

Chorus' price-quality path from 1 January 2022 – Final decision

Reasons paper

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Associated documents

Publication date	Reference	Title
15 Sep 2020	ISBN 978-1-869458-38-6	Fibre information disclosure and price-quality regulation – Proposed process and approach for the first regulatory period
13 Oct 2020	ISBN 978-1-869458-43-0	Fibre Input Methodologies - Main final decisions reasons paper
13 Oct 2020	ISSN 1178-2560	Fibre Input Methodologies Determination 2020 [NZCC 21]
3 Nov 2020	ISBN 978-1-869458-45-4	Fibre Input Methodologies - Financial loss asset final decision – reasons paper
3 Nov 2020	ISSN 1178-2560	Fibre Input Methodologies (initial value of financial loss asset) Amendment Determination 2020 [NZCC 24]
30 April 2021	ISBN 978-1-869458-85-0	Determining Chorus' first fibre price-quality path: Process update
30 April 2021	ISBN 978-1-869458-86-7	Chorus' initial price-quality regulatory asset base as at 1 January 2022 – Consultation on Chorus' initial price quality RAB proposal
27 May 2021	ISBN 978-1-869459-00-0	Fibre Information Disclosures – Draft decisions – Reasons paper
27 May 2021	ISBN 978-1-869458-91-1	[Draft] Fibre Information Disclosure Determination 2021 [2021] NZCC[XX]
27 May 2021	ISBN 978-1-869458-96-6	Proposed Amendments to Fibre Input Methodologies: draft decisions, Reasons paper
27 May 2021	ISBN 978-1-869458-97-3	[Draft] Fibre Input Methodologies Amendment Determination 2021 [2021] NZCC[XX]
27 May 2021	ISBN 978-1-869458-99-7	Chorus' price-quality path from 1 January 2022 – Draft decisions, Reasons paper
27 May 2021	ISBN 978-1-869458-94-2	[Draft] Fibre Price-Quality Path Determination 2021 [2021] NZCC[XX]
29 June 2021	-	Determining Chorus' PQ RAB – Process update
12 July 2021	ISBN 978-1-869459-12-3	Fibre Input Methodologies Determination 2020 (consolidated July 2021)
19 August 2021	ISBN 978-1-869459-23-9	Chorus' initial regulatory asset base as at 1 January 2022 – Draft Decision – Reasons paper
29 September 2021	ISBN 978-1-869459-30-7	Amendments to Fibre Input Methodologies: Capex IM final decision - Reasons paper
29 September 2021	ISSN 1178-2560	Fibre Input Methodologies (base capex and connection capex baseline allowance determination dates) Amendment Determination 2021 [2021] NZCC [17]
30 September 2021	ISBN 978-1-869459-32-1	Proposed amendments to fibre Input Methodologies – wash-up mechanism revised draft – Reasons paper

Publication date	Reference	Title
30 September 2021	ISBN 978-1-869459-31-4	[Revised draft] Fibre Input Methodologies (wash-up mechanism) Amendment Determination 2021
30 September 2021	ISBN 978-1-869459-33-8	Geographically consistent pricing Guidance on our intended approach to s 201 of the Telecommunications Act 2001
30 September 2021	-	Open letter – Consultation on incentive payments as part of fibre price-quality decisions on expenditure allowances
29 November 2021	ISBN 978-1-869459-55-0	Fibre Input Methodologies – Main 2021 amendments – Final decisions – Final reasons paper
29 November 2021	ISSN 1178-2560	Fibre Input Methodologies Amendment Determination (No.2) 2021 [2021] NZCC [25]
30 November 2021	ISBN 978-1-869459-58-1	Fibre Information Disclosure – Final Decisions Reasons Paper
16 December 2021	ISBN 978-1-869459-23-9	Chorus’ transitional initial price-quality regulatory asset base as at 1 January 2022 – Final Decision
16 December 2021	ISSN 1178-2560	Fibre Price-Quality Path Determination 2021 [2021] NZCC [27]
16 December 2021	-	Notice to supply information to the Commerce Commission under section 193(2) of the Telecommunications Act 2001 – Compliance statements for the first regulatory period

Commerce Commission
Wellington, New Zealand

Foreword

Tēnā Koutou

The fibre networks New Zealand has built over the past decade under the Government's Ultrafast Broadband (UFB) programme are critical to every aspect of social and economic life in New Zealand, and to our success in the digital future.

The regulatory regime under Part 6 of the Telecommunications Act, which comes into force on 1 January 2022, will deliver quality and value for New Zealand consumers while promoting continued investment in this essential infrastructure.

On 30 November, we published information disclosure requirements for all four regulated fibre wholesalers, which laid the foundation of the new regime.

The decisions in this paper build on that foundation to set a three-year price-quality path for Chorus, as the largest of those regulated fibre wholesalers.

A key building block of the price-quality path is the value of Chorus's fibre assets at the start of the regulatory regime, or its initial Regulatory Asset Base (RAB), which includes a Financial Loss Asset (FLA) to recognise losses that Chorus incurred during the rollout of its UFB network.

Our final decisions on Chorus' transitional initial RAB are summarised in this paper, and are reflected in our decisions on the price quality path, but are detailed in the separate final decisions paper published alongside this one.

Together, our final decisions are intended to achieve a smooth transition into the new regime by retaining features of the settings that have made UFB a success, while also putting in place a building blocks regulatory regime to create incentives for Chorus to act in the best interests of consumers and to promote competition in telecommunications markets.

As we move forward, the Part 6 regime must remain flexible to adjust to the dynamic and rapidly changing nature of telecommunications markets. We will achieve this flexibility through future price-quality resets, where we are likely to adjust our approach to expenditure assessments, efficiency incentives, and quality regulation in line with industry changes.

The regime also allows for flexibility through reviews of the structure of the price-quality regime and declared services, as well as deregulation reviews, which look at changes to fibre services markets, including changes in levels of competition. These reviews can result in a fibre service being deregulated or price-quality regulation being removed.

Our role as we move forward into the new regime, as it has been throughout the process to reach the decisions in this paper, is to deliver the best long-term outcomes for consumers by creating a stable regulatory environment for Chorus and the wider sector.

We are grateful to all stakeholders for their positive engagement and constructive input into the process leading to our final decisions and the creation of the new regulatory regime.

Ngā mihi nui

A handwritten signature in black ink, appearing to read 'Tristan Gilbertson', written in a cursive style.

Tristan Gilbertson

Telecommunications Commissioner

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Glossary

Abbreviation	Definition
ABAA	Accounting-based allocation approach
ARPU	Average revenue per user
CAGR	Compound annual growth rate
CCC	Chorus' Capital Council
CIP	Crown Infrastructure Partners
CNO	Customer and Network Operations
CO	Central Office
CPI	Consumer Price Index
CRT	Chorus Regional Transport
CTO	Chief Technology Office
DFAS	Direct fibre access services
EDB	Electricity distribution businesses
FAN	Fibre access network
FCM	Financial capital maintenance
FFLAS	Fibre fixed line access services
FLA	Financial Loss Asset
FOFI	Forecast other FFLAS income
FSA	Field service agreements
FWA	Fixed wireless access
IC	Individual Capex
ID	Information disclosure
IM	Input methodologies
IT	Information technology
LCI	Labour Cost Index
MNO	Mobile network operators
NBV	Net book value
ONT	Optical network terminal
POI	Points of interconnection
PON	Passive optical network
PONFAS	PON fibre access services
PPI	Producers Price index
PQ	Price-quality
RAB	Regulatory Asset Base
RBI	Rural Broadband Initiative
RBNZ	Reserve Bank of New Zealand
REN	Regional ethernet network

Abbreviation	Definition
RFCM	Real financial capital maintenance
RFI	Request for information
RPE	Real Price Effect
RSP	Retail service providers
SFA	Specified Fibre Areas
TDRS	Telecommunications Dispute Resolution Scheme
TES	Tail extension service
UDL	Utilities Disputes Limited
UFB	Ultrafast Broadband
UNI	User Network Interface
VCA	Value of a commissioned asset
WACC	Weighted average cost of capital

Executive summary

Purpose of this paper

X1 This paper sets out our final decisions on Chorus Limited's (**Chorus'**) price-quality (**PQ**) path from 1 January 2022 and explains our reasons for making them.

Allowable revenue

X2 We have determined a total allowable revenue of \$2,227.1 million for Chorus over the three years of PQP1. This forecast allowable revenue is composed of:

X2.1 'building blocks revenue' of \$2,182.9m;

X2.2 forecast pass-through costs of \$44.2m; and

X2.3 a wash up amount of \$0.0m.

X3 Forecast allowable revenue is illustrated in Table X1 below.

Table X1 Forecast allowable revenue (\$m in nominal terms)

Component	2022	2023	2024	PQP1 total
Building blocks revenue	676.1	732.9	774.0	2,182.9
Pass-through costs	14.2	14.5	15.5	44.2
Wash-up amount	-	-	-	-
Total	690.2	747.4	789.5	2,227.1

Building blocks revenue

X4 The largest component of forecast allowable revenue is 'building blocks revenue'. Building blocks revenue is an amount specified by the Commission in a PQ determination, and is composed of the relevant building blocks components. Building blocks are components that reflect forecasts of Chorus' costs for the regulatory period, and certain regulatory adjustments (such as to smooth revenue over the PQP1 period).

X5 The indicative values of each building block are set out in Table X2 below. The building blocks components determined, and the specific contributions each of them makes to forecast allowable revenue, are summarised in Table X3 below.

Table X2 Key inputs parameters for the building blocks model

Parameter	Basis	Values		
		2022	2023	2024
Total initial PQ RAB	Final transitional initial PQ RAB (\$m nominal)	\$5,424.8	\$5,474.9	\$5,444.8
Financial loss asset value	Final transitional initial PQ RAB (\$m nominal)	\$1,391.2	\$1,209.2	\$1,050.3
Vanilla WACC	Final WACC determination	4.72%	4.72%	4.72%
Post-tax WACC	Final WACC determination	4.52%	4.52%	4.52%
CPI (revaluations)	RBNZ May 2021 forecasts	1.80%	2.20%	2.13%
Allocated real base capex allowance	Final PQ decision (\$m 2019/20 constant)	\$219.9	\$187.4	\$174.3
Allocated real connection capex baseline allowance	Final PQ decision (\$m 2019/20 constant)	\$135.0	\$96.2	\$71.3
Allocated real opex allowance	Final PQ decision (\$m 2019/20 constant)	\$150.0	\$144.1	\$139.7

Table X3 Final building blocks revenue components (\$m, nominal)

Component	2022	2023	2024
Total return on capital	\$122.9	\$99.0	\$100.6
Return on assets (RAB x WACC)	\$260.8	\$260.7	\$258.8
Revaluations	-\$95.5	-\$117.7	-\$113.7
Ex-ante stranding allowance	\$5.4	\$5.5	\$5.4
Benefit of Crown finance	-\$49.8	-\$51.3	-\$51.7
TCS D allowance	\$1.9	\$1.9	\$1.9
Opex allowance	\$160.4	\$158.2	\$156.0
Total depreciation	\$464.6	\$456.3	\$458.9
Core fibre assets	\$261.4	\$274.2	\$296.6
Financial loss asset	\$203.2	\$182.1	\$162.3
Tax allowance	\$0	\$0	\$0
In-period smoothing	-\$71.9	\$19.4	\$58.5
Total	\$676.1	\$732.9	\$774.0

Pass-through costs

X6 Forecast pass-through costs are costs over which Chorus has little or no control, and that are appropriate to be passed through to end-users. Our final decision is unchanged from our draft decision.

- X7 The fibre input methodologies (**IMs**) specify that pass-through costs are:¹
- X7.1 telecommunications levies under ss 11 and 12 of the Telecommunications Act 2001 (**the Act**);
 - X7.2 telecommunications development levies;
 - X7.3 local authority rates; and
 - X7.4 a fixed membership fee relating to, or a fixed amount payable as a member of:
 - X7.4.1 the Utilities Disputes Limited’s (**UDL**) dispute resolution scheme;
 - X7.4.2 the Telecommunications Dispute Resolution Scheme (**TDRS**); and
 - X7.4.3 any other dispute resolution scheme specified in a PQ determination.

Wash-up amount

- X8 We have amended the IMs such that the wash-up drawdown will work on a PQ period-by-period basis. As such, the wash-up amount in each regulatory year of PQP1 will be zero.

Building blocks components

Final decisions on building blocks determined by the IMs

- X9 The following building block components are largely determined by the IMs:
- X9.1 the components of the return on capital;
 - X9.2 the revaluations building block that results from the indexation of the RAB; and
 - X9.3 the regulatory tax allowance.
- X10 Within the return on capital, we have chosen to specify a negative “annual benefit of Crown finance building block”. While the decision to include this is a matter of implementation judgement, how it is calculated is determined by the IMs.

¹ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.2.

Final decisions on building blocks where we have exercised our judgement

Disposed assets

X11 Chorus has not forecast any asset disposals during PQP1, so our final decision is to not include any.

Revenue smoothing within the period

X12 We have smoothed Chorus' revenue over PQP1 based on allowing prices to remain flat in real per-user terms.

X13 The effective rates of change this smoothing implies are set out in Table X4.

Table X4 Forecast rates of change for in-period smoothing

Value	2023	2024
Forecast CPI	2.2%	2.0%
Quantity growth	6.1%	3.5%
Total ²	8.4%	5.6%

Revenue smoothing between the periods

X14 We do not consider it necessary to smooth revenue between periods under s 197.

Approach to the revenue path and wash-up

Revenue cap

X15 The revenue cap will require that Chorus set prices such that 'forecast total FFLAS revenue' is less than or equal to 'forecast allowable revenue'.

Forecast total FFLAS revenue

X16 Chorus will be required to demonstrate how it calculates 'total FFLAS' on the basis of prices, forecast quantities, and forecasts of "other FFLAS income".

Forecast allowable revenue

X17 We have specified forecast building blocks revenue as a specific dollar value for regulatory year 2022. For regulatory years 2023 and 2024, we have specified building blocks revenue by way of a formula that references:

X17.1 forecast building blocks revenue in the prior regulatory year;

X17.2 updated forecast CPI (consumer price index); and

² Note: the total value is not a sum of the two rates of change, but a multiplicative approach $(1+CPI) \times (1+Q)$.

X17.3 forecast (as at the start of the regulatory period) changes in quantities.

X18 We have decided to allow Chorus to update the values of any forecast pass-through costs on an annual basis.

Additional controls on revenue

X19 We have not included any further measures to control revenues.

Compliance with the revenue path

X20 Chorus must demonstrate that it is compliant with the revenue path on an 'ex ante' basis - prior to the relevant prices coming into effect. This must be done at least annually, and updated mid-year whenever prices change.

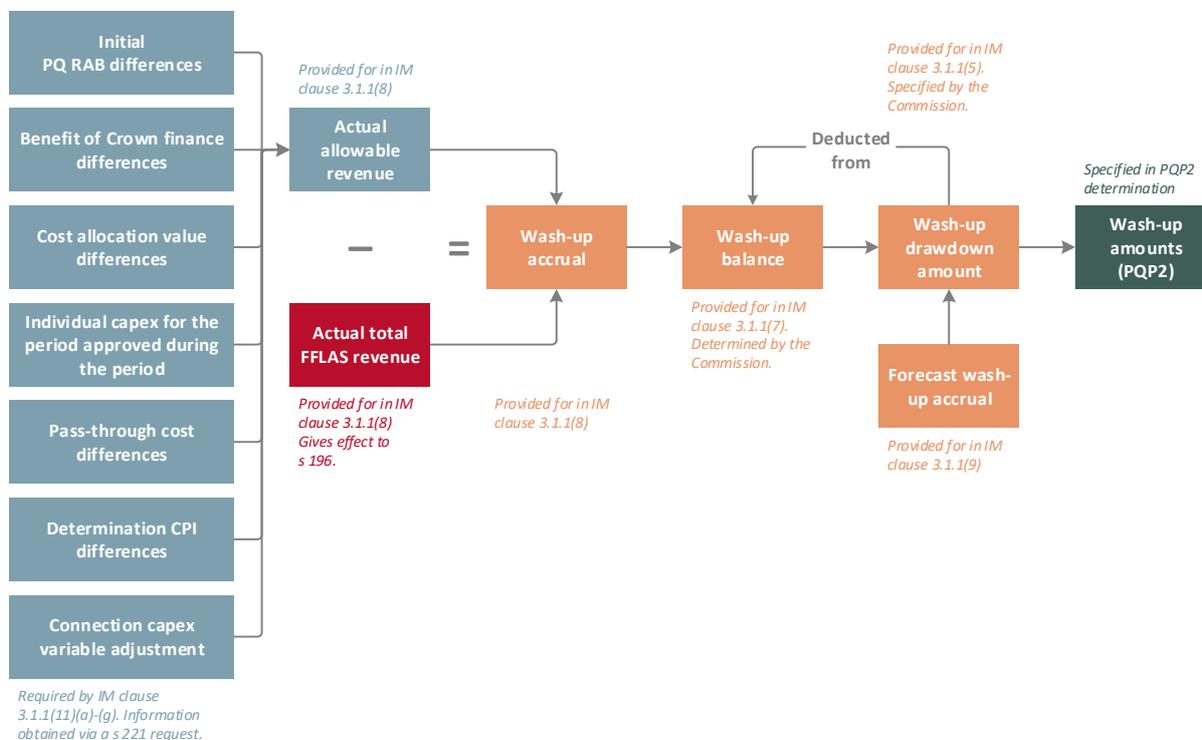
Wash-up

Mechanics of the wash-up

X21 We have specified the mechanics of the wash-up in the IMs.

X22 The wash-up mechanism will work on a 'balance' basis with amounts accruing to and being drawn-from an ongoing wash-up balance and including time-value of money adjustments. Figure X1 below provides an overview of the wash-up mechanism.

Figure X1 Overview of the wash-up mechanism



Scope of the wash-up mechanism

- X23 We have defined the scope of the wash-up mechanism in the IMs. In addition to accounting for under- or over-recovery of revenue, the wash-up includes:
- X23.1 the difference between the transitional initial PQ RAB and the final initial PQ RAB (for PQP1 only);
 - X23.2 the difference between the forecast and actual “annual benefit of Crown financing building block”;
 - X23.3 differences between forecast cost/asset allocator values and actual cost/asset allocator values;
 - X23.4 individual capex allowances in respect of the regulatory period determined after the PQ path was set;
 - X23.5 the difference between forecast and actual pass-through costs;
 - X23.6 the difference between any forecast CPI values in the PQ determination used to determine forecast allowable revenue, and the corresponding actual CPI values; and
 - X23.7 the connection capex variable adjustment.

Expenditure

- X24 We have determined a final base capex allowance of \$581.6 million, a final connection capex baseline allowance of \$302.5 million, and an opex allowance of \$433.8 million over PQP1.
- X25 Relative to Chorus’ proposal, this reduces Chorus’ expenditure by \$60.5 million (9.4%) for the base capex allowance, \$32.9 million (9.8%) for the connection capex baseline allowance and \$54.1 million (11.1%) for the opex allowance.

Base capex allowance

- X26 Our final decision is to approve a total base capex allowance of \$581.6 million for PQP1. This is a reduction from Chorus' proposed expenditure by \$60.5m (9.4%) which includes expenditure we consider would be more appropriately submitted as individual capex. It also includes our final decision on FFLAS allocations which result in a reduction of \$4.5 million from Chorus’ proposal.
- X27 Our final decision on base capex includes:
- X27.1 removal of base capex innovation expenditure of \$34.4, and retention incentives of \$32.6 million;

- X27.2 a base capex adjustment of \$24.9 to account for over-forecasts in Chorus' base capex proposal;
- X27.3 a reduction of \$0.7 million for an unjustified regulatory overlay;
- X27.4 a reduction of Installations capex of \$1.0 million to reflect the change in demand forecast;
- X27.5 a reduction of Aggregation and Transport expenditure by a total of \$2.7m and \$2.4m respectively to account for unjustified assumptions;
- X27.6 adjusted Field sustain expenditure by \$1.9m, to reflect Chorus' fibre assists sustain plan for PQP1;
- X27.7 inclusion of leases in the capex of \$26.0m; and
- X27.8 inclusion of incentives payments in base capex for 2022 of \$18.6m.

Connection capex baseline allowance

- X28 Our final decision is to approve a connection capex baseline allowance of \$302.5 million for PQP1. This is a reduction from Chorus' proposed expenditure by \$32.9 million (9.8%).
- X29 Our final decision on connection capex baseline allowance includes:
 - X29.1 removal of incentive payments of \$10.2 million from the connection capex baseline allowance as we do not consider that they meet the definition of variable connection costs;
 - X29.2 a reduction of the forecast connection capex of \$20.4 million to reflect smoothed unit cost trends;
 - X29.3 a reduction to reflect the change in the demand forecast of \$2.4 million; and
 - X29.4 Connection capex will be split into eleven connection types, rather than the ten connection types proposed by Chorus.
- X30 Our final decision includes specification of connection unit costs for each connection type for PQP1.³

³ Note that some of the information relating to connection types was identified by Chorus as commercially sensitive. To address these concerns, we have grouped certain connection types to protect the confidential nature of this information.

Opex allowance

- X31 Our final decision is to approve an opex allowance of \$433.8 million for PQP1. This is a reduction from Chorus' proposed expenditure by \$54.1 million (11.1%). It also includes our final decision on fibre fixed line access services (**FFLAS**) allocations which result in a reduction of \$17.4 million from Chorus' proposal.
- X32 Our final decision on the opex allowance includes:
- X32.1 an IT efficiency adjustment of \$21.3 million, to account for the benefits from planned IT investment;
 - X32.2 removal of \$13.4 million from Corporate Support expenditure, reflecting the historic cost trends and removing estimated inefficiencies in the base year costs and reductions for one regulatory overlay;⁴ and
 - X32.3 removal of \$2.0 million from Network maintenance for insufficiently justified "pits and manholes" regulatory overlay expenditure.
- X33 Our final decision includes expenditure allowances for each opex sub-category proposed by Chorus.

Individual capex for innovation and incentive payment expenditure

- X34 Our decision is to:
- X34.1 exclude Chorus' proposed expenditure for innovation from base capex;
 - X34.2 exclude Chorus' proposed incentive payment expenditure from base capex for 2023 and 2024 base capex allowance;
 - X34.3 exclude proposed incentive payment expenditure from connection capex baseline allowance; and
 - X34.4 include incentive payment expenditure for 2022 in base capex.
- X35 As allowed for in the capex IM, Chorus may submit expenditure proposals for the expenditure we have excluded under the individual capex mechanism.⁵

⁴ A "regulatory overlay" is the term Chorus uses to describe additional expenditure it added to its proposal post the development of its initial forecast. The initial forecast was in turn based on Chorus' normal business planning process undertaken in February 2020.

⁵ Subject to the thresholds being met for an individual capex proposal.

- X36 This is a change to our draft decision. Instead of removing all incentive payments from Chorus' base capex and connection capex baseline allowances, we have included Chorus' proposed incentive payment expenditure for 2022 only. Chorus must apply for any additional incentive payment expenditure for 2023 and 2024 as individual capex.
- X37 We have included \$18.6 million of incentive payment expenditure for 2022 in the installation capex sub-categories (for both standard and complex installations).

Transitional Initial PQ RAB

- X38 We have determined that the value of the transitional initial PQ RAB (including the financial loss asset (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 X8 below.
- X39 Our decisions on the transitional initial PQ RAB and on cost allocation are discussed in more detail in a separate paper, published alongside this one on our website.

Table X5 Our determination of the transitional initial PQ RAB values (\$m, nominal)

Value	Unallocated values				Allocated values			
	<i>Final decision</i>	<i>Draft decision</i>	<i>Chorus' estimate</i>	<i>Difference (final vs Chorus' estimate)</i>	<i>Final decision</i>	<i>Draft decision</i>	<i>Chorus' estimate</i>	<i>Difference (final vs Chorus' estimate)</i>
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	4,034	3,980	4,045	-11
FLA	n/a	n/a	n/a	n/a	1,391	1,446	1,462	-71
Tax losses⁶	n/a	n/a	n/a	n/a	-955	-1,001	-803	-152

⁶ 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 *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 2.3.3(3)(a)(i). The tax effect of losses is equal to "opening tax losses" multiplied by the corporate tax rate of 28%.

X40 Chorus proposed a number of alternative allocator types. We have determined that these allocator types largely meet the IM requirements. The exceptions where we have accepted Chorus' allocator types, but with modifications to the allocation approach, are as follows:

- X40.1 **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 allocated transitional initial PQ RAB relative to Chorus' estimate by \$57.0 million;
- X40.2 **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 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 allocated transitional initial PQ RAB relative to Chorus' estimate by \$60.2 million;
- X40.3 **allocation of pre-2011 ducts:** we consider Chorus' proposed allocator type for pre-2011 duct values, the 'Route Length Ratio' 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. The forecast figure is subject to confirmation by Chorus of the actual usage at 31 December 2021. This decision reduces the value of the allocated transitional initial PQ RAB relative to Chorus' estimate by \$19.4 million; and
- X40.4 **allocation of floorspace:** We have also identified a concern with the assurance of Chorus' floor space allocation model. We have applied a 50% reduction factor to the figures Chorus has proposed. We will however allow for the allocated amounts from Chorus' model to be applied if suitable assurance is provided prior to finalisation of the initial PQ RAB in 2022. This is a change from our draft decision. This decision reduces the value of the allocated transitional initial PQ RAB relative to Chorus' estimate by \$66.8 million.

X41 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.⁷ The alternative methodologies provision applies to the following elements of the FLA inputs:

X41.1 capital contributions that are not matched to individual assets;

X41.2 the use of net book value (**NBV**) adjustments;

X41.3 value of a commissioned asset (**VCA**) not recorded as a separate asset; and

X41.4 the calculation of UFB cost allocation adjustment cash flow.

Alternative depreciation

X42 For our final decision we have:

X42.1 for Chorus' core fibre assets, applied straight-line depreciation under GAAP with GAAP-based asset lives;

X42.2 for the FLA, applied an alternative method involving:

X42.2.1 an asset life of 14.2 years; and

X42.2.2 tilted annuity depreciation with a tilt rate of -13%.

X43 This final decision on the FLA's depreciation is a change from the draft decision, where we proposed using the diminishing value method. The -13% tilt rate was based on Chorus' proposed alternative approach, as (when applied to the FLA only) it approximates the effect of a -4% tilt applied to a broader range of core fibre assets.

Quality standards

X44 Table X9 below outlines our final decisions on quality standards.

⁷ 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 (29 November 2021), 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.

Table X6 Overview of final quality decisions

Mandatory or optional in the IMs	Quality dimension	Quality standard	Quality standard applies to	Determination reference
Mandatory	Availability: average unplanned downtime Reporting differentiated by geography (availability POI area) and service layer (layer 1 and layer 2)	To comply with the layer 1 availability quality standard in a given availability POI area in a regulatory year, Chorus' average unplanned downtime must not exceed, for a layer 1 aspect of a fibre network, 160 minutes in an availability POI area.	Each availability POI area	Clause 8.1
		To comply with the layer 2 availability quality standard in a given availability POI area in a regulatory year, Chorus' average unplanned downtime must not exceed, for a layer 2 aspect of a fibre network, 40 minutes in an availability POI area.	Each availability POI area	Clause 8.2
		Downtime attributable to force majeure events and non-diverse transport services are excluded from measurement of the availability quality standard.		Clause 4.2 (definition of 'net unplanned downtime')
	Performance: port utilisation	To comply with the performance quality standard for a regulatory year, the percentage of Chorus's ports experiencing port utilisation, upstream or downstream, equal to or exceeding 90% in any five-minute interval in one or more calendar months, must not exceed 0.12%.	Chorus' PQ FFLAS network	Clause 8.3
Optional	Ordering	None		
	Provisioning	None		
	Switching	None		
	Faults	None		
	Customer Service	None		

Chapter 1 Introduction

Purpose of this paper

- 1.1 This paper sets out our final decisions on Chorus Limited's (**Chorus'**) price-quality (**PQ**) path from 1 January 2022 and explains our reasons for making them.
- 1.2 From 1 January 2022, providers of regulated FFLAS will be subject to new forms of regulation under Part 6 of the Act.⁸
- 1.3 The Commerce Commission (**the Commission**) is responsible for determining these elements of the regulatory framework, which are information disclosure (**ID**) regulation and price-quality (**PQ**) regulation. This paper is concerned with PQ regulation. The ID decisions were contained in a separate paper, published on 30 November 2021.⁹
- 1.4 Pursuant to regulations made under s 226 of the Act, Chorus will be subject to PQ regulation, except in respect of areas where it supplies FFLAS in competition with other regulated FFLAS providers.

Structure of this paper

- 1.5 To achieve this objective, the remainder of this paper discusses:
 - 1.5.1 in Chapter 2, the requirements in the Act, the decision-making framework we have applied in reaching our decisions, and the economic principles and incentives framework we have considered when applying our decision-making framework;
 - 1.5.2 in Chapter 3, Chorus' revenue allowance (forecast allowable revenue) for PQP1, and the revenue path during the regulatory period;
 - 1.5.3 in Chapter 4, our decisions on Chorus' opex, base capex, and connection capex allowances for PQP1, and the process we have applied for setting these allowances;
 - 1.5.4 in Chapter 5, a summary of our decision on the transitional initial PQ regulatory asset base (**RAB**) we use when determining allowable revenues;
 - 1.5.5 in Chapter 6, the application of alternative depreciation as part of determining allowable revenue; and

⁸ Unless stated otherwise all references to statutory provisions in this paper are references to statutory provisions under the Telecommunications Act 2001.

⁹ Commerce Commission "Fibre Information Disclosure Final Decisions – Reasons Paper" (30 November 2021).

- 1.5.6 in Chapter 7, the quality standards we have determined for PQP1.
- 1.6 The attachments to this paper discuss technical aspects of our final decisions in detail.

Materials we have published alongside this paper

- 1.7 Alongside this paper, we have published:
- 1.7.1 the PQ determination and compliance notice under s 193(2) of the Act;
 - 1.7.2 the Commission’s ‘demonstration’ building blocks model that demonstrates how we calculate allowable revenue.
- 1.8 Today we have also published our final decision on Chorus’ transitional initial PQ RAB, including cost allocation and the transitional value of the initial PQ RAB. These values are used as inputs to our decisions on Chorus’ allowable revenue.
- 1.9 We intend to issue an information gathering notice under s 221 of the Act, seeking information from Chorus about the revenue path wash-up mechanism over the PQP1 period. Once we have issued this notice to Chorus, we will also publish a copy on our website.
- 1.10 To implement certain aspects of our final PQ decision, it was necessary to make amendments to the IMs.¹⁰ Our final decision on these IM amendments was published on 29 November 2021.¹¹ These amendments included changes to the operation of the revenue path wash-up mechanism.
- 1.11 As noted above, we published our final decisions on ID regulation for Chorus and other regulated FFLAS providers on 30 November 2021.¹²

¹⁰ *Fibre Input Methodologies Amendment Determination (No.2) 2021* [2021] NZCC 25 (29 November 2021). 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).

¹¹ Commerce Commission “Fibre input methodologies main 2021 amendments: final decisions – final reasons paper” (29 November 2021).

¹² Commerce Commission “Fibre Information Disclosure Final Decisions – Reasons Paper” (30 November 2021).

1.12 PQ and ID materials are available on our website at:
<https://comcom.govt.nz/regulated-industries/telecommunications/projects/fibre-price-quality-path-and-information-disclosure>.

1.13 IM amendment materials are available on our website at:
<https://comcom.govt.nz/regulated-industries/telecommunications/projects/fibre-input-methodologies>.

Process we have followed

1.14 The timeline for the process we have followed to determine the PQ path is set out in Table 1.1 below. After that, we briefly explain the links between our decisions on the initial RAB and this decision on the PQ path.

Table 1.1 Current process we are following

Phase	Timing	Scope
Initiation	Q4 2020 to Q1 2021	Process and approach paper Submissions on process and approach paper Chorus PQP1 information request and proposal Consultation on Chorus PQP1 expenditure proposal Submissions on PQP1 expenditure proposal Stakeholder workshop on quality of service
Process update and initial PQ RAB proposal	30 April 2021	Process update paper Potential IM amendment NOI Publication of Chorus' initial PQ RAB proposal Consultation on Chorus' initial PQ RAB proposal Submissions on Chorus' initial PQ RAB proposal (four weeks)
Draft PQ and ID decisions	27 May 2021	ID draft decisions PQP1 draft quality, expenditure, and depreciation decisions Draft IM amendments (PQ and ID-related) Submissions on potential August 2021 IM amendment draft decisions (four weeks) Submissions on ID, PQP1 and potential November 2021 IM amendment draft decisions (six weeks) Cross-submissions on draft decisions (two weeks)
PQP1 WACC determination	1 July 2021	Publication of final PQP1 WACC determination
Draft initial PQ RAB decisions	19 August 2021	Transitional initial PQ RAB draft decision Draft IM amendments (RAB-related) Submissions on draft initial PQ RAB (four weeks) Cross-submissions on draft initial PQ RAB (two weeks)
Final decision on capex IM amendment	29 September 2021	Final IM amendment decision on the timing of PQP1 capex allowances
Revised draft IM amendment decision	30 September 2021	Revised draft decisions on wash-up mechanism fibre IM amendments Submissions on revised draft decisions (21 October 2021) Cross-submissions on revised draft decisions (28 October 2021)
Consultation on incentive payments	30 September 2021	Consultation on additional information published related to incentive payments Submissions due 14 October 2021
Final IM amendment and ID decisions	29 and 30 November 2021	Final decisions on main IM amendments Final decision on ID
Final PQ and transitional initial PQ RAB decisions	16 December 2021	Final PQP1 quality, expenditure, and depreciation decisions Final decision on transitional initial PQ RAB (including cost allocation)
Final Initial RAB decisions	2022	Draft decisions on other 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 of all initial RABs

- 1.15 We consulted on the PQ path in two tranches. Our 27 May 2021 draft decision covered:
- 1.15.1 how Chorus' revenue path will operate;
 - 1.15.2 the treatment of depreciation for Chorus' assets;
 - 1.15.3 expenditure allowances; and
 - 1.15.4 quality standards.
- 1.16 On 19 August, we published draft decisions on:
- 1.16.1 the value of Chorus' initial PQ RAB including the value of the financial loss asset; and
 - 1.16.2 the approach to allocating costs and assets between Chorus' PQ regulated FFLAS and the other services Chorus provides, for both the pre-implementation loss period, and for PQP1.
- 1.17 The decisions we have published today bring together these decisions, as well as addressing submissions received in response to both drafts.
- 1.18 Detailed discussion of our decisions on the value of the transitional initial PQ RAB and on cost allocation can be found in the transitional initial PQ RAB paper. Where necessary, we cross-refer to these decisions.

Chapter 2 Regulatory framework

Purpose and structure of this chapter

- 2.1 This chapter describes the legal requirements under Part 6 for determining PQP1 for Chorus and the economic framework we have applied in making our decisions. The chapter is structured as follows:
- 2.1.1 Overall legal framework, including:
 - 2.1.1.1 an overview of PQ regulation;
 - 2.1.1.2 mandatory decision-making considerations that apply for our first PQ determination;
 - 2.1.1.3 matters that must be included in our first PQ determination; and
 - 2.1.1.4 enforcement provisions applicable for PQ regulation; and
 - 2.1.2 Economic framework.

Overview of PQ regulation

- 2.2 This section provides an overview of the PQ regulatory regime under Part 6.

The ultra-fast broadband initiative

- 2.3 Part 6 is a utility-style regulatory framework modelled on the Part 4 framework under the Commerce Act 1986. It is designed to replace the current framework, where the provision of fibre services by regulated providers under the UFB initiative is governed by UFB contracts with Crown Infrastructure Partners (**CIP**).
- 2.4 In some instances, the Act expressly directs us to consider requirements of the UFB initiative, including when we calculate the initial value of fibre assets under s 177 or when specifying the initial points of interconnection (**POIs**) under s 231. There are other cases where aspects of the price or non-price terms of services are rolled over beyond the implementation date. For example, where regulations are issued in respect of anchor services under s 227 (discussed at paragraph 2.36 below).
- 2.5 In a more general sense, the characteristics of the market have been shaped by features of the UFB initiative, such as the effect of Crown subsidies, discussed at paragraphs 2.56-2.58 below. However, we expect this influence to reduce as the Part 6 framework develops and we move beyond the first regulatory period.

Regulations under s 226

- 2.6 Under s 226, the Governor-General may make regulations prescribing a person who provides FFLAS as being subject to ID regulation, PQ regulation, or both. Regulations under s 226 must also describe the services in respect of which the person is subject to ID regulation, PQ regulation, or both.¹³
- 2.7 The Telecommunications (Regulated Fibre Service Providers) Regulations 2019 (**Regulations**) provide that Chorus will be subject to PQ regulation for 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.¹⁴
- 2.8 Regulations under s 226 determine the scope for PQ regulation including for the PQ RAB and have implications for other provisions in the Act, such as obligations for Chorus to provide regulated services under ss 198-200 and maintain geographic consistency of pricing under s 201. We discuss these matters in more detail from paragraphs 2.20 and 2.34 below.
- 2.9 In our “Fibre input methodologies: Main final decisions reasons paper” (main IMs reasons paper), we indicated that we will make decisions regarding how we will implement the Regulations made under s 226, including how we specify the geographic areas where PQ regulation applies, in our process for setting PQ and ID regulation.¹⁵
- 2.10 We have applied the process described in our “Fibre information disclosure and price-quality regulation: Proposed process and approach for the first regulatory period” (process and approach paper).¹⁶ One exception is the treatment of aggregated services where our approach, based on the location of end-users who are the ultimate recipients of FFLAS, was not able to be applied for aggregated services.¹⁷ Our final decision is to adopt a proposal from Chorus which is outlined in Attachment E.

¹³ Section 226(2)(b).

¹⁴ The Telecommunications (Regulated Fibre Service Providers) Regulations 2019 were made on 18 November 2019, and notified in the Gazette on 21 November 2019.

¹⁵ Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), paragraph 2.69.

¹⁶ Commerce Commission “[Fibre Information disclosure and price-quality regulation – proposed process and approach for the first regulatory period](#)” (15 September 2020), Chapter 6.

¹⁷ Chorus, Chorus submission on “Fibre input methodologies – further consultation draft reasons paper” 13 August 2020.

- 2.11 Further, in our process and approach paper we noted neither the Act nor the Regulations prescribe how the Commission should identify where an LFC has installed a fibre network under the UFB initiative or what it means for an LFC to have “installed a fibre network”.
- 2.12 In our process and approach paper, we considered the contracted UFB candidate (coverage) areas would be useful starting point for identifying the geographic areas where Chorus’ FFLAS would be exempt from PQ regulation but remain subject to ID regulation.¹⁸
- 2.13 The contracted UFB candidate areas are where the regulated providers were required to construct fibre network under the UFB initiative. As the regulated providers have completed their fibre network builds, their as-built UFB fibre network coverage areas provide a fixed starting reference for identifying the relevant geographic areas where Chorus’ FFLAS will be exempt from PQ regulation but not ID regulation.
- 2.14 However, as discussed in our process and approach paper the contracted UFB candidate (coverage) areas are unlikely to provide the complete picture as there are likely be differences between the UFB contracted and as-built network coverage areas. The UFB contracts anticipated developments such as an adjacent greenfield property development would be accommodated in the network build.
- 2.15 The contracted UFB coverage areas may not, therefore, provide enough information on the location of the regulated providers’ fibre networks to enable us to determine the geographical areas where Chorus is exempt from PQ regulation under regulation 6.

¹⁸ [Fibre Information disclosure and price-quality regulation – proposed process and approach for the first regulatory period](#) (15 September 2020), Chapter 6.

- 2.16 As the contracted UFB candidate areas are unlikely to provide enough information, we sought feedback on whether the database we developed for determining specified fibre areas under s 69AB could also be used to assess and determine the geographic areas where PQ regulation applies and does not apply. Under s 69AB, the Commission was required by 1 January 2020 to determine the geographical areas in which specified fibre services are available to end-users, a prerequisite to enabling Chorus to withdraw copper services to end-users under the copper withdrawal code. Submissions received on our process and approach paper were generally supportive of this approach. However, Chorus indicated its support for us using information we have obtained from regulated providers for constructing the database but not for using the database to determine the extent of PQ regulation, as it was developed for a different purpose.¹⁹
- 2.17 We need to exercise judgement when assessing the extent of the geographic areas where Chorus FFLAS will be exempt from PQ regulation. Our assessment will be based on available information while considering what gives best effect to the purposes of Part 6 set out in s 162(b) and (c) and s 166(2)(b).
- 2.18 To implement the Regulations in our process for setting PQ regulation, our work has focussed on ensuring the approach Chorus has applied to defining the geographic scope of PQ FFLAS is consistent with the approach we proposed in our process and approach paper. This predominantly relates to allocating costs to PQ FFLAS versus ID-only FFLAS.
- 2.19 Our final decision is discussed in Attachment E.

Section 201

- 2.20 Section 201 provides that a regulated provider who is subject to PQ regulation must charge the same price for providing FFLAS that are in all material respects the same, regardless of the geographic location of the access seeker or end-user.
- 2.21 In our view, the requirement to offer geographically consistent pricing only applies to services that are subject to PQ regulation.²⁰ The consequence is that where Chorus supplies FFLAS to access seekers or end-users in geographical areas where other LFCs have installed networks under the UFB initiative (in this paper, we refer to these as “LFC UFB areas”), Chorus is not subject to PQ regulation and is not required to supply FFLAS on a geographically consistent basis.

¹⁹ Chorus “[Submissions on PQID process and approach paper](#)” (14 October 2020).

²⁰ Our view remains the same as stated in our main IMs reasons paper: Commerce Commission “[Fibre input methodologies: Main final decisions – reasons paper](#)” (13 October 2020), paragraph 2.71.

2.22 Section 201 was intended to require Chorus to “charge the same price for a fibre service regardless of the location of the customer ... to ensure comparable pricing for all customers, and to discourage ‘pocket pricing’, where a regulated fibre provider could strategically drop prices in a geographic area to undermine competition.” It was so designed in part to avoid widening of the “digital divide”, by requiring Chorus to charge the same price to rural and urban customers.²¹

Our general focus for the application of s 201 is the location of the end-user

2.23 The majority of Chorus’ FFLAS will be subject to PQ regulation and must therefore be supplied on a geographically consistent basis.

2.24 The dividing line between PQ regulation and ID-only regulation under reg 6 of the Regulations depends on whether a service is provided in a geographical area where an LFC other than Chorus has installed a network under the UFB initiative.

2.25 In our view, the language of reg 6, interpreted in light of its purpose, points to the location of the end-user as determining where the service is provided and thus whether PQ regulation or ID-only regulation apply. In particular, the rationale for PQ regulation of FFLAS depends on the competitive dynamic (or lack thereof) in respect of the end-users who are the ultimate recipients of the service, and who are the focus of the purposes set out in section 166(2) of the Act. The underlying purpose of reg 6 is to exempt Chorus from PQ regulation where it is subject to competitive constraints from other LFCs in respect of end-users.²²

2.26 This approach is straightforward to apply for certain FFLAS. For example, for bitstream services that are supplied to identifiable end-users located in an LFC UFB area where the service is provided, PQ regulation does not apply, and as a result, Chorus would not be required to adhere to geographically consistent pricing for those FFLAS.

2.27 The situation is more nuanced when it comes to services that support multiple (and possibly dispersed) end-users. We have considered how reg 6 and s 201 apply to different categories of aggregated services in Attachment D.

²¹ Telecommunications (New Regulatory Framework) Amendment Bill: Departmental Report to the Economic Development, Science and Innovation Committee – Initial Briefing (10 April 2018), at [74]-[77].

²² Commerce Commission “[Fibre Input Methodologies – main final decisions reasons paper](#)” (13 October 2020), paragraph 2.63.

Relevance of our decision on the application of the s 226 regs for Chorus' initial PQ RAB and the application of s 201

- 2.28 Our decision regarding how the reg 6 proviso applies to different categories of FFLAS (set out in Attachment D) is relevant to the determination of Chorus' initial PQ RAB and the application of s 201.
- 2.29 The question of whether FFLAS in a particular geographical location are subject to PQ or ID regulation determines whether s 201 applies (ie, consistent with our guidance, only services subject to PQ regulation will be subject to the s 201 requirement).²³ Similarly, whether a service is subject to PQ regulation, in turn, determines whether the assets associated with delivering that service are in the PQ RAB or the ID RAB. For example, the PQ RAB will be comprised of assets that are used to deliver PQ services.

Scope of FFLAS

- 2.30 The concept of FFLAS, and Chorus' PQ FFLAS, is central to setting the scope of our PQ regulation under Part 6. We discussed this concept and listed service categories offered by regulated providers that we regard as comprising regulated FFLAS in our main IMs reasons paper.
- 2.31 In our main IMs reasons paper, we indicated that we will reach a final view on what individual services come within the definition of regulated FFLAS (including the exact nature of services that will be considered "connection services") when we make our PQ and ID determinations.²⁴
- 2.32 We have considered the individual services Chorus has included as part of FFLAS and have provided a list of services matched against the categories of services we set out in the IMs final decision (Voice services, Bitstream passive optical network (PON) services, Unbundled PON services, Point-to-point services, Transport services, Co-location and interconnection services, Connection services). This is outlined in Attachment D together with our reasons.
- 2.33 We note that some of the services are allocated wholly to regulated FFLAS and some are allocated in part. For example, Chorus has revenue allocated to Chorus Regional Transport (**CRT**) that is a Transport service similar to Intra Candidate Area Backhaul (**ICABS**).

²³ See paragraph 2.21 above and Commerce Commission "[Geographically consistent pricing - Guidance on our approach to section 201 of the Telecommunications Act](#)" (30 September 2021), paragraphs 13-20.

²⁴ Commerce Commission "[Fibre Input Methodologies – main final decisions reasons paper](#)" (13 October 2020), paragraphs 2.107 and 2.139.

Declared services

- 2.34 Section 193(1)(b) provides that regulated providers that are subject to PQ regulation must comply with ss 198 to 201. Further, s 215(2)(b) states that failing to comply with ss 198 to 201 constitutes a contravention of a PQ requirement.
- 2.35 The Act provides for regulations made under ss 227 to 229 to declare certain FFLAS as anchor services (s 227), direct fibre access services (**DFAS**) (s 228) and unbundled fibre services (s 229) (**declared services**). Once services are declared, ss 198 to 200 provide that regulated providers that are subject to PQ regulation will have to provide the declared services and comply with any prescribed maximum prices and conditions.
- 2.36 The Telecommunications (Regulated Fibre Services) Regulations 2021 (**declared services regulations**) provides for a bitstream (100/20Mbps) and voice only FFLAS as being anchor services, and also a DFAS. The declared services regulations prescribe a maximum price, description and conditions for the anchor services and DFAS based on the terms set out in the UFB contracts.²⁵ At this time, regulations have not been proposed under s 229 that would declare an unbundled fibre service.
- 2.37 When imposed, declared services may act as an additional control on the revenues Chorus can earn and the quality of services it provides. We explain how the declared services have impacted on our draft decisions for the revenue path and quality standards in Chapters 3 and Chapter 7 respectively.

Undertakings under subpart 2 of Part 4AA

- 2.38 Subject to any modifications under ss 206 and 230,²⁶ Chorus' supply of PQ FFLAS must also comply with the undertakings it has given under s 156AD (**fibre deeds**). The Chorus fibre deeds require:
- 2.38.1 non-discrimination in relation to the supply of wholesale telecommunications services provided using, or that provide access to unbundled elements of its fibre network;

²⁵ For the initial regulations, clauses 14(3) and 15(3) of Schedule 1AA require that a description of the services, or conditions of the services, not be materially different from the terms set out in a UFB contract. Also, clause 14(4) of Schedule 1AA and s 228(6) require that a maximum price be based on the maximum price for the service under a UFB contract, with an annual CPI adjustment mechanism.

²⁶ Under s 206, on or after the implementation date, Chorus will not be required to achieve price equivalence in relation to the supply of an unbundled layer 1 service to the extent that the service is an input to a service that is subject to a prescribed maximum price under Part 6 that is not a cost-based price. In addition, under s 230, if services are declared under ss 228 and/or 229, then the Governor-General may make regulations discharging a regulated provider from its obligations to supply a service under a s 156AD undertaking.

- 2.38.2 design and build of the fibre network in a way that enables equivalence in relation to the supply of unbundled layer 1 services on or after 1 January 2020 for UFB1 and 1 January 2026 for UFB2; and
- 2.38.3 equivalence in relation to the supply of unbundled layer 1 services on or after 1 January 2020 for UFB1 and 1 January 2026 for UFB2.
- 2.39 The concept of FFLAS is broad enough to cover all of the services supplied under the fibre deeds and therefore Chorus must also supply PQ FFLAS in accordance with the equivalence, non-discrimination and supply obligations under the fibre deeds.

We must make our first PQ determination before the implementation date

- 2.40 We are required to make a PQ determination before the implementation date (1 January 2022) which specifies how PQ regulation applies to Chorus during the first regulatory period. The first regulatory period runs from 1 January 2022 until 31 December 2024.²⁷

The purpose of PQ regulation

- 2.41 The purpose of PQ regulation is to regulate the price and quality of FFLAS provided by regulated providers.²⁸

Mandatory decision-making considerations that apply for our first PQ determination

- 2.42 When making our first PQ determination, and decisions that form part of our determination, we must consider certain matters specified in s 166(2) of the Act.²⁹

- 2.43 Section 166(2) reads:³⁰

“166 Matters to be considered by Commission and Minister

[...]

(2) The Commission... must make the recommendation, determination, or decision that the Commission... considers best gives, or is likely to best give, effect—

- (a) to the purpose in section 162 of the Act; and
- (b) to the extent that the Commission... considers it relevant, to the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services."

²⁷ Section 207(1).

²⁸ Section 192.

²⁹ Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), paragraphs 2.206-2.271.

³⁰ Section 166(2).

2.44 The purpose of Part 6 of the Act, as specified in s 162, reads:

“162 Purpose

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.”

2.45 We discuss our interpretation of the s 162 and s 166 purpose statements in more detail in paragraphs 2.46-2.47 and our approach for explaining our final PQ decisions consistent with the s 166(2) purposes in paragraphs 2.48-2.50. A comprehensive explanation of our views on the purpose statements in the Act can be found in our main IMs reasons paper.³¹

2.46 In *Wellington International Airport Ltd & Ors v Commerce Commission*, the High Court discussed the purpose and operation of s 52A of the Commerce Act 1986 (the equivalent provision under Part 4 of the Commerce Act) in detail. Consistent with the High Court's analysis, we consider that:

2.46.1 we must promote the long-term benefit of FFLAS end-users by promoting the s 162(a)-(d) outcomes consistent with what would be produced in workably competitive markets.³² Our focus is not on replicating all the potential outcomes of workably competitive markets as such, but rather with specifically promoting the s 162(a)-(d) outcomes for the long-term benefit of FFLAS end-users, consistent with the way those outcomes are promoted in workably competitive markets; and

³¹ Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), paragraphs 2.206-2.271.

³² *Wellington International Airport Ltd & Ors v Commerce Commission* [2013] NZHC 3289 at [25] – [27].

- 2.46.2 the objectives in s 162(a)-(d) are integral to promoting the long-term benefit of end-users, and reflect key areas of regulated provider performance that characterise workable competition. None of the objectives are paramount and, further, the objectives are not separate and distinct from each other, or from s 162 as a whole. Rather, we must balance the s 162(a)-(d) outcomes,³³ and must exercise judgement in doing so. When exercising this judgement, we are guided by what best promotes the long-term benefit of end-users.³⁴
- 2.47 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:
- 2.47.1 We must make an assessment on what decision will best give effect to the statutory purposes and the outcomes we are required to promote by s 166. This requires an evaluative judgement.
- 2.47.2 Section 166(2)(a) directs us to make decisions that best give effect to the purpose in s 162. This is a mandatory consideration.
- 2.47.3 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.
- 2.47.4 Section 166(2) does not establish a hierarchy between the promotion of the two outcomes. Where we consider that the promotion of competition is relevant, we must strive to make the decision that best gives, or is likely to best give effect, to both the promotion of outcomes consistent with workable competition for the benefit of end-users of FFLAS under s 162, and to the promotion of competition in telecommunications markets for the benefit of end-users in those markets under s 166(2)(b).

³³ *Wellington International Airport Ltd & Ors v Commerce Commission* [2013] NZHC 3289 at [684].

³⁴ *Wellington International Airport Ltd & Ors v Commerce Commission* [2013] NZHC 3289 at [684].

- 2.48 While all PQ decisions must best give, or be likely to best give, effect to the s 166(2) purposes, in certain cases, we must make our decisions according to specific legal requirements that constrain the exercise of judgement:
- 2.48.1 the application of IMs (for instance, determining the cost of capital for a regulatory period)³⁵ which were determined because they best give, or are likely to best give, effect to the s 166(2) purposes; and
 - 2.48.2 the application of mandatory requirements in the Act (for instance, the regulatory period to which the first PQ path applies).³⁶
- 2.49 In these cases, we have explained our decisions by referencing our specific obligations under the IMs or the Act.
- 2.50 Where our final PQ decisions require us to exercise judgement (for instance, our evaluation of Chorus' capex proposal under the capex IM³⁷ or the determination of quality standards that must be met by Chorus),³⁸ we have explained why those decisions best give, or are likely to best give, effect to the s 166(2) purposes.

Matters that must be included in our first PQ determination

- 2.51 As a regulated provider that will be subject to PQ regulation, Chorus must from 1 January 2022:³⁹
- 2.51.1 apply the "PQ path" set by us in a determination made under s 170 of the Act, which includes:
 - 2.51.1.1 the maximum revenues that Chorus may recover from its regulated FFLAS, as explained from paragraph 2.53;⁴⁰ and
 - 2.51.1.2 the minimum quality standards that must be met by Chorus as explained from paragraph 2.64;⁴¹
 - 2.51.2 provide an anchor service if an anchor service has been declared;⁴²

³⁵ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, Subpart 5 of Part 3.

³⁶ Section 194(2)(a).

³⁷ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.8.5.

³⁸ Section 194(2)(c).

³⁹ Section 193(1).

⁴⁰ Section 195(1). This form of control will also apply to Chorus' second PQ path by virtue of the operation of s 195, s 209 and s 225.

⁴¹ Section 194(2)(c).

⁴² Sections 193(1)(b) and s 198. Under s 227(1) of the Act, the Governor-General may, by Order in Council made on the recommendation of the Minister of Broadcasting, Communications and Digital Media, make regulations declaring a FFLAS to be an anchor service.

- 2.51.3 provide a DFAS if a DFAS has been declared;⁴³
 - 2.51.4 provide an unbundled fibre service if a point-to-multipoint layer 1 service supplied to end-users' premises or buildings has been declared an unbundled fibre service;⁴⁴ and
 - 2.51.5 subject to our views on s 201 discussed in paragraphs 2.20-2.29, regardless of the geographic location of the access seeker or end-user, charge the same price for providing FFLAS that are, in all material respects, the same.⁴⁵
- 2.52 Our first PQ path in respect of Chorus must also specify:
- 2.52.1 the regulatory period (1 January 2022 to 31 December 2024);⁴⁶
 - 2.52.2 the date on which the PQ path takes effect (1 January 2022);⁴⁷ and
 - 2.52.3 the date or dates by which compliance must be demonstrated, where our approach at this time to monitoring compliance is explained in Attachment A in respect of maximum revenues, and Chapter 7 in respect of quality standards.⁴⁸

Forecast allowable revenue

- 2.53 As a regulated provider that will be subject to PQ regulation, Chorus must from 1 January 2022 apply the PQ path set by us and must not exceed the maximum revenues specified by us.⁴⁹ In our IM final decisions, we decided to specify and define "maximum revenues" in the form of a revenue cap. Under the revenue cap, in each regulatory year of the regulatory period, Chorus' forecast total FFLAS revenue recovered by Chorus must not exceed its "forecast allowable revenue".⁵⁰

⁴³ Sections 193(1)(b) and s 199. Under s 228(1) of the Act, the Governor-General may, by Order in Council made on the recommendation of the Minister of Broadcasting, Communications and Digital Media, make regulations declaring a FFLAS to be a DFAS.

⁴⁴ Sections 193(1)(b) and s 200. Under s 229(1) of the Act, the Governor-General may, by Order in Council made on the recommendation of the Minister of Broadcasting, Communications and Digital Media, make regulations declaring a point-to-multipoint layer 1 service supplied to end-users' premises or buildings to be an unbundled fibre service.

⁴⁵ Sections 193(1)(b) and s 201.

⁴⁶ Section 194(2)(a).

⁴⁷ Section 194(2)(d).

⁴⁸ Section 194(2)(e).

⁴⁹ Section 195(1)(a).

⁵⁰ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(1).

- 2.54 In determining forecast allowable revenues which Chorus may recover from its regulated FFLAS:
- 2.54.1 we must apply our IMs to determine key inputs, as described in paragraph 2.55;
 - 2.54.2 we must reflect the actual financing costs incurred by Chorus in respect of Crown financing, as described in paragraphs 2.56-2.57;
 - 2.54.3 we must from the second regulatory period onwards (until the regulatory periods that start on or after the reset date)⁵¹ apply a wash-up mechanism, as described in paragraphs 2.59-2.61;
 - 2.54.4 we must (where “necessary or desirable”) smooth revenues, as described in paragraphs 2.62-2.63;⁵² and
 - 2.54.5 we may reduce/increase forecast allowable revenues depending on how Chorus has performed against the quality standards, as described in paragraphs 2.66.1-2.66.2 and 2.67.

Input methodologies

- 2.55 To determine key inputs for the calculation of forecast allowable revenues under the PQ path, the following IMs must be applied:⁵³
- 2.55.1 cost allocation;⁵⁴
 - 2.55.2 asset valuation (including the FLA);⁵⁵

⁵¹ Under s 196(3), we may (but are not required to) apply the wash-up mechanism in a PQ path for a regulatory period that starts on or after the reset date. Under s 225 the reset date may only follow a Commission PQ review and recommendation under s 209 which must take place at least three years after the implementation date (1 January 2022). Since the first regulatory period starts on the implementation date and lasts for 3 years, a review under s 209 can only occur after the start of the second regulatory period. Accordingly, the earliest reset date would be during the second regulatory period and therefore a shift to maximum prices could not come into effect until at least the third regulatory period.

⁵² We may also decide to alter the profile of revenue recovery for reasons other than smoothing as required by s 197. Examples of this are in-period revenue smoothing, or changing the profile of depreciation.

⁵³ Under s 175(b)(ii) of the Act, we must apply the IMs in determining the prices applying to FFLAS.

⁵⁴ The cost allocation IM for PQ paths is specified in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, Subpart 2 of Part 3.

⁵⁵ The asset valuation IM for PQ paths is specified in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, Subpart 3 of Part 3. Subpart 3 of Part 3 requires a determination of the “opening RAB value” for the financial loss asset in accordance with Schedule B of the IMs. The methodologies for determining the “opening RAB value” of the financial loss asset under clause 3.3.1(9) of the IMs are specified in Schedule B. Schedule B of the IMs includes a section for the asset valuation (Section 2), cost allocation (Section 3), taxation (Section 4) and cost of capital (Section 5) IMs used to determine the “opening RAB value” of the financial loss asset.

2.55.3 taxation;⁵⁶

2.55.4 cost of capital;⁵⁷

2.55.5 regulatory processes and rules, specifically the specification and definition of prices;⁵⁸ and

2.55.6 capex.⁵⁹

Benefit of Crown financing

2.56 In specifying the forecast allowable revenues that Chorus may recover, we must ensure that they reflect, in respect of any Crown financing, the actual financing costs incurred by Chorus (or a related party) in the regulatory period.⁶⁰

2.57 In order to ensure that forecast allowable revenues reflect, in respect of any Crown financing, the actual financing costs incurred by Chorus in the regulatory period, our final decision is to include a (negative) building block equal to the benefit of Crown financing, as calculated in accordance with the IMs, as explained in paragraphs 3.27 of Chapter 3.

2.58 In our main IMs reasons paper, we stated in determining the quality IM, that we had considered a fibre market that has had the benefit of Crown subsidies. We have also considered a market that has had the benefit of Crown subsidies in setting our quality standards for PQP1. Our quality standards have also been informed by the UFB contracts, discussed in more detail in Chapter 7.

Wash-up mechanism

2.59 Over the course of the first regulatory period, a wash-up mechanism will accrue balances for any over- or under-recovery of revenue by Chorus. When we determine the second PQ path, we will be required to apply a wash-up mechanism that provides for this accrued balance to be drawn down.⁶¹

⁵⁶ The taxation IM for PQ paths is specified in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, Subpart 4 of Part 3.

⁵⁷ The cost of capital IM for PQ paths is specified in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, Subpart 5 of Part 3.

⁵⁸ The specification of price and revenues IM is specified in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, Subpart 1 of Part 3.

⁵⁹ The capex IM is specified in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, Subpart 7-8 of Part 3.

⁶⁰ Section 171.

⁶¹ Section 196(2).

- 2.60 We have specified the scope of this mechanism and how it will operate in the IMs.⁶²
- 2.61 We intend to issue a s 221 notice to Chorus alongside these decisions that specifies the detailed calculations necessary to determine the “wash-up amounts” for each regulatory year of PQP2.

Smoothing revenues

- 2.62 When we determine our first PQ path, we must smooth revenues over multiple regulatory periods if we think it necessary or desirable to minimise any undue financial hardship to a regulated provider or to minimise price shocks to end-users.⁶³
- 2.63 Whether this is necessary or desirable will depend in part on the level of forecast allowable revenue we determine for the first PQ path. Our final decision in respect of smoothing under s 197 is that it is not required, as we do not consider financial hardship or price shocks to end-users will occur. This is discussed in paragraphs 3.36-3.39 of Chapter 3.⁶⁴

Quality standards

- 2.64 In specifying the quality standards that will apply to Chorus, we:
- 2.64.1 must apply the quality dimensions IM;⁶⁵ and
 - 2.64.2 may prescribe the standards in any way we consider appropriate (such as targets, bands, or formulas) as long as we apply the relevant IMs.⁶⁶
- 2.65 Our final decision is to specify quality standards for:
- 2.65.1 availability, as measured by average unplanned downtime, as discussed from paragraph 7.87 of Chapter 7; and
 - 2.65.2 performance, as measured by port utilisation, as discussed from paragraph 7.189 of Chapter 7.

⁶² *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(4)-(12).

⁶³ Section 197.

⁶⁴ However, as discussed further in Chapter 3 and Attachment A, we have decided to smooth building blocks revenue *within* PQP1.

⁶⁵ Under s 175(b)(ii) of the Act, we must apply the IMs in determining the quality standards applying to FFLAS. The quality dimensions IM is specified in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, Subpart 6 of Part 3.

⁶⁶ Section 194(4).

Matters that may be included in our PQ determination

- 2.66 A PQ path may include incentives for Chorus to maintain or improve its quality of supply, and those incentives may include (without limitation):
- 2.66.1 penalties which reduce Chorus' forecast allowable revenues based on whether, or by what amount, it fails to meet the required quality standards;⁶⁷
 - 2.66.2 rewards which increase Chorus' forecast allowable revenues based on whether, or by what amount, it meets or exceeds the required quality standards;⁶⁸
 - 2.66.3 compensation schemes that set minimum standards of performance and require Chorus to pay prescribed amounts of compensation if it fails to meet the required quality standards;⁶⁹ and
 - 2.66.4 reporting requirements, including special reporting requirements in asset management plans, if Chorus fails to meet the required quality standards.⁷⁰
- 2.67 Our final decision is to not include revenue-linked penalties or rewards and not to include any compensation schemes, as explained from paragraphs 7.232 to 7.239 Chapter 7.
- 2.68 Our final decision is to include reporting requirements where Chorus fails to meet the required quality standards, as discussed in paragraphs 7.240 to 7.249 of Chapter 7.

Monitoring compliance with the PQ path, declared services regulations, and geographically consistent pricing

- 2.69 To monitor compliance with the PQ path, declared services regulations, and the geographically consistent pricing requirements, we may issue a written notice to Chorus requiring it to provide any (or all) of the following:
- 2.69.1 a written statement that states whether it has complied with the PQ path;⁷¹

⁶⁷ Section 194(3)(a).

⁶⁸ Section 194(3)(b).

⁶⁹ Section 194(3)(c).

⁷⁰ Section 194(3)(d).

⁷¹ Section 193(2)(a).

- 2.69.2 a report on the written statement that is signed by an auditor in accordance with any form specified by us;⁷²
- 2.69.3 sufficient information to enable us to properly determine whether a PQ path has been complied with;⁷³ and
- 2.69.4 a certificate, in the form specified by us and signed by at least one director, confirming the truth and accuracy of any compliance information provided.⁷⁴
- 2.70 We have decided to require, in respect of the revenue path, ex ante compliance disclosures annually, with a requirement to update whenever Chorus varies the prices it charges for FFLAS, as explained in paragraphs A114 to A136 of Attachment A.
- 2.71 We have decided to require, in respect of the quality standards, annual ex post compliance statements for both standards, as explained in paragraphs 7.240 to 7.249 of Chapter 7.
- 2.72 We have also decided to require semi-annual ex post compliance statements in respect of the geographically consistent pricing requirements under s 201.
- 2.73 We have not yet issued compliance requirements for declared services. We may issue or update compliance information requirements at any time by way of a notice during PQP1. Chorus is still required to comply with the substantive declared service obligations.
- 2.74 These compliance requirements are not ID requirements and the information is not required to be publicly disclosed. However, we may publish this information after considering Chorus' views on the confidentiality and/or commercial sensitivity of the information.
- 2.75 We may issue further compliance requirements to Chorus under s 193(2) if we consider this information necessary for the purpose of monitoring compliance with the PQ path, declared services regulations, and the geographically consistent pricing requirements.

⁷² Section 193(2)(b).

⁷³ Section 193(2)(c).

⁷⁴ Section 193(2)(d).

Enforcement provisions applicable for PQ regulation

- 2.76 The High Court may on application by us, order a person to pay a pecuniary penalty to the Crown for contravening PQ requirements under s 215, which must not:⁷⁵
- 2.76.1 in respect of each act or omission, exceed \$500,000 in the case of an individual; or
 - 2.76.2 \$5,000,000 in the case of a body corporate.
- 2.77 If the High Court orders a person to pay a pecuniary penalty under s 215 in respect of the contravention of a PQ requirement, the court may, in addition, order the person to pay compensation to any person who has suffered, or is likely to suffer, loss or damage as a result of the contravention under s 216 of the Act.⁷⁶ An application for this order may be made by us or any “aggrieved person”.⁷⁷ In proceedings under s 216, the court may make such orders as to cost as it thinks fit.⁷⁸
- 2.78 If the High Court is satisfied that FFLAS that are subject to PQ regulation are being provided, or are likely to be provided, in contravention of any PQ requirement applying with respect to those services, the court may (on application by any person) do one or both of the following:⁷⁹
- 2.78.1 grant an injunction restraining any provider of those services from providing them in contravention of the PQ requirement;
 - 2.78.2 make an order requiring the provider to provide the service in accordance with the PQ requirement applying to them.
- 2.79 A person commits an offence if:⁸⁰
- 2.79.1 the person, knowing that particular FFLAS are subject to PQ regulation, intentionally contravenes a PQ requirement in respect of the services; or
 - 2.79.2 the person is subject to an order referred to under paragraph 2.78 and fails to comply with the order.

⁷⁵ Section 215.

⁷⁶ Section 216(1).

⁷⁷ Section 216(2).

⁷⁸ Section 216(5).

⁷⁹ Section 218.

⁸⁰ Section 217(1).

- 2.80 Where a person commits an offence under s 217(1), they are liable on conviction to a fine not exceeding \$200,000 in the case of an individual, or \$1,000,000 in the case of a body corporate.⁸¹

Economic framework

- 2.81 This section discusses the economic framework we have developed as part of our fibre IM decision-making process.
- 2.82 We developed an economic framework to help guide the decisions we make in developing 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 described in s 166(2) of the Act. We consider that this framework is equally relevant to our decision-making process for PQ regulation and it has helped us to develop these final decisions.
- 2.83 The economic framework includes three components:⁸²
- 2.83.1 economic principles, including real financial capital maintenance, allocation of risk, and asymmetric consequences of under/over investment;
 - 2.83.2 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
 - 2.83.3 competition screening questions to help us assess whether our decisions might be relevant to competitive outcomes in telecommunications markets.

Key economic principles

- 2.84 We adopted the following key economic principles to help us develop and implement the Part 6 regime, including PQ regulation.⁸³

⁸¹ Section 217(2).

⁸² Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), paragraphs 2.272-2.335 and 2.383-2.399.

⁸³ For an in-depth discussion of the key economic principles, see Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), paragraphs 2.272-2.316.

- 2.84.1 **Real financial capital maintenance:** we set our regulatory rules in a way that provides a regulated provider with an ex-ante opportunity to earn a normal return on capital.⁸⁴ Allowing regulated providers the ex-ante opportunity, but not the guarantee, of earning normal returns provides them with a chance to maintain the financial capital they have invested, therefore maintaining incentives to invest.
- 2.84.2 **Allocation of risk:** ideally, we allocate risks to regulated providers or end users depending on who is most able to manage the risk, unless doing so would be inconsistent with the Part 6 purposes. Appropriate risk allocation, and where relevant appropriate compensation for the risks carried, maintains incentives to invest and promotes efficient behaviour.
- 2.84.3 **Asymmetric consequences of over-/under-investment:** this principle requires us to consider whether, over the long-term, there are asymmetric consequences to end-users of under-investment in regulated FFLAS versus over-investment. If a material asymmetry exists, this principle allows us to recognise the asymmetry and consider ways to mitigate the risks to end-users (eg, through applying an uplift to the regulatory weighted average cost of capital (**WACC**)).

2.85 The three key economic principles provide useful guidance to us in giving effect to the purposes in s 166(2) and we would not depart from them lightly. However, these principles are not intended as a ‘regulatory compact’—that is, they do not form an (implicit) agreement between us as the regulator and regulated providers. If the principles cease to be consistent with the purposes in s 166(2) or are not, in a particular situation, consistent with these purposes, we will be transparent with stakeholders about the fact that we could not continue to apply one (or more) of the principles.⁸⁵

Incentive framework

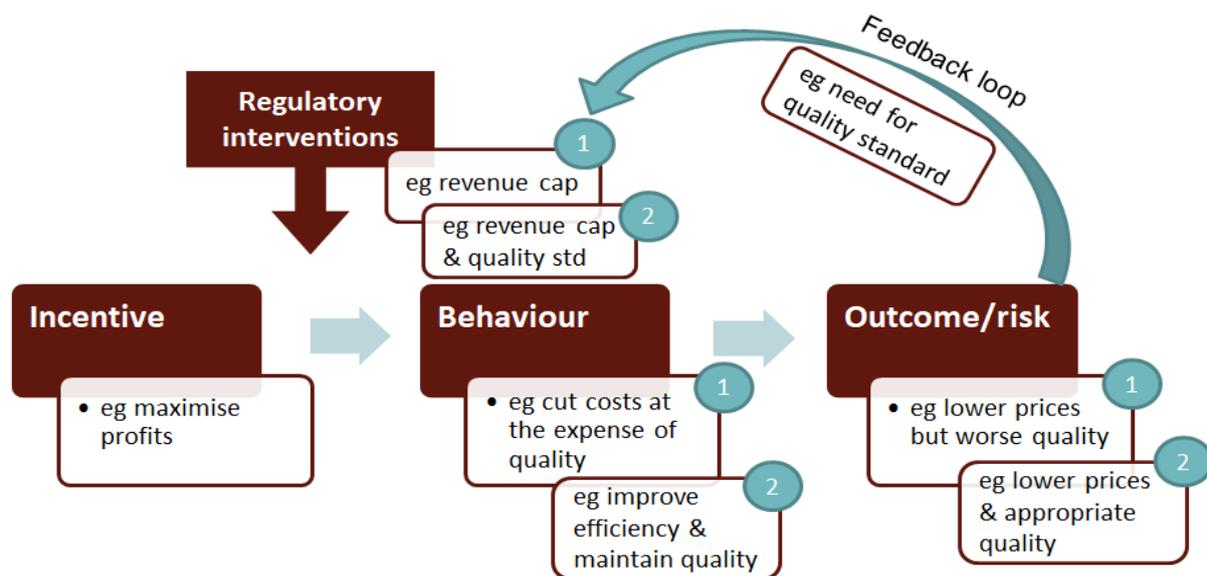
2.86 At its core, our incentive regulation aims to introduce incentives for regulated providers to behave in ways consistent with the purposes described in s 162 of the Act.

⁸⁴ A ‘normal return’ on capital is the return that an efficient firm has an ex-ante opportunity to earn in a workably competitive market. See also Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), paragraph 2.26.

⁸⁵ See also Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), paragraphs 2.282-2.288.

- 2.87 The PQ paths introduce incentives for regulated providers to improve their efficiency and supply FFLAS of a quality that reflects end-user demands (s 162(b)), including through innovation (s 162(a)). Our periodic resetting of the PQ paths ensures that end-users share in the benefits of any efficiency gains (s 162(c)), while limiting excessive profits (s 162(d)), similar to what would happen in a workably competitive market.
- 2.88 In line with the purposes in s 166(2), the regulatory rules introduced through our PQ determinations, underpinned by the fibre IMs and supported by the enforcement provisions specified in sections 215-218 of the Act,⁸⁶ aim to better align the incentives of regulated providers with the long-term interests of end-users.
- 2.89 The incentive framework (partly illustrated in Figure 2.1 below) helps us ensure we have a more holistic view of how the regime may interact with the incentives faced by regulated providers or create consequential incentives for regulated providers. The incentive framework therefore assists us in identifying risks to end-users.

Figure 2.1 A regulated monopolist under a periodic revenue cap can increase profits by improving efficiency or degrading quality.

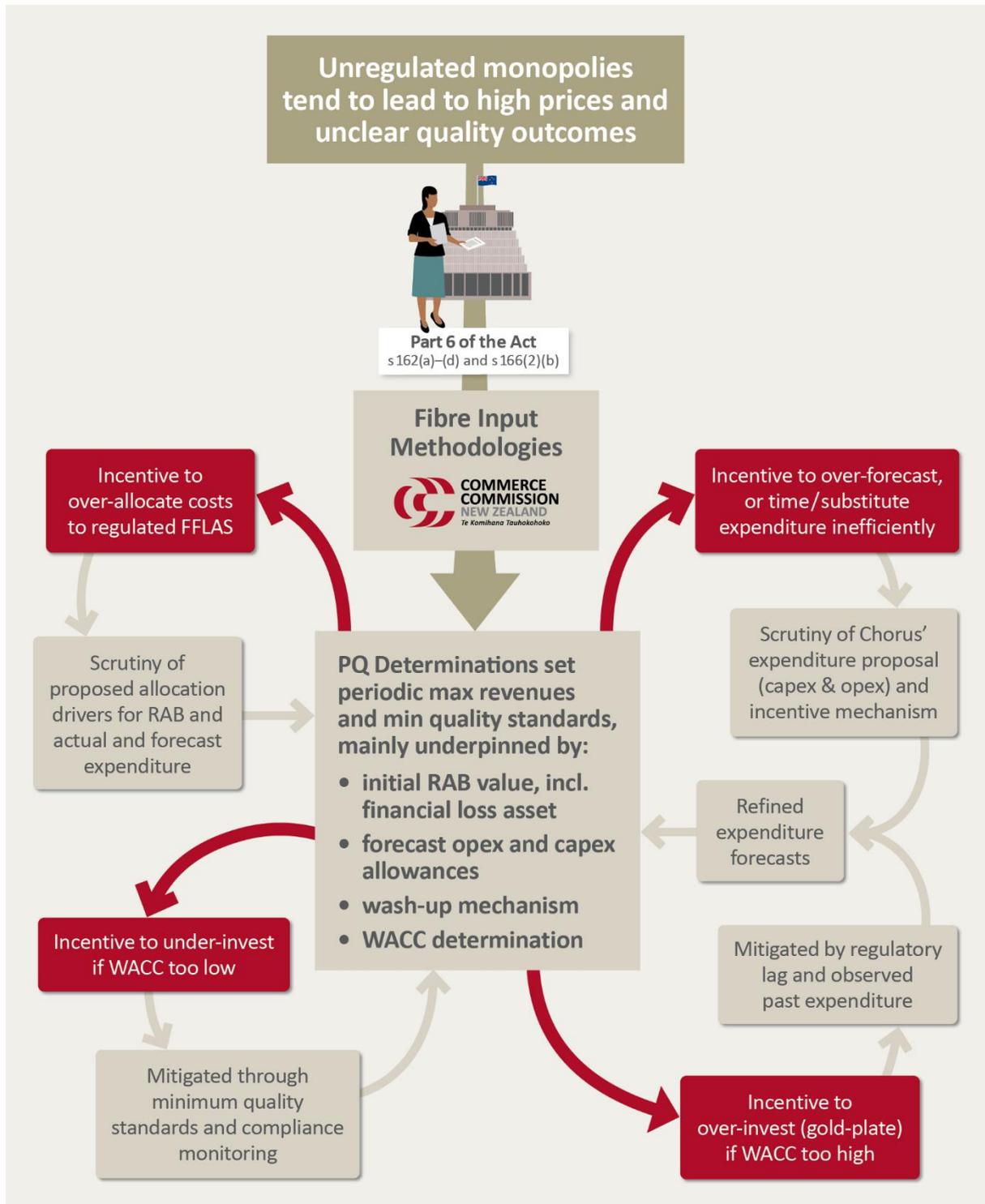


- 2.90 This incentive framework has helped us to determine final PQ path decisions that we consider will best promote the long-term benefit of FFLAS end-users, as required by the Part 6 purpose described in s 162. We have also given consideration, where relevant, to the promotion of workable competition for the long-term benefit of all telecommunication end-users, as required by 166(2)(b).

⁸⁶ See discussion at paragraphs 2.76-2.80 above.

- 2.91 Figure 2.2 illustrates an example of the interaction between:
- 2.91.1 the tools available to us under PQ regulation, subject to the fibre IMs; and
 - 2.91.2 the main consequential incentives that might arise from the rules introduced for regulated providers subject to PQ regulation.
- 2.92 Figure 2.2 is only an example of how we apply our incentive framework and does not capture all regulatory tools that we could apply under PQ regulation in PQP1 or in future periods, nor does it capture all consequential incentives that regulated providers might face. A non-exhaustive list of other potential regulatory tools, not illustrated at Figure 2.2, that could be introduced under PQ regulation is:
- 2.92.1 within-period or between-periods expenditure incentive schemes;
 - 2.92.2 a set of options with different expenditure incentive strengths (or different returns on capital) within a regulatory period in exchange for different expenditure allowances;
 - 2.92.3 quality incentive schemes; and/or
 - 2.92.4 rules related to pricing efficiency.
- 2.93 For regulated FFLAS, the relationships depicted in the figure are also affected by ID and competition. The latter is explicitly recognised by the requirement in s 166(2)(b) of the Act for our decisions to consider the promotion of workable competition in telecommunications markets for the long-term benefit of end-users, where relevant. The following are examples of relevant considerations that affect the incentives of regulated providers:
- 2.93.1 The repeated nature of regulation allows us to observe through ID expenditure outturns over time, which lessens the incentive and therefore the risk of regulated providers gaming the expenditure forecasts;
 - 2.93.2 Greater competitive pressure mitigates some of the incentives of regulated providers to behave in ways that are not in the long-term interest of end-users, which lessens the need for regulation. For example, the incentive to under-invest at the expense of quality is weakened, since the regulated provider would then risk losing end-users dissatisfied with the level of quality to competing firms supplying products based on alternative technologies.

Figure 2.2 An example of how the PQ regime mitigates the main consequential incentives caused by regulation



2.94 In response to our draft decision, Chorus re-submitted that the incentives we discussed misunderstand its business context and do not accurately reflect its incentives.⁸⁷ Since Chorus provided no new information, we repeat that our framework is not intended to reflect on Chorus' current management or investors; rather, it reflects our understanding that a firm in Chorus' context (eg ownership and subject to PQ regulation with periodic resets) will have the incentives described, among potentially many others. Whether or not it acts on those incentives is another matter, which will be revealed over time. However, we consider that it is the appropriate regulatory response to consider these incentives—and consequential risks to end-users—in determining the first PQ path.

Incentives properties of PQP1 and the application of the economic framework

2.95 The introduction of PQ regulation creates incentives that aim to better align the interests of regulated providers with those of end-users. The undesirable consequential incentives discussed in the Economic Framework section (and illustrated in Figure 2.2) will exist in all regulatory periods, starting with PQP1.

2.96 However, PQP1 has some unique incentive features in that:

2.96.1 the information asymmetry between us and Chorus is likely to be higher in PQP1 than in subsequent periods. This is compounded by the incentive and potential ability for a profit maximising regulated provider to set and/or advocate for baselines for expenditure and quality that favour it, but not end-users;

2.96.2 PQP1 may be shorter than subsequent periods given that s 207(2) allows us to determine the duration of subsequent periods between 3 and 5 years; and

2.96.3 we are required to specify maximum revenues (as opposed to maximum price or prices) for each regulatory period that starts before the 'reset date'.⁸⁸ The earliest the reset date could occur is during the course of the second regulatory period.⁸⁹

⁸⁷ Chorus "Submission on price-quality path draft decision" (8 July 2021), paragraphs 41, 42.

⁸⁸ Section 195(1).

⁸⁹ Under s 225 the reset date may only follow a Commission PQ review and recommendation under s 209 which must take place at least three years after the implementation date (1 January 2022). Since the first regulatory period starts on the implementation date and lasts for 3 years, a review under s 209 can only occur after the start of the second regulatory period. Accordingly, the earliest reset date would be during the second regulatory period and therefore a shift to maximum prices could not come into effect until at least the third regulatory period.

Information asymmetry

- 2.97 The information asymmetry between us and Chorus is likely to be higher in PQP1 than in subsequent regulatory periods. As a result, a profit maximising regulated provider might have a greater incentive in PQP1 (relative to subsequent periods) to engage in behaviours such as:
- 2.97.1 overstating its expenditure forecasts;
 - 2.97.2 strategically timing its expenditure, (eg, in the base year);⁹⁰
 - 2.97.3 degrading quality prior to quality standards being set (as a low base for the standards) or degrading quality in not directly observable ways; and
 - 2.97.4 pricing individual FFLAS in inefficient and/or potentially anti-competitive ways.
- 2.98 Among other things, these risks have guided our work on PQP1 so far, especially with regard to:
- 2.98.1 our setting of the initial PQ RAB;
 - 2.98.2 our PQP1 expenditure decisions⁹¹; and
 - 2.98.3 our PQP1 quality standards.

Length of the regulatory period

- 2.99 The length of PQP1 is determined by the Act at s 207(1) to be for three years from the implementation date. We can set the duration of subsequent periods to be between three and five years (s 207(2)). The shorter duration of PQP1, relative to subsequent regulatory periods that might be of five-year duration, has the following marginal effect on incentives:

⁹⁰ Base year is defined in the fibre IMs as "a disclosure year determined by the Commission". See *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2), definition of "base year".

⁹¹ A tool we may consider in future for addressing the incentive to overstate required expenditure is commonly known as 'menu regulation'. Broadly, this tool is designed to encourage 'information revelation' with a minimum regulatory burden. In it, the regulator offers a menu of expenditure options with different cost sharing provisions (ie incentive strengths), or different returns on capital (the PREMO framework for regulating water in Victoria, Australia can be seen as a version of menu regulation). Such an approach would require an amendment to the Fibre IMs.

- 2.99.1 A shorter regulatory period, such as PQP1, results in a weaker natural incentive strength to improve efficiency than a longer period. This is because the period over which Chorus can enjoy the benefits from retaining any efficiency gains is shorter (before they are passed on to end-users in PQP2). However, Chorus' ability to find efficiency improvements in PQP1 is also likely to be lower, especially for capex. This is because the network is new, and therefore the need to replace assets is small. Because of this, even though incentives to find efficiencies are weaker given the shorter regulatory period, the potential harm is also likely lower. The risk to efficiency will grow over time; we intend to monitor it and to consider ways to increase the incentive strength if the need arises in the future.
- 2.99.2 The longer the regulatory period, the greater the incentive to achieve cost reductions (efficiency savings and/or inefficient expenditure deferral) early in the period (and enjoy the higher profits for longer). While such a strategy could be beneficial to end-users, the flip side is that if Chorus identifies cost reductions later in a regulatory period, it might have an incentive to defer the implementation of these savings to the beginning of the next regulatory period. In PQP1, Chorus' scope to inefficiently time work delivered within this period is reduced (relative to a longer regulatory period). This is one of the reasons why we did not consider it necessary to adopt an incremental rolling incentive scheme in the fibre IMs at this stage.⁹² The connection capex mechanism specified in the fibre IMs, which involves a variable component, can also mitigate the risk of expenditure being inefficiently delayed.
- 2.99.3 The shorter duration of PQP1, relative to a longer regulatory period, might imply weaker incentives for Chorus to argue for quality standards that would benefit it rather than end-users. This is because any consequences to end-users (that benefit Chorus instead) from setting inappropriate quality standards in PQP1 would be corrected sooner at the reset after three years (rather than later).

Potential implications of investments under the UFB contracts and price restrictions in the legislation

- 2.100 In addition to the length of the period, PQP1 also has other features that are likely to have an impact on the strength of incentives and/or ability for Chorus to behave in ways that might not be to the long-term benefit of end-users:

⁹² Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 9.178.

- 2.100.1 The scope for Chorus to substitute expenditure inefficiently between opex and capex is reduced in PQP1 because a significant proportion of investment is recently incurred or already committed through the CIP contracts.
- 2.100.2 There are legislative requirements for how Chorus has to price certain FFLAS in PQP1. These requirements may mean that Chorus' prices may not necessarily be efficient and that Chorus' price structure benefits some end-users, while disadvantaging others:
 - 2.100.2.1 Chorus is under a requirement for geographically consistent pricing for FFLAS that are, in all material aspects, the same (s 201);
 - 2.100.2.2 under the regulations made under s 227, there is a requirement on Chorus to provide an anchor service, at a price no greater than the prescribed maximum price (s 198). In PQP1, the prescribed maximum price for the anchor service has to be based on the CIP contract price for that service, with an annual CPI adjustment (s 227(2)(d) and clause 14(4) of Schedule 1AA)); and
 - 2.100.2.3 under the regulations under s 228, there is a requirement on Chorus to provide DFAS, at a price no greater than the prescribed maximum price (s 199). In PQP1, the prescribed maximum price for DFAS has to be based on the CIP contract price for that service, with an annual CPI adjustment (s 228(6)).
- 2.101 As noted above, the legislative requirements imposed on Chorus' prices in PQP1 are likely to benefit some end-users while disadvantaging others (relative to efficient, cost-based prices). For example, the requirement for the anchor service maximum prescribed price in PQP1 to be based on the CIP contract price (at s 227(2)(d) and clause 14(4) of Schedule 1AA)) ensures that end-users whose retail product uses the anchor service are protected from price shocks in PQP1. However, to the extent that the CIP contract price does not reflect the costs of the anchor service, this might mean that the price level or structure Chorus has to adopt is inefficient; and that end-users purchasing retail products that use FFLAS other than the anchor service might be charged higher prices as a result.

- 2.102 We do not have the power to recommend a cost-based maximum prescribed price for the anchor service until PQP2 (see s 208(6)(b)). Likewise, we cannot do a review under s 209 and recommend cost-based maximum prices for DFAS and the unbundled fibre service until three years after the regime implementation date at the earliest.
- 2.103 We consider that these legislative restrictions on Chorus' prices limit, at least in PQP1, Chorus' ability to set prices in ways that could lead to long-term harm to competition or to detriment to end-users of telecommunications services. This is one of the reasons why in our final IM decisions we decided to not determine a pricing methodologies IM.⁹³ However, as noted at paragraph 2.101 above, we are aware of the risks to end-users that might arise from inefficient pricing structures, including potentially anti-competitive pricing, and we intend to monitor prices through ID disclosures and determine whether further intervention is required in the future.

Competition survey results

- 2.104 Earlier this year we sought feedback on the promotion of competition in telecommunication markets through ID and PQ regulation via a survey.⁹⁴ Below we summarise the responses to the survey we published in February; each submitter identified what they perceive to be the biggest risk(s) to competition and the best way to mitigate these risks using PQ regulation. Views from interested persons on our survey have helped us to reach our draft and final PQP1 expenditure decisions.

2.104.1 Kordia identified the biggest risk to competition as being Chorus' bundling layer 2 products between PQ and ID-only areas that has exclusionary effects on LFCs in ID-only areas. Kordia submitted that the only solution to this is to set a certain acceptable minimum price through revenue/price regulation. This will ensure Chorus backhaul services (like their tail extension service (TES) and Chorus Backhaul Connect service) will not disadvantage other backhaul competitors by selling at an anti-competitively low price. PQ regulation would set Chorus' TES bundled backhaul pricing at a level that other firms could compete with.

⁹³ Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 9.173-9.177.

⁹⁴ Commerce Commission "[Promoting competition in telecommunications markets as part of fibre information disclosure \(ID\) and price-quality \(PQ\) regulation – survey questions](#)" (4 February 2021).

- 2.104.2 Chorus submitted that the hypothetical risks identified by us in the survey were already addressed by other elements of the regulatory framework or prohibited under the Commerce Act and therefore unlikely to arise. Chorus submitted that PQ regulation was not designed to promote competition but rather to ensure natural monopolies act in consumers' interests. Chorus submitted that there are other tools used to promote competition, namely the Telecommunications Act, Deeds and Commerce Act which already establish an integrated competition and regulatory framework. Chorus suggested any competition concerns relating to telecommunications markets should first be addressed by the existing regulatory tools, rather than seeking to introduce extra requirements in PQ regulation.
- 2.104.3 Enable and Tuatahi⁹⁵ identified a competition risk in the wholesale broadband access market arising from the fact that one technology (fixed fibre) is regulated as a structurally separated wholesale only service, while a competing service, fixed wireless access (FWA), is unregulated and delivered by vertically integrated providers who also consume more than 80% of the fixed fibre providers wholesale services. They submitted that increasing the regulatory burden on fibre providers while ignoring the competitive impact of FWA providers in the wholesale broadband market would simply tilt the playing field even more in their favour. They also submitted that we require Chorus to separately report for each of the LFC's UFB geographic areas, its UFB areas, and non-UFB areas so that any discriminatory pricing can be identified.
- 2.104.4 Spark did not rank its perceived risks. Spark identified a risk to competition from the fact that Chorus' interests extend beyond the purview of Part 6 of the Act. Spark were concerned that PQ decisions could enable Chorus to fund competitive activities from guaranteed BBM returns which would lead to a lessening of competition in related markets. Spark was also concerned about Chorus' pricing below cost and using incentive payments to entice customers from competing access providers. Spark submitted that the best way to mitigate these risks was to only allow retention capex where it best promotes competition. It submitted that recoverable capex should be defined so that it excludes capex initiatives with conditions or outcomes that do not best promote competition.

95 Tuatahi First Fibre was previously known as UltraFast Fibre.

Incentive payments

- 2.105 Incentive payments are payments that Chorus makes to RSPs to incentivise acquisition of new customers to Chorus' fibre network or to incentivise existing customers to upgrade to new services. Chorus included incentive payment expenditure in its proposal for PQP1.
- 2.106 The issue of incentive payments produced considerable stakeholder interest and submissions. Their rationale, level and interaction with the regulatory framework were questioned in submissions.
- 2.107 From an economic perspective, incentive payments can either promote or harm the long-term benefit of end-users; they can also be pro or anticompetitive. We present our views on incentive payments in Attachment C, including the economic test we applied to reach our final decisions.

Chapter 3 Allowable revenue

Purpose and structure of this chapter

- 3.1 This chapter sets out our final decisions on the maximum revenue Chorus will be allowed to recover during the PQP1 regulatory period. The chapter is structured as follows:
- 3.1.1 forecast allowable revenue for PQP1;
 - 3.1.2 building blocks components; and
 - 3.1.3 approach to the revenue path and wash-up mechanisms.
- 3.2 This chapter is supported by Attachment A, where we discuss the details of the revenue path and how compliance with it must be demonstrated.

Forecast allowable revenue for PQP1

- 3.3 This section discusses:
- 3.3.1 forecast allowable revenue;
 - 3.3.2 our final decisions on its component parts;
 - 3.3.3 how these have changed since our draft decisions; and
 - 3.3.4 our final decision on whether it is necessary to smooth revenue over multiple periods under s 197 of the Act.

Forecast allowable revenue

- 3.4 We have determined a total forecast allowable revenue of \$2,227.1m (in nominal terms) for Chorus over the three years of PQP1.⁹⁶ This allowable revenue amount is composed of:⁹⁷
- 3.4.1 a 'building blocks revenue' amount of \$2,182.9m;⁹⁸
 - 3.4.2 a forecast allowance for pass-through costs of \$44.2m;⁹⁹ and
 - 3.4.3 a wash-up amount of \$0.

⁹⁶ In nominal sum terms.

⁹⁷ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(2).

⁹⁸ In nominal terms.

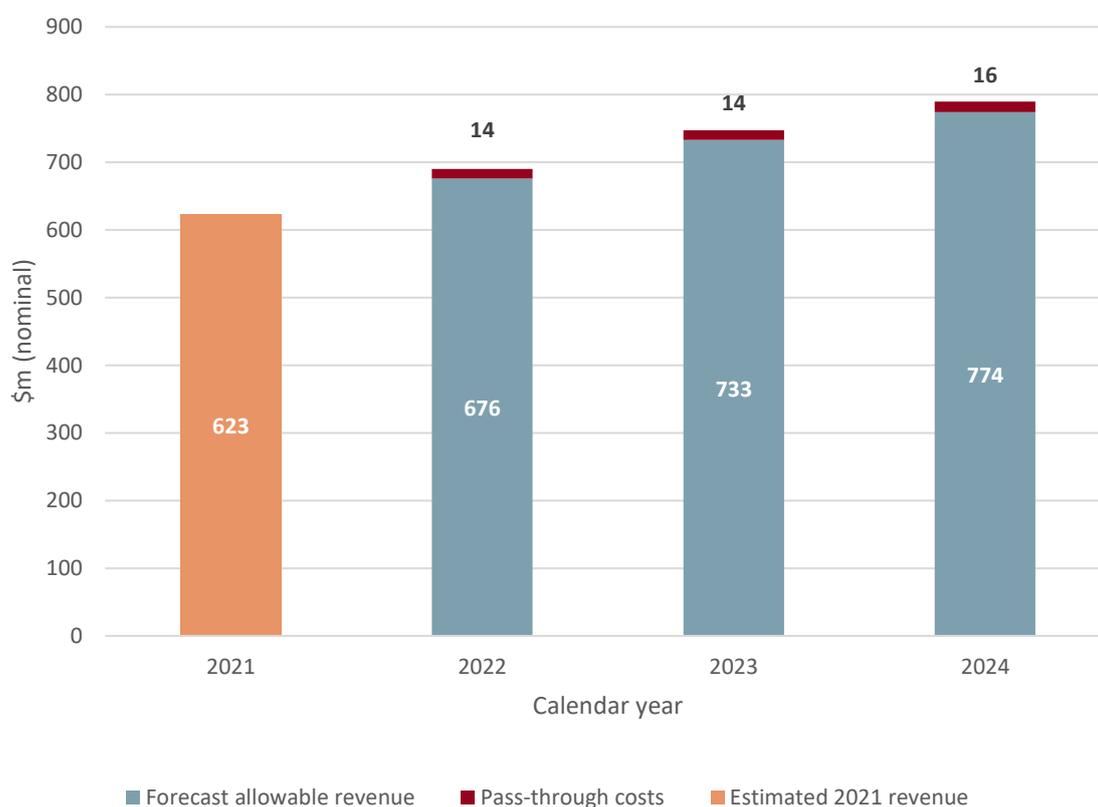
⁹⁹ In nominal terms. Consistent with the Fibre IMs and our PQ determination, Chorus will be able to update these forecast values when demonstrating compliance with the revenue path.

3.5 These values are shown on an annual basis in Table 3.1 below and illustrated in Figure 3.1, along with a comparable estimate of Chorus' PQ FFLAS revenue for calendar year 2021.¹⁰⁰

Table 3.1 Components of forecast allowable revenue (\$m, nominal)¹⁰¹

Component	2022	2023	2024	PQP1 total
Building blocks revenue	676.1	732.9	774.0	2,182.9
Pass-through costs	14.2	14.5	15.5	44.2
Wash-up amount	-	-	-	-
Total	690.2	747.4	789.5	2,227.1

Figure 3.1 Forecast allowable revenue for PQP1¹⁰²



¹⁰⁰ Value taken from: [Chorus "UPDATED: Indicative MAR range vs estimated regulated fibre revenues" \(6 April 2021\)](#).

¹⁰¹ All annual numbers are nominal values, calculated based on each year's 'revenue date' (5 August, the date in the year where the present value is equivalent to 12 equal payments on the 20th of each month).

¹⁰² Assuming current forecasts of CPI inflation and pass-through costs. As discussed in Attachment A, we have determined a revenue path that moves with updated forecast inflation and pass-through cost forecasts can be updated annually.

Decisions on components of forecast allowable revenue

Building blocks revenue

- 3.6 The largest component of forecast allowable revenue is ‘building blocks revenue’. Building blocks revenue is an amount specified by the Commission in a PQ determination, and is composed of the relevant building blocks components.¹⁰³ Building blocks revenue reflects forecasts of Chorus’ costs and certain regulatory adjustments (such as to smooth revenue over the PQP1 period).
- 3.7 The way we calculate building blocks revenue is illustrated in Figure 3.3 below. We have set out key input parameters and assumptions in Table 3.2.
- 3.8 The building blocks components determined, and the specific contributions each of them make to forecast allowable revenue, are summarised in Table 3.3. The decisions we have made in relation to each building block are discussed in more detail in the second section of this chapter, from paragraphs 3.26 to 3.35.

Table 3.2 Key input parameters for the building blocks model

Parameter	Basis	Values		
		2022	2023	2024
Total initial PQ RAB	Final transitional initial PQ RAB (\$m nominal)	\$5,424.8	\$5,474.9	\$5,444.8
Financial loss asset value	Final transitional initial PQ RAB (\$m nominal)	\$1,391.2	\$1,209.2	\$1,050.3
Vanilla WACC	Final WACC determination	4.72%	4.72%	4.72%
Post-tax WACC	Final WACC determination	4.52%	4.52%	4.52%
CPI (revaluations)	RBNZ May 2021 forecasts	1.80%	2.20%	2.13%
Allocated real base capex allowance	Final PQ decision (\$m 2019/20 constant)	\$219.9	\$187.4	\$174.3
Allocated real connection capex baseline allowance	Final PQ decision (\$m 2019/20 constant)	\$135.0	\$96.2	\$71.3
Allocated real opex allowance	Final PQ decision (\$m 2019/20 constant)	\$150.0	\$144.1	\$139.7

¹⁰³ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2) – definition of ‘building blocks revenue’.

Table 3.3 Final building blocks revenue components (\$m, nominal)

Component	2022	2023	2024
Total return on capital	\$122.9	\$99.0	\$100.6
<i>Return on assets (RAB x WACC)</i>	\$260.8	\$260.7	\$258.8
<i>Revaluations</i>	-\$95.5	-\$117.7	-\$113.7
<i>Ex-ante stranding allowance</i>	\$5.4	\$5.5	\$5.4
<i>Benefit of Crown finance</i>	-\$49.8	-\$51.3	-\$51.7
<i>TCS D allowance</i>	\$1.9	\$1.9	\$1.9
Opex allowance	\$160.4	\$158.2	\$156.0
Total depreciation	\$464.6	\$456.3	\$458.9
<i>Core fibre assets</i>	\$261.4	\$274.2	\$296.6
<i>Financial loss asset</i>	\$203.2	\$182.1	\$162.3
Tax allowance	\$0	\$0	\$0
In-period smoothing	-\$71.9	\$19.4	\$58.5
Total	\$676.1	\$732.9	\$774.0

Pass-through costs

3.9 The Specification of Price and Revenues IM also require an allowance for the recovery of ‘forecast pass-through costs’ to be included in forecast allowable revenue. Pass-through costs are costs over which Chorus has little or no control, and that are appropriate to be passed through to end-users.

3.10 The fibre IMs specify that pass-through costs are:¹⁰⁴

3.10.1 telecommunications levies under ss 11 and 12 of the Act;

3.10.2 telecommunications development levies;

3.10.3 local authority rates; and

3.10.4 a fixed membership fee relating to, or a fixed amount payable as a member of:

3.10.4.1 the Utilities Disputes Limited’s (UDL) dispute resolution scheme;

¹⁰⁴ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.2.

3.10.4.2 the Telecommunications Dispute Resolution Scheme (**TDRS**);
and

3.10.4.3 any other dispute resolution scheme specified in a PQ
determination.

3.11 As these items are specified by the fibre IMs, they have not changed since our draft decision.

3.12 We have not specified any additional dispute resolution scheme costs as pass-through costs for PQP1. This is because we are not aware that Chorus participates in any additional relevant schemes for which a pass-through cost would be required.

3.13 As we received no submissions on additional dispute resolution schemes, we have retained this decision unchanged from the draft.

3.14 As discussed further in Attachment A, Chorus will be able to update the forecast values for pass-through costs when demonstrating compliance with the revenue path.

Wash-up amount

3.15 The fibre IMs also require the inclusion of a 'wash-up amount' as part of forecast allowable revenue.¹⁰⁵ The purpose of this amount is to allow accumulated wash-up balances to be added to or subtracted from allowable revenues. We have amended the fibre IMs such that the wash-up drawdown will work on a period-to-period basis.¹⁰⁶ As such, the wash-up amount in each regulatory year of PQP1 will be zero.

3.16 When determining the Fibre IMs, we also considered whether the wash-up amount should be used for smoothing of revenues within and between periods.¹⁰⁷ We have implemented in-period smoothing by way of a separate building block. As discussed below, we do not consider inter-period smoothing necessary under s 197.

¹⁰⁵ As part of IM amendments made in advance of our PQ and ID decisions, we have specified in greater detail how the wash-up amount is determined and what it encompasses. Commerce Commission "Fibre input methodologies main 2021 amendments: final decisions – final reasons paper" (29 November 2021), Chapter 4.

¹⁰⁶ Commerce Commission "Fibre input methodologies main 2021 amendments: final decisions – final reasons paper" (29 November 2021), paragraph 4.12.

¹⁰⁷ Commerce Commission "[Fibre input methodologies: Main final decisions – reasons paper](#)" (13 October 2020), para 9.28.

- 3.17 Our decision, discussed in Chapter 6 to accelerate depreciation for the FLA has the effect of shifting revenue recovery between periods. However, our reason for implementing this is because we consider it better promotes the purpose of Part 6, rather than to minimise price-shocks or undue financial hardship under s 197.

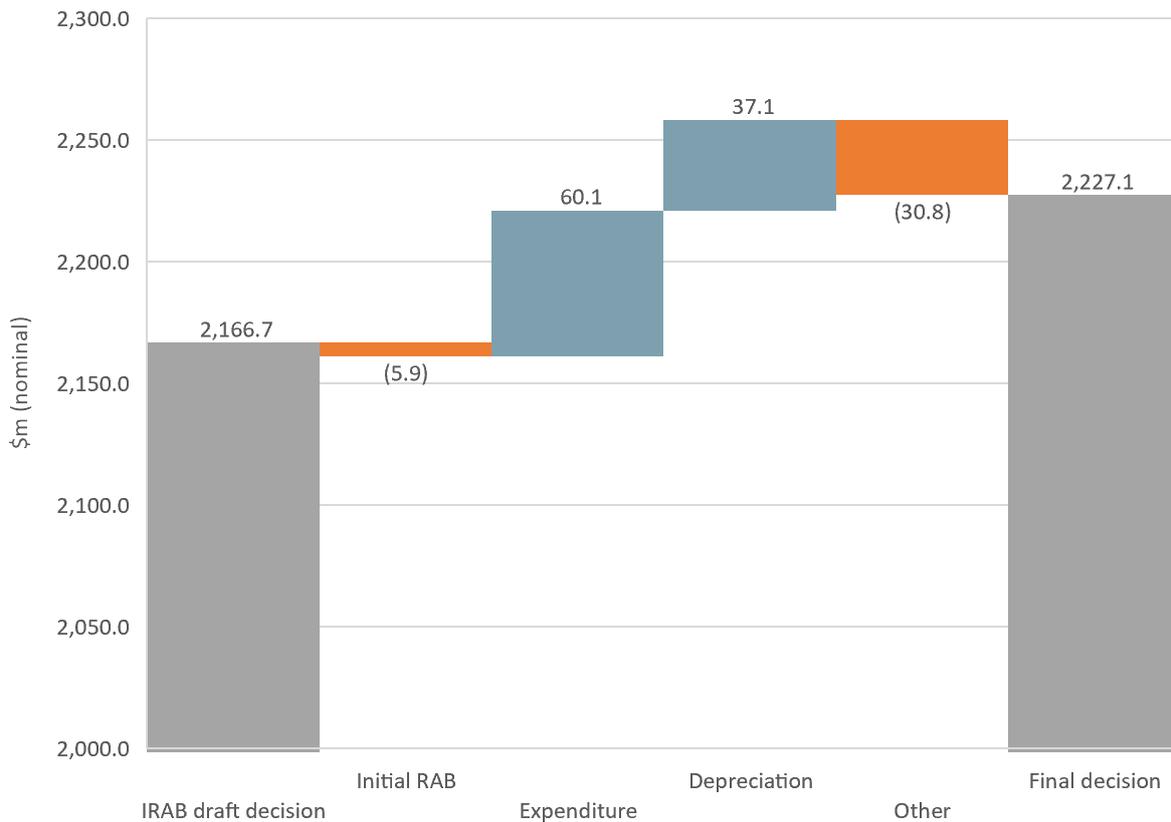
Changes to forecast allowable revenue since our draft decisions

- 3.18 This section sets out how forecast allowable revenue has changed since our draft decisions and the factors driving that change. These factors fall into three types:
- 3.18.1 changes made (to cost allocation and the transitional initial RAB draft values) in our 19 August draft transitional initial RAB decision;
 - 3.18.2 modelling error corrections; and
 - 3.18.3 changes into input values due to:
 - 3.18.3.1 changes to PQ and RAB policy decisions; and
 - 3.18.3.2 changes to input values outside the RAB and PQ decisions, specifically:
 - 3.18.3.2.1 the final PQP1 WACC, determined 1 July 2021; and
 - 3.18.3.2.2 forecasts of CPI used to calculate revaluations, based on the Reserve Bank of New Zealand (RBNZ) May 2021 monetary policy statement; and
- 3.19 The incremental impacts of changes we have made in our final decision are set out in Table 3.4 and illustrated in Figure 3.2.

Table 3.4 Drivers of change in forecast allowable revenue

	PQP1 forecast allowable revenue (\$m nominal)	Incremental nominal \$m change	Incremental % change
Combined RAB/PQ draft decisions	\$2,166.7	n/a	n/a
Transitional initial RAB final decisions	\$2,160.8	-\$5.9	-0.27%
Expenditure final decisions	\$2,220.9	60.1	2.78%
Depreciation final decisions	\$2,258.0	37.1	1.67%
Other (including model error correction)	\$2,227.1	-30.8	1.37%
PQ final decisions	\$2,227.1	n/a	n/a

Figure 3.2 Changes in allowable revenue from draft to final decision¹⁰⁸

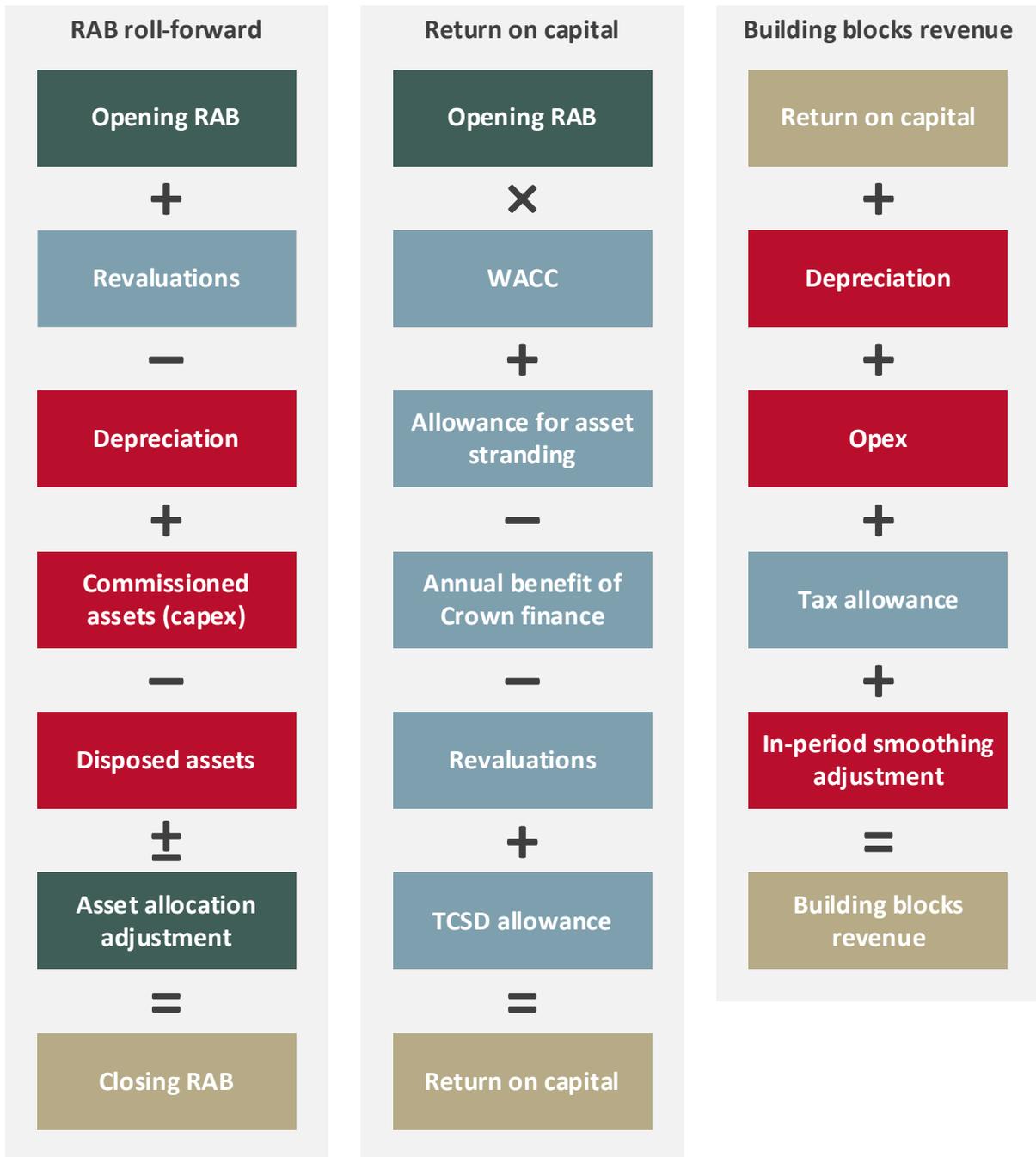


Building blocks components

- 3.20 This section summarises the final decisions we have made on each of the major building block components that make up 'forecast building blocks revenue'.
- 3.21 It starts by giving a brief summary of the building blocks methodology. It then discusses the values we have used for each component and finishes by discussing specific building blocks where we have had to exercise our judgement about the values that we consider meet the criteria in s 166(2) of the Act. Finally, it describes how we have implemented this model in practice.

¹⁰⁸ This figure uses the MAR implied by our combined draft PQ and draft transitional initial RAB decisions as its starting point.

Figure 3.3 Stylised key building blocks equations



Building blocks methodology

- 3.22 Building blocks are the forecast efficient costs and other components that are added together to form a regulated provider's allowable revenue. A stylised version of the building blocks methodology is shown in Figure 3.3. These components are unchanged from our draft decision (although the values of the components have changed).
- 3.23 The inputs to building blocks revenue highlighted in **red** are those where we have exercised our judgement as part of the PQ setting process. In determining these values for our final decisions, we have made decisions that we consider best give effect to the purpose in s 162, consistent with s 166(2)(a), and (where relevant) the promotion of workable competition, consistent with s 166(2)(b).
- 3.24 The inputs highlighted in **green** (the opening PQ RAB) is largely determined by applying the fibre IMs, but also required judgement and an assessment of whether Chorus complied with the fibre IMs in preparing the information it is based on. Detailed discussion of these decisions can be found in our transitional initial RAB final decision paper.
- 3.25 The inputs highlighted in **blue** are largely determined by the fibre IMs, and only require us to apply the relevant fibre IMs.

Final decisions on building blocks determined by the fibre IMs

- 3.26 As illustrated above, the following building block components are largely determined by the fibre IMs:
- 3.26.1 the components of the return on capital;
 - 3.26.2 the revaluations building block that results from the indexation of the RAB; and
 - 3.26.3 the regulatory tax allowance.
- 3.27 Within the return on capital, we have chosen to specify a negative "annual benefit of Crown finance building block". While the decision to include this is a matter of implementation judgement, how it is calculated is determined by the fibre IMs.
- 3.28 Note that the regulatory tax allowance in each regulatory year of PQP1 is \$0m. This is because Chorus has faced tax losses during the pre-implementation period that have not yet been fully recovered.

Final decisions on key building blocks where we have exercised our judgement

- 3.29 This section discusses the final decisions we have made regarding:
- 3.29.1 disposed assets; and

3.29.2 revenue smoothing within the PQP1 period.

3.30 Other key building blocks where we need to exercise judgement are discussed elsewhere in this paper and accompanying documents. A these are:

3.30.1 capex and opex allowances (Chapter 4); and

3.30.2 the opening PQ RAB (Chapter 5 and in detail in the transitional initial RAB paper);

3.30.3 depreciation (in Chapter 6).

Disposed assets

3.31 Forecast values of disposed assets are removed from the PQ RAB during the ‘roll-forward’ illustrated above in Figure 3.3. Chorus has not forecast any asset disposals during PQP1, so our final decision includes \$0 values for disposals. We received no submissions on this issue, and it is unchanged relative to our draft decision.

Revenue smoothing within the period

3.32 We have smoothed Chorus’ revenue over the PQP1 period based on allowing (though not requiring) Chorus to maintain prices at current real levels.

3.33 This involves determining building blocks revenue such that it increases by:

3.33.1 forecasts of weighted average demand growth consistent with our final decision on connection expenditures; and

3.33.2 RBNZ CPI forecasts.

3.34 The effective rates of change this smoothing implies are set out in Table 3.5.

Table 3.5 Forecast rates of change for in-period smoothing

Value	2023	2024
Forecast CPI	2.2%	2.0%
Demand growth	6.1%	3.5%
Total ¹⁰⁹	8.4%	5.6%

¹⁰⁹ Note: the total value is not a sum of the two rates of change, but a multiplicative approach $(1+CPI) \times (1+Q)$.

- 3.35 To give effect to this change, we have included an additional ‘in-period smoothing’ building block in our building blocks revenue calculation for each regulatory year of PQP1. This “in-period smoothing” building block is not required under the fibre IMs but will operate as a “building block component” under the definition of “building blocks revenue” under the fibre IMs.¹¹⁰ This “in-period smoothing” building block has the effect of reducing building blocks revenue in the first year of the regulatory period by -\$71.9 million, and in years two and three, increasing building blocks revenue by \$19.4 million and \$58.5 million respectively.

Revenue smoothing between periods under s 197

- 3.36 As noted in Chapter 2, we have an obligation to smooth revenues over two or more periods in a present-value neutral way where we consider it is necessary to minimise:

3.36.1 price-shocks to end-users; or

3.36.2 undue financial hardship to a regulated FFLAS provider.

- 3.37 We do not consider either of these risks are likely to eventuate, and so we do not consider that revenue smoothing between periods is required under s 197.

- 3.38 Regarding price-shocks, we do not consider the increase in forecast allowable revenue (relative to current revenues) large enough to lead to a price shock. As allowable revenue is set to increase in line with demand, in aggregate real prices (on a revenue per connection basis) will be approximately flat.

- 3.39 Regarding financial hardship, while Chorus has presented evidence (in support of its alternate depreciation proposal) that it may have faced some difficulties in attracting investment if the default depreciation methodology was applied, we do not consider this rises to the level of financial hardship contemplated by the Act. As we note in Chapter 6, we have applied alternative tilted annuity depreciation to the FLA which brings forward Chorus' revenues in PQP1.

Implementing the building blocks model

- 3.40 To implement the calculations set out in Figure 3.3 above, we have used a building-blocks model developed for Chorus by consultants Analysys Mason. This model uses the outputs of Chorus’ initial RAB model (as modified for our final decisions on the transitional initial RAB and cost allocation) as an input and applies the same approach to cost allocation (on a forecast basis) as used in the initial RAB model.

¹¹⁰ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, definition of “building blocks revenue” in clause 1.1.4(2).

- 3.41 As this model contains confidential information, we have not published a version of it. Chorus has undertaken an internal and external review process for this model, the details of which we have published on our website.¹¹¹
- 3.42 The model uses our final decisions on commissioned assets, operating expenditure, depreciation, and in-period revenue smoothing as inputs to calculate forecast building blocks revenue values we cite in this paper.
- 3.43 The Commission has also developed a ‘demonstration’ model, which applies the same building blocks methodology (except for the application of cost allocation and depreciation, the outputs of which are taken from the Chorus model). We have used this model as a cross-check on the results from the Chorus model, to test for it for accuracy. This model (which contains actual values, rather than randomised ones) has also been published on our website.¹¹²

Correction of errors in the initial RAB and PQ models

- 3.44 As part of integrating the PQ and RAB models and quality assurance processes ahead of the final decision, errors in Chorus’ model (as modified with our changes) were identified. These are set out in Table 3.6 below.

Table 3.6 Error correction in the PQ and RAB models

Error	Description
Transfer of opex into IAV and MAR	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 inputs and consistency	IAV model now uses WACC inputs provided by the Commission, that are then linked into the MAR model.
MAR FLA lifetime consistency	MAR model updated to apply a consistent FLA asset life.
Escalators + IDC but no VCA	Changes to properly input the CPI/RPE and interest during construction inputs from the regulatory templates into the IAV and MAR models, with conversion from calendar years to financial years (change to inputs, not to model formulae).

¹¹¹ [Chorus “MAR model – External review processes” \(14 May 2021\).](#)

¹¹² Commerce Commission “Chorus PQ building blocks demonstration model” (16 December 2021), available at: <https://comcom.govt.nz/regulated-industries/telecommunications/projects/fibre-price-quality-path-and-information-disclosure>

Error	Description
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 value for 2011.

Approach to the revenue path and wash-up

3.45 This section sets out our high-level final decisions on the revenue cap and wash-up mechanisms that will apply during PQP1. It is supported by:

3.45.1 Attachment A, which covers the details of how the revenue path will work in practice; and

3.45.2 Chapter 4 of the final IM amendments reasons paper, which details the changes we have made to implement the wash-up.¹¹³

Summary of our approach to the revenue cap

3.46 The purpose of the revenue cap is – simply put – to limit Chorus' revenue. Doing this is a central part of meeting the s 192 purpose of PQ regulation. On top of this, we must determine the revenue path in a way that is compliant with the Act and the fibre IMs, and that best promotes the purpose of Part 6 and workable competition in telecommunications markets for the long-term benefit of telecommunications services where relevant.

3.47 This section covers:

3.47.1 the fundamental design decisions on how the revenue cap will operate; and

¹¹³ Commerce Commission "Fibre input methodologies main 2021 amendments: final decisions – final reasons paper" (29 November 2021), Chapter 4.

3.47.2 final decisions on the additional controls on revenue that we indicated we could consider.¹¹⁴

3.48 As noted above, final revenue cap decisions are discussed in detail in Attachment A.

Basis for the revenue cap

3.49 As required by the fibre IMs, and consistent with the final IM amendments, the revenue cap will require Chorus to set prices such that 'forecast total FFLAS revenue' is less than or equal to 'forecast allowable revenue'.¹¹⁵

3.50 For regulatory years 2023 and 2024, Chorus will have to demonstrate compliance with this on a forecast (or ex ante) basis and will do so prior to first setting prices that will apply for that regulatory year. For regulatory year 2022, Chorus will have to demonstrate compliance with this in a one-off statement by 31 March 2022. Chorus will also have to update any time it changes its existing prices mid-year.

Forecast total FFLAS revenue

3.51 Forecast total FFLAS revenue is defined by the fibre IMs, so we do not need to exercise judgement about this issue as part of the PQ path. However, we will require Chorus to demonstrate how it calculates 'total FFLAS' on the basis of prices, forecast quantities, and forecasts of "other FFLAS income". This is to enable transparent assessment of whether the forecasts used are 'demonstrably reasonable' and to allow for future calculation of the wash-up.

Forecast allowable revenue

3.52 Forecast allowable revenue is defined by the fibre IMs. However, there is scope for judgement in how this is applied in the PQ path. The specification of 'building blocks revenue' is a discretionary matter at each PQ path setting.

3.53 We have specified forecast building blocks revenue as a specific dollar value for regulatory year 2022. For regulatory years 2023 and 2024, we have specified building blocks revenue by way of a formula that references:

3.53.1 forecast building blocks revenue in the prior regulatory year;

3.53.2 updated forecast CPI; and

3.53.3 forecast (as at the start of the regulatory period) changes in quantities.

¹¹⁴ Commerce Commission "[Fibre Information disclosure and price-quality regulation – proposed process and approach for the first regulatory period](#)" (15 September 2020), Table 6.1, page 124.

¹¹⁵ Fibre Input Methodologies Determination 2020, as amended on 29 November 2021, clause 3.1.1(1).

3.54 We have decided to allow Chorus to update the values of any forecast pass-through costs on an annual basis. This annual updating means pass-through costs are promptly passed through to prices as intended. The alternative approach – fixing forecasts at the start of the period – would mean a substantial wash-up balance could build up.

Additional controls on revenue

3.55 We have considered whether any additional controls on Chorus' revenue were justified in addition to the ordinary revenue path. These measures included:

3.55.1 a limit on Chorus' ability to accrue a wash-up balance by choosing to under-recover its revenue voluntarily;

3.55.2 a catastrophic demand risk cap (to share risk between Chorus and end-users in the event of a sudden loss of demand); or

3.55.3 a limit on the rate of increase for Chorus' 'total FFLAS revenue', notwithstanding compliance with the revenue path.

3.56 We have not introduced any such measures and none of these measures are specified in the fibre IMs.

3.57 Promotion of the purpose of Part 6 and workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services are relevant to this decision, as we would only introduce these kinds of measures where the conventional revenue cap does not adequately mitigate (or creates) risks to incentives or competition.

3.58 Our starting point when considering these measures is that we should not include them unless there is a compelling s 166(2) reason for doing so. This is because these additional measures add complexity, increasing compliance costs and the possibility of over-determined prices.

Limit on undercharging

3.59 This measure was introduced in Part 4 for electricity distribution businesses (EDBs), where we were concerned that trust-owned EDBs would build up substantial wash-up balances as they pass-on lower prices to their consumer/owners. We do not consider this a risk with an investor-owned provider.

3.60 However, there is a risk of Chorus artificially lowering prices in the short term on certain products in an effort to limit competition from FWA providers. Chorus has the ability to temporarily under-recover with a future wash-up, giving it an advantage over FWA providers.

- 3.61 In submissions on the process and approach paper, Spark and Vocus supported a control on under-recovery, citing the competition risks discussed above. In submissions on the draft decision paper, Chorus opposed the control, while Spark reiterated support for the control and Vodafone proposed separate consultation on requirements to mitigate undercharging risk. Chorus cross-submitted disagreeing with the RSPs.
- 3.62 Given Chorus' indicated approach to pricing (broadly speaking, maintaining stable prices in real terms) and the investment needs it faces, we do not consider this risk likely in PQP1. However, we would reconsider this decision in future periods if we considered this risk was more likely to eventuate, and therefore, require this control in order to best give (or be likely to best give), effect the s 166(2) purposes.

Catastrophic demand risk

- 3.63 From a risk-allocation principle perspective, there is an argument that some risk of dramatic declines in demand should be shared with Chorus. However, the inclusion of a catastrophic event reopener allows us to manage this risk.

Limit on the increase in forecast revenue from prices

- 3.64 The purpose of this kind of mechanism is to limit sudden increases in revenue due to multiple intersecting factors (such as incentives, wash-ups, or pass-through costs). As PQP1 for Chorus lacks such features, this risk does not exist, so this measure is unnecessary.

Summary of our approach to the wash-up mechanism

- 3.65 This section discusses our approach to the wash-up mechanism as implemented in the fibre IMs.¹¹⁶ It covers:
- 3.65.1 the mechanics of how the wash-up would be calculated; and
 - 3.65.2 our final decisions about the scope of the wash-up.

Mechanics of the wash-up

- 3.66 We have specified the mechanics of the wash-up in the IMs.
- 3.67 The wash-up mechanism will work on a 'balance' basis with amounts accruing to, and being drawn-down from, an ongoing wash-up balance with time-value-of money adjustments.

¹¹⁶ Commerce Commission "Fibre input methodologies main 2021 amendments: final decisions – final reasons paper" (29 November 2021), Chapter 4; *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(3)-(12).

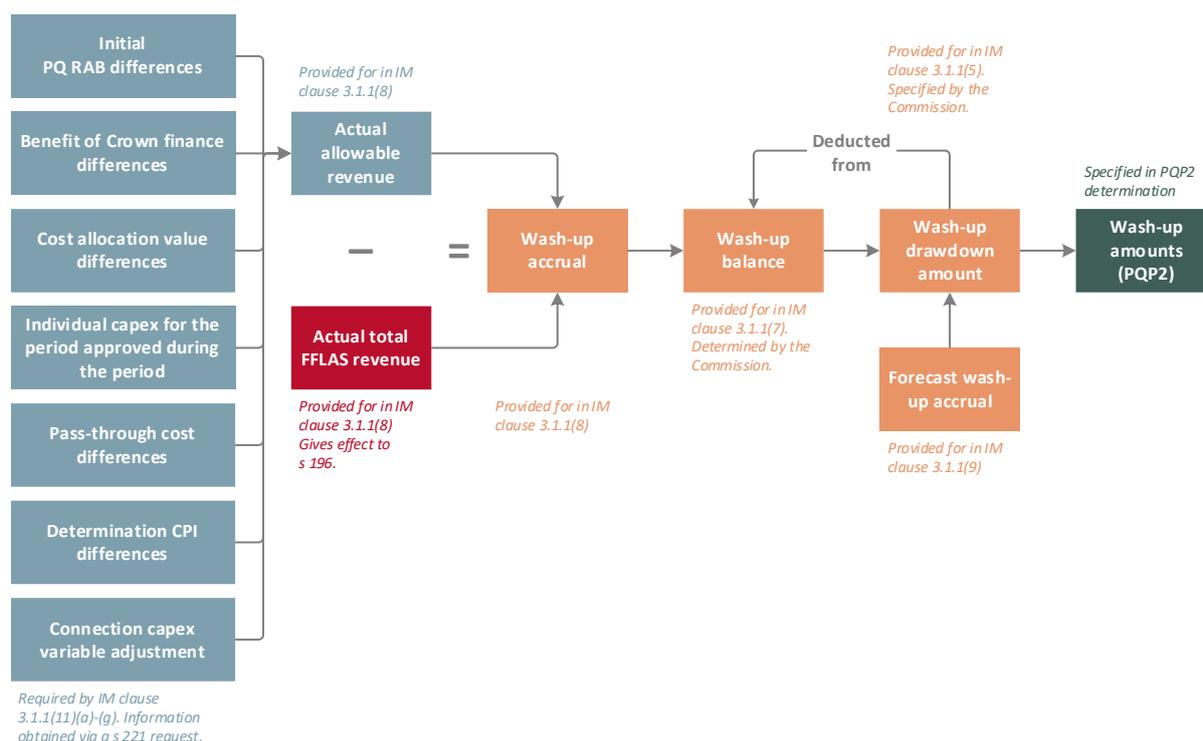
- 3.68 The wash-up mechanism is composed of four key elements, determined by the Commission by applying the fibre IMs and based on information provided by the regulated provider:
- 3.68.1 'wash-up accrual amounts' used to capture the relevant forecast versus actual differences in inputs to the revenue path, defined as the difference between:¹¹⁷
 - 3.68.1.1 actual 'total FFLAS revenue' (the revenue a regulated provider receives from access seekers); and
 - 3.68.1.2 'actual allowable revenue' (a version of allowable revenue recalculated with the relevant inputs updated (see paras 3.71 and 3.72 below on the scope of the wash-up));¹¹⁸
 - 3.68.2 a 'wash-up balance' used to track accruals, drawdowns, and time value of money adjustments;¹¹⁹
 - 3.68.3 a 'wash-up drawdown amount' used to deduct accrued balances to be returned to the regulated provider or access seekers (depending on whether the balance is positive or negative) via the revenue path in the subsequent regulatory period, and whose value must:
 - 3.68.3.1 not be greater or less than (depending on whether the wash-up balance is positive or negative respectively) the existing wash-up balance at the time the wash-up drawdown is determined plus a forecast of the final regulatory year's wash-up accrual amount; and
 - 3.68.3.2 equal in present value terms to the sum of 'wash-up amounts' for the subsequent regulatory period.
- 3.69 The wash-up will operate on a period-to-period basis, rather than on a year-to-year basis. The discount rate applied to maintain time value of money will be the vanilla WACC.
- 3.70 How the wash-up will operate is illustrated in Figure 3.4 below.

¹¹⁷ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(8).

¹¹⁸ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(11).

¹¹⁹ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(7).

Figure 3.4 Overview of the wash-up mechanism



Scope of the wash-up mechanism

3.71 We are required by statute to include a wash-up for any under- or over- recovery of revenue.¹²⁰ At a minimum, this encompasses differences in recovery due to differences in forecast versus actual levels of demand.

3.72 We have defined the scope of the wash-up mechanism in the fibre IMs.¹²¹ In addition to accounting for under- or over-recovery of revenue, the wash-up includes:

- 3.72.1 the difference between the transitional initial PQ RAB and the final initial PQ RAB (for PQP1 only);
- 3.72.2 the difference between the forecast and actual “annual benefit of Crown financing building block”;
- 3.72.3 differences between forecast cost/asset allocator values and actual cost/asset allocator values;
- 3.72.4 individual capex allowances in respect of the regulatory period determined after the PQ path was set;

¹²⁰ Telecommunications Act 2001, s 196.

¹²¹ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(11).

- 3.72.5 the difference between forecast and actual pass-through costs;
- 3.72.6 the difference between any forecast CPI values in the PQ determination used to determine forecast allowable revenue, and the corresponding actual CPI values; and
- 3.72.7 the connection capex variable adjustment.

Chapter 4 Expenditure allowances

Purpose and structure of this chapter

- 4.1 The purpose of this chapter is to set out our decisions on base capex, connection capex baseline and opex allowances. Our final decisions on these allowances form part of our MAR determination for PQP1.
- 4.2 The chapter is structured as follows:
 - 4.2.1 summary of our decisions on expenditure;
 - 4.2.2 requirements of the Act and application of the fibre IMs;
 - 4.2.3 processes we have undertaken to evaluate and determine Chorus' expenditure allowances for PQP1;
 - 4.2.4 assessment of particular areas of Chorus' proposal;
 - 4.2.5 our decisions on cost allocation and cost escalation;
 - 4.2.6 our decisions on Chorus' base capex allowance;
 - 4.2.7 our decisions on Chorus' connection capex baseline allowance; and
 - 4.2.8 our decisions on Chorus' opex allowance.

Summary of our decisions on expenditure

- 4.3 Consistent with the capex IM, we have determined expenditure allowances¹²² for the:
 - 4.3.1 base capex allowance; and
 - 4.3.2 connection capex baseline allowance.
- 4.4 We have also determined an opex allowance for the upcoming regulatory period.
- 4.5 We consider our expenditure decisions implement the fibre IMs (including the capex IM evaluation criteria), promote workable competition in telecommunications markets for the long-term benefit of end-users, and best give effect to the purposes of s 162.

¹²² We note that the capex allowances are net of capital contributions.

4.6 The expenditure allowances we are approving for use in the MAR calculation are in nominal terms. The amounts quoted in this chapter are in constant 2019/2020 dollars, unless otherwise stated, as this was the basis of our evaluation. Table X4 in the executive summary sets out our final expenditure allowances in nominal commissioned terms.

4.7 Tables 4.1 and 4.2 summarise our decisions for each expenditure allowance for PQP1. The expenditure amounts quoted are all in constant 2019/2020 dollars. We then provide a more detailed summary of the key features of our decisions in Table 4.3.

Table 4.1 Summary of our expenditure allowance decision (in constant \$m)

	Base capex	Baseline Connection Capex	Opex	Totex
Chorus proposal¹²³	642.1	335.4	487.8	1,465.3
Draft decision	535.2	284.0	435.6	1,254.8
Final decision	581.6	302.5	433.8	1,317.8
Difference between draft decision and final	46.4	18.5	-1.8	63.0
Difference between Chorus Proposal to Final	-60.5	-32.9	-54.1	-147.5
Difference due to allocation changes	-4.5		-17.4	-21.9
Potential Chorus Individual Capex proposals				60.3
Adjusted difference				-65.3

4.8 Table 4.2 shows our final decisions on the allowances by year.

Table 4.2 Our final decisions by allowance by year (in constant \$m)

Allowance	2022	2023	2024	Total
Base capex	219.9	187.4	174.3	581.6
Connection capex baseline	135.0	96.2	71.3	302.5
Opex	150.0	144.1	139.7	433.8
Totex	504.9	427.7	385.3	1,317.8

¹²³ Note that Chorus' proposal allowances are presented excluding leases in this table.

4.9 Table 4.3 provides a summary our final decisions on each of the expenditure categories.

Table 4.3 Summary of our final decisions

Topic	Final decisions
Base capex allowance	<p>Our final decision is to approve a total base capex allowance of \$581.6m for PQP1. This is a reduction from Chorus' proposed expenditure by \$60.5m (9.4%) which includes expenditure we consider would be more appropriately submitted as individual capex. It also includes our final decision on FFLAS allocations which result in a reduction of \$4.5m from Chorus' proposal.</p> <p>Our final decision on base capex includes:</p> <ul style="list-style-type: none"> • removal of base capex innovation expenditure of \$34.4 million, • removal of \$32.6 million of retention incentives, and \$1.0 million to reflect the change in demand forecast; • a base capex adjustment of \$24.9 million to account for over-forecasts in Chorus' base capex proposal; • a removal of \$0.7 million for an unjustified regulatory overlay; • a reduction of Aggregation and Transport expenditure by a total of \$2.7m and \$2.4m respectively to account for unjustified assumptions. • adjusted Field sustain expenditure by \$1.9m, to reflect Chorus' fibre assists sustain plan for PQP1; • inclusion of leases in base capex of \$26.0m; and • inclusion of incentives payments in base capex for 2022 of \$18.6m. <p>Our final decision includes expenditure decisions for each base capex sub-category proposed by Chorus.</p> <p>Our decisions relating to specific base capex sub-categories are outlined from paragraph 4.178 onwards.</p>

Topic	Final decisions
Connection capex baseline allowance	<p>Our final decision is to approve a connection capex baseline allowance of \$302.5m for PQP1. This is a reduction from Chorus' proposed expenditure by \$32.9m (9.8%).</p> <p>Our final decision on connection capex baseline includes:</p> <ul style="list-style-type: none"> • removal of incentive payments of \$10.2m from the connection capex baseline allowance as we do not consider that they meet the definition of variable connection costs; • a reduction of the forecast connection capex of \$20.4m to reflect smoothed unit cost trends; • a reduction to reflect the change in the demand forecast of \$2.4m; and • Connection capex will be split into eleven connection types, rather than the ten connection types proposed by Chorus. <p>Our final decision includes specification of connection unit costs for each connection type for PQP1.¹²⁴</p> <p>Our decisions relating to connection capex baseline allowance are outlined from paragraph 4.287 onwards.</p>
Opex allowance	<p>Our final decision is to approve an opex allowance of \$433.8m for PQP1. This is a reduction from Chorus' proposed expenditure by \$54.1m (11.1%). It also includes our final decision on FFLAS allocations which result in a reduction of \$17.4m from Chorus' proposal.</p> <p>Our final decision on the opex allowance includes:</p> <ul style="list-style-type: none"> • an IT efficiency adjustment of \$21.3m, to account for the benefits from planned IT investment; • removal of \$13.4m from Corporate Support expenditure, reflecting the historic cost trends and removing estimated inefficiencies in the base year costs and reductions for one regulatory overlay¹²⁵ and • removal of \$2.0 m from Network maintenance for insufficiently justified "pits and manholes" regulatory overlay expenditure. <p>Our final decision includes expenditure allowances for each opex sub-category proposed by Chorus.</p> <p>Our decisions relating to specific opex sub-categories are outlined from paragraph 4.349 onwards.</p>
Approach to cost allocation	<p>The expenditure allowance decisions in this paper incorporate our final decisions on cost allocation. For further information on our final decisions relating to cost allocation, refer to the Initial RAB final decisions reason paper.</p>

¹²⁴ Note that some of the information relating connection types was identified as commercially sensitive by Chorus. To address these concerns, we have grouped certain connection types to protect the confidential nature of this information.

¹²⁵ A "regulatory overlay" is the term Chorus uses to describe additional expenditure it added to its proposal post the development of its initial forecast. The initial forecast was in turn based on Chorus' normal business planning process undertaken in February 2020.

Topic	Final decisions
Approach to cost escalation	<p>Our final decision is to use an alternative to Chorus' cost escalation proposal.</p> <p>We will escalate approximately half of expenditure with the non-CPI escalators that Chorus proposed, and the remaining expenditure with a combination of 'Just CPI' and the weighted average approach to escalation applied in Part 4 for EDBs.</p> <p>Our final decision is to update all escalator forecasts for the final expenditure allowance decision later this year.</p> <p>For detail on our decisions relating to cost escalation, refer to paragraph 4.131 onwards.</p>

Requirements of the Act and application of the fibre IMs

4.10 This section sets out the legal requirements and regulatory framework which underpin our decisions on expenditure in relation to PQ regulation. It explains how our decisions best give effect to the purposes of s 162 and s 166(2)(b) and the requirements in the capex IM.

IM requirements

4.11 The capex IM requires us to determine a capex allowance, after Chorus has submitted a capex proposal that relates to each of the capital expenditure categories set out in the IM.¹²⁶ For the first regulatory period, we must make at least the following determinations on specific allowances:

4.11.1 A base capex allowance for each regulatory year of the regulatory period; and

4.11.2 A connection capex baseline allowance for each regulatory year of the regulatory period.

4.12 The capex IM also allows Chorus to apply for additional individual capex allowances at any time before or during the regulatory period.¹²⁷ Information requirements for that process may be met by Chorus referencing documents already provided to the Commission.¹²⁸ As at the date of publication of this paper, Chorus has not submitted any individual capex proposals. However, some of our decisions exclude expenditure from the capex allowances, leaving open the possibility for Chorus to apply for the expenditure under an individual capex proposal.

4.13 The capex IM requires us to include the following in the connection capex baseline allowance determination:¹²⁹

¹²⁶ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.7.1(1).

¹²⁷ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.7.22(1).

¹²⁸ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.7.5(1).

¹²⁹ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.7.20(2).

- 4.13.1 the connection capex baseline allowance by connection type for each regulatory year of the regulatory period;
 - 4.13.2 the connection capex unit costs and any non-linear connection cost functions used to calculate the connection capex baseline allowance for each regulatory year of the regulatory period; and
 - 4.13.3 the forecast volumes, by connection type, used to calculate the connection capex baseline allowance for each regulatory year of the regulatory period.
- 4.14 Additionally, we need to determine an opex allowance for the upcoming regulatory period. Our approach to determining the opex allowance is similar to the approach we use for the capex allowances. This is discussed further from paragraph 4.349 below.
- 4.15 We are also required to apply the cost allocation IM to any forecast expenditure. The details of our approach and the implementation of cost allocation are set out in the section on cost allocation in Chapter 5 of the transitional initial PQ RAB paper. We summarise the cost allocation process we have taken for our PQP1 expenditure allowance decisions in the cost allocation section below starting from paragraph 4.131.

Evaluating Chorus' expenditure proposals and applying the fibre IMs

- 4.16 In evaluating Chorus' base capex and connection capex baseline proposals, we must apply the evaluation criteria in the capex IM.¹³⁰ To approve opex for Chorus' first regulatory period, we have applied the evaluation criteria described in the capex IM, including the assessment factors that are applicable to opex. We consider that taking this approach to our decisions will best give effect to, or likely best give effect to, the purposes in s 166(2) of the Act.
- 4.17 Our approach to making expenditure decisions includes considering whether the proposed expenditure meets the expenditure objective and reflects good telecommunications industry practice. The expenditure objective is that expenditure reflects the efficient costs that a prudent fibre network operator would incur to deliver PQ FFLAS of appropriate quality, during the upcoming regulatory period and over the longer term.¹³¹
- 4.18 Good telecommunications industry practice means:¹³²

¹³⁰ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.8.5.

¹³¹ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.8.5(2).

¹³² *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2).

4.18.1 the exercise of a degree of skill, diligence, prudence, foresight and economic management, that would reasonably be expected from a skilled and experienced asset owner engaged in the management of a fibre network under comparable conditions. A decision on good telecommunications industry practice should take into account the domestic and international best practice, including international standards and factors such as the relative size, age and technology of the relevant fibre network and domestic regulatory and market conditions, including applicable law.

4.19 The evaluation criteria also require us to have regard to relevant assessment factors when considering whether a capex proposal has met the expenditure objective.¹³³ The assessment factors help us identify the different aspects of prudence and efficiency.

4.20 The assessment factors we must have regard to when evaluating an expenditure proposal are outlined in table 4.4.

Table 4.4 Assessment factors in the capex IM

Assessment factors	
a)	Whether the proposed capex complies with all applicable legal and regulatory obligations associated with the provision of PQ FFLAS.
b)	Governance relating to proposed capex, including evidence that appropriate policies and processes have been applied.
c)	Historic capital expenditure and consideration of historic rates of investment.
d)	Quantitative or economic analysis related to the proposed capex, including sensitivity analysis and impact analysis undertaken.
e)	Approach to forecasting capital expenditure, including models used to develop the capital expenditure forecasts.
f)	Relevant financial information including evidence of efficiency improvements in proposed capex.
g)	Competition effects, including specific information for sub-categories of capital expenditure that have potential impacts on competition in PQ FFLAS and other telecommunications markets.
h)	The linkages between the proposed capex and quality, including the impact the capital expenditure would have on PQ FFLAS quality outcomes.
i)	Consideration and analysis of alternatives to the proposed capex, including the impact of the alternatives on PQ FFLAS quality outcomes.
j)	The extent and effectiveness of consultation and engagement with stakeholders and the extent that feedback received has been incorporated into the capex proposal.
k)	Procurement, resourcing, and deliverability of the proposed capex.
l)	Common costs and benefits between PQ FFLAS, ID-only FFLAS and services that are not regulated FFLAS.
m)	Fibre asset and fibre network information.

¹³³ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clauses 3.8.5 and 3.8.6.

Assessment factors

n)	Mechanisms for controlling actual capital expenditure with respect to the proposed capex and achieving the PQ FFLAS quality outcomes.
o)	The extent of the uncertainty related to the: i) need for the proposed capex; ii) economic case justifying the proposed capex; and iii) timing of the proposed capex.
p)	The extent that a risk-based approach has been applied.
q)	The impact that the proposed capex has on a layer 1 service in respect of PQ FFLAS.
r)	The dependency and trade-off between the proposed capex and related operating expenditure to ensure least whole-of-life cost for managing assets and cost-efficient solutions.
s)	The accuracy and reliability of data.
t)	The reasonableness of the key assumptions, methodologies, planning and technical standards relied upon.

- 4.21 As explained in our IM reasons paper,¹³⁴ we consider that by applying the evaluation criteria set out in the capex IM, our decisions best give effect to s 166(2) of the Act (i.e. the purpose in s 162 and the promotion of workable competition for the long-term benefit of end-users, where relevant).
- 4.22 For the purposes of our evaluation of the expenditure we have had regard to the relevant assessment factors at the level of the expenditure categories that collectively make up the base capex, connection capex baseline and opex allowances. Our analysis was undertaken using a top-down analysis of the whole proposal, followed by prioritisation of expenditure subcategories for targeted detailed analysis. We consider our analysis was undertaken at a level appropriate to the materiality of the proposed expenditure. Our approach is discussed further in paragraphs 4.31 to 4.51.
- 4.23 Accordingly, we have applied the evaluation criteria in the capex IM to the expenditure allowances as a whole (base capex, connection and opex proposals). For each base capex, connection capex baseline, and opex sub-category we have also considered the evaluation criteria. Therefore, we consider our decisions on the expenditure allowances meet the expenditure objective and reflect good telecommunications industry practice.

¹³⁴ Commerce Commission “[Fibre input methodologies: Main final decisions – reasons paper](#)” (13 October 2020), paras 7.135-7.139.

- 4.24 We have made the decisions in each case that we consider best give effect to s 166(2). We have not considered it necessary to specifically explain why every individual decision best gives, or is likely to best give, effect to the purposes in s 166(2). Each decision is intended to contribute to our overall determination of the allowances that best give, or is likely to best give, effect to s 166(2).
- 4.25 We therefore consider that, based on our scrutiny and evaluation of Chorus' expenditure proposal as a whole, in accordance with the capex IM, and in light of the s 166(2) purposes, our final expenditure allowances meet the requirements under the fibre IMs and Part 6 of the Act.

Context for our decision

- 4.26 We discussed the context for our decision in our draft decision reasons paper.¹³⁵
- 4.27 One feature of the regulatory process is an information asymmetry between us and Chorus. However, this is likely to diminish over time. We also expect the quality and robustness of information used for regulatory forecasting to improve over time as Chorus becomes more familiar with fibre regulation.
- 4.28 Another feature is that there may be an incentive for Chorus to inflate forecasts. Over the longer term, this incentive will be influenced by factors such as revealed actual expenditure through ID and the repeated nature of PQP resets, as well as the rigour of our assessments of proposed expenditure.
- 4.29 However, there is a risk that Chorus' expenditure proposal is overstated for PQP1. It is therefore a prudent regulatory response to approach the expenditure assessment with this risk in mind. The extent to which Chorus has an ability to translate any inflated expenditure forecast into higher allowed revenues (and prices) in PQP1 is mainly controlled by scrutiny of Chorus' proposed expenditure. We consider that inclusion of inflated expenditure forecasts would be inconsistent with the purposes of s 166(2).
- 4.30 In applying this scrutiny, it is important to note that our role is not to cut proposed expenditure as such. Rather our role is to assess expenditure against the expenditure objective, and any potential impacts on the promotion of workable competition in telecommunications markets (where relevant) and the purposes in s 162.

¹³⁵ Commerce Commission "Chorus' price-quality path from 1 January 2022: Draft decision - reasons paper" (27 May 2021), paras 4.24 to 4.28.

Processes we have undertaken to evaluate and determine Chorus' expenditure allowances for PQP1

4.31 This section covers the processes we have undertaken to evaluate and determine Chorus' expenditure allowances for PQP1. This includes the processes undertaken to reach a draft decision, consideration of stakeholder views and other steps to reach our final decision on Chorus' expenditure allowances for PQP1.

Treatment of confidential information

4.32 In the course of assessing Chorus' proposal, some of the information we have used in the assessment is commercially sensitive and therefore confidential. Where information is confidential, we have either not published it as part of this reasons paper or have redacted it for the public version of this paper.

Use of external experts to support our evaluation of Chorus' expenditure allowances

4.33 We employed an independent consultancy, Network Strategies Limited (Network Strategies), to help us evaluate Chorus' expenditure allowances for PQP1 against the evaluation criteria in the capex IM. Network Strategies provided evaluation assistance for our draft decisions in May 2021 and the final decisions outlined in this document.

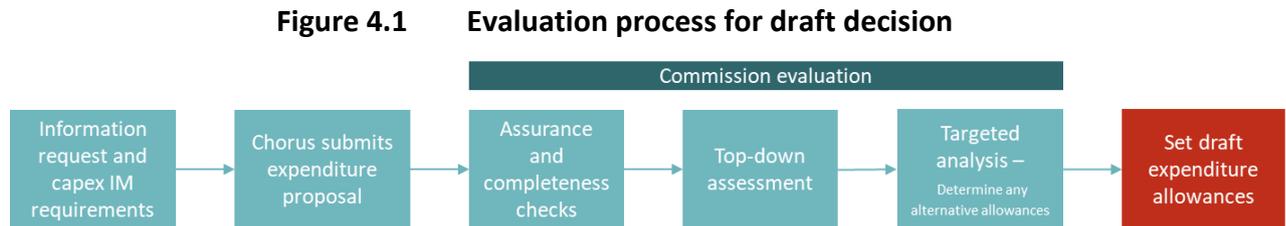
4.34 The specific support Network Strategies provided included:

- 4.34.1 Supporting the Commission's top-down analysis of Chorus' expenditure proposals;
- 4.34.2 Supporting the Commission's scrutiny of the report by Chorus' external expert, CutlerMerz on Chorus' expenditure proposal;
- 4.34.3 Assessing priority expenditure sub-categories against the expenditure objective including having regard to the assessment factors in the capex IM and ensuring Chorus' expenditure allowances reflect good telecommunications industry practice; and
- 4.34.4 Helping the Commission assess submissions on our draft decision and undertaking further analysis to ensure our final expenditure allowance decisions meet the evaluation criteria and good telecommunications industry practice.

Process to draft decision

4.35 In undertaking our assessment of the base capex, connection capex baseline and opex proposals, we conducted a top-down assessment against the expenditure objective, supported by a targeted bottom-up investigation of specific expenditure sub-categories or overarching issues.

4.36 Figure 4.1 below illustrates the evaluation process we used to reach our draft decision.



4.37 Key steps of our top-down analysis included:

4.37.1 Assessment of the robustness of the approach taken by Chorus' external expert, CutlerMerz, and a review of its approach to assessing each expenditure category;

4.37.2 A top-down assessment of Chorus' expenditure proposal including a focus on requirements that affect all aspects of the capex and opex forecast in Chorus' proposal. This includes the policy and planning standards used, the approach to prioritisation and challenge, demand forecasts, cost estimation methods (including contingencies), procurement efficiency, and deliverability; and

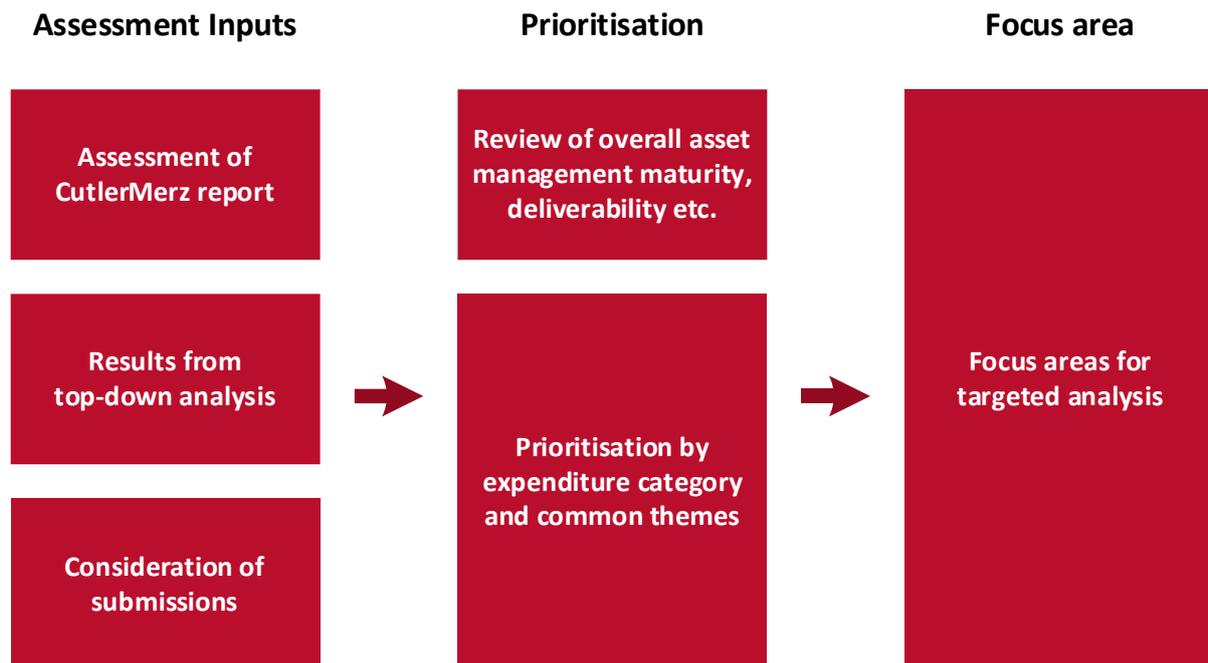
4.37.3 Consideration of stakeholder submissions from consultation on Chorus' expenditure proposal in February 2021.

4.38 In undertaking the top-down analysis, we had regard to relevant assessment factors in determining whether Chorus' expenditure proposal meets the expenditure objective and reflects good telecommunications industry practice. The assessment factors help us identify the different aspects of prudence and efficiency that we consider relevant when evaluating capex and opex proposals.

4.39 For our top-down analysis we particularly considered the governance relating to proposed expenditure (assessment factor b), the historic expenditure and consideration of historic rates of investment (assessment factor c), Chorus' overall approach to forecasting expenditure (assessment factor e), the extent of any consultation and engagement with stakeholders (assessment factor j), and the overall need for the proposed expenditure (assessment factor o). These factors, together with our review of the CutlerMerz report, provided the foundation for our final decisions on some of the expenditure categories, while providing the basis for selecting specific expenditure categories for targeted analysis.

4.40 Figure 4.2 below illustrates how we determined the focus areas through a process of prioritisation.

Figure 4.2 Prioritisation process



4.41 We used the following characteristics to determine focus areas:

- 4.41.1 Materiality of expenditure category;
- 4.41.2 Low level of justification;
- 4.41.3 Issues raised in top-down assessment;
- 4.41.4 Potential for gaming or deliverability risk;
- 4.41.5 High increase from historic cost;
- 4.41.6 Lack of visibility of benefits;
- 4.41.7 Potentially discretionary spend;
- 4.41.8 Potential to impact on adjacent markets; and
- 4.41.9 Stakeholder identified issues.

4.42 The above characteristics were created to assist us to develop a priority list of expenditure sub-categories for targeted evaluation. We consider this list of characteristics is consistent with the expenditure objective in the capex IM (including the assessment factors).

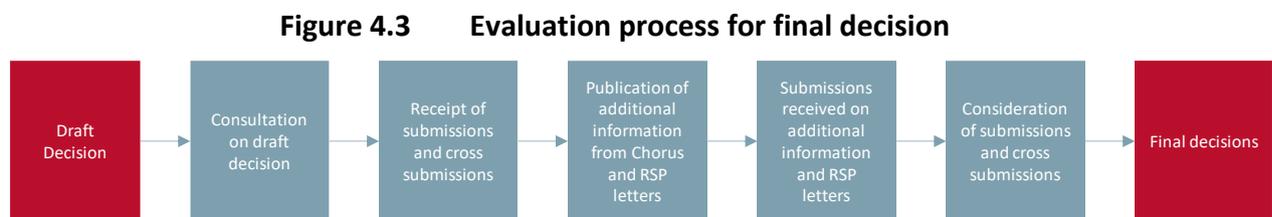
4.43 As a result, we reviewed in detail the analysis and assumptions that drive approximately 67% of Chorus' proposed base capex, proposed opex and 100% of the connection capex baseline allowance.

4.44 To support our targeted analysis, we requested additional information as needed from Chorus through an request for information (RFI) process. We also held several workshops with Chorus to understand and evaluate its proposal.¹³⁶

Process from draft decision to final

4.45 The process from draft decision to final decision began by assessing stakeholder submissions. We received a number of submissions and cross-submissions from stakeholders on our expenditure draft decisions. We grouped submissions into themes and began assessing whether proposals from submissions would better promote the purposes of Part 6 of the Act and better reflect the expenditure objective (and good telecommunications industry practice) than our draft decisions.

4.46 The evaluation process from the draft decision to final decision is illustrated in Figure 4.3 below.



4.47 We received a significant number of submission points on our draft decision regarding Chorus' incentive payments expenditure, which is one category of expenditure for which Chorus sought approval as base capex. Given the substance and significance of the submissions on this issue we sought additional information from Chorus on its incentive payment offerings. We decided to publish a targeted consultation on Chorus' response to our RFI. We also published for consultation several letters from RSPs which came out of submission rounds supporting incentive payments. We received five additional submissions in response to our targeted consultation. We have considered the submissions received and made a final decision on Chorus' expenditure for PQP1.

4.48 We also sought clarification information from Chorus on aspects of its proposal in response to submission points and to assist with finalising our PQ path for PQP1.

4.49 We made a draft determination on Chorus' initial RAB in August 2021 which included an evaluation of Chorus' proposed allocators to help value its initial RAB and PQP1 expenditure allowances (forecast capex and opex expenditures).

¹³⁶ We issued and received responses on 24 RFIs covering a diverse range of subject areas and information types. We have published the RFIs separately on our website.

Assessment of particular areas of Chorus' proposal

4.50 The following sections set out our decisions on particular aspects of Chorus' proposal that underpin our final decisions on the allowances.

4.51 This section is structured as follows:

4.51.1 Individual capex for innovation and incentive payment expenditure;

4.51.2 Chorus' budgeting process and regulatory overlays;

4.51.3 Demand forecast;

4.51.4 Labour cost modelling;

4.51.5 Historic trends in Chorus' expenditure;

4.51.6 Asset management maturity;

4.51.7 Our decisions on additional reporting requirements for PQP1; and

4.51.8 Chorus' approach to consultation with its stakeholders.

Individual capex for innovation and incentive payment expenditure

Our final decision

4.52 Our final decision is to:

4.52.1 exclude Chorus' proposed expenditure for innovation from base capex;

4.52.2 exclude Chorus' proposed incentive payment expenditure from base capex for 2023 and 2024 base capex allowance;

4.52.3 exclude proposed incentive payment expenditure from the connection capex baseline allowance; and

4.52.4 include incentive payment expenditure for 2022 in base capex.

4.53 As allowed for in the capex IM, Chorus may submit expenditure proposals for the expenditure we have excluded under the individual capex mechanism.¹³⁷

¹³⁷ Subject to the thresholds being met for an individual capex proposal.

- 4.54 This is a change to our draft decision. Instead of removing all incentive payments from Chorus' base capex and connection capex baseline allowances, we have included Chorus' proposed incentive payment expenditure for 2022 only. Chorus must apply for any additional incentive payment expenditure for 2023 and 2024 as individual capex.
- 4.55 We have included \$18.6m of incentive payment expenditure for 2022 in the installation capex sub-categories (for both standard and complex installations).
- 4.56 If Chorus intends to submit an individual capex proposal, Chorus must notify us in writing that it intends to do so and must include an individual capex design proposal with the notice.¹³⁸
- 4.57 If Chorus proposes to submit an individual capex proposal for incentive payments (either for new or existing connections), Attachment G of our draft decision¹³⁹ and Attachment C of this decision, set out the type of information that Chorus would need to provide in relation to the incentive payments as part of any individual capex proposal. These attachments also include an overview of our indicative approach to assessing incentive payments as part of an individual capex proposal.
- 4.58 Our reasons for excluding certain proposed capex from the allowances are discussed in more detail in the base capex and connection capex baseline sections from paragraph 4.178 and paragraph 4.286 respectively. We address stakeholder submissions on our draft decisions relating to individual capex in these sections. We have set out our reasons for our decision relating to incentive payments and how we have considered stakeholder submissions in Appendix C.

Process and timing of individual capex determinations

- 4.59 We may determine an individual capex allowance at any time subject to receiving an individual capex proposal from Chorus and following the process as set out in the capex IM.
- 4.60 For individual capex proposals submitted during PQP1, the revenue Chorus would have received from the approved individual capex allowance will be added as a wash-up amount in a future PQ determination.

¹³⁸ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, refer to clause 3.7.23 for the requirements relating to the individual capex proposal process.

¹³⁹ Commerce Commission "Chorus' price-quality path from 1 January 2022: Draft decision - reasons paper" (27 May 2021), Attachment G.

Individual capex and the ability to ring-fence

- 4.61 The capex IM requires that an individual capex allowance must be restricted to the project or programme to which that individual capex allowance relates.¹⁴⁰ In effect that individual capex must be ring-fenced from other expenditure proposals unless we waive this requirement.¹⁴¹
- 4.62 In our final IM reasons paper,¹⁴² we considered that having the ability to ringfence individual capex will help us to separately assess and monitor these projects and programmes.
- 4.63 Since our draft PQ decision, we have considered stakeholder submissions regarding our proposal to require incentive payments and innovation expenditure as individual capex. We have identified an issue with implementing the requirement in the IM to restrict individual capex projects:
- 4.63.1 There is no current mechanism that would effectively 'ringfence' or restrict substitution between individual capex and base capex sub-categories.
- 4.63.2 Under the regulatory framework, individual capex is treated the same as base capex. Therefore, as long as the total MAR cap was not passed, Chorus could substitute any individual capex within the base capex allowances. This would effectively mean that expenditure would be fungible between individual capex and base capex.
- 4.63.3 We currently consider that under the existing regulatory settings, the most effective mechanism for 'restricting' individual capex and implementing ring-fencing would be applying alternative incentive rates¹⁴³ to individual capex allowances. There is no current requirement in the capex IM for a specific incentive mechanism that would enable the Commission to apply different incentive rates to different expenditure types.
- 4.63.4 However, we considered that implementing a change prior to the start of PQP1 was too fundamental to the underlying framework and will require further thinking and consultation with stakeholders. We therefore are not pursuing an amendment of the fibre IMs on this basis in advance of the PQ decision.

¹⁴⁰ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.7.28(3).

¹⁴¹ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.7.28(4)-(5).

¹⁴² Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paras 6.1109 to 6.1111.

¹⁴³ By incentive rates we mean the financial incentives Chorus face from under or over-spending capex.

4.64 We still consider individual capex proposals are an important tool to manage uncertainty and to help ensure any capex determined by the Commission meets the expenditure objective and reflects good telecommunications industry practice.

Chorus' budgeting process and variations to the five-year business plan

4.65 Chorus' proposal is made up of proposals for base capex, connection capex baseline and opex.

4.66 For the base capex and opex proposals, Chorus identified expenditure sub-categories that collectively make up each proposal. Chorus' connection capex baseline proposal consisted of a list of connection types that reflect common groups of customer connection types with similar unit costs and demand profiles.

4.67 Overall, we found that Chorus' proposal contained the primary components of the information required by the IM. However, in many areas, the proposal and supporting documentation lacked the level of detailed information and justification required to assess the rationale for the proposed expenditure. We therefore supplemented Chorus' proposal with additional RFIs seeking to fill the information gaps and assess Chorus' proposal against the evaluation criteria.

4.68 We note that Chorus' proposal was developed or adapted from its five-year planning and budget establishment process and, as such, we found that some of the quantitative forecast information was descriptive and lacked detail and justification. This view was also noted by AMCL (an asset management consultancy)¹⁴⁴ in its review of Chorus' asset management maturity where it noted that overall Chorus' asset management maturity is at the midpoint for organisations which have had their first asset management maturity assessment and some of Chorus' processes as described lacked granularity and justification.

4.69 In our view, this has affected the overall quality and consistency of the information provided as part of the proposal. In particular, we note that budgeting processes consist of individual groups independently developing estimates and forecasts. There is a risk in a budgeting process that forecasts are overstated. In many cases this also has resulted in the justification for the expenditure being unclear, and the linkages between investment and benefits not being made explicit.

¹⁴⁴ Chorus commissioned AMCL to produce a report on the state of its asset management. This report was provided to the Commission during our evaluation. Chorus has claimed this report is confidential, however we have sought agreement with Chorus to publish aspects of this report.

- 4.70 The consequence of Chorus' approach is that the proposal and underlying information presented to us is less transparent than what would normally be expected in a regulatory process. This is the first time Chorus has submitted a regulatory expenditure proposal of this nature, and such issues are not unexpected. We expect the quality of Chorus' proposals will improve over time.
- 4.71 Accordingly, for the first regulatory period, there are some instances where the justification for the forecast expenditure is poor and we have had to apply judgement based on historical trends and other relevant factors to establish the allowances included in this decision.
- 4.72 For PQP2, we would expect a more consistent and standardised approach to the development of the proposal, and a greater level of justification for the expenditure. We also consider that, for future proposals, the inclusion of features such as standardisation of cost estimation, consistency in approach to labour cost modelling, and justification of base year expenditure would lead to improvements in both the information content of a proposal and the realisation of efficiencies within Chorus' business.
- 4.73 Therefore, we intend to issue an information request in early 2022 to require Chorus to provide a cost estimation / asset data improvement roadmap in 2022. The roadmap should indicate areas of improvement Chorus will undertake during PQP1 on its cost estimation processes for its second expenditure proposal for the second price quality path. Refer to the section below on additional reporting requirements for Chorus during PQP1 starting at paragraph 4.127.

Demand forecast

Our final decision

- 4.74 Our decision is to update demand forecasts using June 2021 actual connection numbers and retain the percentage growth in total demand determined by Chorus in its proposal. This results in a reduction of \$2.4m to the connection capex baseline allowance. This is a change from our draft decision.
- 4.75 The change in our decision has resulted from consideration of the material provided in submissions and cross-submissions. The change in our decision on the demand forecast impacts on the connection capex baseline allowance and incentive payments.

Our draft decision, submissions on our draft decisions and alternatives considered

- 4.76 Chorus developed a demand forecast for PQP1 that was used as an input into its expenditure proposal. This specifically related to the proposed expenditure included in the connection baseline capex, incentive payments, and to a limited extent, base capex (ex-ante incentive payments) and opex expenditure. The forecast for PQP1 relied upon historical data up to and including February 2020.

- 4.77 The primary assumptions used by Chorus in its forecast were sourced from MBIE’s National Construction Pipeline Report (2019) and the expected uptake of fibre services over the forecast period.
- 4.78 In our draft decision, we utilised Chorus’ forecasting methodology with updated assumptions based on the latest information available at the time. This involved utilising the information contained within the more recent MBIE National Construction Pipeline Report (2020).
- 4.79 The demand forecast we used in our draft decision based on updated assumptions resulted in a total reduction in expenditure of approximately \$26.4m and had the following impact on expenditure allowances:
- 4.79.1 Base capex: reduction in installation activity associated with existing connections (such as upgrades) of base capex of \$3.1m.
- 4.79.2 Connection capex baseline: the lower connection volume forecast resulted in a reduction of \$21.8m in baseline connection capex.
- 4.79.3 Opex: the change in forecast demand was expected to result in a reduction of \$1.5m within maintenance opex over PQP1.
- 4.80 We received submissions from Chorus, Spark, Vodafone, and 2degrees. Chorus and Spark provided cross-submissions.
- 4.81 Chorus submitted:

“Independent experts and evidence of demand prove the integrity of Chorus forecasts, while the MBIE 2020 construction pipeline report (which the Commission relies on) is an acknowledged outlier produced at a time of great uncertainty. The draft decision also uses the MBIE 2020 report to justify demand-based reductions in unrelated areas and computational errors multiply the impact.”¹⁴⁵

“MBIE’s 2020 report is not reliable as it was produced at a time of uncertainty and linkages to expenditure are over-estimated. The integrity of Chorus’ demand forecast is proven.”¹⁴⁶

“These points reinforce our own experience that we under-forecast demand in 2020. The rebound has been much quicker than we expected, and we now have a robust property development pipeline.”¹⁴⁷

“the Commission has over-estimated the impact that a weaker construction outlook would have on our demand forecasts.”¹⁴⁸

¹⁴⁵ Chorus “Submission on price-quality path draft decision” (8 July 2021), para 7.2.

¹⁴⁶ Chorus “Submission on price-quality path draft decision” (8 July 2021), page 10.

¹⁴⁷ Chorus, “Submission on price-quality path draft decision” (8 July 2021), para 139.

¹⁴⁸ Chorus, “Submission on price-quality path draft decision” (8 July 2021), para 140.

4.82 In its cross-submission, Chorus considered:

“Our demand forecasting is prudent, the Commission is too pessimistic in its draft decision and overestimates the impact of demand changes with its adjustments. Whilst Vodafone’s submission supported the Commission’s proposed reduction to the demand forecast, we have provided an independent expert report and evidence of recent demand that proves the integrity of Chorus’ demand forecasts for PQP1. We also note Vodafone’s key argument is that it felt our demand forecasts are overly optimistic due to the ambitions of MNOs to drive growth fixed wireless access (FWA), which Vodafone views as a direct competitor to lower-speed fibre services.”¹⁴⁹

“Independent experts and evidence of recent demand prove the integrity of Chorus’ forecasts, while the MBIE 2020 construction pipeline report (which the Commission relies on) is an acknowledged outlier produced at a time of great uncertainty. Notwithstanding that, the Commission has over-estimated the impact that a weaker construction outlook would have on our demand forecasts, including making links to areas of expenditure not affected by construction demand.

This includes the system peak band width forecasts, where there is no material link to MBIE construction pipeline, and maintenance opex, where fault rates are weighted towards older assets and therefore are not materially impacted by network extension activities in the near term. Please also refer to Sapere’s expert report, included with our PQ draft decision submission.”¹⁵⁰

4.83 Chorus' submission was accompanied by additional information from Sapere.¹⁵¹ Sapere provided additional commentary on the construction sector in New Zealand in support of Chorus’ original forecast but did not provide an independent forecast of connections.

4.84 In its submission, Spark noted:

“As the Commission has acted on Chorus signalled demand drivers, it highlights concerns with Chorus’ underlying claimed causal activity drivers and cost allocators. The Commission should form a view of demand based on the most reliable information available to it.”¹⁵²

4.85 Vodafone agreed with our update of the forecast and considered Chorus’ proposal overstated the level of fibre uptake. Vodafone also provided details on its own forecasting of uptake rates. It stated:

“Chorus estimates of fibre uptake are significantly more than Vodafone's, this has a substantial impact on forecasts that may result in windfall gains for Chorus.”¹⁵³

¹⁴⁹ Chorus “Cross-submission on price-quality draft decision” (3 August 2021), page 3.

¹⁵⁰ Chorus “Cross-submission on price-quality draft decision” (3 August 2021), page 16.

¹⁵¹ Sapere “New Zealand Residential Building Consents, 2021 to 2025” (30 June 2021).

¹⁵² Spark “Fibre ID and PQ draft decisions, Cross Submission” (5 August 2021), page 5.

¹⁵³ Vodafone “Submission on the draft price-quality path to be applied to Chorus” (8 July 2021), page 26.

“The material over-estimation of uptake by Chorus is likely to generate a substantial windfall gain. We propose two changes to mitigate this risk: a) require the use of independent forecasts of demand, such as those produced by IDC; and b) include in the wash-up any changes in costs directly related to changes in demand.”¹⁵⁴

“We agree with updating demand forecasts for installation expenditure, network aggregation and network transport and field sustain expenditure. However, as above more needs to be done to verify the demand forecasts proposed by Chorus.”¹⁵⁵

4.86 In its submission, 2degrees considered there was insufficient information noting:

“At the workshop on Chorus’ expenditure proposals 2degrees noted concerns about the extent to which Chorus was relying on claims about confidentiality of expenditure related information. These concerns have been realised in the draft PQP decision, for example, exclusion of information on forecast capex for 2025, forecasts of opex for 2020 to 2026, forecasts of demand/connects during the regulatory period and asset maturity”

4.87 In addition to the submissions received on the demand forecast, we received submissions from Chorus and Vodafone on the application of the demand forecast to expenditure.

4.88 Chorus made the following points in its submission:

“new property demand does not materially influence network maintenance”¹⁵⁶

“Our proposed baseline connection capex, network capacity capex and maintenance opex forecasts should be approved. Any other adjustments made for demand forecasting should be reversed.”¹⁵⁷

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.89 We have considered the submissions and the latest actual connections publicly reported by Chorus.

4.90 The key elements that drive the demand forecast are:

4.90.1 The forecast construction of new dwellings in the areas where Chorus provides FFLAS services;

4.90.2 The forecast win rate of the new dwellings; and

4.90.3 The forecast uptake of fibre for existing dwellings where fibre has already been laid past their premises but have not yet converted to fibre.

¹⁵⁴ Vodafone Submission, “Submission on the draft price-quality path to be applied to Chorus” (8 July 2021), page 27.

¹⁵⁵ Vodafone “Submission on the draft price-quality path to be applied to Chorus” (8 July 2021), para 30.

¹⁵⁶ Chorus “Submission on price-quality path draft decision” (8 July 2021), page 66.

¹⁵⁷ Chorus “Submission on price-quality path draft decision” (8 July 2021), page 67.

- 4.91 Analysis by Network Strategies indicated that current forecast construction rates of new dwellings are similar to that included within the MBIE 2019 forecast.
- 4.92 Current economic indicators show that the construction rates have not declined as indicated in the MBIE 2020 forecast and, as such, we consider that Chorus' original forecast uptake rates are more likely to occur than what we used in our draft decision. We agree with Chorus that the MBIE 2020 forecast was developed at a time of considerable uncertainty due to the potential implications of COVID on the construction industry.
- 4.93 However, we have also observed that the actual win rate and uptake in 2021 was lower than Chorus' forecast. This is supported by actual market data presented by Chorus in its latest full year financial results.
- 4.94 As stated in its FY21 investor presentation,¹⁵⁸ total Chorus fibre connections as at June 2021 were 871,000. This is lower than the number of connections Chorus forecast for 2021. We also note that the UFB deployment is at a stage when the number of new UFB connections in each six-month period is declining gradually.
- 4.95 We therefore consider it appropriate to use Chorus' original forecast connection growth rate over PQP1 but to use updated connections as the base year to which forecasts are applied. This results in a reduction to Chorus' original proposal but a smaller reduction than was indicated by our draft decision.
- 4.96 We considered whether it was better to retain the forecasts used in the draft decision or to update the forecasts based on the information provided in submissions, accounting for the latest information available in the market. Network Strategies has utilised this information in its analysis. We consider using the updated forecasts best gives effect to the purposes in s 166(2).
- 4.97 Accordingly, as described above, in making our final decision we have had regard to the historical information (assessment factor c), the quantitative or economic analysis related to the proposed capex, including sensitivity analysis and impact analysis undertaken (assessment factor d), and the reasonableness of the key assumptions, methodologies, planning and technical standards relied upon (assessment factor t).

¹⁵⁸ Chorus "Annual Report 2021" (23 August 2021), page 2.

- 4.98 Our decision on the demand forecast can result in a higher or lower MAR than might have been the case if the MAR could in some way be established with actual demand. This may result in harm to end-users via an overinflated or undervalued MAR. For some aspects of our decision, differences between forecast and actual demand will be washed up at the end of the period. This primarily relates to the forecast connection capex where forecast demand is washed up with actuals as part of the variable connection capex mechanism.
- 4.99 Accordingly, it is appropriate to try to minimise the risk of harmful effects by making an ex-ante forecast decision which, on balance, reflects the expected demand over the period using the most currently available information. This is why we have updated the forecasts to reflect the most recent actual connection numbers.
- 4.100 We also note that in relation to s 166(2)(b) the use of a demand forecast that significantly diverges from the expected forecast could result in anticompetitive outcomes by either understating or overstating the MAR and in particular the connection capex components and incentive payments.¹⁵⁹ We also note that Chorus has the incentive to overstate the demand forecast to inflate its MAR and increase cashflows, while others may have the incentive to understate the demand forecast to reduce Chorus' MAR during the period.
- 4.101 Therefore, while there is always uncertainty as to the actual level of demand that will eventuate, and there is always a degree of judgement involved in establishing ex-ante demand forecasts, we consider it is best that the demand forecast used within the final decision be a forecast based on the expected outcomes established through considering the most up to date information reflecting actual demand. We consider this will best meet the s 166(2) purposes.

Labour cost modelling

Our final decision

- 4.102 Our final decision is to not apply any adjustment for labour cost modelling.

¹⁵⁹ For more detail on incentives please refer to Attachment C on incentive payments.

Our draft decision, submissions to our draft decisions and alternatives considered

- 4.103 As part of our draft decision, we reviewed Chorus' approach to modelling labour costs for the PQP1 proposed expenditure. Labour is a significant expense for Chorus, with annual expenditure in FY2021 of \$74 million and in FY2020 of \$80 million.¹⁶⁰ It is generally an operating cost, although some labour expenses are capitalised. The purpose of our review was to understand how labour costs were modelled across expenditure categories and to determine where forecasts had included any efficiency assumptions and significant increases/reductions in staff counts.
- 4.104 Our draft decision concluded that it was reasonable not to introduce further reductions to directly address a Chorus labour regulatory overlay which essentially involved the omission of a management target cost reduction from the regulatory forecasts.
- 4.105 Vodafone submitted that the Commission needed to reassess reducing opex to reflect labour costs and that our draft decision rationale was unjustified.¹⁶¹

“At paragraphs 4.75-4.76 the Commission notes that it considered reducing the labour overlay, network operations, and asset management opex to ‘reflect uncertainty and unjustified expenditure’. However, the Commission chose not to do this on the basis that it had already made significant reductions elsewhere in the opex forecast. This is not a legitimate reason to not adjust the forecasts. If the expenditure is ‘unjustified’ then it cannot be included. There is no maximum amount the Commission can reduce forecasts. Instead, it must search for the best estimates, rather than trying to keep to some arbitrary proximity of what Chorus itself has proposed.”

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

- 4.106 The key issues regarding labour cost components of Chorus' regulatory estimates are whether the components are justified, and whether to allow an additional Chorus labour adjustment to partly reinstate a reduction in the scale of Customer and Network Operations (CNO) labour cost.
- 4.107 Chorus admits that there is uncertainty associated with labour requirements in the new operating model. It is feasible that some of the reductions in labour cost sought by Chorus management in its labour overlay will be achieved through the IT programme, which will not be scaled down.

¹⁶⁰ Chorus “FY21 Full Year Result Presentation” (23 August 2021), page 16.

¹⁶¹ Vodafone “Submission on the draft price-quality path to be applied to Chorus” (8 July 2021), para 34.

- 4.108 Network Strategies has estimated that the FFLAS labour overlay is approximately [REDACTED] during the regulatory period. However, Network Strategies also consider that opex benefits enabled through IT would be approximately \$21.3m during PQP1 (refer to the section below) with additional benefits in subsequent years. As a result, our draft decision effectively imposed an opex overlay of \$21.3m, a proportion of which will relate to labour-saving changes. While this quantum is less than the FFLAS labour overlay during the regulatory period, it is reasonably close.
- 4.109 Our conclusion is therefore that the draft decision best gives effect to the purposes of s 166(2), and we consider no further adjustment needs to be made to Chorus' opex allowance to reflect additional analysis of Chorus labour cost modelling.

Historic trends in Chorus' expenditure

- 4.110 A review of historical trends against forecasts was undertaken using data provided by Chorus encompassing allocated historical capex from 2016 to 2019 and forecasts for 2020 to 2026.
- 4.111 In contrast to the increasing trend for years 2017 to 2020, capex (including both base capex and baseline connection capex) is forecast to decrease up to the end of PQP1. As Chorus is transitioning from a focus on network build to more of a focus on network operation, a decrease in capex is expected over time. However, in 2025 total capex is forecast to increase again.
- 4.112 Similarly, a review of historical trends against forecasts was undertaken using data provided by Chorus encompassing allocated historical opex from 2016 to 2019 and forecasts for 2020 to 2026.
- 4.113 Total opex compound annual growth rate (**CAGR**) for the forecast period (2020–2026) is similar to historical CAGR (2017–2019). However, when analysing forecasts up to the end of PQP1 (2020–2024) the CAGR is significantly higher than the historical CAGR. The forecast increase in opex for the first three years (2020–2022) results in a higher CAGR for PQP1 compared with historical opex.
- 4.114 High forecast increases in opex for years 2020-2021 could potentially result in over-estimated starting opex for PQP1. Consequently, we have considered the above historic trends in our targeted evaluation of Chorus' expenditure sub-categories. In some cases, reasons for these increasing trends were unclear and this has influenced our decisions on those particular sub-categories. We discuss how we take into account historic trends in our decisions on these sub-categories in the relevant sections later in this paper.

Asset management

4.115 Chorus commissioned AMCL to undertake an assessment of its asset management maturity. AMCL's detailed findings supported our initial top down analysis that found Chorus' governance framework appeared to be appropriate and consistent with good telecommunications industry practice. However, AMCL found that much of the quantitative forecast information lacked detail, was descriptive, and some of Chorus' processes as described lacked granularity and justification.

4.116 By way of example, AMCL found that:

4.116.1 Overall Chorus' asset management maturity is at the midpoint for organisations which have had their first asset management maturity assessment. AMCL acknowledge the robustness of many of the underlying processes that exist within Chorus, but have identified many potential improvements across key areas of asset management;

4.116.2 The last eight years of building the fibre network has led to Chorus adopting many leading practices within the lifecycle delivery subject group. This has resulted in higher scores compared to many other utilities;

4.116.3 Chorus' Capital Council drives good financial decision-making for capital investment, which has a positive impact on asset investment;

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- 4.117 Based on our own analysis, alongside the observations from the AMCL report, we consider it is unlikely that the proposed expenditure is forecast at an efficient level. Therefore, we consider there is potential to further reduce the allowances to reflect more efficient outcomes. We have done this through targeted analysis of specific expenditure categories and the application of an overall adjustment to the allowances.
- 4.118 We note that Chorus has included expenditure for asset management improvement within its base capex proposal. We also note that it appears no efficiency adjustment have been made to reflect the improvement in asset management, forecasting improvements or data management.
- 4.119 For PQP1, our draft decision was to require additional reporting on Chorus' asset management improvement through the development of an asset management development roadmap and reporting on progress against milestones within the roadmap, reporting on standardisation of cost estimation and forecasting methodologies, and reporting on improvements in data management.
- 4.120 We still consider additional reporting to be an important component of Chorus' asset management journey going forward. However, we have decided to delay issuing the notices requiring such reporting until early 2022. This is set out in more detail further below.
- 4.121 As a result of the asset management improvements, we would expect significant improvements for the information provided by Chorus for the PQP2 proposal.

Chorus' approach to consultation with its stakeholders

- 4.122 Chorus submitted an engagement plan¹⁶² alongside its expenditure proposal and conducted consultation with its stakeholders on its investment plans for PQP1 prior to submitting its expenditure proposal in December 2020. Chorus also conducts regular ongoing consultation with its customers (RSPs), particularly to support product development.

¹⁶² An engagement plan is a reporting requirement in the Chorus capex IM and forms part of the Integrated Fibre Plan.

- 4.123 We considered Chorus' approach to consultation with its stakeholders as part of our top-down assessment of its expenditure proposal. In our view, Chorus' expenditure proposal relies heavily on business as usual consultation, and it appears that minimal specific input and feedback from key stakeholders has been incorporated into the proposal for PQP1.
- 4.124 We acknowledge the challenges with timeframes facing Chorus to ensure effective consultation on its current PQP1 proposal, given the nascent features of the regulatory regime. We also acknowledge challenges to public consultation that include confidential information.
- 4.125 However, in future periods, we consider effective consultation on Chorus' proposal will be a high priority to ensure that stakeholder requirements are an input to the development of the proposal and that greater consideration of expenditure and quality are made available to stakeholders.
- 4.126 Therefore, we intend to include a requirement that Chorus provide an updated engagement plan by 30 June 2022 as part of the additional reporting requirements.

Our decisions on additional reporting requirements for PQP1

- 4.127 Our final decision on the additional reporting is to retain our draft decision but to delay the issuing of the s 221 notices requiring the additional reporting.
- 4.128 We still intend to issue a s 221 information request in early 2022 that requires Chorus to provide us with:
- 4.128.1 An asset management development roadmap by 30 June 2022;
 - 4.128.2 A cost estimation and asset data improvement roadmap by 30 June 2022;
 - 4.128.3 An annual report on the progress against the asset management development roadmap and the cost estimation and asset data improvement roadmap; and
 - 4.128.4 An updated engagement plan by 30 June 2022.
- 4.129 These are the same additional reporting requirements we set out in our draft decision. We received no submissions on our draft decision to require additional reports from Chorus. While we still intend to issue such an information request early in 2022, the details of the request do not form part of our final decision.

4.130 We decided to delay issuing the reporting requirements to Chorus to early 2022 to prioritise our resources on finalising Chorus' expenditure allowances and other decisions that affect our PQ decisions. We consider that this decision will not have any adverse effect on the quality of reporting or end user outcomes and will still provide Chorus with sufficient time to fulfil its reporting requirements.

Our decisions on cost allocation and cost escalation

Application of cost allocation decisions to Chorus' forecast expenditure

4.131 In our transitional initial PQ RAB paper we set out and explain our decisions on the cost and asset allocator types and values that we applied to determine the value of Chorus' transitional initial PQ RAB. We explain in the transitional initial PQ RAB paper that the allocator types and values apply also to the determination of Chorus' forecast opex and capex allowances for PQP1, and note that the calculated forecast opex and capex figures (ie, after application of the allocator types and values) would be set out in this our PQ paper.

4.132 In this section, we set out the impact of these decisions on the allocation of Chorus' forecast expenditure to PQ FFLAS for PQP1.

4.133 Table 4.5 sets out the impact of these decisions on forecast opex and capex allowances for PQP1, after the application of the cost and asset allocator types and values.

Table 4.5 Change in expenditure allowances because of our cost allocation decisions

	Chorus proposal	Final decision	Changes in final decision due to cost allocation
Total opex	487.8	433.8	-17.4
Total capex	977.5	884.1	-4.5

Background

4.134 For our PQ draft decisions paper,¹⁶³ our decisions did not take account of any change in cost or asset allocation in our expenditure allowances. Instead, we said we would consult on Chorus' proposed cost and asset allocations, as they impact on Chorus' expenditure allowances, as part of our draft decisions on Chorus' transitional initial PQ RAB.¹⁶⁴ We did this because of Chorus' two-step approach to allocating costs for its expenditure proposal and for determining its initial RAB.

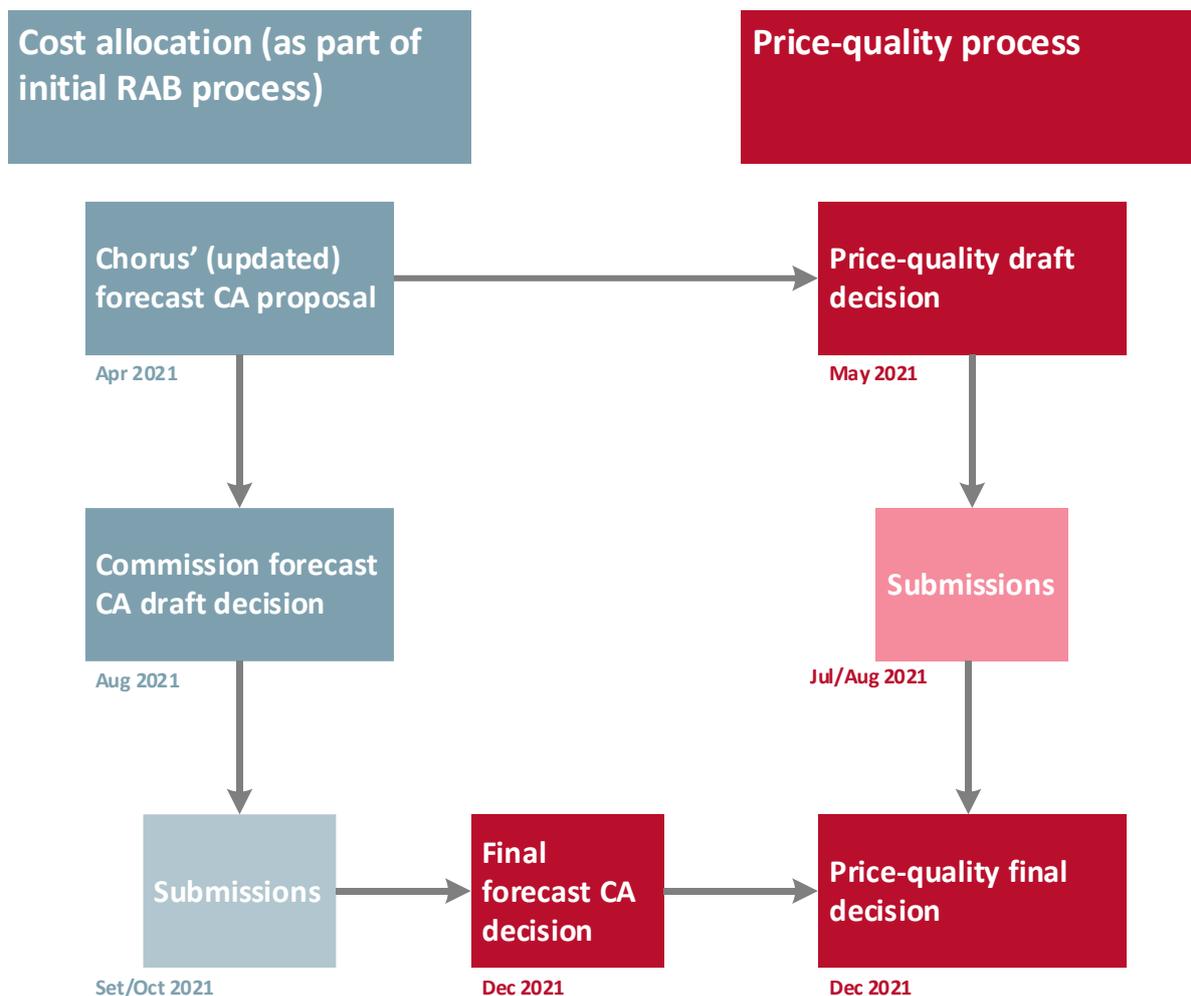
¹⁶³ Commerce Commission "[Chorus' price-quality path from 1 January 2022: Draft decisions - reasons paper](#)" (27 May 2021), para 4.96.

¹⁶⁴ Commerce Commission "[Chorus' initial regulatory asset base as at 1 January 2022 - Draft Decisions](#)" (19 August 2021).

- 4.135 In November 2020 we issued Chorus with a s 221 notice requesting information from Chorus including requirements for its base capital expenditure, connection capex baseline expenditure, and operating expenditure proposals. In February 2021 we received Chorus' expenditure proposals that outlined its proposed allocated forecast PQP1 expenditures in respect of PQ FFLAS based on Chorus' proposed allocation decisions. We received updated forecasts from Chorus in March 2021 that reflected the cost allocators used by Chorus in its initial RAB proposal.
- 4.136 The transitional initial PQ RAB paper outlines our decisions and reasoning behind our acceptance or otherwise of the cost and asset allocator types and values proposed by Chorus. These will be used in calculating the value of the initial RAB and forecast PQP1 expenditure allowances.¹⁶⁵ While we summarise the cost allocation decisions in this section of our paper as they relate to PQP1 forecast expenditure, we refer stakeholders to chapter 5 of our transitional initial PQ RAB paper for our detailed analysis.
- 4.137 To determine the expenditure allowances for PQP1, we need to be satisfied that Chorus' proposed expenditure complies with the legal requirements and regulatory framework which underpins our decisions on expenditure in relation to PQ regulation. This means the forecast expenditure we determine needs to be expenditure allocated to PQ FFLAS only.
- 4.138 While the focus of this assessment is on Chorus' expenditure proposal for PQP1 we have been mindful this proposal sits alongside Chorus' FLA proposal and Initial RAB proposal for PQP1.
- 4.139 Figure 4.4 below, illustrates the process we have taken to assess and finalise Chorus' cost allocation proposal.

¹⁶⁵ Commerce Commission, "Chorus' transitional initial price-quality regulatory asset base as at 1 January 2022 – Final Decision – Reasons paper" (16 December 2021)

Figure 4.4 Proposed process to update expenditure allowances with setting of the transitional initial PQ RAB



4.140 Our final decision on Chorus' expenditure proposal was dependent on our final decisions on Chorus' transitional initial PQ RAB proposal. We consulted on Chorus' transitional initial PQ RAB and FLA in August 2021.¹⁶⁶

4.141 In August 2021 we also consulted on Chorus' approach to cost allocation for the proposed expenditure for PQP1 including the proposed impact on allowances from any changes in PQ FFLAS allocations.¹⁶⁷ Our draft decisions in the August consultation paper considered stakeholders views on the issue of cost allocation submitted on our consultation of Chorus' expenditure proposal in February 2021.

¹⁶⁶ Commerce Commission "[Chorus' initial regulatory asset base as at 1 January 2022 - Draft Decisions](#)" (19 August 2021).

¹⁶⁷ Commerce Commission "Chorus' price-quality path from 1 January 2022: Draft decision - reasons paper" (27 May 2021).

4.142 This process allowed us scrutinise Chorus' approach to cost allocation for its expenditure proposal and to combine our assessment at the same time as we assess and consult on Chorus' initial PQ RAB and FLA.

A summary of the key allocator decisions that affect PQP1

4.143 In Table 4.6 below, we summarise the cost allocation decisions that we made in our transitional initial PQ RAB paper that apply to our determination of Chorus' forecast expenditure allowance for PQP1.

Table 4.6 Impact of allocation decisions on expenditure forecasts

Issue	Decision
Allocation of shared operating costs and shared assets	<p>We agree, in principle, with Chorus' overall two-step approach to the allocation of aggregated costs between PQ FFLAS and ID-only FFLAS.</p> <p>We accept Chorus' allocations of aggregated costs after taking into account corrections for calculation or assignment errors.</p> <p>For an explanation of our decision see paragraphs 5.61-5.72 in our transitional initial PQ RAB paper.</p>
Chorus' proposed allocator types and associated allocator values for the cost/asset allocators	<p><i>Future benefit</i></p> <p>Approve the use of the future benefit allocator type to allocate joint marketing expenses. Calculate the future benefit cost allocator using forward-looking revenues over a [five]-year timeframe.</p> <p>For an explanation of our decision see paragraphs 5.80-5.156 in our transitional initial PQ RAB paper.</p>
	<p><i>Net book value (NBV)</i></p> <p>Approve the use of the NBV allocator type to allocate property damage costs and business interruption insurance costs.</p> <p>For an explanation of our decision see paragraphs 5.157-5.178 in our transitional initial PQ RAB paper.</p>
	<p><i>Recipient business function</i></p> <p>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.</p> <p>For an explanation of our decision see paragraphs 5.179-5.192 in our transitional initial PQ RAB paper.</p>
	<p><i>Totex</i></p> <p>Approve the use of the totex allocator type to allocate specified overhead expenses where totex meets the IM requirements (set out at paragraph 5.212 of our transitional initial PQ RAB paper).</p> <p>For an explanation of our decision see paragraphs 5.197-5.234 in our transitional initial PQ RAB paper.</p>

Issue	Decision
	<p><i>CTO common</i></p> <p>The “CTO Common Cost” expenditure items listed in Table 5.9 of our transitional initial PQ RAB paper 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.</p> <p>For an explanation of our decision see paragraphs 5.235-5.288 in our transitional initial PQ RAB paper.</p>
	<p><i>Shared ISAM</i></p> <p>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.</p> <p>For an explanation of our decision see paragraphs 5.289-5.303 in our transitional initial PQ RAB paper.</p>
	<p><i>Shared with copper, fibre</i></p> <p>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.</p> <p>For an explanation of our decision see paragraphs 5.304-5.316 in our transitional initial PQ RAB paper.</p>
	<p><i>Pre-2011 central office Floorspace</i></p> <p>Not approve the use of the floorspace allocator proposed by Chorus until appropriate assurance is provided (at which time the full assured amount will be allocated)</p> <p>For an explanation of our decision see paragraphs 5.359-5.387 in our transitional initial PQ RAB paper.</p>

Our decisions on Chorus' approach to cost escalation

Our final decision

- 4.144 Subpart 7 of Part 3 of the fibre IMs requires us to determine Chorus’ capex allowance. One of the steps in this process is to determine cost escalators in order to inflate the real expenditure allowance to a nominal expenditure allowance that is suitably adjusted for price changes in future years.
- 4.145 Our final decision is to use an alternative to Chorus' cost escalation proposal. We will escalate approximately half of the constant price expenditure forecast with the non-CPI escalators that Chorus proposed, and the remaining expenditure with a combination of 'Just CPI' and the weighted average approach to escalation applied in Part 4 for EDBs. This is the same approach we indicated in our draft decision.

- 4.146 We have updated all escalator forecasts using updated forecast price indices from NZIER.¹⁶⁸ This is consistent with our draft decision to update using NZIER forecasts on which we did not receive submissions.¹⁶⁹ We have published alongside this paper the report from NZIER that summarises the forecast indices and the methodologies used to create them.
- 4.147 While we received no submissions on our draft modelling approach to calculating the annual changes in price index inflation, our final decision is to use a four-quarter year-on-year approach. This change from our draft decision is designed to ensure consistency with the approach to calculating annual CPI changes in the revenue path.
- 4.148 We have made no further decision changes in our approach to cost escalation.

Decision for capex inflators

- 4.149 Our decision for capex is to use seven inflators, including six Real Price Effect (**RPE**) indices and the CPI. Our decision is to use NZIER forecasts and the following proportions:¹⁷⁰
- 4.149.1 Labour Cost Index (**LCI**) 'Professional and Technical Services' index (24%);
 - 4.149.2 Producers Price index (**PPI**) Outputs index for all industries (4%);
 - 4.149.3 PPI Outputs 'Heavy and Civil Engineering Construction' index (8%);
 - 4.149.4 USA Producer Price Index by Industry: Fibre Optic Cable Manufacturing (3%);
 - 4.149.5 PPI Outputs 'Electronic and Electrical Equipment Manufacturing' index (14%);
 - 4.149.6 Consumer Price Index (CPI or 'Just CPI' in Chorus' proposal) (32%); and
 - 4.149.7 Capital goods price index (**CGPI**) (16%).

¹⁶⁸ These NZIER price index forecasts were received 8 October 2021 and are described by NZIER in NZIER "Cost escalation forecasts: Outlook and forecasting methodologies" (15 October 2021).

¹⁶⁹ Commerce Commission "Chorus' price-quality path from 1 January 2022: Draft decision - reasons paper" (27 May 2021), footnote 153.

¹⁷⁰ These proportions are calculated using final decision expenditure for capex (at constant 2019/2020 prices).

Alternatives considered for capital expenditure escalators

4.150 In our draft decisions we considered Chorus' escalation proposal and implicit weightings:¹⁷¹

4.150.1 LCI 'Professional and Technical Services' index (23%);

4.150.2 PPI Outputs index for all industries (4%);

4.150.3 PPI Outputs 'Heavy and Civil Engineering Construction' index(7%);

4.150.4 USA Producer Price Index by Industry: Fibre Optic Cable Manufacturing (3%);

4.150.5 PPI Outputs 'Electronic and Electrical Equipment Manufacturing' index (13%); and

4.150.6 CPI (49%).

Decision for opex

4.151 Our decision for opex is to use six inflators. Our decision is to use NZIER forecasts and the following proportions:¹⁷²

4.151.1 LCI 'Professional and Technical Services' index (34%);

4.151.2 PPI Outputs index for all industries (17%);

4.151.3 PPI Published output commodities 'Rent of commercial land and buildings' (4%) index;

4.151.4 CPI (23%); and

4.151.5 LCI All Industries Index (22%).

Alternatives considered for opex

4.152 In our draft decision we considered Chorus' proposal and implicit weightings:¹⁷³

4.152.1 LCI 'Professional and Technical Services' index (34%); and

4.152.2 PPI Outputs index for all industries (2%); and

¹⁷¹ We calculated these proportions for our draft decision paper using Chorus' proposed expenditure for capex (at constant 2019/2020 prices) and proposed RPEs. See Chorus "RT02 Cost escalation" (1 April 2021).

¹⁷² These proportions are calculated using final decision expenditure for opex (at constant 2019/2020 prices).

¹⁷³ We calculated these proportions using Chorus' proposed expenditure for opex (at constant 2019/2020 prices) and proposed RPEs. See Chorus "RT02 Cost escalation" (1 April 2021).

4.152.3 PPI Published output commodities 'Rent of commercial land and buildings' (5%) index; and

4.152.4 CPI (60%).

Decisions to update forecasts

4.153 Our final decision is to update the forecasts of the CPI index used for 'Just CPI', and for the eight real price effect indices or RPEs.¹⁷⁴ We have also updated the NZD/USD exchange rate forecast from NZIER for the capex sub-categories that Chorus proposed.¹⁷⁵

4.154 We consider that updating the forecast indices provides a more accurate expenditure forecast and better accounts for the impact of COVID-19 on the forecasts for the cost escalation series.

Decision to update the forecast averaging approach

4.155 We note that we have revised the modelling approach to calculate the forecast RPE series and the Just CPI series for consistency with the revenue path. This is a change from a single month year-on-year change, to a four-quarter average year-on-year change. We did not receive submissions on this point.

4.156 Updating the forecast indices provides a more accurate expenditure forecast and better accounts for the impact of COVID-19 on the forecasts for the cost escalation series.

Submissions received

4.157 We received submissions from Chorus and 2degrees on our cost escalation draft decisions.¹⁷⁶ Chorus and 2degrees agreed with our draft decision to adopt Commission-proposed cost escalators and to update cost escalators prior to the final decision.

¹⁷⁴ The timing of the forecast CPI we have used to forecast input cost inflation matches the timing of the forecast CPI that is used to smooth the revenue path. This is the RBNZ forecast of CPI inflation available in the RBNZ Monetary Policy Statement August 2021 (18/08/21). The timing of the forecast price indices we have used for the RPEs also matches the timing of the forecast CPI that is used to smooth the revenue path. These are the NZIER price index forecasts received 8 October 2021, and that are also consistent with NZIER "Quarterly Predictions, September quarter 2021". We note that beyond where RBNZ forecasts are available, we assume a linear reversion to the RBNZ inflation target of 2%, and that this applies to the December 2024 quarter.

¹⁷⁵ We have used FX data from NZIER's Quarterly Prediction for September 2021, where the source of NZIER exchange rate data is Reserve Bank of New Zealand.

¹⁷⁶ Chorus "Submission on price-quality path draft decision" (8 July 2021); 2degrees "Submission on Fibre PQID - IM amendments draft decisions" (8 July 2021).

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

- 4.158 The cost of the inputs regulated businesses require to deliver the outputs expected of them changes over time, for predictable reasons beyond their control. Put another way, the expenditure allowances we produce in constant-price terms must be adjusted for input price inflation, to be incorporated into the financial model, in order to provide an expectation of real financial capital maintenance.
- 4.159 We have considered the following matters in making these decisions:
- 4.159.1 We consider that a nominal expenditure forecast that is consistent with Chorus' cost base results in an efficient allowance, meets the expenditure objective of cost efficiency and prudence, and reflects good telecommunications industry practice;
- 4.159.2 We also consider that the economic framework, including the incentive framework and the principles of real financial capital maintenance and risk allocation are relevant:
- 4.159.2.1 A key consideration in providing an ex-ante expectation of real FCM is how investors are compensated for inflation,¹⁷⁷ This involves escalating real expenditure with forecast input cost inflation and foreign exchange that is free of systematic bias;¹⁷⁸

¹⁷⁷ See Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 3.317.

¹⁷⁸ See Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraphs 2.295 to 2.295.2.

4.159.2.2 Risk allocation is also a key consideration – we consider that Chorus has some control over its exposure to input cost inflation. Therefore, it should be exposed to the risk of changes to the cost of inputs over time, as this provides incentives to operate in efficient ways given input costs (eg vary its exposure to certain input costs or contracting arrangements). However, by setting input cost inflation and CPI forecasts for the revenue path at the same time, and by replacing forecast CPI with actual CPI in the revenue path, some of the inflation risk is passed to consumers. By escalating input costs by forecast input cost inflation and foreign exchange in setting an ex-ante allowance, PQ regulation provides an ex-ante expectation of normal returns, but does not guarantee an ex-post normal return;¹⁷⁹

4.159.2.3 A further consideration is the incentive regulated providers may have to game expenditure forecasts by over forecasting nominal input costs. This is why we scrutinise the forecasts used. We note that the repeated nature of regulation lessens this incentive and risk over time.¹⁸⁰

4.159.3 PQP1 is a short initial regulatory period, and we may vary our approach to cost escalation at the next reset once we have a better understanding of Chorus' exposure to input cost pressures.¹⁸¹

4.160 The purpose of these inflators is to allow Chorus the costs of changes in the real prices of inputs that are outside of its control. This ensures a nominal expenditure allowance that is suitably adjusted for price changes in future years.

4.161 There will likely be different cost drivers for different components of expenditure. For Chorus' expenditure allowance, we are able to apply discretion to the specific circumstances and cost categories that will apply to Chorus during the PQP1 period.

¹⁷⁹ Allocation of risk is an economic principle. Commerce Commission "Fibre information disclosure and price-quality regulation: Proposed process and approach for the first regulatory period" (15 September 2020), paragraph 3.79.1.

¹⁸⁰ See Commerce Commission "Fibre information disclosure and price-quality regulation: Proposed process and approach for the first regulatory period" (15 September 2020), paragraphs 3.86.1.

¹⁸¹ See Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 7.30.

4.162 In its expenditure proposal, Chorus applied some recommendations from NZIER for forecasting the cost escalators. For example, the six RPE in Chorus' proposal are among the wider set of RPEs that NZIER recommended to Chorus.¹⁸²

4.163 We note that, although NZIER recommendations to Chorus provided options for matching cost escalators to granular cost drivers, NZIER did not provide cost escalators at the expenditure sub-category level and did not include cost escalator proportions.¹⁸³

4.164 Chorus proposed to escalate 47% of expenditure with select RPE indices. Chorus applied combinations of RPE indices at the subcategory level and explained the basis for the RPE index proportions:¹⁸⁴

The RPE category weightings were calculated using the underlying forecast cost models and other accounting information, as the percentage cost associated with the broad activity types (e.g. technical labour, equipment, fibre) corresponding to the broadly-based indices.

4.165 By matching cost escalators to cost drivers, we consider that Chorus' approach selects cost escalators that are most relevant to Chorus' actual costs. For example, for the 'Standard Installations' capex subcategory, Chorus' proposal matches the following cost drivers (RPE categories) and RPE indices, on a proportional basis:¹⁸⁵

4.165.1 4% ducts – PPI Outputs 'Heavy and Civil Engineering Construction' index;

4.165.2 11% technical labour – LCI 'Professional and Technical Services' index;

4.165.3 6% equipment – PPI Outputs 'Heavy and Civil Engineering Construction' index; and

4.165.4 4% fibre – USA Producer Price Index by Industry: Fibre Optic Cable Manufacturing.

4.166 We also received information from Chorus demonstrating this form of mapping for all expenditure subcategories, as well as the granular underlying accounting data.

¹⁸² For Chorus' cost escalation proposal see Chorus "RT02 Cost escalation" (1 April 2021). For NZIER recommendations to Chorus see New Zealand Institute of Economic Research "Chorus Price Index information and COVID-19" (23 September 2020), tables 3 to 5.

¹⁸³ New Zealand Institute of Economic Research "Description of Chorus Price Index Information - Memo" (31 March 2020), tables 5 to 7, and New Zealand Institute of Economic Research "Chorus Price Index information and COVID-19" (23 September 2020), tables 3 to 5.

¹⁸⁴ Chorus "Modelling and cost allocation report" (16 December 2020), page 6.

¹⁸⁵ See Chorus "RT02 Cost escalation" (1 April 2021), pages "1. Overview" and "3. Capex - RPE Indices", Chorus "Modelling and cost allocation report" (16 December 2020), page 6, and Chorus "NZIER report September 2020" (16 December 2020), tables 4 and 5.

- 4.167 We note that Chorus applied a subset of the relevant RPE indices that NZIER proposed. For example, Chorus applied one of the labour cost escalators proposed in NZIER's report.¹⁸⁶
- 4.168 We note that Chorus' RPE set is less detailed than the full set of options in NZIER's report but we also recognise that matching escalators to cost drivers is a balancing exercise and additional escalators may not provide further accuracy.
- 4.169 We consider that Chorus' set of non-CPI RPEs meets the expenditure objective of cost efficiency and prudence given that it is consistent with Chorus' cost base.
- 4.170 Chorus proposed to escalate (53%) of expenditure with the CPI index rather than with RPE indices. This aspect of Chorus' proposal departs from NZIER advice to Chorus.¹⁸⁷
- 4.171 We also note that NZIER proposed the CPI index to Chorus as one of two escalator options for the singular cost activity 'payments to RSPs to use their poles' and not as a primary escalator.¹⁸⁸
- 4.172 Chorus proposed to escalate two cost types with the CPI index:
- 4.172.1 Field service agreements (FSA) or contracts indexed to CPI (cost categories where there is a significant component from fixed price contracts or contracts specifying annual CPI increases);¹⁸⁹ and
 - 4.172.2 balance of costs.
- 4.173 Our decision is to escalate the proportion of expenditure that Chorus attributes to FSAs with the CPI index. We have received information from Chorus at the subcategory level that links 29%¹⁹⁰ of expenditure to these FSA contracts.

¹⁸⁶ Chorus "NZIER report September 2020" (16 December 2020), table 5. NZIER also proposed LCI 'Construction' and LCI 'Administrative and Support Services' as possible cost escalators for some cost inputs.

¹⁸⁷ Chorus illustrates with the example of "Installations – standard installations" in Chorus "Modelling and cost allocation report" (16 December 2020), page 5.

¹⁸⁸ New Zealand Institute of Economic Research "Description of Chorus Price Index Information - Memo" (31 March 2020), page 2.

¹⁸⁹ Chorus "Modelling and cost allocation report" (16 December 2020), page 6.

¹⁹⁰ This 29% is an approximation produced through Commission analysis of Chorus and Commission information. Specifically, we have calculated this by removing the 'balance of costs' proportions at the subcategory level from Chorus' 'just CPI' escalator, then determining the percentage of our expenditure amount (constant 2019/2020 prices) that the remaining 'Just CPI' escalators would apply to.

- 4.174 For the remaining expenditure balance of costs that Chorus proposes to escalate with the CPI index, our view is that other, non CPI, RPEs would be more appropriate. Chorus has not provided a clear rationale for escalating these cost inputs with CPI, and consumer goods are unlikely to be a major cost input for Chorus.
- 4.175 Our decision is to escalate ‘balance of costs’ expenditure with the mixture of capital and labour escalators that we use in Part 4 for EDBs. This is a simplifying assumption that applies general inflators:
- 4.175.1 For capex this is NZIER forecasts of the capital goods price index (CGPI) (100%);¹⁹¹
- 4.175.2 For opex this is the weighted average of NZIER forecasts of the all-industries LCI (LCI All Industries index) (60%) and NZIER forecasts of the PPI Outputs index for all industries (40%).^{192 193}
- 4.176 While other escalators may better align with the cost inputs underlying Chorus’ balance of costs expenditure amount, we consider these are more appropriate than the CPI index.
- 4.177 We consider that these decisions best give (or are likely to best give) effect to the purpose in s 166(2)(a) as they:
- 4.177.1 compensate prudent nominal expenditure forecasts that are free of systematic bias through the use of recent and independent RPE and CPI indices, and foreign exchange (FX) forecasts, thereby safeguarding Chorus’ incentives to invest by providing an expectation of real financial capital maintenance under s 162(a);¹⁹⁴ and
- 4.177.2 limit Chorus’ ability to extract excessive profits under s 162(d) by matching escalators to cost drivers, to the extent possible, to mitigate over-forecasting risk.¹⁹⁵

¹⁹¹ Commerce Commission "Default price-quality paths for electricity distributions businesses from 1 April 2020: Final decisions - reasons paper" (27 November 2019), paragraph B166.

¹⁹² Commerce Commission "Default price-quality paths for electricity distributions businesses from 1 April 2020: Final decisions - reasons paper" (27 November 2019), paragraph A128.

¹⁹³ Commerce Commission "Low-cost forecasting approaches: Final decision EDB DPP 2015 to 2018" (28 November 2014), paragraph 3.37.

¹⁹⁴ Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 7.16.3.

¹⁹⁵ Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 7.16.2.

4.178 We do not consider the promotion of workable competition for the long-term benefit of end-users, under s 166(2)(b), relevant to our final decision on cost escalators, except of course in the general sense of wanting Chorus' costs to be efficient.

Base capex allowance

4.179 Our final decision for base capex is to set an allowance of \$581.6 million. This is a reduction of \$60.5 million from Chorus' proposal, and a relative increase of \$46.4 million from our draft decision. Our final decision for base capex include the impact of our final cost allocation decisions, which reduces base capex by \$4.5m. A key component of our decision is the removal of \$60.3 million¹⁹⁶ from the base capex allowance that Chorus can consider applying for under the individual capex mechanism.

4.180 As described in our draft decision, we prioritised a detailed assessment of eight base capex expenditure sub-categories:

4.180.1 Installation: Complex;

4.180.2 Installations: Standard;

4.180.3 IT and Support: Corporate;

4.180.4 IT and Support: Network & Customer IT;

4.180.5 Network Capacity: Access;

4.180.6 Network Capacity: Aggregation;

4.180.7 Network Capacity: Transport; and

4.180.8 Network Sustain and Enhance: Field Sustain.

4.181 There are seven base capex sub-categories that we did not prioritise for detailed assessment. For these categories we made our final decision based on our top down analysis.

4.182 We have set out our final decisions on all base capex expenditure sub-categories in Table 4.7 below.

¹⁹⁶ This is due to the removal of innovation capex and a component of Chorus' proposed retention capex.

Table 4.7 Base capex final decisions (in constant \$)

Base capex expenditure category	Sub-category	Chorus Proposal (\$m) ¹⁹⁷	Draft decision (\$m)	Final decision (\$m) ¹⁹⁸	Change from Draft to Final (\$m)	Change from Proposal to Final (\$m)
Extending the Network	Augmentation	10.4	10.4	10.4	-	-
	New Property Developments	21.4	21.4	21.4	-	-
	UFB Communal	39.7	39.7	39.7	-	-
Installations	Complex Installations	6.6	4.2	5.7	1.5	-0.8
	Standard Installations	95.4	63.1	81.3	18.2	-14.2
IT and Support	Business IT	32.3	32.3	32.2	-0.1	-0.1
	Corporate	42.3	6.3	9.0	2.7	-33.2
	Network & Customer IT	76.2	75.2	76.2	1.0	-
Network Capacity	Access	71.7	71.7	71.7	-	-
	Aggregation	48.4	45.7	45.7	-	-2.7
	Transport	47.8	45.4	45.4	-	-2.4
Network Sustain and Enhance	Field Sustain	63.1	61.2	61.2	-	-1.9
	Relocations	13.0	13.0	13.0	-	-
	Resilience	37.0	37.0	37.0	-	-
	Site Sustain	36.8	36.8	56.5	19.7	19.7
Base capex adjustment			-28.2	-24.9	3.3	-24.9
Total Base capex		642.1	535.2	581.6	46.4	-60.5

¹⁹⁷ Note that the values in this column do not include leases.

¹⁹⁸ Note that the values in this column include leases.

Evaluation criteria

4.183 In making a decision on the base capex allowance we have applied the evaluation criteria, and had regard to the assessment factors in evaluating Chorus' base capex proposal and whether the base capex proposal has met the expenditure objective and the impact of the decision on the purposes in s 166(2).¹⁹⁹

4.184 We have had particular regard to the following assessment factors in evaluating Chorus' base capex proposal:

Reference	Assessment factors
c)	Historic capital expenditure and consideration of historic rates of investment.
d)	Quantitative or economic analysis related to the proposed capex, including sensitivity analysis and impact analysis undertaken.
e)	Approach to forecasting capital expenditure, including models used to develop the capital expenditure forecasts.
f)	Relevant financial information including evidence of efficiency improvements in proposed capex.
g)	Competition effects, including specific information for sub-categories of capital expenditure that have potential impacts on competition in PQ FFLAS and other telecommunications markets
i)	Consideration and analysis of alternatives to the proposed capex, including the impact of the alternatives on PQ FFLAS quality outcomes
m)	Fibre asset and fibre network information.
o)	The extent of the uncertainty related to the: i) need for proposed capex; ii) economic case justifying the proposed capex; and iii) timing of the proposed capex.
r)	The dependency and trade-off between the proposed capex and related operating expenditure to ensure least whole-of-life cost for managing assets and cost-efficient solutions.
s)	The accuracy and reliability of data
t)	The reasonableness of the key assumptions, methodologies, planning and technical standards relied upon.

4.185 Our decisions on each of the priority base capex expenditure sub-categories are discussed further below.

¹⁹⁹ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.8.6.

Our final decision for base capex expenditure categories assessed by our top-down analysis

Our final decision

- 4.186 Our final decision is to include in the base capex allowance Chorus' proposed expenditure for those expenditure categories that have not been targeted for detailed analysis. Our decision remains unchanged from the draft decision.
- 4.187 Table 4.8 lists the categories and the expenditure decision to which our decision applies.

Table 4.8 Final decision for base capex expenditure categories not targeted for detailed analysis

Base capex expenditure category	Chorus Proposal (\$m)	Draft Decision (\$m)	Final Decision (\$m)
Extending the Network: Augmentation	10.4	10.4	10.4
Extending the Network: New Property Developments	21.4	21.4	21.4
Extending the Network: UFB Communal	39.7	39.7	39.7
IT and Support: Business IT	32.3	32.3	32.2
Network Sustain and Enhance: Relocations	13.0	13.0	13.0
Network Sustain and Enhance: Resilience	37.0	37.0	37.0
Network Sustain and Enhance: Site Sustain	36.8	36.8	56.5 ²⁰⁰

²⁰⁰ The value of capitalised leases are included of \$24.1 million and cost allocation changes led to a \$4.4 million reduction.

Table 4.9 Final decision for base capex expenditure categories not targeted for detailed analysis by year

Base capex expenditure category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
Extending the Network: Augmentation	2.8	3.7	3.8	10.4
Extending the Network: New Property Developments	6.5	7.2	7.7	21.4
Extending the Network: UFB Communal	39.7	-	-	39.7
IT and Support: Business IT	9.2	12.3	10.7	32.2
Network Sustain and Enhance: Relocations	4.3	4.3	4.3	13.0
Network Sustain and Enhance: Resilience	10.6	13.0	13.4	37.0
Network Sustain and Enhance: Site Sustain²⁰¹	20.5	19.4	16.6	56.5

Our draft decision, submissions to our draft decisions and alternatives considered

4.188 In our draft decision, the seven base capex categories listed in Table 4.9 formed part of our overall top-down assessment but were not targeted for detailed analysis. We also noted that, as part of the base capex allowance, these categories are subject to the base capex adjustment applied to the base capex allowance as a whole.

4.189 We did not receive any specific submissions on our draft decision in relation to these expenditure categories.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.190 We undertook a top-down assessment of Chorus' expenditure proposal. Key steps of this approach included:

4.190.1 Assessment of the robustness of the approach taken by Chorus' external expert, CutlerMerz, and a review of its approach to assessing each expenditure category;

²⁰¹ The value of capitalised leases are included.

4.190.2 A top-down assessment of Chorus' expenditure proposal including a focus on requirements that affect all aspects of the capex and opex forecast in Chorus' proposal. This included the policy and planning standards used, the approach to prioritisation and challenge, demand forecasts, cost estimation methods (including contingencies), procurement efficiency, and deliverability; and

4.190.3 Consideration of stakeholder submissions from consultation on Chorus' expenditure proposal in February 2021.

4.191 In undertaking the top down analysis, we had regard to the relevant assessment factors to assist our evaluation of whether Chorus' expenditure proposal meets the expenditure objective and reflects good telecommunications industry practice.

4.192 Based on this analysis we consider the proposed expenditure best meets the expenditure objective and reflects good telecommunications industry practice. Accordingly, we have accepted the expenditure proposed by Chorus for these categories as our final decision.

Installations: Complex and Installations: Standard

4.193 Installation capex is used to establish a physical link between the communal network and an optical network terminal (ONT) at an end point. It includes associated provisioning and incentive costs. Complex installations relate to those installations that require specific design and build to meet business requirements.

Our final decision

4.194 Our final decision, is to include the following amounts for standard and complex installations expenditure allowances:

4.194.1 Installations: Complex - \$5.7m

4.194.2 Installations: Standard - \$81.3m

Table 4.10 Our final decisions for installations

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
Complex Installations	4.0	1.5	0.3	5.7
Standard Installations	36.9	22.4	22.0	81.3

4.195 Our decision includes \$18.6m for incentive payments expenditure as part of base capex installations for the first year of PQP1. We have removed \$32.6 million of expenditure for retention incentives in 2023 and 2024, and \$1.0 million to reflect the change in demand forecast.

- 4.196 We have not included incentive payments from installation expenditure for the last two years of PQP1. Chorus will have to submit an individual capex proposal for additional incentive payment expenditure.
- 4.197 We discuss the reasons behind our decisions on incentive payments in Attachment C, including how we have considered submissions from stakeholders.
- 4.198 We have also not applied the overall base capex adjustment to the Installation capex sub-categories. This means that we have not applied any further adjustment to the installation sub-categories to reflect any over-forecasting risk in Chorus' proposal. We discuss our reasoning in the base capex adjustment section below.

Our draft decision, submissions to our draft decisions and alternatives considered

- 4.199 Our draft decision was to exclude all proposed incentive payments from base capex for the duration of PQP1. Our decision was that Chorus could submit an individual capex proposal for the expenditure.
- 4.200 We received submissions on incentives from five stakeholders (Spark, Chorus, Vodafone, Trustpower and 2degrees). Our analysis of the incentive payments, along with the submissions received is set out in Attachment C.
- 4.201 We did not receive submissions on the other components on installation expenditure.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

- 4.202 Following our evaluation, our decision is to retain the installation expenditure proposed by Chorus, excluding the incentive payments for existing connections. Our Top-down analysis did not highlight specific high risks with this expenditure. We also noted that the AMCL review considered that the last eight years of building the fibre network has led to Chorus adopting many leading practices within the lifecycle delivery subject group. As such we considered that the proposed expenditure (excluding the incentive payments) is likely to be representative of good telecommunications industry practice and likely to best give effect to the purposes of s166(2).

IT and Support: Corporate

- 4.203 IT and Support: Corporate capex is capex used for corporate information technology (IT) systems as well as capital for accommodation and office equipment.

Our final decision

4.204 Our final decision is to include \$9.0 million for the IT and Support: Corporate expenditure sub-category. Our decision is a reduction from Chorus' base capex proposal of \$42.3m. This includes a reduction to the IT and Support: Corporate expenditure of \$35.1m from Chorus' proposal.

4.205 Our decision is to remove innovation expenditure of \$34.4 million and the unjustified expenditure of \$0.7 million resulting from [REDACTED]. We have added back \$1.9 million for leases over PQP1.

Table 4.11 Our final decisions for IT and Support: Corporate

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
IT and Support: Corporate	3.5	2.6	2.9	9.0

Our draft decision, submissions to our draft decisions and alternatives considered

4.206 Our draft decision was to reduce IT and Support: Corporate by \$36m.

4.207 We received submissions from Chorus, 2degrees, Vodafone, and Spark on our draft decision for IT and Support: Corporate. All submitters agreed with the proposal to remove the innovation capex from this category. Vodafone considered that our decision to assess innovation expenditure as individual capex would allow us to put more oversight on innovation expenditure.²⁰²

4.208 Chorus submitted that the uncommitted innovation capex is a good candidate for the individual capex mechanism. However, Chorus also considered that:

4.208.1 inflight projects of \$3m should be approved within base capex; and

4.208.2 the uncommitted innovation expenditure should be reallocated to address "under-forecasting in other areas revealed in post submission analysis".²⁰³

4.209 We received cross-submissions from Spark and Vodafone noting that Chorus' proposal to reallocate expenditure is "completely without principle". Such negotiation would "result in an uncertain regulatory framework".²⁰⁴ Our analysis included consideration of the expenditure objective, good telecommunications industry practice, and s 166(2).

²⁰² Vodafone "[Submission on fibre price-quality path](#)" (8 July 2021), paragraph 30a.

²⁰³ Chorus "[Submission on Fibre PQ draft decisions](#)" (8 July 2021), page 9.

²⁰⁴ Spark "[Fibre ID and PQ draft decisions submission](#)" (8 July 2021), page 14.

4.210 Chorus proposed IT and Support: Corporate expenditure of \$42.3m. A significant portion of this expenditure was for innovation, which we excluded from the draft decision on the basis that there is a strong incentive for Chorus to not spend the capex. This expenditure is highly uncertain and subject to considerable discretion. Therefore, we considered that the individual capex mechanism would be a more appropriate mechanism for seeking approval for expenditure such as this. We evaluated the expenditure by having regard to the uncertainty related to the need for the proposed capex and the economic justification (assessment factor o).

4.211 In our draft decision we stated:

“4.156.1 Innovation expenditure of \$36m has been incorporated into the proposal. The expenditure associated with innovation is highly uncertain and subject to considerable discretion. Furthermore, at this stage, we do not consider that the economic case for this expenditure has been made:

4.156.1.1 We consider there is a strong incentive (and therefore risk) for Chorus not to spend the capex and/or apply the required effort to make innovations succeed, since we will not monitor innovation expenditure under base capex, given its fungible nature. This is particularly true in an environment where Chorus is under pressure to pay dividends (so approved capex goes to dividends) and where the MAR may be lower than expected when the expenditure proposal was prepared (so there is less pressure to create additional revenue streams through innovation to hit the MAR);

4.156.1.2 Longer term innovation (what Chorus calls horizons 2 and 3) is by definition more speculative and higher risk, so we consider that individual capex is the more appropriate mechanism, rather than base capex; and

4.156.1.3 As such, we are proposing to exclude innovation expenditure from the base capex allowance, based on our consideration of the matters set out in clause 3.7.12(3) of the capex IM. Chorus may then submit an individual capex proposal for this expenditure (under clause 3.7.12(4) of the capex IM).”²⁰⁵

4.212 We have considered the submissions and we agree with Spark and Vodafone that simply reallocating the expenditure without justification does not align with the processes set out in the capex IM. We cannot assess Chorus' proposal against the expenditure objective without further information from Chorus to show how the allocation of innovation expenditure to other expenditure sub-categories would result in expenditure that reflected the efficient costs of a prudent network operator.

4.213 We also note that, in regard to Chorus' inflight projects, Chorus did not provide any details of these projects including the phasing and treatment of the expenditure. While these projects may well be justified, we do not consider we can legitimately include the expenditure without suitable further explanation.

²⁰⁵ Commerce Commission "Chorus' price-quality path from 1 January 2022: Draft decision - reasons paper" (27 May 2021), page 105.

- 4.214 In its submission, Chorus also considered that the innovation amount included in the proposal was \$34.4m and not \$36m.²⁰⁶ We investigated Chorus' claim by scrutinising various submission documents pertaining to its innovation proposals and financials. On review of the numbers Chorus provided to us during our evaluation, we were able to reconcile \$34.4m with Chorus' proposal documentation.
- 4.215 In our draft decision we also excluded \$1m from IT and Support: Network & Customer IT capex for the unjustified [REDACTED]
[REDACTED]²⁰⁷ Following Chorus' submission, and clarification from Chorus as to the correct classification of this expenditure, we have applied the correct allocation and reduced the capex in IT and Support: Corporate.
- 4.216 Accordingly, based on submissions and our review of the documentation, our final decision is a reduction of \$35.1m from the IT and Support: Corporate expenditure and include the remaining expenditure within the base capex allowance. We consider this best gives effect to the purposes of s 166(2).

IT and Support: Network & Customer IT

- 4.217 IT and Support: Network & Customer IT capex is capex for systems and platforms across IT domains that support network or customer activities. These include product development, customer experience and optimisation, lifecycle and compliance.

Our final decision

- 4.218 Our final decision is to include \$76.2m expenditure for IT and Support: Network & Customer IT. This is the same as proposed by Chorus in its base capex proposal.

Table 4.12 Our final decisions for IT and Support: Network & Customer IT

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
IT and Support: Network & Customer IT	25.8	24.7	25.7	76.2

²⁰⁶ Chorus "Submission on price-quality path draft decision" (8 July 2021), page 65.

²⁰⁷ Commerce Commission "Chorus' price-quality path from 1 January 2022: Draft decision - reasons paper" (27 May 2021), paragraph 4.158.

Our draft decision, submissions to our draft decisions and alternatives considered

4.219 In our draft decision, we adopted the majority of Chorus' proposed Network and Customer IT expenditure. We proposed a reduction of \$1m to reflect the unjustified additions made by Chorus [REDACTED]

²⁰⁸

4.220 Chorus disagreed with our draft decision, stating that:

"It is wrong to assume an increase in costs can only be inefficient. As with many parts of our business we need to review our delivery model as work volumes change. Step changes in fixed costs may efficiently contain variable costs or achieve a change in service quality.

In this case, post-submission, we have confirmed that we can delay the forecast transition and defer the associated costs. However, we have reallocated this expenditure to help address under-forecasting elsewhere."²⁰⁹

4.221 Chorus also noted that the costs associated with the \$1m reduction in our draft decision were costs that related to a different expenditure category.²¹⁰

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.222 As noted above, following Chorus' submission and clarification, we consider that the correct classification for the reduction we made as part of our draft decision is IT and Support: Corporate. We also clarified the amount of the reduction and the correct application of the allocation to FFLAS. This resulted in a reduction in the amount we removed from the expenditure.

4.223 Chorus did not provide any further justification for the additional expenditure other than to note it could defer the expenditure. Chorus did not provide any further information or supporting evidence to suggest reallocating expenditure from this sub-category would meet the expenditure objective. Therefore, our decision is to retain the reduction, corrected for the allocation, and classification.

4.224 Accordingly, our final decision for IT and Support: Network & Customer IT is to include the amount proposed by Chorus in its proposal. Our final decision on IT and Support: Corporate, as set out above, accounts for the removal of the unjustified expenditure on [REDACTED]

²⁰⁸ Commerce Commission "Chorus' price-quality path from 1 January 2022: Draft decision - reasons paper" (27 May 2021), paragraph 4.158.

²⁰⁹ Chorus "Submission on price-quality path draft decision" (8 July 2021), page 70.

²¹⁰ Chorus "Submission on price-quality path draft decision" (8 July 2021), page 70.

Network Capacity: Access

4.225 Network Capacity: Access capex is capex that enables end user connections to the fibre network. This includes ONTs and OLTs and the software which manages the configuration and alarms called an Element Management Platform.

Our final decision

4.226 Our final decision is to include \$71.7m expenditure for network capacity access.

Table 4.13 Our final decisions for Network Capacity: Access

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
Network Capacity: Access	21.9	28.4	21.4	71.7

Our draft decision, submissions to our draft decisions and alternatives considered

4.227 Our draft decision was to include Chorus' proposed Network Capacity: Access expenditure of \$71.7m.

4.228 We did not receive specific submissions from stakeholders on our draft decisions on Network Capacity: Access expenditure.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.229 We assessed the proposed expenditure on the basis of the need and justification for the expenditure (assessment factor o), along with consideration of the assumptions, technical standards relied upon (assessment factor t). In our view, Chorus' proposed Network Capacity: Access capex is required lifecycle investment and asset replacement within PQP1. None of the proposed investments are avoidable long term and all of them deliver long term benefits to customers.

4.230 Accordingly, we consider that our decision to include the expenditure as proposed by Chorus (with allocation changes applied) best gives effect to the purposes of s 166(2).

Network Capacity: Transport

4.231 Network Capacity: Transport capex is capex for the transport network. The transport network provides high-capacity connectivity over long distances between aggregation nodes and OLTs. It consists of equipment supporting transmission links over core, transport and access cables.

Our final decision

4.232 Our final decision is to approve \$45.4m expenditure for Network Capacity: Transport expenditure sub-category. We have retained our draft decision of reducing transport expenditure by \$2.4m.

Table 4.14 Our final decisions for Network Capacity: Transport

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
Network Capacity: Transport	11.9	15.9	17.6	45.4

Our draft decision, submissions to our draft decisions and alternatives considered

4.233 Chorus' proposed Network Capacity: Transport expenditure of \$47.8m. In our draft decision, we reduced the expenditure by \$2.4m. The reduction was based on aligning the planning assumptions used in the forecast expenditure (assessment factor t), the lack of justification for projects with no scope (assessment factor o), and poorly established cost estimates (assessment factors e and f).²¹¹

4.234 Chorus submitted that we had misunderstood the threshold for investment and incorrectly applied an adjustment due to the demand forecast.²¹²

4.235 Vodafone submitted in favour of updating demand forecasts for installation expenditure, network aggregation and network transport expenditure.²¹³

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.236 Our review of Chorus' proposed expenditure found issues with Chorus' forecast and modelling assumptions that made it difficult to assess against the expenditure objective. The issues included:

4.236.1 Overly simplified models with hard coded inputs without sufficient explanation;

4.236.2 Uncertainties in forecasting approach that increased the margin of error. For example, the transport model did not demonstrate how traffic forecasts drive quantities; and

²¹¹ Commerce Commission "Chorus' price-quality path from 1 January 2022: Draft decision - reasons paper" (27 May 2021), paragraph 4.163.

²¹² Chorus "Submission on price-quality path draft decision" (8 July 2021), pages 68 and 69.

²¹³ Vodafone "Cross submission on the draft price-quality path to be applied to Chorus" (5 August 2021), paragraph 30.

- 4.236.3 The design and scope of some projects were not defined, and costs based on broad estimates.
- 4.237 For our draft decision, Network Strategies applied assumptions to account for the modelling uncertainties, which included considering the impact that the demand forecast may have on the expenditure.
- 4.238 In Our Fibre Plans²¹⁴, Chorus explicitly states that connections and data per connection influences transport, discussing the linkages between system peak, the number of connections and ATPU, the latter being “the primary measure we use for network planning”. As the demand forecasts have been rebased – decreasing total connections for 2021 and in subsequent years – we would expect that the forecast system peak is likely to decrease as well, although we note that the relationship between these two metrics is not linear. Therefore, a downward adjustment to Network Capacity: Transport capex would not be unreasonable.
- 4.239 Given the uncertainties over the design and scope of projects included in the Chorus proposal, there is no evidence to suggest that the downward adjustment of the draft decision should be reversed.
- 4.240 As such, our decision is to retain our draft decision on this expenditure category. In reaching this decision we have had particular regard to assessment factors (e) approach to forecasting capital expenditure, including models used to develop the capital expenditure forecasts; (o) the extent of the uncertainty related to the proposed capex; and (s) the accuracy and reliability of data. We consider that applying the adjustments to this expenditure sub-category best gives effect to the purposes of s 166(2).

Network Capacity: Aggregation

- 4.241 Network Capacity: Aggregation capex is capex for networks that link access networks to retail service provider (**RSP**) POI. This consists of switches (rack-mounted equipment with interface cards) and the links between them.

Our final decision

- 4.242 Our final decision is to include \$45.7m expenditure for Network Capacity: Aggregation. This includes a reduction of \$2.7m from Chorus' proposal for this expenditure sub-category.

²¹⁴ Chorus "Our Fibre Plans" (12 February 2021), page 41.

Table 4.15 Our final decisions for Network Capacity: Aggregation

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
Network Capacity: Aggregation	11.8	19.6	14.3	45.7

Our draft decision, submissions to our draft decisions and alternatives considered

4.243 Our draft decision was to exclude \$2.7m of proposed aggregation capex from Chorus' proposal and accept the remainder allowance.

4.244 Chorus submitted that we had misunderstood the threshold for investment and incorrectly applied an adjustment due to the demand forecast.²¹⁵

4.245 Vodafone submitted in favour of updating demand forecasts for installation expenditure, network aggregation and network transport expenditure.²¹⁶

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.246 As with Chorus' proposed Network Capacity: Aggregation forecast our review of Chorus' proposed expenditure found issues with Chorus' forecast and modelling assumptions that made it difficult to assess against the expenditure objective. The issues included:

4.246.1 Overly simplified models with hard coded inputs without sufficient explanation;

4.246.2 Uncertainties in forecasting approach that increased the margin of error; and

4.246.3 Insufficient information on increment thresholds which have a significant impact on model output.

4.247 For our draft decision, Network Strategies applied assumptions to account for the modelling uncertainties. These assumptions include adjusting Chorus' traffic forecasts and implementing thresholds for equipment upgrade that are consistent with the expected traffic growth during PQP1.

²¹⁵ Chorus "Submission on price-quality path draft decision" (8 July 2021), pages 68 and 69.

²¹⁶ Vodafone "Cross submission on the draft price-quality path to be applied to Chorus" (5 August 2021), paragraph 30.

4.248 Following our review of Chorus’ submission and a recheck of the assumptions, we consider that the above adjustments were applied correctly. As we noted in the draft decision, the change in expenditure was driven from aligning the assumptions used to forecast expenditure with Chorus’ own planning assumptions, which we consider is still appropriate.

4.249 As such, our final decision is to retain our draft decision on this expenditure category. In reaching this decision we have had particular regard to assessment factors (e) approach to forecasting capital expenditure, including models used to develop the capital expenditure forecasts; (o) the extent of the uncertainty related to the proposed capex and its economic case; and (s) the accuracy and reliability of data. We consider that applying the adjustments to this expenditure sub-category best gives effect to the purposes of s 166(2).

Network Sustain and Enhance: Field Sustain

4.250 Network Sustain and Enhance: Field Sustain capex is capex for physical network assets outside of network sites, such as poles, fibre, and terminators.

Our final decision

4.251 Our final decision is to include \$61.2m for Network Sustain and Enhance: Field Sustain capex in the base capex allowance. Our decision reduces Chorus' proposed Network Sustain and Enhance: Field Sustain expenditure by \$1.9m.

Table 4.16 Our final decisions for Network Sustain and Enhance: Field Sustain

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
Network Sustain and Enhance: Field Sustain	19.4	20.6	21.3	61.2

Our draft decision, submissions to our draft decisions and alternatives considered

4.252 In our draft decision, we removed \$1.9m from the Field Sustain expenditure. This reduction was made on the basis that the forecasting assumptions used were unjustified, and not aligned with Chorus’ supplied documentation (assessment factor (t)). Aligning the assumptions with Chorus’ own planning documentation resulted in the change to the forecast expenditure.

4.253 Chorus submitted that the reason for the reduction is not clear. Chorus also stated that uncertainty is not a reason to remove expenditure.²¹⁷

²¹⁷ Chorus “Submission on price-quality path draft decision” (8 July 2021), page 69.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

- 4.254 In a similar manner to Network Capacity: Aggregation and Transport, Chorus has not provided sufficient justification of the expenditure. While the cost calculation appears to be appropriate, the input assumptions involve a great deal of uncertainty (assessment factors o and t), which has not been adequately addressed within the proposal or supporting documents.
- 4.255 We reviewed both Chorus' submission and the changes that we made to the forecast assumptions for the draft decision. We disagree with Chorus that we cannot take into account uncertainty in forecasting methodologies and Chorus' proposal documentation. Uncertainty is explicitly allowed for under assessment factor (o) and an assessment of the assumptions used in forecasting under assessment factor (t), and the modelling approach used under assessment factor (e).
- 4.256 The specific adjustment which has been implemented related to pole replacement rates. The Chorus model is sensitive to small variations in the assumed volume replacement rates, yet it is unclear from the Chorus documentation how estimates for pole replacement are obtained. Issues with pole replacement volumes are reported in the Cutler Merz report in the context of risk modelling and capex-opex trade-off with respect to whole of life costs²¹⁸. According to Chorus' fibre asset plans, network poles for fibre are to be replaced at a rate of 2.5%²¹⁹ in PQP1. When using this rate in place of the rate in the model, an overall saving of \$1.9 million is achieved.
- 4.257 Based on our review, we consider that the approach used in the draft decision was appropriate and that our decisions mean Chorus' allowance is prudent and efficient. Accordingly, we consider that our decision best gives effect to the purposes of s 166(2).

Treatment of leases

- 4.258 Leases are commercial agreements between Chorus and suppliers for the use of buildings, utilities and other services. Under GAAP, leases that meet certain characteristics are treated as capex.

²¹⁸ Cutler Merz "Independent Verification: Chorus Expenditure Forecast 2022 to 2024" (December 2020), Section 10, p103.

²¹⁹ Chorus "Our Fibre Assets" (10 February 2021), page 56.

Our final decision

4.259 Our final decision is to include the addition of lease capex of \$26m in the base capex allowance. We have apportioned lease costs to the following capex sub-categories:

4.259.1 Network Sustain and Enhance: Site Sustain - \$24.1m

4.259.2 IT and Support: Corporate - \$1.9m

Our draft decision, submissions to our draft decisions and alternatives

4.260 In the draft decision, lease costs were excluded from the opex allowances and were not applied to the capex allowances to account for lease expenditure. Chorus included leases in its opex proposal for explanatory purposes although, under the appropriate accounting standards (IFRS16) and the fibre IMs, leases must be treated as capex.

4.261 In response to our draft decision Chorus submitted that our base capex allowances had not included lease expenditure:

“The Commission has assumed that the capex view of leases was included in our capex proposal, which is incorrect. And by removing lease costs from opex there is now no lease expenditure in our proposal for assessment. The final decision should clearly record approval of the opex view of leases (this will be used for tracking, reporting and future proposals) and the capex view (this will be used for setting the MAR) and the allowance should be adjusted to include leases expenditure (and \$26m capex in the MAR).”²²⁰

4.262 We did not receive any other submissions or cross-submissions from other stakeholders on this issue.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.263 We have reviewed Chorus' submission and engaged with Chorus to clarify the treatment of leases within Chorus' proposal documentation. We did this to understand the appropriate treatment of leases and give ourselves confidence that the leases were completely excluded from the draft decisions to avoid double counting.

4.264 The lease expenditure was included within the capex spreadsheets provided by Chorus but was filtered out when calculating the total capex. The capex expenditure associated with leases is \$26m over PQP1.

²²⁰ Chorus “Submission on price-quality path draft decision” (8 July 2021), page 81.

4.265 The opex view of leases was included for presentation purposes only. The opex (cashflow) view of leases totals \$38.8m over PQP1.

Table 4.17 Changes to the capex sub-categories from adding lease expenditure

Expenditure category	Expenditure sub-category	Decision allowance (\$m)	Lease amount added (\$m)	Final decision allowance (\$m)
Network Sustain and Enhance	Site Sustain	32.4	24.1	56.5
IT and Support	Corporate	7.1	1.9	9.0
Sub-total		39.5	26.0	65.5

4.266 Table 4.17 above shows where the lease expenditure has been included within the base capex allowance. The majority of the lease capex relates to building leases (\$24.1m) and falls within the site sustain capex sub-category. The difference in the capex and opex amounts proposed by Chorus reflect the difference in accounting treatment.

4.267 We have included the full amount of lease expenditure proposed by Chorus on the basis that:

4.267.1 The value of the proposed leases was driven by historical expenditure and renewing of existing leases (assessment factors c and f). Therefore, the risk from over forecasting is less than for growth expenditure;

4.267.2 Lease expenditure largely results from commercial negotiation between Chorus and counterparties, and as such, in our view represent a lower risk than other areas of the expenditure.

4.268 We note that the opex and capex view of leases were included in the audit of Chorus' proposal that was conducted by KPMG in 2020. We therefore have some confidence that the capex and opex (cash flows) amounts for leases were correctly extracted from the same underlying leases business forecasting model.

4.269 We therefore consider that the proposed amount is prudent and efficient and reflects good telecommunications industry practice.

Base capex adjustment

4.270 The base capex adjustment is an amount we have specified that reduces the total base capex to be included in the base capex allowance.

Our final decision

4.271 Our final decision is to include a base capex adjustment of -\$24.9m. This is a change from our draft decision that included an adjustment of -\$28.2m.

4.272 The change to our draft decision is due to basing the adjustment on a smaller proportion of base capex. In our final decision we have excluded installations and lease capex from the calculation.

Table 4.18 Our final decisions for base capex adjustment

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
Base capex adjustment	-9.0	-8.2	-7.6	-24.9

Our draft decision, submissions to our draft decisions and alternatives considered

4.273 In our draft decision, we applied an overall base capex adjustment to Chorus' base capex allowance.²²¹ This equated to a 5% or -\$28.2m adjustment to the base capex over PQP1. The adjustment was based on variances between Chorus' 5-year business plan and its PQP1 expenditure proposal.

4.274 Chorus includes in its five-year plan a substantial stretch efficiency target, along with an adjustment to reduce its capex to reflect historical over forecasts. Chorus reversed the stretch efficiency reduction in the expenditure proposal and added it back into the expenditure forecast as a regulatory overlay, while not accounting for any of the over forecasting in its proposal. We disagreed with Chorus' approach.

4.275 Vodafone, Vocus and Spark all submitted in support of removing the proposed base capex adjustment from base capex.

4.276 Vocus considered that there is “no legitimate basis for Chorus to reinstate expenditure that removed from its five-year plan as a result of a management and board challenge process”²²², and that “Chorus should not propose expenditure the Chorus’ Board does not consider appropriate.”²²³ Vodafone agreed with adjusting base year figures to account for over-forecasting and uncertainty²²⁴, and Spark noted the Commission may exclude capex due to uncertainty regarding the need for the capex and the economic case justifying it.²²⁵

²²¹ Commerce Commission "Chorus' price-quality path from 1 January 2022: Draft decision - reasons paper" (27 May 2021), paragraphs 4.167 to 4.170.

²²² Vocus “Consultation on Chorus’ price-quality path from 1 January 2022 – draft decision” (8 July 2021), paragraph 15.

²²³ Vocus “Consultation on Chorus’ price-quality path from 1 January 2022 – draft decision” (8 July 2021), paragraph 15.

²²⁴ Vodafone “Submission on the draft price-quality path to be applied to Chorus” (8 July 2021), page 9.

²²⁵ Spark " [“Cross-submission on Fibre PQID draft decisions”](#) (5 August 2021), page 1.

4.277 Chorus strongly disagreed with our draft decision submitting that:²²⁶

Chorus' plans likely underestimate efficient expenditure: Our PQP1 proposal is based on a business plan which is constrained by real world pressures, including operating outside debt metrics with a real risk of a credit rating downgrade."

Undue focus on cost reductions: In treating Chorus as if it were any other traditional monopoly supplier of a mature and homogenous service, the Commission has incorrectly assumed both that: (i) there are likely to be opportunities to reduce costs, and (ii) that its principal role is to apply pressure to Chorus' proposed expenditure to identify those opportunities.

Chorus' operating model is lean, and Chorus is still in the process of transitioning from building the network to operating it.

Commission has misunderstood or misapplied Chorus information to justify large and arbitrary expenditure cuts. In fact, our base year is efficient, and the forecast reflects trends as we move from build to operate.

Apply 5% reduction to base capex allowance: This reduction is based on incorrect assumptions and judgements. When corrected no reduction is justified.

We note, contrary to the Commission's claim, we have a clear and persistent track record of under-forecasting capex in the outyears (i.e. every year beyond the budget year) of our business plans. This is true for eleven from twelve observations across our last four business plans.

Observed differences between the first (budget) year of any forecast and actual expenditure are not indicative of how longer-horizon forecasts will perform. The budget year and the outyears of business plans have different purposes and present a different forecasting challenge. Budget years are treated as a hard limit once set, so underspend is more likely than not. Outyears should be a best view of likely outturn but tend to err towards optimism – building in hoped-for cost reductions and underplaying potential increases.

Chorus is lean, and our plans likely underestimate efficient expenditure due to real world pressures. Expenditure cuts and exclusions will harm consumers in the short and long term.

Chorus has been delivering one of NZ's largest infrastructure projects to a fixed price contract in a way that exceeded expectations, managing efficient costs and maintaining a lean base. During recent years, Chorus has been constrained by debt metrics and a 'manage for cash' regime, as well as facing real world competitive pressures from vertically integrated mobile network operators (MNOs), which reinforces expenditure discipline.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.278 In considering whether our final decision on allowances meets the expenditure objective and reflects good telecommunications industry practice, we had regard to the following assessment factors:

²²⁶ Chorus "Submission on price-quality path draft decision" (8 July 2021), paragraph 3.2.

[REDACTED]

- 4.282 Having considered this analysis, and the lack of justification for and clarity on aspects of Chorus' proposal, we still consider there is a justification for adopting an overall reduction in Chorus' base capex.
- 4.283 However, while we still consider that Chorus' forecasting processes are more aligned with managing a budget rather than forecasting the capital requirements over the regulatory period, we do consider that due to its operating context Chorus' installation related expenditure is likely to be more justified than other aspects of its forecasts. This is also supported by AMCL findings that the last eight years of building the fibre network has led to Chorus adopting many leading practices within the lifecycle delivery subject group.
- 4.284 This is also consistent with the increases we have observed in the unit costs for baseline connection capex. The observed increases are significantly below that used within Chorus' forecast, demonstrating that some measure of efficiency has been achieved within Chorus' delivery processes, while also illustrating the unreliability of Chorus' forecasting processes.
- 4.285 Accordingly, we consider that retaining the 5% adjustment on base capex meets the expenditure objective. However, our final decision is to limit the scope of the adjustment such that it does not apply to installation related capex, recognising where efficiencies are likely to have been made over the years. This is also consistent with our connection capex decision to limit the growth rate of the unit costs. Consequently, this reduces the reduction in base capex from our draft decision of -\$28.2m to -\$24.9m.
- 4.286 Our decision takes steps to mitigate the likely over forecasting in Chorus' proposal. This reduces the potential harm to end-users and is therefore we consider best gives effect to the purposes of s 166(2). The decision to include a reduction is consistent with good telecommunication industry practice.

Connection capex baseline allowance

- 4.287 Connection capex is capex that is directly incurred by Chorus in relation to connecting new end-user premises where the communal fibre network already exists or will exist at the time of connection. Connection capex consists of two components, a connection capex baseline allowance, which is determined prior to the start of a regulatory period, and a connection capex variable adjustment which is used to washup the differences in the forecast volume of new connections with the actual number of new connections over the regulatory period. Our decisions set out in this paper are for the connection capex baseline allowance for PQP1.
- 4.288 Our final decision for connection capex baseline allowance is to determine an allowance of \$302.5m. This is a reduction of \$32.9m from Chorus proposal, and a relative increase of \$18.5m from our draft decision. We have applied the evaluation criteria in the capex IM and, in our view, our final decision on the connection capex baseline allowance meets the expenditure objective and reflects good telecommunications practice.
- 4.289 In this section we discuss the key components that make up our final decision on Chorus' connection capex baseline allowance. Our decision includes the following components:
- 4.289.1 Smoothing of connection capex unit costs;
 - 4.289.2 Updated connection volume forecast;
 - 4.289.3 Removal of the incentive payments from the connection capex baseline allowance; and
 - 4.289.4 Splitting connection types into eleven groups and specifying non-linear connection cost functions.
- 4.290 Our decision includes the specification of the connection capex unit costs by connection type in accordance with clause 3.7.20 of the fibre IMs. These are specified in Table 4.19 below. Table 4.20 below shows how each decision has affected Chorus' connection capex baseline allowance.

Table 4.19 Connection capex adjustments - unit cost and demand forecasts

Adjustment	Impact on connection capex (\$)	Impact on connections capex (%)
Smoothing unit cost trends	-20.4	-6.08%
Reduction in forecast installations	-2.4	-0.70%
Removal of incentive payments	-10.2	-3.03%
Total	-32.9	-9.81%

Specified connection capex baseline unit costs and volumes

4.291 We are required to specify the connection types that constitute the connection capex baseline allowance for PQP1.²³² This includes:

4.291.1 a connection capex baseline allowance for each connection type by regulatory year in PQP1;

4.291.2 connection capex unit costs and any non-linear connection cost functions, used to calculate the connection capex baseline allowance for each connection type; and

4.291.3 the forecast volumes, by connection type, used to calculate the connection capex baseline allowance for each regulatory year of the regulatory period.

4.292 Table 4.20 shows our final decision on the connection capex unit costs and volumes for the connection capex baseline allowance for use in the MAR for PQP1. Table 4.20 specifies the connection capex unit costs (and one non-linear connection cost function) used to calculate the connection capex baseline allowance for each connection type, as well as the forecast volumes (by connection type) and connection incentives used to calculate the connection capex baseline allowance for each regulatory year of the regulatory period. It also shows how we have split the connection types from 10 (as proposed by Chorus) into 11.

Table 4.20 Our connection capex baseline allowance final decisions by connection type

Connection Type	Group	Volumes			Unit costs			Volume x Unit costs (real)		
		2022	2023	2024	2022	2023	2024	2022	2023	2024
Type 1	Group 1	17,388	11,190	7,465	714	735	750	12.4	8.2	5.6
Type 2	Group 2	64,630	40,163	23,573	1,184	1,206	1,225	76.5	48.4	28.9
Type 3										
Type 4	Group 3	7,515	6,370	6,008	4,573	4,519	4,474	34.4	28.8	26.9
Type 5										
Type 6										
Type 7										
Type 8	Group 4	82,228	51,953	31,738	75	87	100	6.1	4.5	3.2
Type 9										
Type 11										
Type 10	Group 5	2,196	2,342	2,470	2,545	2,647	2,753	5.6	6.2	6.8
Total								135.0	96.2	71.3

²³² *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.7.20(2).

Adjusting Connection capex allowances to reflect changes in connection volumes

- 4.293 The capex IM provides for an adjustment to be made to the connection capex baseline allowance that reflects changes in Chorus' actual connection volumes during the regulatory period.
- 4.294 Chorus is required to submit to the Commission a connection capex annual report. The annual report must include the actual connection volumes for each connection type for each regulatory year of the regulatory period. The connection capex variable adjustment will be determined after the receipt of the last connection capex annual report for the regulatory period, by adjusting for the difference between actual connection volumes by connection type, and forecast connection volumes by connection type, at agreed unit costs, in accordance with the connection capex baseline allowance determination.
- 4.295 The connection capex variable adjustment mechanism will adjust Chorus' wash-up amount to reflect any changes in the actual number of connections during a regulatory period. The process for any adjustments to the allowable revenues as a result of the connection capex variable adjustment will be captured by our wash-up mechanism.

Background

- 4.296 For each of the key components outlined in paragraphs 4.289.1 to 4.288.4, we explain our draft decision, a summary of key submissions and our analysis including how we have determined our decision meets the expenditure objective, and best gives effect to purposes of s 166(2) of the Telecommunication Act.
- 4.297 In making a decision on the connection capex baseline allowance, we have had regard to the relevant assessment factors when considering whether a capex proposal has met the evaluation criteria in the capex IM.²³³
- 4.298 The assessment factors we have had particular regard in for our evaluation of Chorus' connection capex baseline proposal are shown in Table 4.21 below.

²³³ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.8.5.

Table 4.21 Assessment factors used to evaluate Chorus' connection capex baseline allowance

Reference	Assessment factors
c)	Historic capital expenditure and consideration of historic rates of investment.
d)	Quantitative or economic analysis related to the proposed capex, including sensitivity analysis and impact analysis undertaken.
e)	Approach to forecasting capital expenditure, including models used to develop the capital expenditure forecasts.
f)	Relevant financial information including evidence of efficiency improvements in proposed capex.
g)	Competition effects, including specific information for sub-categories of capital expenditure that have potential impacts on competition in PQ FFLAS and other telecommunications markets
i)	Consideration and analysis of alternatives to the proposed capex, including the impact of the alternatives on PQ FFLAS quality outcomes
m)	Fibre asset and fibre network information.
o)	The extent of the uncertainty related to the: <ul style="list-style-type: none"> i) need for proposed capex; ii) economic case justifying the proposed capex; and iii) timing of the proposed capex.
r)	The dependency and trade-off between the proposed capex and related operating expenditure to ensure least whole-of-life cost for managing assets and cost-efficient solutions.
s)	The accuracy and reliability of data
t)	The reasonableness of the key assumptions, methodologies, planning and technical standards relied upon.

4.299 The sections below describe our evaluation of Chorus' connection capex baseline proposal in more detail.

Smoothing of connection capex unit costs

4.300 Connection unit costs represent the capex required to connect a premise to the communal network. Connection unit costs are specified by the type of connection, and the year in which the connection is expected to occur. Once determined, connection unit costs are fixed for the regulatory period. Chorus has proposed unit costs for each connection type. Smoothing of connection unit costs is where we have smoothed the forecast change in the unit costs from one year to the next.

Our final decision

4.301 Our final decision is to smooth unit costs for connection capex to reflect historic cost trends for connection unit costs. This is unchanged from our draft decision. The smoothing of connection unit costs results in a reduction in the connection capex allowance of \$20.4m from that proposed by Chorus.

4.302 We have made the reduction based on our assessment of Chorus' approach to forecasting the capex (assessment factor e), consideration of historic rates of investment (assessment factor c), relevant financial information (assessment factor f), the uncertainty related to the need for the proposed capex (assessment factor o), and the reasonableness of the key assumptions (assessment factor t).

Our draft decision, submissions to our draft decisions and alternatives considered

4.303 In our draft decision, we considered that the forecast unit costs for connection appeared to be subject to significant and unjustified fluctuations. The volatility in the proposed unit rates was not supported by Chorus' justification for the expenditure, and it did not appear to have occurred historically. We also considered that such volatility is unlikely to occur in practice. Accordingly, we removed the unsupported volatility, which resulted in significantly lower unit costs than those proposed by Chorus.

4.304 We received submissions on our draft decision to smooth unit costs from Chorus, Spark and Vodafone. Chorus disagreed with the draft decision, submitting that smoothing of connection unit costs guarantees under-recovery which is to the detriment of consumers.²³⁴

4.305 Vodafone agreed with our draft decision to remove the unjustified variations in the unit costs for connections as unit costs have remained steady since the UFB roll-out began and there is no reason to suspect that this will suddenly change over PQP1.²³⁵

4.306 Spark submitted:

"Further consider omitting possible over estimated costs. The Commission should check whether fibre roll out and connection costs have been appropriately included in the expenditure proposal"²³⁶

"The Commission has proposed that connection capex be based on current connection costs and forecast connection demand. However, the Commission may wish to consider whether the unit costs reflect the likelihood that a new connection is to a "fibre ready" premises."²³⁷

"If the unit cost drivers do not reflect this possibility, then there is a double recovery as the cost to pro-actively install fibre to a premises is already in the RAB and then added again to the RAB at the time the connection is provisioned in response to a connection service order."²³⁸

²³⁴ Chorus "Submission on price-quality path draft decision" (8 July 2021), paragraph 7.3.

²³⁵ Vodafone "Submission on the draft price-quality path to be applied to Chorus" (8 July 2021), paragraph 30d.

²³⁶ Spark "Fibre ID and PQ draft decisions, Cross Submission" (5 August 2021), page 2.

²³⁷ Spark "Fibre ID and PQ draft decisions, Cross Submission" (5 August 2021), paragraph 70.

²³⁸ Spark "Fibre ID and PQ draft decisions, Cross Submission" (5 August 2021), paragraph 72.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

- 4.307 We have considered the responses from submitters and reviewed our draft decision to smooth the unit costs for connection. In particular, we considered Chorus' submission that as the volume of new connections decline the unit costs are expected to rise.²³⁹ However, we note that, other than these statements by Chorus, no further information was provided to clarify the unexplained variations in the unit costs set out by Chorus in its proposal.
- 4.308 While we agree that declining demand may result in rising unit costs, Chorus' unit cost forecasts exhibited fluctuations from year to year – upwards and downwards – which do not appear to correspond with falls in demand. We further note that UFB1 CPPC has been declining for some years before a 3.2% rise in FY21, while UFB2 CPPC was estimated to rise by 2.3% in FY21. These increases may not be due to decreasing demand, but may reflect the final stages of the UFB build as it reaches locations that are more costly to serve.
- 4.309 These increases were well within Chorus' guidance, and indeed UFB2 was at the bottom end of that range. FY21 results:²⁴⁰
- 4.309.1 UFB1 - \$1055 with guidance range \$1025-1075 (FY20 \$1022)
- 4.309.2 UFB2 - \$1217 with guidance range \$1200-1350 (FY20: not reported)
- 4.310 We conclude that this information recently published by Chorus in its annual reporting supports our conclusion that the volatility in the proposed unit rates is unjustified.
- 4.311 We have also subsequently verified with Chorus whether the connection capex includes connections where a lead-in already exists. Chorus has verified that the baseline connection capex does not encompass premises where lead-ins already exist. As Spark noted, if these were included within the baseline connection capex, the costs for installation would have been double counted.

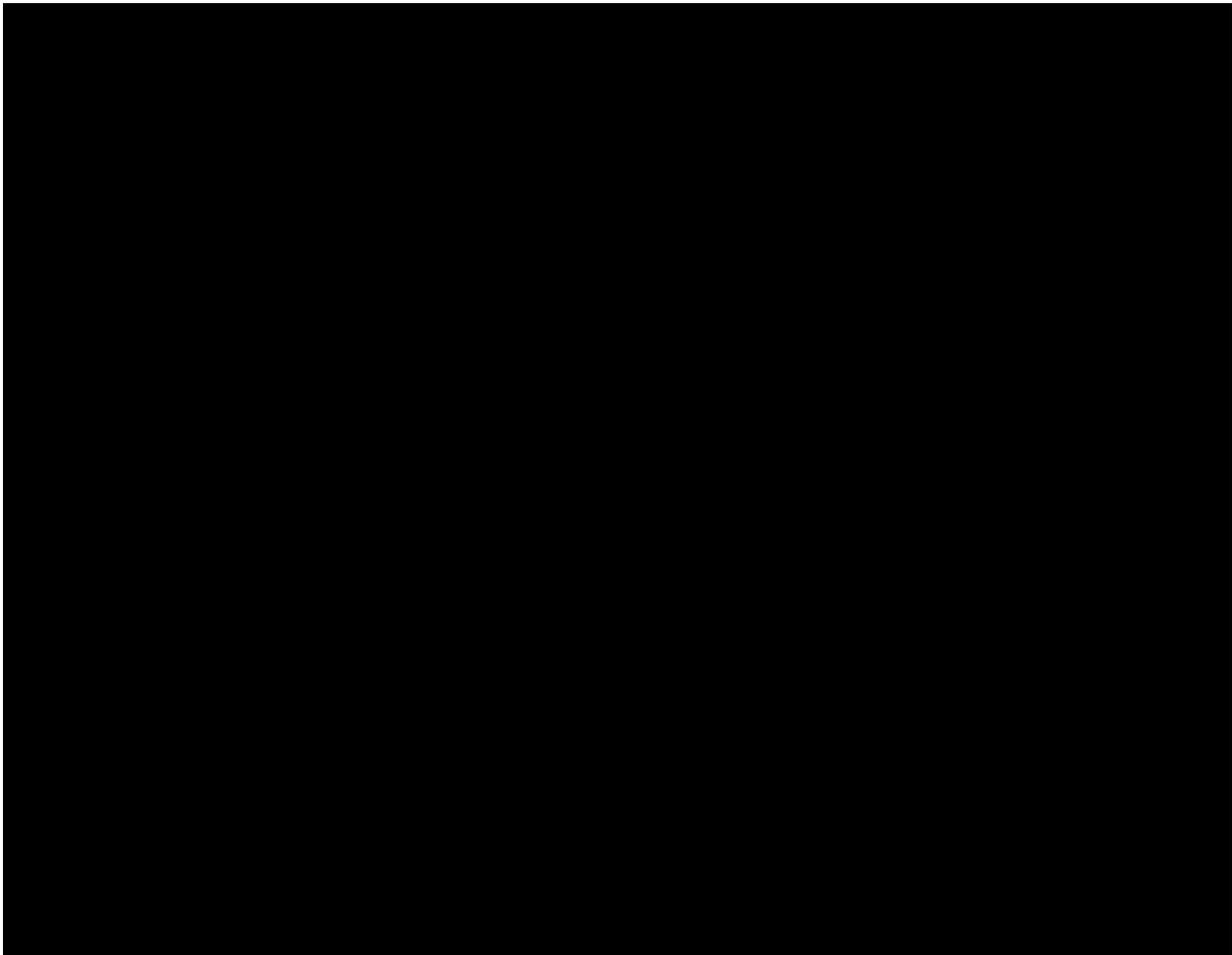
²³⁹ Chorus "Submission on price-quality path draft decision" (8 July 2021), Appendix A13, page 71.

²⁴⁰ Chorus "FY21 Full Year Result presentation" (23 August 2021).

4.312 Figure 4.5 below shows the forecast unit costs by group for connection as proposed by Chorus. The forecasts for the unit rates for Groups 1, 4, 5 and 7 show significant and unexplained variations for 2020, 2021 and 2022. We note that the increases in 2022 are significant (in percentage terms) and not representative of changes in volumes. [REDACTED]

4.313 Figure 4.5 uses the original ten connection types proposed by Chorus and not the eleven types we have determined. We have excluded Group 6 from the chart as the unit costs are [REDACTED].

Figure 4.5 Chorus proposed forecast connection capex unit costs[



4.314 Table 4.22 below shows the percentage change by year for each of the connection types included in Chorus' proposal.

Table 4.22 Chorus' proposed percentage change in unit costs by year

Year	2020	2021	2022	2023	2024
Type 1					
Type 2					
Type 3					
Type 4					
Type 5					
Type 6					
Type 7					
Type 8					
Type 9					
Type 11					
Type 10					

4.315 Accordingly, we reviewed the analysis of its unit costs and applied the following:

4.315.1 We considered smoothing unit costs for each connection type on a case by case basis. The smoothing was applied to the unit costs for Groups 1 to 6 and Group 9. The smoothing was calculated using an assumed percentage change to unit costs for calendar years 2020 to 2024. The assumed rate of change in the initial years is set at 4%, which is slightly higher than the 3.9% for UFB1 and 3.0% for UFB2 stated in the Chorus December 2020 half-year report.

4.315.2 Given the relative stability of the cost per premise in previous years we have assumed for most of the connection types (Groups 1, 2a, 2b, 4, 5 and 6) the 4% annual increase will decline to 2% over the regulatory period. Annual increase in unit costs for Groups 3 and 9 is assumed to remain at 4% over the regulatory period. We also note that the volume of connections in most groups declines across the regulatory period. The profile of these assumptions was modified to broadly reflect the profile Chorus included in its proposal.

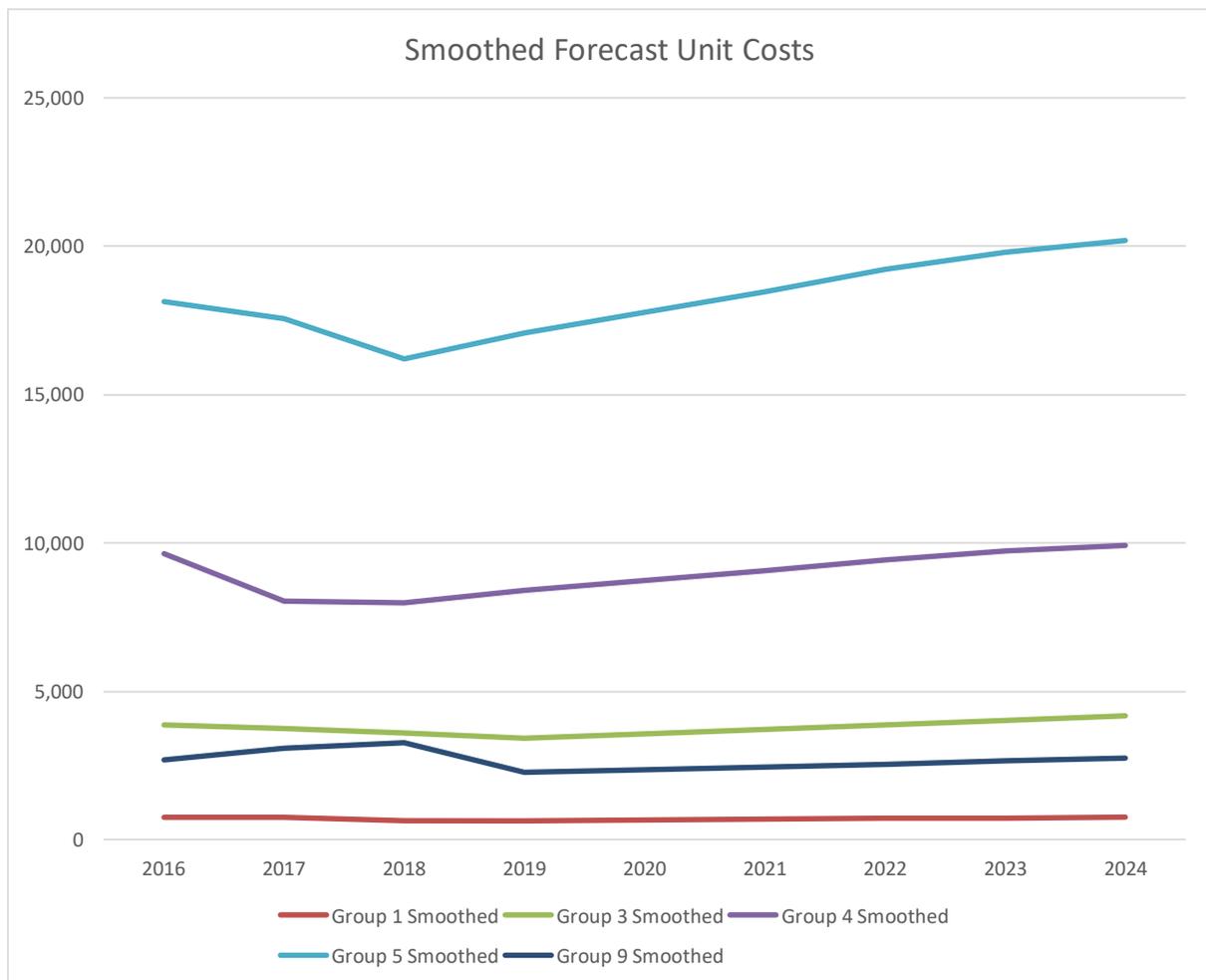
4.315.3 No smoothing has been applied to unit cost trends for Groups 7, 8 and 10. Groups 7 and 8 were excluded from the smoothing process, as the increase in their unit costs was affected by the addition of incentive payments. With the removal of the incentive payments the unit costs are similar to previous years. Group 10 was excluded as it comprised a

[REDACTED]

4.315.4 While we recognise that the unit costs for the connection types may have differing rates of change due to the cost make-up of the groups, in the absence of justification from Chorus on the cost drivers for the unit costs for each group, and for the purposes of establishing the total connection capex allowance, we have applied similar growth rates across connection types unless a separate treatment is warranted due to volume changes over the forecast period.

4.316 Figure 4.6 illustrates the recommended forecast unit costs with smoothing.

Figure 4.6 Final smoothed forecast connection capex unit costs



4.317 Table 4.23 shows the resulting growth rates applied by connection type.

Table 4.23 Growth rates applied per connection type

- 4.318 In our view, the expenditure proposed by Chorus overstates the expected uplift in unit costs for connection based on the trends in historical data, and the justification provided by Chorus. We consider that the proposed expenditure would likely result in harm to end-users. If unit costs were set at a level higher than the efficient level, harm is created through the potential to distort Chorus’ incentives and allow Chorus to earn excessive returns. This is harmful to end-users and can distort competition. Equally, setting unit costs at too low a level creates a disincentive for Chorus to invest which could result in harm to end-users and distort competition.

- 4.319 We consider that our decision strikes the correct balance between these potential outcomes. Without additional information from Chorus, we consider smoothing based on historic trends would more likely result in expenditure that reflects the costs of an efficient fibre network operator and therefore meets the expenditure objective and promotes the purpose statements of the Telecommunications Act. Specifically, we consider that:
 - 4.319.1 Assumptions behind the inputs and volatility did not appear justified;
 - 4.319.2 Historic trends provide a more realistic predictor of forecast expenditure for connection unit costs than Chorus volatile forecasts; and
 - 4.319.3 Smoothing unit costs based on historic data will lead to more efficient costs.

- 4.320 Accordingly, our final decision is that the reduction in unit costs remains the same as our draft decision. This equates to a reduction in the connection capex baseline allowance of \$20.4m from that proposed by Chorus.

Updated connection volume forecast

4.321 Forecast connection volumes, by connection type, are multiplied by the connection capex unit costs to determine the connection capex baseline allowance.

Our final decision

4.322 Our final decision is to reduce the volume of connections in accordance with our decision on the demand forecast set out in paragraphs 4.74 to 4.75 above. The change in the demand forecast, relative to that proposed by Chorus, results in a \$2.4m reduction in the connection capex baseline allowance from Chorus' proposal. The reasons for our change in demand forecast is set out further in paragraphs 4.89 to 4.101.

Our draft decision, submissions to our draft decisions and alternatives considered

4.323 Our draft decision was to change the connection capex volumes based on an updated forecast, reflecting the MBIE 2020 construction report. This resulted in a reduction in the connection capex baseline allowance of \$21.8m. We note that at the time of development of the MBIE 2020 report there was considerable uncertainty as to the impact that COVID-19 may have on the construction industry.

4.324 We received submissions on our proposed change in the demand forecast from Chorus, Spark, Vodafone, and 2degrees. The submissions received and the reasons for our adjustment are set out in paragraphs 4.76 to 4.88 above in our discussion on our demand forecast decision.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.325 In response to submissions, we reviewed the basis for our proposed adjustment to forecast connection capex volumes, and we considered the information now available in the market. Based on this review, we have updated the connection volumes used in the forecast connection capex. The updated volumes represent a slight reduction on the volumes proposed by Chorus. We discuss this further in our discussion on our demand forecast decision in paragraphs 4.89 to 4.101 above.

4.326 We consider that updating the volumes to reflect actual uptake to date, and reflecting the expected future uptake, based on the current information we have available, means that end-users are least likely to be harmed. Accordingly, we consider our final decision best gives effect to the purposes of s 166(2).

Removal of the incentive payments from the connection capex baseline allowance

4.327 Chorus included incentive payments within its proposed connection capex unit costs.

Our final decision

- 4.328 Our final decision is to remove \$10.2m of new connection incentive payments from the baseline connection unit costs. This decision remains unchanged from our draft decision and removes all of the incentive payment expenditure from Chorus' connection capex baseline allowance proposal.
- 4.329 We have summarised the submissions received and our analysis in the paragraphs below. More discussion on our decision on incentive payments is set out in Attachment C.

Our draft decision, submissions to our draft decisions and alternatives considered

- 4.330 In our draft decision, we removed all incentive payments from baseline connection capex. We considered that new connection incentive payments did not meet the definition of connection capex, and inclusion within connection capex was distortionary. We stated:²⁴¹

4.185 We do not consider the new connections incentive payments meet the requirements for variable connection costs (i.e. meet the definition in the capex IM or the policy intent behind the baseline connection capex mechanism), since these incentive payments:

4.185.1 are not directly driven by demand, but rather by Chorus policies; and

4.185.2 do not vary with each new end-user connection, since there seem to be eligibility criteria which determine whether they apply in a particular instance.

4.186 Furthermore there is a risk of over-recovery if these payments are included in baseline connection capex. This is because if the proposed new connection incentive payments are applied through the connection capex variable adjustment mechanism, they will become a fixed unit cost that Chorus recovers for every new connection. However, we understand that these payments would not necessarily be paid out for every new connection, but rather are subject to eligibility criteria that Retail Service Providers must meet. In other words, Chorus would recover an amount for every new connection and may not incur an actual cost for every new connection.

- 4.331 We received specific submissions from Chorus on the draft decision:²⁴²

Incentive payments clearly fall within the definition of connection capex as they are directly incurred costs of connecting new end-users. Our view is that there is a direct, one-to-one correspondence between there being uptake of a new connection and our having the cost associated with the incentive.

²⁴¹ Commerce Commission "Chorus' price-quality path from 1 January 2022: Draft decision - reasons paper" (27 May 2021), paragraphs 4.185 to 4.186.

²⁴² Chorus "[NERA Customer incentive payments](#)" (8 July 2021).

4.332 Spark submitted in it's cross-submission that:²⁴³

Accordingly, we are of the view that the Commission has the discretion to adopt its proposed approach of excluding the Incentive Payments from Chorus' base and connection capex expenditure allowances, and would similarly have the discretion to change its draft decision and remove the ability for Incentive Payments to be assessed under an individual capex proposal such that there would be no capex allowance and which would, in our view, be the less risky approach from a legal perspective.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.333 After receipt and consideration of submissions and the further information provided by Chorus our view remains unchanged, and we do not consider that incentive payments related to new connections meet the requirements for variable connection costs. Therefore, our decision is to exclude incentive payments from baseline connection capex. This decision is the same as our draft decision. It results in a \$10.2m reduction in the connection capex baseline allowance.

4.334 We have set out the submissions received along with our further consideration of submissions and our review of the incentive payments in Attachment C.

4.335 Overall, we consider that removal of the incentive payments from baseline connection capex means that end-users are not faced with potential harm from the over-recovery of capex associated with incentives. Harm may result from incentive payments being treated as variable which means they will scale in a linear manner with connection volumes, that may not accurately reflect the actual implementation of incentive offers in the market. We therefore consider that our decision to remove the incentive payment from baseline connection costs best gives effect to the purposes of s 166(2).

4.336 We are including an allowance for new connections incentives payments in Chorus' base capex allowance for the first year of PQP1. Refer to Attachment C for further information.

Splitting connection types into eleven groups and specifying non-linear connection cost functions

4.337 The capex IM requires the connection capex to be specified by the type of connection. Chorus proposed to split connection capex into ten connection types.

²⁴³ Spark "[Cross submission on Fibre PQ draft decisions –Russell McVeagh treatment of incentive payments as capex](#)" (5 August 2021).

Our final decision

4.338 Our final decision is to specify eleven connection capex types and a non-linear connection cost function. This remains unchanged from our draft decision. The additional baseline connection capex type is formed from splitting the proposed connection type 2 into two types, type 2 and 3.

Our draft decision, submissions to our draft decisions and alternatives considered

4.339 In our draft decision, we increased the number of connection types from the ten proposed by Chorus to eleven through the separation of Group 2 into two separate groups.

4.340 We have also specified the non-linear unit cost function proposed by Chorus in its connection capex baselines allowance proposal.

4.341 In our draft decision, we stated:

“4.176 On the whole, we consider the proposed connection types appear to be appropriate. However, we consider that an additional connection type should be created by splitting one of the proposed types (connection type #2) into two connection types. The spread of unit costs within connection type 2 means we consider that the grouping of connections within proposed connection type 2 are not similar in cost. Consequently, the spread of costs within connection type 2 presents the potential for Chorus to game the incentives between installations within this group.

4.177 Our draft decision to split the proposed connection type 2 will not impact on the total connection capex baseline allowance. It will limit the extent to which Chorus may earn margin by gaming the allowance through incentivising the use of low-cost installation methods, while recovering a weighted average unit cost.”

4.342 We received a submission from Chorus indicating that it is neutral on the split, but that:²⁴⁴

The risk of gaming is overstated. Installation method is dictated by site conditions, and our overriding incentive is to encourage uptake, including by providing a good installation experience. As such, it would be counterproductive for us to, for example, delay more costly installations to take advantage of a small regulatory gain.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.343 Having considered Chorus’ submission, we still consider that, given the spread in unit costs within Group 2, there is potential for Chorus to earn additional margin by gaming the allowance. Such gaming has the potential to create harm and does not align with good telecommunications industry practice or the expenditure objective in the capex IM.²⁴⁵

²⁴⁴ Chorus "Submission on price-quality path draft decision" (8 July 2021), page 74

²⁴⁵ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.8.5.

4.344 [REDACTED]
[REDACTED]
[REDACTED]. The step change in unit costs within the group was the cause for the recommendation within the draft decision. No further specific information regarding connection type 2 costs or processes was provided as part of the submissions.

4.345 We acknowledge Chorus' point about risk, but we consider splitting connection type 2 into two different types:

4.345.1 is a low-cost solution;

4.345.2 will minimise the opportunity for gaming and therefore prevent harm to end-users; and

4.345.3 ensure costs reflect the actual costs experienced by Chorus.

4.346 Therefore, we consider that splitting connection types into eleven groups best meets the expenditure objective and good telecommunications industry practice, and best gives effect to s 166(2).

4.347 The capex IM allows Chorus to propose non-linear connection cost functions in calculating connection capex costs. We consider recognising that hyper fibre costs do not follow a linear cost function would mean our approved allowances for connection type 11 would be more reflective of the actual costs of connection.

Opex allowance

- 4.349 Our final decision for opex is to set an opex allowance of \$433.8m. This is a reduction of \$54.1m from Chorus' proposal, and a relative reduction of \$1.8m from our draft decision. Our final decision accounts for the changes to the FFLAS allocations of -\$17.4m.
- 4.350 As described in our draft decision, we prioritised our detailed assessment of the opex expenditure on the following categories:
- 4.350.1 Customer: Product, Sales and Marketing;
- 4.350.2 Network: Maintenance;
- 4.350.3 Network: Network Operations; and
- 4.350.4 Support: Corporate.
- 4.351 Our decisions on the opex categories that were not targeted for detailed analysis are based on our top-down assessment of Chorus' proposal, as described in our draft decision.²⁴⁶
- 4.352 Table 4.24 summarises our final decisions by expenditure sub-category.

Table 4.24 Final Opex decisions (in constant \$)

Expenditure category	Sub-category	Chorus Proposal (\$m)	Draft decision (\$m)	Final decision (\$m)	Change from Draft to Final (\$m)	Change from Proposal to Final (\$m)
Customer	Customer operations	18.9	18.9	18.9	-	-
	Product, Sales & Marketing	70.4	70.4	67.9	-2.5	-2.5
Network	Maintenance	91.3	82.3	84.7	2.4	-6.7
	Network Operations	43.4	43.4	41.5	-1.9	-1.9
	Operating costs	23.3	23.3	22.1	-1.2	-1.2
Support	Asset Management	38.9	38.9	37.5	-1.4	-1.4
	Corporate	144.6	122.8	127.4	4.6	-17.3
	Technology	57.0	57.0	55.1	-1.9	-1.9
IT efficiency adjustment		-	-21.3	-21.3	-	-21.3
Opex Total		487.8	435.6	433.8	-1.8	-54.1

²⁴⁶ Commerce Commission "Chorus' price-quality path from 1 January 2022: Draft decision - reasons paper" (27 May 2021), paragraphs 4.32 to 4.35

Evaluation Criteria

- 4.353 In making decisions on Chorus' opex allowance, we have had regard to the assessment factors in the capex IM that are relevant to considering an opex proposal. We consider the application of the relevant assessment factors to the opex best gives effect to the purposes in s 166(2) by promoting expenditure that reflects the efficient costs of a prudent fibre network operator while also reflecting good telecommunications industry practice.
- 4.354 The assessment factors we have had regard to for our evaluation of Chorus' opex expenditure are listed in Table 4.25.

Table 4.25 Opex Assessment Factors

Assessment factors
Historic operating expenditure and consideration of historic rates of expenditure.
Quantitative or economic analysis related to the proposed opex, including sensitivity analysis and impact analysis undertaken.
Approach to forecasting opex, including models used to develop the opex forecasts.
Relevant financial information including evidence of efficiency improvements in proposed opex.
Competition effects, including specific information for sub-categories of opex that have potential impacts on competition in PQ FFLAS and other telecommunications markets.
Fibre asset and fibre network information.
The extent of the uncertainty related to the:
i) need for the proposed opex;
ii) economic case justifying the proposed opex; and
iii) timing of the proposed opex.
The dependency and trade-off between the proposed opex and related capital expenditure to ensure least whole-of-life cost for managing assets and cost-efficient solutions.
The accuracy and reliability of data.
The reasonableness of the key assumptions, methodologies, planning and technical standards relied upon.

- 4.355 Our decisions on each of the opex categories are discussed further below, including our related draft decisions, submission points we have considered in our analysis and how our final decisions meet the expenditure objective and reflect good telecommunications industry practice.

Our decision for opex expenditure categories assessed as part of our top-down analysis

Our final decision

- 4.356 Our final decision is to include Chorus' proposed expenditure for those expenditure categories that have been assessed through our top-down analysis of Chorus' proposal. Our decision remains unchanged from the draft decision.
- 4.357 Table 4.26 lists the categories and the expenditure to which this decision applies.

Table 4.26 Final decision for opex sub-categories not targeted for detailed analysis by year

Opex expenditure subcategory	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
Customer Operations	7.0	6.2	5.7	18.9
Operating Costs	7.1	7.4	7.5	22.1
Asset Management	12.6	12.4	12.4	37.5
Technology	18.4	18.2	18.5	55.1

Our draft decision, submissions to our draft decisions and alternatives considered

- 4.358 In our draft decision, we accepted the expenditure proposed by Chorus for the four opex categories listed in Table 4.26. We also noted that the opex allowance incorporates an overall efficiency adjustment.
- 4.359 We did not receive any specific submissions on the expenditure within the sub-categories listed in Table 4.26.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

- 4.360 We conducted a top-down assessment of Chorus' expenditure proposal. Key steps of our approach included:
- 4.360.1 Assessment of the robustness of the approach taken by Chorus' external expert, CutlerMerz, and a review of its approach to assessing each expenditure category;
 - 4.360.2 A top-down assessment of Chorus' proposal including a focus on requirements that affect all aspects of the capex and opex forecast in Chorus' proposal. This included the policy and planning standards used, the approach to prioritisation and challenge, demand forecasts, cost estimation methods (including contingencies), procurement efficiency, and deliverability; and
 - 4.360.3 Consideration of stakeholder submissions from consultation on Chorus' expenditure proposal in February.

4.361 In undertaking the top-down analysis, we had regard to relevant assessment factors to assist our assessment of whether Chorus' proposal meets the expenditure objective and reflects good telecommunications industry practice.

4.362 Based on this analysis we consider the proposed expenditure meets the expenditure objective and reflects good telecommunications industry practice. Accordingly, we have accepted the expenditure proposed by Chorus as our final decision.

Customer: Product, Sales and Marketing

4.363 Product, Sales and Marketing is opex directed at attracting and retaining end users and managing RSP relationships.

Our final decision

4.364 Our final decision is to include \$67.9m Product, Sales and Marketing expenditure within the opex allowance. This is the expenditure proposed by Chorus. Our decision remains unchanged from the draft decision. Our final expenditure decision accounts for the final allocators, which have reduced expenditure for this sub-category by -\$2.5 million.

Table 4.27 Our final decision for Product, Sales and Marketing

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
Product, Sales and Marketing	22.4	22.7	22.8	67.9

Our draft decision, submissions to our draft decisions and alternatives considered

4.365 In our draft decision, we considered that the proposed expenditure was justified.

4.366 Vodafone considered that to avoid the error of forecasting from inflated costs (for product, sales and marketing) we must assess whether costs since 2018 have materially changed before using them in any forecasts.²⁴⁷

²⁴⁷ Vodafone “Submission on the draft price-quality path to be applied to Chorus” (8 July 2021), paragraph 29.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

- 4.367 Our assessment of the proposed expenditure included consideration of the historical trends and the assumptions Chorus used in its forecast. There was a forecast increase in staff from 2020 to 2021 of approximately 16%, with small decreases from 2023. The additional staff are primarily in the growth and innovation areas. Apart from this change, expenditure in this area appears to be based on a business as usual scenario to support new products and an ongoing contractual obligation to promote fibre broadband. We considered that the \$2m p.a. included for innovation opex costs within product, sales and marketing expenditure is appropriate.
- 4.368 The Commission agrees with Vodafone, and an assessment of the historical trend was undertaken. We found that the trend over PQP1 follows the historical trend, with annual increases reducing over time.
- 4.369 Accordingly, we consider the proposed product, sales and marketing expenditure reflects good telecommunications industry practice, and approving the proposed expenditure is likely to best give effect to the purposes of s 166(2) of the Act.
- 4.370 As such our final decision is to include the proposed product, sales and marketing expenditure within the opex allowance.

Network: Maintenance

- 4.371 Network: Maintenance covers on the network for reactive work (work to address an issue identified through a fault, alarm or inspection); recoverable work (work for which all or part of the cost can be recovered from another party); and preventative work (routine inspection works, including testing and survey).

Our final decision

- 4.372 Our final decision is to include \$84.7m of Network Maintenance expenditure in the opex allowance. This is a change from our draft decision where we proposed to include \$82.3m.
- 4.373 We have removed \$2 million for an unjustified pits and manholes programme. Our final expenditure decision accounts for the final allocators, which have reduced expenditure for this sub-category by -\$4.7 million.

Table 4.28 Our final decision for network maintenance

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
Network Maintenance	26.9	28.6	29.1	84.7

Our draft decision, submissions to our draft decisions and alternatives considered

- 4.374 In our draft decision, we reduced Chorus' proposed network maintenance expenditure by \$9m to:
- 4.374.1 remove expenditure associated with a pits and manholes programme \$7.6m that we considered to be unjustified based on the assumptions Chorus used in its forecast, and the uncertainty in the need for the expenditure; and
 - 4.374.2 account for the proposed change in the demand forecast \$1.4m.
- 4.375 In its submission Chorus considered that the change in new property demand, as a component of the demand forecast, is not material enough to influence forecast network maintenance, given fault rates are so low (and are weighted towards older assets).²⁴⁸
- 4.376 Chorus also considered we incorrectly attributed 100% of the pits and manholes expenditure to FFLAS (resulting in a larger reduction). Its submission stated that pits and manholes expenditure was a post-June 2020 addition to its business plan following identification of a need to address health and safety risks.²⁴⁹
- 4.377 Vodafone submitted in favour of adjusting network maintenance to account for changes in forecast demand. Vodafone also stated that more needs to be done to verify the demand forecasts proposed by Chorus.²⁵⁰

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

- 4.378 In assessing Chorus' proposed expenditure for Network Maintenance, we had regard to historic investment in this sub-category, the forecasting methodologies, specific inputs and assumptions relied upon in forecasting the expenditure as well as any uncertainty in the economic case.
- 4.379 Based on Chorus' submission, we undertook a review of the pits and manholes expenditure incorporated within the proposal. We conclude the correct FFLAS expenditure for pits and manholes is \$2m rather than the \$7.6m we used in the draft decision.

²⁴⁸ Chorus "Submission on price-quality path draft decision" (8 July 2021), page 32.

²⁴⁹ Chorus "Submission on price-quality path draft decision" (8 July 2021), page 75.

²⁵⁰ Vodafone "Submission on the draft price-quality path to be applied to Chorus" (8 July 2021), paragraph 31.

- 4.380 No further information justifying the pits and manholes programme was provided by Chorus in its submission and, as such, having regard to the justification, need for the expenditure, and the assumptions used by Chorus in its forecast, we still consider the pits and manholes expenditure should not be included within the opex allowance. We therefore consider that removal of the expenditure meets the expenditure objective and best gives effect to the purposes of s 166(2).
- 4.381 Our final decision on the demand forecast, set out starting in paragraph 4.74, means the impact of the demand forecast on network maintenance is negligible. Therefore, we have not amended the network maintenance expenditure for the change in the demand forecast.

Network: Network Operations

- 4.382 Network: Network Operations opex covers activities including management of network electronics alarms, technical support and configuration services, and provision of network electronics equipment repair and return.

Our final decision

- 4.383 Our final decision is to include \$41.5m of network operations expenditure within the opex allowance. Our decision remains unchanged (apart from allocation changes) from the draft decision and reflects Chorus' proposed expenditure. Our final expenditure decision accounts for our final decisions on cost allocation, which have reduced expenditure for this sub-category by -\$1.9 million.

Table 4.29 Our final decision for Network Operations

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
Network Operations	13.1	13.8	14.6	41.5

Our draft decision, submissions to our draft decisions and alternatives considered

- 4.384 Our draft decision was to accept Chorus' proposed network operations expenditure. Following our review of historical expenditure and the assumptions used by Chorus in its forecast, we considered that the proposed expenditure aligned with good telecommunication industry practice.
- 4.385 In its submission Vodafone considered our decision to not reduce network operations expenditure "on the basis that we had already made significant reductions elsewhere" is not a legitimate reason to not adjust forecasts.²⁵¹

²⁵¹ Vodafone "Submission on the draft price-quality path to be applied to Chorus" (8 July 2021), page 10

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.386 In assessing Chorus' proposed expenditure for Network Operations, we have had particular regard to historic investment in this sub-category, the forecasting methodology used, the specific inputs and the assumptions relied on for forecasting the expenditure, as well as the uncertainty in the economic case. We do not agree with Vodafone, and our decision to accept the proposed network operations expenditure is not based on adjusting the expenditure in other categories.

4.387 As we did not receive any additional information within submissions to support or change our analysis of the network operations expenditure, we consider that our analysis undertaken for the draft decision still holds and is relevant to our final decision. Therefore, we consider that the proposed expenditure meets the expenditure objective while reflecting good telecommunications industry practice and best gives effect to the purposes of s 166(2).

Support: Corporate

4.388 Support: Corporate opex covers business operating expenditure for corporate functional units including accommodation, insurance and professional services.

Our final decision

4.389 Our final decision is to include \$127.4 million Corporate expenditure within the opex allowance. Our final decision reduces Chorus' proposed expenditure for this sub-category but is an increase from our draft decision, where we proposed to only include \$122.8 million.

4.390 We have removed \$13.4 million to reflect the historic cost trends and removing estimated inefficiencies in the base year costs (\$12.6 million) and reductions for one regulatory overlay. Our final expenditure decision accounts for our final decisions on cost allocation, which have reduced expenditure for this sub-category by -\$3.9 million.

Table 4.30 Our final decision for Support: Corporate

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
Support: Corporate	45.2	41.6	40.6	127.4

Our draft decision, submissions to our draft decisions and alternatives considered

- 4.391 In our draft decision, we proposed to remove \$21.8m from the Corporate expenditure based on our assessment of the justification for the proposed forecast, the trend we observed in the historical expenditure, the assumptions used for the forecast, and two regulatory overlays.²⁵² We considered that Chorus' proposed opex included significant increases in 2020 which were not justified based on the material or the explanation provided. As such, we replaced the step change in 2020 with a continuation of the historic expenditure trend. This resulted in a reduction in the opex over PQP1.
- 4.392 In its submission Chorus disagreed with our draft decision stating:
- 4.392.1 the Commission has misunderstood or misapplied Chorus' information to justify large and arbitrary expenditure cuts;
 - 4.392.2 The adjustment overlooks important business and regulatory context;²⁵³
 - 4.392.3 That its base year is efficient, and the forecast reflects a larger network to service, increasing allocation to FFLAS and lower capitalisation of labour and overheads;²⁵⁴
 - 4.392.4 the Commission should fully consider the dynamics of its labour cost forecasting from a FY2019 base as a declining capital programme results in a larger proportion of total overhead costs in corporate support opex, which does not scale up or down linearly with capex cycles;²⁵⁵
 - 4.392.5 extrapolating historical trends is not appropriate and forecasts should only be evaluated with the clear understanding Chorus is not in a steady state;²⁵⁶ and
 - 4.392.6 it was unclear how the \$21.8m reduction in opex had been calculated.²⁵⁷

²⁵² A "regulatory overlay" is the terminology Chorus uses to describe expenditure that it added to its forecast in the time period between setting its business plan in February and submitting its Proposal in December.

²⁵³ Chorus "Submission on price-quality path draft decision" (8 July 2021), page 9.

²⁵⁴ Chorus "Submission on price-quality path draft decision" (8 July 2021), page 9.

²⁵⁵ Chorus "Submission on price-quality path draft decision" (8 July 2021), page 17.

²⁵⁶ Chorus "Submission on price-quality path draft decision" (8 July 2021), page 21.

²⁵⁷ Chorus "Submission on price-quality path draft decision" (8 July 2021), page 79.

4.393 In contrast, Vodafone agreed with our draft decision to reduce corporate support²⁵⁸ and was concerned the reduction did not go far enough. Specifically, Vodafone noted there were some unnatural incentives for Chorus to increase expenditure between 2018 and 2022 and the Commission must consider the impact on the calculation of forecasts.

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.394 In assessing Chorus' proposed expenditure for Corporate opex, we had particular regard to historic investment in this sub-category, the forecasting methodologies, specific inputs and assumptions relied upon in forecasting the expenditure as well as any uncertainty in the economic case.

4.395 Following submissions, we reviewed the basis for our draft decision. We still consider the steep uplift in the proposed corporate opex from 2018 to 2019 which continues on to 2020 and 2021 is unjustified. We do not agree with Chorus' submission that FY2019 is a reasonable and efficient base year because good telecommunications industry practice involves considering the most recent data in developing forecasts, particularly during periods of organisational change.

4.396 While FY2020 data is now available, Chorus has not shared this information with the Commission. If Chorus wished to show evidence that FY2019 is suitable as a base year, then it should have demonstrated why FY2020 would not have been superior. It does not seem credible that the most recent information on which to base PQP1 forecasts should be more than two and a half years old and from a time when UFB build was still strong. This is not good telecommunications industry practice.

4.397 Chorus states that FY2019 is a reasonable and efficient basis for its corporate expenditure, on the grounds that it reflects sustained cost control, commercial arrangements which incentivise efficiency and market scrutiny.²⁵⁹

²⁵⁸ Vodafone "Submission on the draft price-quality path to be applied to Chorus" (8 July 2021), page 10

²⁵⁹ Chorus 'Submission on price-quality path draft decision' (8 July 2021), page 16.

4.397.1 From our examination of material provided by Chorus it was apparent that during the business planning process forecasts are presented to management which may subsequently be subject to management downward adjustments or targets as a result of overarching constraints. The regulatory forecasts which were provided to the Commission were directly from the business planning process, and as noted in paragraph 4.104, such adjustments were not included in these forecasts. This suggests that there may indeed be pressure on Chorus to be disciplined with expenditure. However this may not be reflected in the regulatory forecasts, in the absence of a base year close to the commencement of PQP1 and the lack of inclusion of some management adjustments.

4.397.2 Chorus' reviewer Cutler Merz states that actual values for FY20 are the most appropriate base for these forecasts as previously higher costs were incurred as a result of the UFB build phase.

4.397.2.1 "Because of additional business support costs incurred during the main UFB build phase and recent restructurings to reduce costs, Chorus has determined that FY20 is the most appropriate base year for forecasting. As FY20 is expected to have a lower level of expenditure than previous years (at a Chorus level, the FFLAS share is increasing which results in FFLAS expenditure growing) it is an appropriate starting position. However, accurate forecasting will not be possible until actual FY20 expenditure is known".²⁶⁰

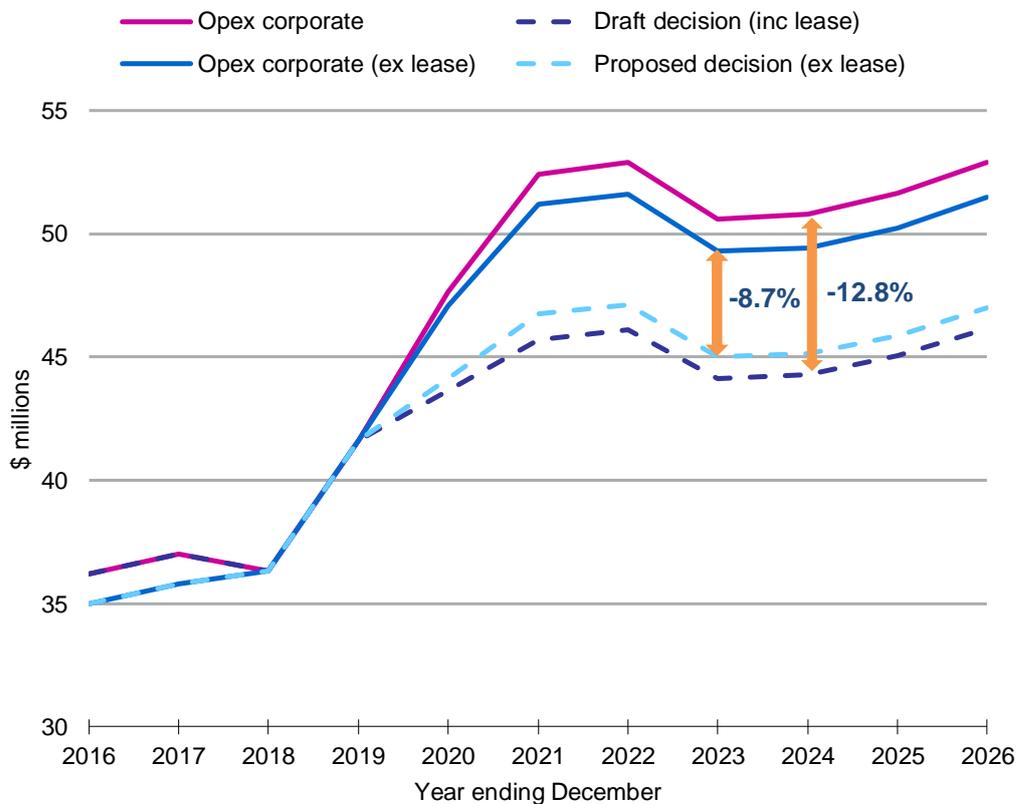
4.398 We agree with the Cutler Merz assessment, and from the above quotation, it now appears that Chorus also accepts that FY2020 is the most appropriate base year. However, as FY20 actuals were unavailable at the time the forecasts were prepared they have not been used as the base year. As a result it is reasonable to assess the corporate opex forecast in the light of recent trends, together with any new factors that may affect the forecasts. We examined all of the factors suggested by Chorus as having an impact not reflected in trend analysis. We found that the treatment of leases in the original analysis did require an amendment, but we found no evidence that lower capitalisation had a significant impact on the corporate opex category. As regards an increasing share of FFLAS over time in corporate opex, Chorus' own numbers suggest that this actually declines during PQP1.

²⁶⁰ Cutler Merz "Independent Verification Chorus Expenditure Forecast 2022 to 2024" (December 2020), page 142.

- 4.399 Our decision is based on the information provided by Chorus. Chorus did not provide any additional information to clarify or demonstrate how we have overlooked the business and regulatory context for its forecast, other than to assert that its forecast is correct, and the base year is efficient.
- 4.400 The proposed step changes in the forecast expenditure for 2020 to 2021 is inconsistent with the degree of change in Chorus' capital programme over that time. As Chorus itself states in *Our Fibre Assets*:
- Historically, our corporate and asset management expenditure has been driven by our network build activities. As we come toward the end of the build phase our corporate expenditure will be relatively stable as we reallocate some of our internal resources from managing network build to improving our asset management capabilities.²⁶¹
- 4.401 We consider our approach addresses the treatment of historical expenditure within the forecast and addresses Vodafone's submission that we must consider the impact of the base year on the forecast.
- 4.402 As we set out in our discussion on leases starting in paragraph 4.258, we have also considered the impact that the update to the treatment of leases has on our decision on Support: Corporate expenditure. Within our draft decision the leases are a component of the historical data set on which the Support: Corporate decision was based. To account for the change in the treatment of leases, and ensure consistency in the data set used, we needed to remove the leases from the opex used to calculate the trend.
- 4.403 Utilising the same approach as used for the draft decision, while ensuring a consistent treatment of leases, results in a smaller reduction of 8.7% or \$12.6m rather than 12.8% or \$21.8m we used in the draft decision.
- 4.404 Figure 4.7 below illustrates the relative differences in corporate opex costs proposed by Chorus and our draft decision, compared with the updated analysis with the removal of leases from the data.

²⁶¹ Chorus "Our Fibre Assets", (February 2021), page 118.

Figure 4.7 Chorus' proposed corporate opex costs comparing the adjustment used in the draft decision and the adjustment proposed for the final opex allowance



4.405 The review of the draft decision has also shown that two further adjustments are necessary in relation to two regulatory overlays. These are:

4.405.1 Reinstating the regulatory overlay for self-insurance. In the draft decision we made a reduction to reflect appropriate cost allocations to PQ FFLAS, based on Chorus' material provided which had indicated that the unallocated and FFLAS amounts were the same. However, Chorus clarified a mislabelling issue in its material demonstrating that the overlay was an unallocated amount and appropriate allocations had therefore already occurred. Therefore, it is not necessary to include any deduction for self-insurance.

4.405.2 Reinstating a reduction to the regulatory overlay for change costs for the same reason, namely to remove the deduction that had been made in error for FFLAS allocation reasons.

4.406 We consider that our final decision is more reflective of the efficient costs incurred by Chorus. The large increases proposed by Chorus are unjustified, and not supported by observation of actual increases in costs reported by Chorus. We consider that acceptance of Chorus' proposal is likely to lead to end-users paying more than otherwise would be the case and could result in over recovery by Chorus. Therefore we consider that our final decision is likely to best meet the expenditure objective, reflect good telecommunications industry practice and therefore the purposes of s 166(2).

IT efficiency adjustment

4.407 The IT efficiency adjustment accounts for the expected efficiency benefits that result from the forecast capex expenditure on IT systems and processes.

Our final decision

4.408 Our final decision is to include an IT efficiency adjustment of \$21.3m in the opex allowance. This is the same as our draft decision.

Table 4.31 Our final decision for IT efficiency adjustment

Expenditure sub-category	2022 (\$m)	2023 (\$m)	2024 (\$m)	Total PQP1 (\$m)
IT efficiency adjustment	-2.8	-6.8	-11.6	-21.3

Our draft decision, submissions to our draft decisions and alternatives considered

4.409 Chorus' proposal included \$76.4m of capex for Customer and Network IT, and \$33m capex for Business IT during PQP1. Chorus did not include the expected benefits from such projects within its proposal.

4.410 In our draft decision, we stated it was likely that this expenditure would result in additional efficiencies in its operating costs. We considered that many of the unspecified IT projects will likely yield efficiency benefits over the PQP1 period.

4.411 Therefore, our draft decision was to apply a top-down adjustment to opex allowance of -\$21.30m to reflect the expected benefits from IT capex investments. The amount of the benefit was calculated using a confidential model provided by Chorus through an RFI.

4.412 Chorus disagreed with our draft decision, stating in its submission that:

"The Commission's assumed efficiencies from IT capex optimisation are wrong by a factor of 5 and ignore that IT optimisation enabled efficiencies are already included in PQP1 forecasts."²⁶²

4.413 In contrast Vodafone agreed with our approach, submitting that:

"We agree with accounting for the expected efficiency improvements from IT capex investments. It is important that expected efficiency savings are shared with end users from the start of the regime."²⁶³

Our analysis including consideration of the expenditure objective, good telecommunications industry practice, and s 166(2)

4.414 Based on the submissions received we reviewed our assessment of the IT efficiency adjustment. Network Strategies identified, based on the information provided by Chorus, \$67.3m of IT spend was available to achieve business efficiencies. This was determined by considering the total IT capex less IT capex driven by lifecycle replacements. The remainder capex was for optimisation, improving business outcomes, product development and customer experience and optimisation.

4.415 Chorus' statement that the Commission's assumed efficiencies are wrong by a factor of five appears to be based on the view that only the \$12.7m Customer experience and optimisation from Business IT should incur opex efficiency gains. However, our view is that all IT investment that is not dedicated to lifecycle or compliance requirements should be within scope and therefore we have considered the entire \$67.3m of IT spend that was available to achieve business efficiencies.

4.416 As part of the RFI process Chorus' supplied a model that was used to determine the benefit from the IT investment. We note that Chorus' model assumes that [REDACTED]
[REDACTED] In accordance with the Chorus model we have excluded [REDACTED] of the IT capex available to achieve business efficiencies to allow for projects that provide non-financial benefits.

4.417 While we acknowledge that the different types of IT investment are likely to deliver varying levels of efficiency benefits, we do consider it is highly likely that some efficiency benefit will arise from each type of investment. We also sought additional information from Chorus on the efficiencies that might be achieved as a result of IT capex, including on how to differentiate the efficiency benefits that may be realised from the different IT investment types.

²⁶² Chorus "Submission on price-quality path draft decision" (8 July 2021), paragraph 7.1.

²⁶³ Vodafone "Submission on the draft price-quality path to be applied to Chorus" (8 July 2021), paragraph 31.

- 4.418 IT investment will typically be split between lifecycle investments that maintain capabilities, and new capabilities that provide some measurable business benefit. Chorus described the types of benefits to be expected in the future as well as historical examples of benefits resulting from previous projects. However, we would expect to see evidence of those benefits emerging in the PQP1 cashflows. Chorus was only able to show evidence of opex or capex savings associated with historical IT development. This shows that savings are possible, and expected, but does not demonstrate that the current plan incorporates the anticipated savings.
- 4.419 Chorus was unable to provide any evidence that savings from IT capex are already embedded within its opex models or of any linkage between capex and opex savings. As a result it is clear that the two models for capex and opex are entirely unlinked. While high-level budget instructions may exist about reducing opex and setting a capex budget with a notional cause and effect relationship, there is no evidence of a connected model linking them together.
- 4.420 In assessing Chorus IT expenditure, we had regard to assessment factor (r), which involves scrutiny of the dependency and trade-off between the proposed capex and related operating expenditure to ensure cost-efficient solutions. However, Chorus has not identified any specific reductions in the forecast opex that have a causal link to proposed IT investments which would support its claim that IT optimisation enabled efficiencies are already included in PQP1 forecast. As a result, our view is that these savings were not in fact reflected in the proposed opex forecast. Accordingly, we have made our final decision based on the approach we used in our draft decision.
- 4.421 We consider that the realisation of benefits from IT capex investment is an expected outcome from such investment, and benefit realisation meets the expenditure objective and reflects good telecommunications industry practice. Accordingly, we would expect to see such benefits accounted for in forecast expenditure and not doing so would result in harm to end-users. Therefore, we consider that our decision to include such benefits best gives effect to the purposes of s 166(2).

Chapter 5 Transitional initial PQ RAB

- 5.1 This chapter summarises our decisions that establish the value of Chorus' transitional initial PQ RAB. The transitional initial PQ RAB is a key input required to determine the total revenue that Chorus may recover over PQP1.
- 5.2 We have determined that Chorus' transitional initial PQ RAB value is (\$5.425 billion).
- 5.3 We will determine Chorus' final initial PQ RAB value in 2022 once the necessary information to do so becomes available.
- 5.4 The transitional initial RAB is discussed in more detail in the transitional initial RAB final decision reasons paper, published alongside this paper.

Introduction to the initial RAB

What is the initial PQ RAB?

- 5.5 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'.²⁶⁴
- 5.6 The PQ RAB is made up of two components:
- 5.6.1 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); and
 - 5.6.2 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).
- 5.7 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 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.

²⁶⁴ 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?

- 5.8 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.
- 5.9 The information that will only be available after 1 January 2022 is as follows:
- 5.9.1 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.
- 5.9.2 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.
- 5.10 When this information becomes available, we will proceed to determine Chorus' final initial PQ RAB value. Any difference in the revenue that Chorus would otherwise have 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

- 5.11 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 5.1 below.

Table 5.1 Our determination of the transitional initial PQ RAB values

Value	Unallocated values (\$ millions)				Allocated values (\$ millions)			
	Final decision	Draft decision	Chorus' estimate	Final vs Chorus' estimate	Final decision	Draft decision	Chorus' estimate	Final vs Chorus' estimate
Transitional Initial PQ RAB (total)	6,526	6,551	6,566	-40	5,425	5,427	5,507	-82
Core Fibre Assets (transitional)	5,136	5,104	5,104	32 ²⁶⁵	4,034	3,980	4,045	-12
FLA (transitional)	n/a	n/a	n/a	n/a	1,391	1,446	1,462	-71
Tax losses²⁶⁶	n/a	n/a	n/a	n/a	-955	-1001	-803	-152

5.12 Determining the transitional initial PQ RAB value has required us to follow the same steps (as required by the fibre IMs) as we would to determine the final initial PQ RAB value. In summary:

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

- 5.12.1.1 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
- 5.12.1.2 apply the cost allocation IM to the unallocated initial RAB value to arrive at the initial RAB value of the core fibre assets.

²⁶⁵ 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 error corrections applied by Analysys Mason.

²⁶⁶ 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%.

- 5.12.2 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 present-value sum of the differences between revenue received, and costs incurred, by Chorus for the provision of UFB FFLAS under the UFB initiative each year.²⁶⁷
- 5.12.3 The initial PQ RAB value is the sum of the initial RAB values of the core fibre assets and the FLA.
- 5.13 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.
- 5.14 This chapter does not detail our calculation of each of the components at paragraphs 5.12.1 to 5.12.3 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 the transitional initial PQ RAB paper, and concern:
- 5.14.1 the direct attribution of post-2011 assets (Chapter 4 of the transitional initial RAB paper);
- 5.14.2 the allocation of shared operating costs and asset values (chapter 5 of the transitional initial RAB paper) (our decisions applying the cost allocation IM will also apply to determination of the forecasts of Chorus' opex and capex allowances for PQP1; and
- 5.14.3 specific inputs used to calculate the FLA and opening tax losses (Chapter 6 of the transitional initial RAB paper).
- 5.15 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 5.9 above, are:
- 5.15.1 replacing the forecast values for financial loss years 2021 and 2022 with actual values; and
- 5.15.2 our decision on the application of the central office space allocator type.

²⁶⁷ 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.

- 5.16 As such, apart from these two decisions, all decisions that we set out in the transitional initial RAB paper 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

- 5.17 The cost allocation IM first involves assessing whether assets and operating costs are ‘directly attributable’ to UFB FFLAS/PQ FFLAS.²⁶⁸ 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.
- 5.18 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.
- 5.19 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 5.17 above, the fibre IMs contain a definition of “directly attributable”, and we have applied that definition in this final decision.
- 5.20 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.

²⁶⁸ The allocation of costs and asset values to UFB FFLAS is required to determine the FLA value.

- 5.21 Our final decisions (as discussed in chapter 4 of the transitional initial RAB paper) 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:
- 5.21.1 as being directly attributable to UFB FFLAS for the purposes of determining the initial RAB value of the FLA;
 - 5.21.2 as being directly attributable to PQ FFLAS for the purposes of determining the initial RAB value of core fibre assets at the implementation date;
 - 5.21.3 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

- 5.22 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).
- 5.23 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.
- 5.24 Within ABAA, costs and assets must be allocated using an allocator that is based on:²⁶⁹
- 5.24.1 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);²⁷⁰ or

²⁶⁹ 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).

²⁷⁰ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2) – definition of causal allocator.

- 5.24.2 a proxy asset allocator or a proxy cost allocator: where a causal relationship cannot be established.²⁷¹
- 5.25 Within the definitions of “causal relationship”, “proxy asset allocator” and “proxy cost allocator” is the requirement that in each case these allocators (ie, ratios):²⁷²
 - 5.25.1 must be consistently applied within a financial loss year, and between financial loss years; and
 - 5.25.2 are “objectively justifiable and demonstrably reasonable”.
- 5.26 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.²⁷³
- 5.27 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.
- 5.28 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

- 5.29 Our decisions on the application of the cost allocation IM have involved us assessing:
 - 5.29.1 how Chorus has implemented its approach to cost allocation via its models;
 - 5.29.2 whether to approve Chorus’ proposed ‘alternative’ allocator types not set out under the default list in the cost allocation IM;
 - 5.29.3 whether proxy asset and cost allocators used by Chorus are ‘objectively justifiable and demonstrably reasonable’; and

²⁷¹ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2) – definition of proxy allocator.

²⁷² *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 1.1.4(2) – definition of proxy allocator and causal allocator.

²⁷³ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause B.1.1.6(1)(c)(x).

- 5.29.4 whether Chorus' allocation of costs meets the shared cost cap requirements.²⁷⁴
- 5.30 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.
- 5.31 As discussed in Chapter 5 of the transitional initial PQ RAB paper, We have determined that Chorus' proposed allocator types and values meet the IM requirements, except for the following modifications we have decided to make:
- 5.31.1 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)
- 5.31.2 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 CTO Common Costs expense category. Instead, we have determined a set of allocator types 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).
- 5.31.3 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).

²⁷⁴ 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.

5.31.4 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 FLA and 'opening tax losses'

5.32 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 WACC estimates for the financial loss period. For these decisions, we have applied the fibre IMs or adopted Chorus' proposal. These are discussed in Chapter 6 of the transitional initial PQ RAB paper.

5.33 Through the consultation process Chorus had advised it was unable to comply with aspects of the fibre 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 fibre IMs where certain criteria are met.²⁷⁵ The alternative methodologies provision applies to the following elements of the FLA inputs:

5.33.1 capital contributions that are not matched to individual assets

5.33.2 the use of net book value (**NBV**) adjustments

5.33.3 VCA not recorded as a separate asset

5.33.4 the calculation of UFB cost allocation adjustment cash flow.

²⁷⁵ 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 6 Depreciation

Purpose and structure of this chapter

- 6.1 This chapter sets out in detail our final decisions on depreciation for Chorus' core fibre assets and FLA.
- 6.2 It covers:
 - 6.2.1 our final decisions and how they compare with our draft decisions;
 - 6.2.2 the relevant aspects of our legal and economic framework that we have applied in making these decisions;
 - 6.2.3 our final decision on the depreciation method (including the asset life) for Chorus' FLA; and
 - 6.2.4 our final decision on the depreciation method (including the asset life) for Chorus' core fibre assets.

Final decisions

- 6.3 Our final decisions are to maintain the default GAAP depreciation for the core fibre assets and to apply an alternative depreciation method and asset life for the FLA.
 - 6.3.1 Core fibre assets: depreciate using straight-line depreciation under GAAP with GAAP-based asset lives, consistent with the default method in clause 3.3.2(3) of the fibre IMs. This is unchanged from the draft decision.
 - 6.3.2 FLA: depreciate using the tilted annuity method with an asset life of 14.2 years and a tilt rate of -13%, as allowed for under clause 3.3.2(5) of the fibre IMs. The decision on the depreciation method is a change from our draft decision, where we proposed using the diminishing value method. The decision on the asset life is unchanged.
- 6.4 Under the fibre IMs, we have some discretion about what depreciation method to apply to fibre assets. The IMs provide for default approaches, but allow us to apply an alternative method where we consider it would:
 - 6.4.1 better promote the purpose of Part 6;
 - 6.4.2 where relevant, better promote workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services; and

- 6.4.3 where relevant, be consistent with the Commission’s smoothing of prices or revenue under s 197 of the Act.²⁷⁶
- 6.5 Our final decisions on the depreciation of the FLA result in a FLA depreciation amount of approximately \$558m to be recovered over PQP1, or about \$207m, \$186m and \$165m in CY 2022, 2023 and 2024 respectively. For reference, the FLA value for CY 2022 is approximately \$1,391m.
- 6.6 In brief, the main benefit of our decisions on the FLA asset life, depreciation method and tilt rate is that they promote incentives to invest (including by mitigating stranding risk and maintaining cashflow in PQP1), while also providing positive side-effects in terms of smooth transitioning of the regime (revenue stability) and lowering future complexity and administrative cost.
- 6.7 We set out our reasons for this approach in this chapter.

Framework for our final decisions

- 6.8 The treatment of depreciation for PQ purposes is generally provided for in Subpart 3 of the fibre IMs, clauses 3.3.2 and 3.3.3. However, the fibre IMs explicitly provide for the Commission to exercise its judgement about whether to apply an alternative depreciation method for some or all fibre assets when determining a PQ path.²⁷⁷
- 6.9 The IMs treat the asset life of the FLA as an integral part of any alternative depreciation method.²⁷⁸ It is the combined asset life together with the depreciation approach (and associated parameters) that encompass the alternative depreciation method. However – to explain our reasons more clearly – this chapter discusses asset life and depreciation method as separate and discrete decisions.
- 6.10 Under clause 3.3.2(5) of the fibre IMs, we may adopt an alternative depreciation method (tilted annuity in this case) when determining allowable revenue, instead of the default position where a GAAP consistent depreciation method must be applied, if we are satisfied that the result of applying the alternative depreciation method:

(a) better promotes the purpose of Part 6 of the Act;

(b) where relevant, best gives, or is likely to best give, effect to s 166(2)(b) of the Act;
and

²⁷⁶ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.3.2(5).

²⁷⁷ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.3.2(5).

²⁷⁸ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clauses 2.2.10(1)(d)(ii), 3.3.2(2), (3) and (5).

(c) where relevant, is consistent with the Commission's smoothing of prices or revenue under s 197 of the Act.

- 6.11 To support our analysis of what best promotes the statutory decision-making criteria, we have applied the legal and economic framework set out in Chapter 2 of this paper.

Relevance of the purpose of Part 6

- 6.12 We consider that s 162(a) is most relevant to the choice of depreciation method. As we noted in our main IMs reasons paper, the choice of the depreciation profile is one way of managing asymmetric risks associated with asset stranding (along with the provision of an ex-ante allowance, and allowing for the possible shortening of asset lives).²⁷⁹ This clear allocation of stranding risk together with the flexibility to manage it, promotes incentives to invest efficiently.
- 6.13 In addition, allowing for the faster recovery of the FLA will partially alleviate concerns that the forecast allowable revenue determined for the first regulatory period should not curtail revenue growth driven by FFLAS uptake, which may put pressure on Chorus to cut efficient expenditure to maintain cashflow.

Promotion of workable competition in telecommunications markets

- 6.14 In addition to considering the purpose in s 162 of the Act, we are required under s 166(2)(b) to consider, where relevant, the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services.
- 6.15 As a result of applying our 'competition screening' approach, we do not think that these final decisions are relevant for promoting competition for the long-term benefit of end-users of telecommunications services. Therefore, we are not making these final decisions based on s 166(2)(b). Accordingly, clause 3.3.2(5)(b) of the fibre IMs is not a relevant consideration for us in assessing whether an alternative depreciation method can be applied for PQP1.
- 6.16 Nevertheless, we consider that front-loading capital recovery is not inconsistent with what we would expect to observe in a workably competitive market. We would expect a firm in a workably competitive market to try to recover the FLA as soon as possible by charging what the market can bear, within the constraints of competition.

²⁷⁹ Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraphs 6.984.2 and 6.1022.

6.17 As we discuss below, fibre uptake, at over 65%, is relatively high compared to past expectations, and continues to grow.²⁸⁰ This higher uptake enables a faster recovery of the FLA without causing price shocks to consumers (ie the market can probably bear faster recovery of the FLA).

Smoothing revenues

6.18 In our main final decisions on the fibre IMs, we described our ability to smooth revenues over two or more regulatory periods by reference to s 197.²⁸¹ Section 197 is prescribed in the Act as a mandatory requirement if, in our opinion, it is necessary or desirable to do so to minimise any undue financial hardship to a regulated provider or to minimise price shocks to end-users.²⁸²

6.19 We may also smooth revenues over two or more regulatory periods where we consider that this smoothing would best give (or be likely to best give), effect to the s 166(2) purposes as part of our specification of allowable revenues under s 195(1)(a). The IMs explicitly provide for us to allow for an alternative depreciation method to be applied for some or all fibre assets. This is one way in which we can smooth revenues over two or more regulatory periods.²⁸³

6.20 In this instance, we do not consider that it is necessary or desirable to smooth revenues to minimise any undue financial hardship to Chorus or to minimise price shocks to end-users. Therefore, although our decision will have the effect of smoothing revenue in a manner consistent with s 197, we do not have a mandatory obligation under s 197 to smooth revenues. Accordingly, clause 3.3.2(5)(c) of the fibre IMs is not a relevant consideration for us in assessing whether an alternative depreciation method can be applied for PQP1.

Economic principles

Risk allocation

6.21 Ideally, we allocate risks to regulated providers or end-users depending on who is most able to manage the risk, unless doing so would be inconsistent with the Part 6 purposes. Appropriate risk allocation, and, where relevant, appropriate compensation for the risks carried, maintains incentives to invest and promotes efficient behaviour.

²⁸⁰ See <https://www.crowninfrastructure.govt.nz/> (accessed in December 2021).

²⁸¹ For example, Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), page 23, para 2.191-2.192, 3.294.2.4, 6.1101, 9.16.3, 9.27 and 9.43.

²⁸² Section 197.

²⁸³ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.3.2(5).

- 6.22 As part of our IM decisions, we allocated the asymmetric risks associated with asset stranding to Chorus. We provided partial compensation for this risk through the 10bps allowance on the RAB (broadly equivalent to \$5.4m per year for PQP1). We noted that the other tools to manage stranding risk include shortening asset lives and alternative depreciation profiles.²⁸⁴ This clear allocation of stranding risk together with the flexibility to manage it, promotes incentives to invest efficiently (s162(a)).
- 6.23 For the avoidance of doubt, the tools in paragraph 6.22 can be used as complements, and that is how we are using them here. This means that there is no ‘double counting’ or over-compensation to Chorus.

Ex-ante expectation of a normal return

- 6.24 We set our regulatory rules in a way that provides a regulated provider with an ex-ante opportunity to earn a normal return on capital. A normal return is the return on capital that an efficient firm has an ex-ante opportunity to earn in a workably competitive market. Allowing regulated providers the ex-ante opportunity, but not the guarantee, of earning normal returns provides them with a chance to maintain the financial capital they have invested, therefore maintaining incentives to invest.
- 6.25 The stranding allowance mentioned in paragraph 6.22 helps to provide Chorus with an expectation of earning a normal return in an environment of stranding risk. To the extent that this is insufficient, alternative depreciation and/or asset lives can also support this expectation which is important to promote investment.

Chorus’ proposal to depreciate the FLA

- 6.26 Chorus and its advisers--Analysys Mason and Incenta--proposed an alternative FLA asset life and depreciation methods. Chorus presented its proposed alternative in various submissions to our process, including the initial RAB draft decision and PQ/ID draft decision, as well as in other associated documents.
- 6.27 This short section summarises the proposals and notes the main documents that contain them.

²⁸⁴ Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), paragraphs 6.984.2 and 6.1022.

Asset life for the FLA

6.28 Chorus proposed an alternative method for setting the asset life of the FLA. The proposal weights asset lives with reference to the relative depreciation expense of the core fibre assets, rather than the initial RAB values of the assets.^{285,286,287} This results in a shorter asset life of 14.2 years for the FLA.

Depreciation method for the FLA

6.29 Chorus proposed two alternatives to the default straight-line depreciation approach – tilted annuity depreciation applied to the FLA and to core fibre assets that are at risk of stranding; or an alternative approach which applies tilted annuity depreciation only to the FLA (but using a larger tilt factor).

6.29.1 If applied to the whole asset base, Chorus proposed a real tilt rate of -4%, referring to analysis by Incenta of long-term price trends for telecommunications services in New Zealand and overseas.^{288, 289}

6.29.2 If applied to the FLA only, a larger real tilt rate of about -13% could be applied to achieve the same revenue outcome.²⁹⁰

6.30 We note that Chorus submitted its proposal to use a tilted annuity approach on 14 May 2021. Therefore, we had limited time to fully consider Chorus' proposal and its potential implications by the time we published the draft decision on 27 May 2021.

Asset life of the FLA

Our final decision

6.31 We have decided to apply an asset life of 14.2 years to the FLA, as part of the alternative depreciation method we have decided to use for PQP1.

²⁸⁵ Commerce Commission "Consultation on Chorus' initial price quality RAB proposal" (30 April 2021), paragraph 4.54.

²⁸⁶ Incenta "Remaining life for the FLA asset: Report for Chorus" (May 2021).

²⁸⁷ Analysys Mason "Building Block model documentation: IAV model v314_120c" (24 March 2021), page A-24.

²⁸⁸ Chorus "Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice" (14 May 2021), paragraph 23.

²⁸⁹ Incenta "Advancing the return of capital in relation to regulated fibre assets" (May 2021), paragraphs 10, 48, and 52.

²⁹⁰ Chorus "Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice" (14 May 2021), paragraph 26.

Requirements in the Fibre IMs

- 6.32 As we discussed in our main IMs reasons paper, the FLA is a special case asset that combines various unrecovered returns incurred during the pre-implementation period.²⁹¹ We noted that a way to determine the asset life over which to recover the FLA is the weighted average life of the UFB-related core fibre assets employed to provide FFLAS, which are the services in respect of which any financial losses were incurred. The default method determines the weights with reference to the initial RAB values of those UFB-related core fibre assets.
- 6.33 The asset life of the FLA is defined in clause 2.2.10(1)(d) of the fibre IMs as being either:
- (i) the period equivalent to the weighted average life of the UFB-related core fibre assets in an initial RAB as at the implementation date, where the weights used are the initial RAB values of those UFB-related core fibre assets; or
 - (ii) a period adopted by the regulated provider under an alternative method.
- 6.34 In addition to the default method for determining the asset life of the FLA,²⁹² the fibre IMs also provide flexibility for an alternative method to be applied, allowing for a different FLA asset life.²⁹³

What are the options that we have considered?

- 6.35 We considered two options: the default and the alternative option proposed by Chorus.

Option 1 – the ‘default’ option

- 6.36 Under clause 3.3.2(2) and (3) of the fibre IMs, the default method for determining the asset life of the FLA is to estimate a weighted average asset life, where the weights used are the initial RAB values of the underlying core fibre assets used to supply UFB FFLAS, as set out in clause 2.2.10(1)(d)(i).
- 6.37 Under this method, the asset life for the FLA reflects the significant investment under the UFB initiative in relatively long-lived assets such as ducts, manholes, poles and fibre cables.

²⁹¹ Fibre input methodologies: Main final decisions - reasons paper (13 October 2021), paragraph 3.287.

²⁹² *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.3.2(2) and (3), which incorporate cl 2.2.10(1)(d)(i).

²⁹³ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.3.2(5).

Option 2 – the ‘alternative’ option

- 6.38 Earlier in the process, Chorus proposed another method for setting the asset life of the FLA. It appears that Chorus considered this as a default method, since in their view, it complied with cl 2.2.10(1)(d)(i). In our consultation paper on Chorus’ initial PQ RAB proposal, we noted that the method proposed by Chorus did not initially appear to comply with cl 2.2.10(1)(d)(i) of the fibre IMs, and that Chorus’ proposal appeared to weight asset lives with reference to the relative depreciation expense of the fibre assets, rather than the initial RAB values of the assets.²⁹⁴ This resulted in a shorter asset life of 14.2 years for the FLA.
- 6.39 Regardless of whether Chorus’ method for setting the asset life of the FLA could be considered as ‘default’ (ie complied with cl 2.2.10(1)(d)(i)), we adopted this asset life of 14.2 years in our draft decision, as an *alternative* method (as opposed to default method) to depreciation, allowed under cl 3.3.2(5).²⁹⁵
- 6.40 There were no significant submissions on this point in response to our draft decision. However, Chorus did submit the following in response to our consultation on the initial PQ RAB proposal:²⁹⁶

...the approach adopted by Analysys Mason complies with the IMs because clause 2.2.10(1)(d)(i) merely requires the use of a “weighted average” of the lives of the UFB-related core fibre assets to determine the asset life of the FLA. The IMs do not specify the type of weighted averaging method, or specifically that a weighted arithmetic average must be used.

Analysys Mason used depreciation as the weighting variable, which is a simplified and equivalent method of applying a weighted harmonic average using initial RAB values for the core fibre assets as weights. The use of a weighted harmonic average is consistent with clause 2.2.10(1)(d)(i).

- 6.41 We agree that using depreciation as the weighting variable to determine the asset life of the FLA is appropriate.²⁹⁷ However, for this final decision, we have adopted Chorus’ proposed method as an alternative method allowed under cl 3.3.2(5). As discussed below, we consider that applying the alternative method—resulting in a shortened asset life for the FLA—would better promote s162(a) of the Act.

²⁹⁴ Commerce Commission “Consultation on Chorus’ initial price quality RAB proposal” (30 April 2021), paragraph 4.54.

²⁹⁵ The draft decision described the FLA asset life as “14 years” and “approximately 14 years”, rather than 14.2 years. The value that results from applying Chorus’ proposed method is 14.2 years. For the draft decision, this value of 14.2 years was used in the Analysys Mason model, but did not flow through every aspect of the model. However, the difference between using 14 or 14.2 was immaterial. The modelling for the final decision uses 14.2 years.

²⁹⁶ Chorus “Amendments to the Input Methodologies for Fibre: August 2021 amendments” paragraphs 56, 57.

²⁹⁷ We will consider outside (and after) this process whether amending the IMs is required to clarify what weighting methodology can be applied under the default method in cl 2.2.10(1)(d)(i).

Our assessment of the options for the asset life for the FLA

- 6.42 We have decided to apply a shortened FLA asset life of 14.2 years, as proposed by Chorus.²⁹⁸ As discussed in this section, this is on the basis that—in combination with the tilted annuity method discussed in the next section— a shorter FLA asset life better maintains incentives to invest, by mitigating both stranding risk, and the pressure to cut efficient expenditure to maintain cashflow in the transition to the new regime.
- 6.43 Unlike physical assets, for which a useful life can be estimated, determining a period over which the value of the FLA should be recovered will involve a considerable degree of judgement. There is no precise right answer.
- 6.44 We specifically identified the FLA as an asset for which a different asset life compared to the rest of the RAB might be justified.²⁹⁹
- 6.45 As we explained in our main IMs reasons paper, the FLA is not a physical asset, but a special case asset that represents unrecovered returns resulting from building a new network ahead of demand. In this sense, the FLA is a regulatory construct that capitalises historic losses and allows these to be taken into account when determining the regulated revenues that can be earned after the implementation date of the new regulatory regime.
- 6.46 These features of the FLA mean that it is a genuinely sunk cost with no alternative use. NERA characterised the FLA as a capitalised historic cost, resulting in a forward-looking cost of zero.³⁰⁰ This contrasts with core fibre assets, which are expected to continue to be available for use over a long period of time.
- 6.47 In a workably competitive market, we would expect financial losses to be recovered as quickly as possible, subject to a constraint that faster recovery of such losses does not result in an adverse shock to prices that would limit the firm’s ability to compete.
- 6.48 In this regard, we note that the uptake of Chorus’ bitstream FFLAS, which is currently 66% across Chorus’ UFB-contracted areas (and 71% in UFB1 areas), is higher than expected.³⁰¹

²⁹⁸ Shorter compared to the longer asset life that would result from applying cl 2.2.10(a)(d)(i)), where the weighted average used is the weighted arithmetic average.

²⁹⁹ Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), paragraph 3.287.

³⁰⁰ NERA “Frontloading depreciation to account for asset stranding risk” (12 May 2021), paragraph 32.

³⁰¹ <https://company.chorus.co.nz/file-download/download/public/2304>

- 6.48.1 According to Chorus, “[t]he success of the fibre roll-out to date has exceeded all expectations, with uptake beyond what was expected and customers enjoying increased capacity without real-terms [sic] price increases.”³⁰²
- 6.48.2 Chorus’ expenditure proposal also notes that the original UFB contracts “included an obligation to maximise uptake, with a target of achieving 20% uptake by 2020. The network build was a success and the pace of uptake has exceeded all expectations.”³⁰³
- 6.48.3 As we noted in the fibre IMs FLA reasons paper, expectations at the start of the UFB initiative were that uptake may reach around 30% by 2019.³⁰⁴
- 6.49 The higher uptake and ongoing demand for UFB services indicates that faster recovery of the FLA (as would be achieved by shortening the period over which recovery occurs) compared to default depreciation under the fibre IMs, may be supported without raising the risk of price shocks for FFLAS consumers.
- 6.50 The historic and sunk nature of the FLA may also make it more vulnerable to any asset stranding risk that may exist in a market characterised by technological change and potential competition. It has no ability in and of itself to generate future revenue, whereas the core fibre assets have at least some probability of doing so.
- 6.51 As we noted in our main IMs reasons paper, one of the tools at our disposal to mitigate asset stranding risk is to allow for the possible shortening of asset lives (in combination with other forms of compensation such as applying an ex-ante allowance, retaining assets in the RAB, and allowing for the use of alternative depreciation profiles).³⁰⁵

³⁰² Chorus “Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice” (14 May 2021), paragraph 20.

³⁰³ Chorus “Our Fibre Assets”, page 2.

³⁰⁴ Commerce Commission “Fibre input methodologies: FLA final decision - reasons paper” (3 November 2020), paragraph 3.298.1.

³⁰⁵ Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), paragraph 6.984.2.

- 6.52 We note Spark’s submission which argued that “the ability to recover the FLA comes from being attached to assets that generate income and, as it is centrally held, is significantly less prone to stranding than specific assets at, say, the edge of the network.”³⁰⁶ In the case of deregulating fibre markets (likely at the edge of the network), we would remove the relevant asset values from the RAB, which would include the relevant proportion of the FLA.³⁰⁷
- 6.53 In this context, it is unlikely that Chorus would be able to recover the relevant proportion of the FLA in the deregulated market, to the extent that its competitors do not have to recover an equivalent cost. In that sense, we consider that the FLA is more prone to stranding.
- 6.54 In our view, a shortened asset life for the FLA is likely to maintain incentives to invest during the transition from the pre-implementation period, during which UFB services were provided under contracts with the government, to the new regulatory regime for FFLAS, and in doing so, best promote s 162(a) of the Act.
- 6.55 Allowing for the faster recovery of the FLA will partially alleviate concerns that the forecast allowable revenue determined for the first regulatory period should not curtail revenue growth driven by FFLAS uptake, which may put pressure on Chorus to cut efficient expenditure to maintain cashflow.
- 6.56 We also note that any risk that Chorus would increase prices during this transition will be mitigated by the expected price cap on anchor services. In addition, any attempt to increase prices would heighten the threat posed by competing network operators (including the threat that evolving fixed wireless and mobile services might attract Chorus’ copper customers who might otherwise have migrated to fibre).³⁰⁸
- 6.57 We have therefore adopted Chorus’ alternative method for setting the asset life of the FLA in our decisions which results in an asset life of 14.2 years.

³⁰⁶ Spark “Fibre ID and PQ draft decisions: Cross-submission | Commerce Commission” (8 July 2021), paragraph 74b.

³⁰⁷ Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), paragraph 3.367.3

³⁰⁸ Chorus’ fibre services are also subject to s 201 which require it to charge the same price for such services regardless of the geographic location of the access seeker or end-user.

Depreciation method for the FLA

Our final decision

- 6.58 Our final decision is to depreciate the FLA using the tilted annuity method with a tilt rate of -13%. This is a change from our draft decision, where we proposed using the diminishing value method to depreciate the FLA.
- 6.59 We are satisfied that the result of this method—in combination with the 14.2 years FLA asset life—better promotes the purpose of Part 6 (s 162(a)) for the reasons set out at paragraph 6.89.3, and therefore is consistent with clause 3.3.2(5)(a) of the fibre IMs. As discussed above in paragraphs 6.15 and 6.20, we do not consider that the requirements in clause 3.3.2(5)(b)-(c) are relevant for this decision.

Options considered

- 6.60 We considered the following options:
- 6.60.1 Straight-line depreciation: this method is GAAP consistent, and is the default method we have applied under the fibre IMs;
 - 6.60.2 Diminishing value depreciation applied only to the FLA;
 - 6.60.3 Tilted annuity depreciation applied to the FLA and to core fibre assets that are subject to asset stranding risk (Chorus' proposal); and
 - 6.60.4 Tilted annuity depreciation applied only to the FLA (Chorus' 'pragmatic alternative').
- 6.61 Under the default setting in the fibre IMs, both the FLA and the core fibre assets are depreciated using a GAAP-consistent method. Our view is that straight-line depreciation meets this criterion. Applying this approach results in depreciation charges that are constant over time.
- 6.62 The diminishing value method calculates the charge based on a constant percentage of the remaining asset value and results in a decreasing charge over the useful life (as the constant percentage is applied to a depreciating asset). Like tilted annuity depreciation (discussed below), it provides the ability to adjust (front-load) the profile of recovery of the FLA. It has the advantage of simplicity and being relatively easy to implement.
- 6.63 Chorus proposed two alternatives to the default straight-line depreciation approach – tilted annuity depreciation applied to the FLA as well as to core fibre assets that are at risk of stranding; or an alternative approach which applies tilted annuity depreciation only to the FLA (but using a larger tilt factor).

- 6.64 An annuity combines an allowance for depreciation with the return on capital. Tilted annuities can be applied in a way consistent with the principles of financial capital maintenance, and that is the way in which we have adopted the tilted annuity approach.
- 6.65 A standard annuity calculates the charge that recovers the asset's total purchase price and financing costs in annual sums that are constant over time.
- 6.66 If the asset's market value is expected to change over time, a tilted annuity may be more appropriate. A tilted annuity calculates an annuity charge that can be made to change between years at the same rate as the expected change of the asset value. When implemented this way, it results in declining annualization charges if asset values are expected to fall over time (ie, as may happen with technological change), or vice versa if asset values are expected to rise. Because of this feature, the tilted annuity approach can approximate economic depreciation as annual charges are brought into line with the expected value of the asset through its economic life.³⁰⁹
- 6.67 As with a standard annuity, the tilted annuity should still result in charges that, after discounting, recover the asset's purchase price and financing costs, when applied consistent with ex-ante financial capital maintenance.

Our assessment of the options for depreciation methods for the FLA

- 6.68 In this section, we set out our final views on the options outlined above in respect of the recovery of the FLA.

Straight-line depreciation

- 6.69 As noted above, straight-line depreciation allows for a constant recovery of capital (in real terms under the fibre IMs) over the life of the asset. Straight-line depreciation is a simple and widely-used approach, and may be appropriate when the use of an asset is uniform from one year to another.
- 6.70 However, in the case of the FLA, there are a number of reasons why it may be desirable to allow for a relatively fast recovery of the FLA.³¹⁰

³⁰⁹ Economic depreciation can be defined simply as the period-by-period change in the market value of an asset. The market value of an asset is equal to the present value of the income that the asset is expected to generate over the remainder of its useful life.

³¹⁰ There may also be circumstances in which it may be appropriate to defer recovery of the asset, for example where demand is initially low but expected to increase. For example, if we were looking at this issue when UFB uptake was very low, it might be appropriate to delay recovery to ensure that depreciation increased as demand increased, which is essentially what happened, resulting in the FLA. However, such deferral is less likely to be appropriate in the current situation, as UFB uptake is now higher than expected.

- 6.70.1 As discussed earlier, in a workably competitive market, we would expect the FLA to be recovered as quickly as possible, subject to the constraint that faster recovery does not result in an adverse shock to prices which would worsen the competitive position of the firm. Given current market conditions and FFLAS uptake, there is an opportunity to achieve this without raising the risk of price shocks for FFLAS consumers.
- 6.70.2 The use of a front-loaded depreciation profile for the FLA reduces the prospect of a step change in the depreciation component at the end of the life of the FLA (which would occur with a straight-line depreciation approach). Unlike normal assets, which are replaced by new assets at the end of their life, once the FLA is recovered, no new investment is required. As a result, at that point in time, there could be a significant reduction in allowed regulated revenues under straight-line depreciation.
- 6.70.3 Given the sunk nature of the FLA, together with the fact that it has no ability in and of itself to generate future revenue, it may be more prone to asset stranding than core fibre assets, particularly in a market characterised by technological change and evolving competition.
- 6.70.4 In the transition to the new regulatory regime, it is important to maintain incentives for regulated providers to continue to invest in new connections (FFLAS uptake) and new services:
- 6.70.4.1 In considering such incentives, there is likely to be a complex range of factors – for example, Chorus has the option of reducing prices or offering incentive payments (as it has and plans to continue doing) to stimulate FFLAS uptake and is also likely to be motivated to invest in new connections and new services to the extent that it faces a threat from emerging competition.
- 6.70.4.2 However, there is a risk that a materially lower allowable revenue than expected would put pressure on Chorus to cut efficient expenditure that benefits end-users in order to increase cashflow, even where this expenditure provided net benefits to Chorus (and end-users) in the longer term.
- 6.71 We do not consider that any of the above arguments are individually definitive, but taken together, we consider that on balance they make a case for bringing forward revenues through the faster recovery of the FLA, as this is likely to satisfy the relevant criteria in the fibre IMs, including better promoting the purpose of Part 6.
- 6.72 We now consider the remaining options outlined above.

Diminishing value

- 6.73 In the draft decision, we considered that diminishing value depreciation and tilted annuity depreciation have many of the same benefits in terms of s 162(a). However, as an approach to bring forward the recovery of the FLA, the diminishing value depreciation method has the advantage of simplicity and being relatively easy to implement.
- 6.74 On balance, our view in the draft decision was that the diminishing value approach is an appropriate alternative depreciation method to apply to the recovery of the FLA. It has a similar front-loading effect on the recovery of the financial asset as Chorus' proposal, but without the complexity.
- 6.75 In terms of implementation, the standard approach is to use a depreciation rate that is determined by the asset life. For example, the diminishing value depreciation rates used by Inland Revenue are determined according to the formula $2/N$, where N is the asset life. For an asset life for the FLA of 14 years, this implies a depreciation rate of 14.3%. A change in the asset life would result in a change to the diminishing value depreciation rate.
- 6.76 However, having considered submissions on the draft decision (discussed below from paragraph 6.88), we now consider that a tilted annuity approach would be more appropriate. We discuss below the reasons why we prefer the tilted annuity approach to the diminishing value approach.

Tilted annuity

- 6.77 Under a tilted annuity approach, the profile of the recovery of capital can be adjusted (through the tilt rate) to better reflect expectations of the change in asset values over time.
- 6.78 Chorus has proposed the use of a tilted annuity depreciation method. Chorus proposed that a tilted annuity be applied to both the FLA, as well as to core fibre assets that it has identified as being subject to asset stranding risk (including but not limited to ducts, fibre cables and lead-ins, poles, and layer 2 electronics). Under Chorus' proposal, other assets, such as land, buildings, power equipment, and IT assets, would be subject to the default straight-line depreciation approach.

- 6.79 Chorus proposed a ‘conservative’ tilt rate of -4%, referring to analysis by Incenta of long-term price trends for telecommunications services in New Zealand and overseas.³¹¹ Incenta recommended using a real tilt rate of between -4% (based on historic trends in telecommunications services in New Zealand) to -6% (based on historic trends in wireless telecommunications services in the United States),³¹² and that the tilts should be applied to all assets that are subject to a risk of being stranded.
- 6.80 As a ‘pragmatic alternative’, Chorus proposed that a tilted annuity could be applied to the FLA only, using a larger tilt to achieve the same outcome. Under this alternative, straight-line depreciation would be applied to all core fibre assets. Chorus submits that this would be a more pragmatic approach and easier to implement, as it would involve applying an alternative depreciation method to a single non-physical asset.³¹³
- 6.81 Chorus put forward a number of arguments in support of its proposal to apply a tilted annuity approach. According to Chorus, its proposed depreciation method would better address the asset stranding risk faced by Chorus from technology improvements in the telecommunications sector. It would also deliver a smooth transition from the pre-implementation period into the new regulatory regime by keeping prices broadly constant in real terms, and ensuring that Chorus has incentives to continue to invest in delivering fibre services to end users.
- 6.82 Chorus claims that it “is making this depreciation proposal on the grounds that we have a material uncompensated economic asset stranding risk, which is expected to grow over time reflecting technology improvements in the telecommunications sector.”³¹⁴ Chorus refers to evidence contained in expert reports by Incenta and NERA in support of its application, and says that its proposal is consistent with the ex-ante allowance of ten basis points which the Commission set in the fibre IMs to compensate for asymmetric risks associated with asset stranding.³¹⁵

³¹¹ Chorus “Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice” (14 May 2021), paragraph 23.

³¹² Incenta “Advancing the return of capital in relation to regulated fibre assets” (May 2021), paragraphs 10, 48, and 52.

³¹³ Chorus “Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice” (14 May 2021), paragraph 26.

³¹⁴ Chorus “Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice” (14 May 2021), paragraph 16.

³¹⁵ Chorus “Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice” (14 May 2021), paragraph 17.

- 6.83 Chorus notes that, in the main IMs reasons paper, the Commission acknowledged that the 10-basis point allowance “was intended to address stranding risk that would not otherwise be addressed through other tools, such as an alternative depreciation profile.”³¹⁶
- 6.84 Chorus notes that NERA identifies “a high risk of asset stranding for the FLA and assets in the Wellington region” where Vodafone operates the HFC network.³¹⁷ NERA also claims to provide “new evidence of a growing competitive threat from fixed wireless, which has seen a significant marketing push and more aggressive sales goals from FWA providers since the fibre IMs were determined.”³¹⁸
- 6.85 Chorus notes that its proposal would only affect the timing of its future FFLAS revenues, and would be present-value neutral over time. As a result, it submits that its proposal would not lead to excess profits. It also claims that its proposal is consistent with the smoothing of prices under s 197 of the Act, and that if it were unable to bring forward depreciation, it would suffer a material revenue reduction at the start of the first regulatory period:³¹⁹

The lower than expected asset valuation and default MAR outcome creates an opportunity to address Chorus’ residual asset stranding risk without increasing prices in real terms relative to the pre-implementation period. This will ensure we receive sufficient revenue to ensure price stability as we transition into the first regulatory period.

- 6.86 We note that Chorus submitted its proposal to use a tilted annuity approach on 14 May 2021. Therefore, we had limited time to fully consider Chorus’ proposal and its potential implications by the time we published the draft decision on 27 May 2021.
- 6.87 We made a number of observations in our draft decision on Chorus’ proposed use of a tilted annuity approach. They can be summarised as follows:
- 6.87.1 the tilted annuity method is designed to approximate depreciation charges that vary with the asset’s market value, whereas the FLA has no market value;
- 6.87.2 accelerating depreciation for the FLA is NPV neutral, while this may not be the case for Chorus’ core fibre assets that were/are shared;

³¹⁶ Chorus “Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice” (14 May 2021), paragraph 38.1

³¹⁷ Chorus “Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice” (14 May 2021), paragraph 32.

³¹⁸ Chorus “Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice” (14 May 2021), paragraph 33.

³¹⁹ Chorus “Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice” (14 May 2021), paragraph 18.

- 6.87.3 the tilted annuity method is more complex than other methods such as diminishing value; and
- 6.87.4 the tilts proposed by Chorus of -4% (where tilted annuity is applied to the whole asset base) or -13% (where tilted annuity is only applied to the FLA) were likely to be disproportionately weighted towards wireless services. Therefore, a lower rate of change would be more appropriate were a tilted annuity approach to be implemented.

Submissions on the draft decision and our response

- 6.88 Submissions received on the draft decision in relation to the depreciation method can be summarised as follows:
 - 6.88.1 Spark submitted that it supports the Commission applying a depreciation profile that manages or smooths revenues over time, as this likely is a more transparent and flexible means of managing the revenue profile over other available tools. However, it recommended that, if applied, accelerated depreciation be applied across all relevant UFB assets.
 - 6.88.2 Chorus submitted that it supports alternative depreciation and a smooth transition, but suggested that the tilted annuity method is better than diminishing value as it better reflects the underlying economic drivers of stranding risk. It submitted that the diminishing value method proposed in the draft is reasonable for PQP1, but that it is not likely to deliver optimal future outcomes due to the end-of-life adjustment that diminishing value creates.
 - 6.88.3 In cross-submissions, Spark noted that restricting alternative depreciation to the FLA may not give us sufficient flexibility to manage the revenue shock risk. Chorus mentioned that while it was comfortable with applying alternative depreciation to the whole asset base—as originally proposed—it accepted that applying alternative depreciation only to the FLA has some pragmatic advantages and was comfortable with that approach for PQP1.
 - 6.88.4 L1 Capital submitted that depreciation tilting is being used to fill the revenue gap, but that it does not bring any economic value to Chorus. It argued for changing the WACC and the stranding allowance.

- 6.89 We set out below our responses to the main points raised in submissions:
- 6.89.1 On Spark's point that, if applied, alternative depreciation should be applied to the whole asset base rather than only to the FLA, we maintain our draft decision. While both options have an equivalent effect on allowed revenues (depending on the respective tilt rates applied), we agree with Chorus that applying alternative depreciation only to the FLA has pragmatic advantages. Other reasons that support applying alternative depreciation to the FLA include:
- 6.89.1.1 the FLA is fully allocated to FFLAS and its allocation does not change over time, which means the tilting is NPV neutral. This may not be the case if the alternative depreciation was applied to the whole asset base;
 - 6.89.1.2 the FLA is a regulatory construct that has no obvious market value or asset life;
 - 6.89.1.3 there may be a benefit to end-users from recovering it as soon as possible as long as it does not cause a revenue/price shock. This is because this asset is rolled forward at the WACC rate, and so end-users pay more in total when it is compounded at that rate long into the future, compared with recovering it faster;
 - 6.89.1.4 the FLA may be more prone to stranding, and so recovering sooner mitigates stranding risk to Chorus, which promotes incentives to invest; and
 - 6.89.1.5 we consider that there is enough flexibility to manage revenue smoothing from applying alternative depreciation only to the FLA, rather than the whole asset base.
- 6.89.2 On Chorus' point that tilted annuity depreciation is better than diminishing value, having had the opportunity to consider the merits of this approach in comparison to other approaches more fully, we agree with Chorus. We have therefore changed our position from the draft decision. We consider that applying tilted annuity depreciation to the FLA is a better alternative to diminishing value because:
- 6.89.2.1 Tilted annuity is more consistent with smoothing revenue over the longer term, while achieving materially similar revenue outcomes for PQP1 relative to diminishing value.

- 6.89.2.2 Tilted annuity avoids the need to smooth a ~\$193m end-of-life adjustment that would result from applying the diminishing value method. This likely avoids future complexity and administrative costs since it mitigates the risk that we need to consider changes to the alternative depreciation of the FLA in the future. Alternatively, if we applied and maintained the diminishing value method, we would need to consider other regulatory tools to smooth the end-of-life adjustment.
- 6.89.2.3 While tilted annuity is more complex conceptually than straight-line depreciation or diminishing value (both to understand the logic of the method and to estimate some of the parameters), it is nevertheless straight-forward to implement over multiple periods once specified in the model.
- 6.89.3 In relation to the tilt rate to apply, we have accepted Chorus' 'pragmatic alternative' of -13% applied only to the FLA. This is on the basis that, when applied together with the FLA asset life of 14.2 years, this tilt rate produces:
 - 6.89.3.1 forecast allowable revenue for PQP1 that does not curtail revenue growth driven by FFLAS uptake, and therefore maintains incentives to invest, while helping to mitigate stranding risk; and
 - 6.89.3.2 a similar depreciation amount for 2022 (and PQP1) to our draft decision.
- 6.89.4 On L1 Capital's point that alternative depreciation applied to the FLA is NPV neutral, that is our intent. It is another tool to mitigate stranding risk and we are using it.
- 6.89.5 On L1 Capital's point that we should increase the WACC and the stranding allowance, these issues were considered as part of the fibre IMs setting process, which closed when the fibre IMs were issued at the end of last year.

Our final decision on the depreciation method for the FLA

- 6.90 One the basis of the above, our final decision is that the tilted annuity depreciation method should be applied to the FLA, using a tilt rate of -13%.

Final decision on the depreciation method for core fibre assets

Final decision

- 6.91 We have decided to retain the default approach to depreciation for core fibre assets. This approach involves applying straight-line depreciation (a GAAP compliant method) with unaltered asset lives.
- 6.92 Chorus has proposed applying a tilted annuity approach to the core fibre assets that it considers at risk of asset stranding. As discussed in paragraph 6.89.1, we consider that applying alternative depreciation to the FLA alone is sufficient to achieve the investment incentives we are seeking to promote under s162(a).
- 6.93 As such, we do not consider that applying an alternative depreciation method for the core fibre assets would better promote the purpose of Part 6, as required by clause 3.3.2(5), than the default approach.

Chapter 7 Quality standards

Purpose and structure of this chapter

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7.1 The purpose of this chapter is to set out our final decisions on the quality standards applying for PQP1 and explain the reasons for our decisions. The chapter is structured as follows:

7.1.1 Summary of decisions on quality standards.

7.1.2 Application of our regulatory framework.

7.1.3 Key interactions.

7.1.4 Decisions on quality standards.

Table 7.1 Overview – decisions on quality standards

Mandatory or optional in the IMs	Quality dimension and metric	Quality standard	Determination reference ³²⁰
Mandatory	Availability: average net unplanned downtime Differentiated by geography (availability POI area) and service layer (layer 1 and layer 2)	To comply with the layer 1 availability quality standard for a given availability POI area in a regulatory year, Chorus' average net unplanned downtime must not exceed, for a layer 1 aspect of a fibre network, 160 minutes in that availability POI area.	Clause 8.1
		To comply with the layer 2 availability quality standard for a given availability POI area in a regulatory year, Chorus' average net unplanned downtime must not exceed, for a layer 2 aspect of a fibre network, 40 minutes in that availability POI area.	Clause 8.2
		Downtime attributable to force majeure events, non-diverse transport services and port utilisation equal to or above 95% are excluded from measurement of the availability quality standard.	Clause 4.2, definition of 'net unplanned downtime'
		Performance: port utilisation	To comply with the performance quality standard for a regulatory year, the percentage of Chorus's ports experiencing port utilisation, upstream or downstream, equal to or exceeding 90% in any five-minute interval in one or more calendar months in that regulatory year, must not exceed 0.12%.
Optional	Ordering	None	
	Provisioning	None	
	Switching	None	
	Faults	None	
	Customer Service	None	

Application of our regulatory framework

7.2 This section sets out the legal requirements and regulatory framework which underpin our decisions on quality standards in relation to PQ regulation. It explains how our decisions give effect to the statutory purpose in Part 6 and, where relevant, the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services.

³²⁰ *Fibre Price-Quality Path Determination 2021* [2021] NZCC 27.

Requirements under the Act and the quality IM

Requirements under the Act

- 7.3 As we explain in the regulatory framework chapter, the purpose of PQ regulation, and our obligations and the timeframes to make PQ determinations.
- 7.4 Section 192 provides that the purpose of PQ regulation is to regulate the price and quality of FFLAS provided by regulated providers.
- 7.5 Section 194(2)(c) states that a PQ path must specify the quality standards that must be met by a regulated provider. Section 194(4) also states that these quality standards may be prescribed in any way we consider appropriate (such as targets, bands, or formulae).

Requirements under the quality IM

- 7.6 The quality IM specifies quality dimensions which underpin the PQ requirements.³²¹ The quality IM sets out an exhaustive list of quality dimensions as well as a non-exhaustive list of example quality metrics.
- 7.7 The quality IM requires a PQ determination to specify quality standards for the mandatory quality dimensions of availability and performance. Additional quality standards may also be specified for the optional quality dimensions of ordering, provisioning, switching, faults, and customer service.
- 7.8 The quality IM also provides for a PQ determination to differentiate by regulated provider, geography, fibre network architecture, PQ FFLAS and classes of end user.³²²
- 7.9 The quality IM sets out a list of quality dimensions (as noted above, some are mandatory whereas others are optional). In our IM reasons paper, we defined the following terms:³²³
- 7.9.1 Quality dimensions: are defined in s 164 as measures of regulated FFLAS quality. We see these as measures encompassing the broad aspects of service quality. The Act requires us to include quality dimensions in the fibre IMs.³²⁴ The PQ and ID determinations specify the quality dimensions against which providers will be assessed.

³²¹ *Fibre Input Methodologies Determination 2020* [2020] NZCC 21, clauses 3.6.1, 3.6.2.

³²² *Fibre Input Methodologies Determination 2020* [2020] NZCC 21, clause 3.6.3.

³²³ Commerce Commission “Fibre input methodologies main final decisions reasons paper” (13 October 2020), paragraph 5.6.

³²⁴ Telecommunications Act 2001, s 176(1)(b).

- 7.9.2 Quality metrics: apply to PQ and ID regulation and describe what is being measured and provide more granularity to quality dimensions. We included example quality metrics in the quality IM to increase certainty for regulated providers, access seekers and end-users, but the actual metrics are selected as part of the PQ and ID processes.
- 7.9.3 Quality standards: are levels of quality that must be met by a regulated provider, which must be specified in its PQ path under s 194.

Economic incentives

- 7.10 In order to maximise profits in the presence of limited competition and a revenue cap, a PQ regulated provider may have an incentive to reduce expenditure as this can improve profitability under PQ regulation. This is desirable to the extent that costs can be reduced while maintaining an appropriate level of quality.
- 7.11 However, a PQ regulated provider may have weakened incentives to grow, maintain and replace assets, potentially to the detriment of quality and therefore not to the long-term benefit of end-users. Without effective competition, a PQ regulated provider may face weakened incentives to provide the quality that end-users demand.
- 7.12 PQ regulation, alongside ID regulation and declared services regulations, addresses this problem by setting quality standards which incentivise regulated providers to appropriately maintain and replace assets, support service levels, connect access seekers and end-users in a timely manner. PQ regulation therefore aims to incentivise regulated providers to supply FFLAS in a manner that is consistent with the outcomes produced in workably competitive markets as specified in s 162.
- 7.13 In our view, the information asymmetry between us and regulated providers is likely to be higher in PQP1 than in subsequent regulatory periods. As a result, there may be a greater incentive in PQP1 (relative to subsequent periods) to allow quality to degrade prior to the implementation date or in ways that are not directly observable.³²⁵ This incentive may be partially offset by the fact that PQP1 is relatively short (three years) before the price-path is reset as well as by potential competition from other services.

³²⁵ Under the UFB arrangements, the default payments for missed service levels are generally less significant than breaching a quality standard under Part 6, and so Chorus may have an incentive to let quality degrade before implementation of PQP1. Also, in setting the quality standards, the standard levels are informed by Chorus' historical performance.

- 7.14 We have considered the overall incentives regulated providers have to provide appropriate quality in PQP1 in making our decisions. We have set quality standards that seek to prevent, and give us visibility of, FFLAS quality degradation, as well as provide Chorus with incentives to supply FFLAS of a quality that reflects end-user demands.

Legal framework

- 7.15 Under s 166(2) of the Act, we must make determinations and decisions that we consider best give, or are likely to best give, effect:

7.15.1 to the purpose in s 162; and

7.15.2 to the extent that we consider it relevant, to the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services.

- 7.16 The decisions about quality of FFLAS are constrained by the Act and the fibre IMs but still require an exercise of judgement.

- 7.17 Where our decisions are constrained by the Act and the fibre IMs, we have explained our decisions by referencing our specific obligations under the fibre IMs or the Act.

- 7.18 Where our decisions require us to exercise judgement, we have explained why those decisions best give, or are likely to best give, effect to the s 166(2) purposes.

- 7.19 We consider that our quality standards decisions meet the purpose of PQ regulation in s 192 by specifying quality standards that ensure FFLAS that is subject to PQ regulation is provided by Chorus to a level of quality that best gives effect to the s 166(2) purposes.

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

- 7.20 This section sets out how our decisions fit within the outcomes of s 162 and, where relevant, the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services, as required by s 166(2).

Relevance and application of s 162 to our decisions

- 7.21 We consider that all our decisions, together, give effect to the purpose outlined in s 162, and where relevant, the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services. In particular, our decisions ensure regulated providers:
- 7.21.1 have incentives to innovate and to invest in network and service quality (s 162(a));
 - 7.21.2 have incentives to improve efficiency and supply FFLAS of a quality that reflects end-user demands (s 162(b)); and
 - 7.21.3 are limited in their ability to extract excessive profits (s 162(d)).
- 7.22 We consider the principal way our decisions give effect to the s 162 purpose is by helping ensure that regulated providers “have incentives to...supply FFLAS of a quality that reflects end-user demands” as set out in s 162(b). We achieve this by incentivising compliance with, and penalising breaches of, quality standards. Further, our PQ regulation can incentivise investment and innovation in line with s 162(a) by specifying the quality standards that must be met.
- 7.23 Fibre end-users make price-quality trade-offs when making decisions about which retail service is best for them, so we interpret “quality that reflects end-user demands” as “the quality that end-users are willing to pay for,” since demand is generally linked to price. In setting PQ regulation, we assess the level of quality end-users demand and reflect this through minimum quality standards. As such, we have set quality standards based on our assessment of what level of quality end-users demand in the first instance.
- 7.24 Setting quality standards for the mandatory quality dimensions of performance and availability, alongside ID regulation and declared services regulations, helps ensure PQ regulation provides additional incentives for regulated providers to deliver services of a quality that reflect end-user demands.
- 7.25 We also consider that our decisions will play a role in giving effect to the s 162(d) purpose by helping ensure regulated providers “are limited in their ability to extract excessive profits”. Our quality standards help limit the incentives regulated providers may otherwise have to profit from underspending on network and service quality.

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

- 7.26 Regulated FFLAS (e.g. layer 1 services) may be used as inputs for other services (e.g. layer 2 services and above). Therefore, the quality standards we determine can help promote competition in other telecommunications markets by maintaining a level of quality where a regulated provider might have incentives to offer lower quality for FFLAS inputs into competing services (e.g. DFAS for fixed wireless services).
- 7.27 In making our decisions, we have considered the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services under s 166(2)(b), including where FFLAS is used as an input. We are satisfied that our decisions promote competition where this consideration is relevant, and we have not identified any reasons or implications that would require us to take a different approach to our decisions from the one which promotes the purposes of s 162 as outlined from paragraph 7.21 above.

Best practice principles

- 7.28 In the quality IM reasons paper we committed to following best practice principles when applying the quality IM to PQ regulation.³²⁶ We have considered and applied the following best practice principles in setting the quality standards:
- 7.28.1 **relevant:** to ensure PQ FFLAS quality reflects end-user demands;
- 7.28.2 **measurable:** able to be measured by regulated providers;
- 7.28.3 **verifiable:** able to be checked or demonstrated to be true or accurate;
- 7.28.4 **controllable:** able to be controlled (at least to some extent) by regulated providers; and
- 7.28.5 **proportionate:** the benefits to access seekers or end-users justify the costs to regulated providers.

Key interactions

- 7.29 This section discusses the regulatory requirements and other factors that have relevance to our decisions on quality standards, including considerations that are specific to telecommunications markets and the UFB initiative.

³²⁶ Commerce Commission “Fibre input methodologies: Main final decisions – reasons paper” (13 October 2020), paragraph 5.77.

- 7.30 All of the LFCs are regulated providers subject to ID regulation. The LFCs have also given open access undertakings in the form of fibre deeds. Chorus is the only regulated provider subject to PQ regulation and must also comply with ss 198 - 201 (declared services and geographically consistent pricing requirements).
- 7.31 Each of these requirements are discussed in more detail in the regulatory framework chapter and in the context of our quality standards decisions below.³²⁷

Fibre market context

- 7.32 In setting our quality standards and applying the quality IM, we have considered a range of market factors that we consider are relevant to the quality of FFLAS that Chorus delivers. These include:
- 7.32.1 the incentives Chorus has in relation to providing quality of service, and how these incentives might change in the face of increased competition in telecommunications markets;
 - 7.32.2 the dynamic nature of the telecommunications industry, where technology and end-user demands change rapidly; and
 - 7.32.3 the quality dimensions that can be controlled by regulated providers, at least to some degree, as opposed to those that access seekers have more control over or are the result of a third party or external event.
- 7.33 In the IM reasons paper, we stated, in determining the quality IM, that we had considered a fibre market that has had the benefit of Crown subsidies. We also stated that we expected to give the same consideration to setting quality standards under PQ regulation.³²⁸ Accordingly, in making our decisions, we have considered a market that has a higher amount of fibre deployment and uptake, reflecting the benefit of Crown subsidies, compared to a fibre market that has not received a subsidy.
- 7.34 Under the UFB initiative, the UFB contracts and associated documents (UFB arrangements) have governed Chorus' supply of services (including pricing of those services). From the implementation date, the UFB arrangements will, for the most part, cease and we will regulate PQ FFLAS quality in accordance with the provisions of Part 6.

³²⁷ See Chapter 2 for more information on the regulatory framework.

³²⁸ Commerce Commission "Fibre input methodologies: Main final decisions – reasons paper" (13 October 2020), paragraph 5.65.

- 7.35 Under the UFB initiative, the UFB arrangements have set the level of service quality that Chorus' fibre network performs to, and the level of service quality that consumers receive.
- 7.36 We seek to maintain this level of service quality as we transition to the new regulatory framework to ensure Chorus continues to provide a quality of FFLAS that reflects end-user demands, and to provide Chorus with incentives to innovate, invest and improve efficiency. This also allows for a smooth transition to the new regulatory framework, by minimising disruption and providing certainty to industry participants as we move into PQP1.

Quality standards and the revenue path

- 7.37 The quality standards under PQ regulation aim to mitigate the incentives of regulated providers to reduce expenditure at the expense of quality. We have a number of tools under Part 6 that work together to mitigate the risk of under-investment in the network.
- 7.38 Under revenue cap regulation, we set a revenue path, which Chorus is able to outperform by reducing its costs, thereby earning additional profits. However, one way for Chorus to cut costs is to reduce investment and maintenance costs, which may lead to poor consumer outcomes. Hence, we set a PQ path which includes quality standards and may also include quality incentives in future regulatory periods.³²⁹
- 7.39 Quality standards act as a minimum level of quality and encourage investment in, and maintenance of, the network so that quality does not degrade below a given level. Quality standards mitigate the broad expenditure incentives to let quality reduce below a certain level that we consider justifies an investigation into the quality outcomes and can result in legal action.
- 7.40 Section 194(3) also allows for a quality incentive scheme in addition to quality standards for the given quality metrics. A quality incentive scheme provides for additional/reduced revenue for changes in quality. In principle it provides a marginal incentive to adjust quality to the point where the marginal costs of adjustment equal the incentive set (which should ideally reflect consumer preferences).³³⁰

³²⁹ We have not set quality incentives under the price-quality path for the first regulatory period. We will assess the need for quality incentives in the next reset when we have more data from PQP1.

³³⁰ In paragraph 7.59 we explain that we do not consider it necessary to include revenue-linked incentives or compensation schemes for PQP1.

- 7.41 Quality standards also apply alongside other regulatory requirements under Part 6, to provide quality incentives for Chorus. This includes the declared services, s 201 requirements, and ID regulation, all discussed below.

Information disclosure regulation

- 7.42 The quality IM requires an ID determination to specify quality performance measures and statistics for availability, performance, faults, and customer service quality dimensions. Additional performance measures may also be specified for the optional quality dimensions of ordering, provisioning and switching.³³¹
- 7.43 ID regulation sets the baseline across these quality dimensions by requiring regulated providers to disclose information on the quality metrics and performance measures, thereby providing the appropriate level of scrutiny across regulated providers' networks and respective service quality. Quality standards apply to a select number of these quality measures.
- 7.44 From the beginning of PQP1, Chorus as well as the other regulated providers will be required to disclose information on their performance delivering FFLAS under ID regulation. The Act specifies that we must determine ID requirements to ensure that sufficient information is readily available to interested persons to assess whether the purpose of Part 6 is being met.
- 7.45 Quality performance measures under ID will provide incentives for regulated providers to continue to deliver appropriate levels of quality for FFLAS. ID reporting will allow us and interested parties to monitor quality performance through PQP1 to determine whether additional or different quality measures are required, as well as how we may set quality standards, for PQP2.

Fibre deeds (Part 4AA)

- 7.46 The UFB initiative required that fibre providers who offered services that used networks developed (in whole or in part) with Crown funding give undertakings to the Crown. Under Chorus' fibre deeds, it is required to meet equivalence and non-discrimination obligations in relation to the supply of certain PQ FFLAS.
- 7.47 Non-discrimination obligations mean Chorus must not treat access seekers differently to one another, or differently to itself. Equivalence obligations mean Chorus must supply relevant PQ FFLAS to access seekers on the same basis that it supplies to itself.

³³¹ *Fibre Input Methodologies Determination 2020* [2020] NZCC 21, clauses 2.5.1 and 2.5.2.

7.48 The Chorus fibre deeds do not prescribe quality standards for FFLAS but the equivalence and non-discrimination obligations will promote a level of consistency of price and service quality across certain PQ FFLAS. We have taken account of this when making our decisions.

Declared services and s 201

Declared services

- 7.49 The regulatory framework chapter explains the declared services that Chorus must provide to access seekers. The declared services regulations prescribe the description of the anchor services and DFAS, and the terms and conditions (including maximum prices) on which Chorus must provide the declared services.³³²
- 7.50 As noted above, the UFB arrangements have, to date, set the level of service that Chorus' fibre network performs to, and the level of service quality that consumers receive, and we have taken these into account in determining appropriate quality standards.
- 7.51 Clauses 14(3) and 15(3) of Schedule 1AA of the Act require that regulations prescribing a description of the declared services, or conditions of the declared services not be materially different from the terms set out in a UFB contract. The declared services regulations incorporate, by reference, content from the UFB contracts, including service level terms and default payments from the UFB contracts.³³³
- 7.52 We have taken account of specified quality-related service level terms in the declared services regulations when setting the PQ quality standards, which reflect the requirements of the UFB arrangements.³³⁴

³³² Sections 198-200.

³³³ Telecommunications (Regulated Fibre Services) Regulations 2021, regulations 9(1)(c), 12(1)(c), and 16(1)(c).

³³⁴ Shortly before our final decision was made, Chorus commenced judicial review proceedings challenging the legality of the declared services regulations. Our decision is that the quality standards determined in this chapter are appropriate even if Chorus is successful in seeking an order quashing the regulations. We are required to determine the appropriate quality standards as part of our price-quality determination. The quality standards we have set apply to FFLAS generally and do not depend on what services are declared or the detailed terms and conditions of those services. We have also taken into account the judicial review in relation to the decision not to set any optional quality standards at this time.

Section 201

- 7.53 Section 201 requires Chorus to set prices that are geographically consistent for FFLAS that are, in all material respects, the same. This requirement restricts Chorus' ability to price discriminate (by offering the same FFLAS at different prices in different PQ areas). Chorus is also subject to ID requirements and applicable quality standards that disincentivise or limit its ability to offer reduced quality services in different PQ areas (eg, rural vs urban areas).
- 7.54 In making our decisions, we have taken account of the fact that Chorus is restricted in varying its pricing for the same FFLAS in different areas where it provides PQ FFLAS. We have applied quality standards that are consistent across measurement areas to reflect that Chorus cannot differentiate prices by geographic location.

Retail service quality (Part 7)

- 7.55 While Part 6 sets out the requirements for regulating FFLAS quality, we also have powers to regulate retail service quality, and telecommunications consumer matters more broadly, under Part 7.
- 7.56 We said at paragraph 5.39 of our IM reasons paper that we consider the main interaction between Parts 6 and 7 will be on the aspects of service quality that affect fibre end-users and can be controlled,³³⁵ to some extent, by the regulated provider. For example, the service quality that end-users perceive will be based on the end-to-end service experience. This may be made up of actions from the retailer as well as the regulated provider.
- 7.57 In setting our quality standards, we have considered what can be regulated under Part 7 to ensure our decisions are consistent and complementary and do not over-burden industry participants.

Decisions on setting quality standards

General approach

- 7.58 As explained in the regulatory framework chapter, the PQ determination applies to Chorus and to the PQ FFLAS it provides.

³³⁵ Commerce Commission "Fibre input methodologies: Main final decisions - reasons paper" (13 October 2020), paragraph 5.39.

Part 6 regulatory requirements

7.59 In setting our quality standards for PQP1, we have considered the regulatory requirements under Part 6 as a whole (including ID regulatory requirements, the declared services, and s 201). Taking these requirements into account, we do not consider it necessary to:

7.59.1 determine quality standards beyond those that we have specified for the mandatory quality dimensions for PQP1; or

7.59.2 include revenue-linked incentives or compensation schemes for PQP1.

UFB arrangements

7.60 In our IM reasons paper, we stated that the:³³⁶

quality requirements in the UFB contracts assisted us in setting the quality IM dimensions and...they will provide a useful starting point for PQ and ID regulation.

7.61 Consistent with our overall approach of creating a smooth transition to the new regime, we have taken account of the UFB arrangements in making our decisions. As discussed more in relation to specific decisions below, our decisions have been informed by the UFB arrangements, including:

7.61.1 the measures of availability (downtime) and performance (port utilisation);

7.61.2 differentiated service levels (by layer and geographic area for availability);
and

7.61.3 the threshold levels for availability service levels.

Available information

7.62 In our main IMs reasons paper, we said we would consider available information on the quality of regulated FFLAS currently or historically supplied by regulated providers.³³⁷ In making our decisions we have had regard to current information disclosed by regulated providers under subpart 3 of Part 4AA (Services provided using networks developed with Crown funding: Undertakings regime and Commerce Act 1986 authorisations).

³³⁶ Commerce Commission "Fibre input methodologies: Main final decisions - reasons paper" (13 October 2020), paragraph 5.45.

³³⁷ Commerce Commission "Fibre input methodologies: Main final decisions - reasons paper" (13 October 2020), paragraph 5.151.

- 7.63 On 11 December 2020, we issued notices under s 221 to regulated providers for quality information in relation to the UFB arrangements, and reporting capability plans and forecasts. We also made an informal request to Chorus for further and more recent historical data for its average downtime and port utilisation. On 18 August 2021, we issued a subsequent notice under s 221 to Chorus for quality information in relation to historical data for its average downtime, port utilisation and connection numbers (together, **Chorus information requests**).
- 7.64 We held a technical workshop on current fibre industry practices on 26 February 2021 where stakeholders were able to discuss and seek clarification on the requirements for PQ regulation. We also held a quality ID working group session on 9 September 2021 which also had relevance to PQ quality as there was discussion on the measurement of quality dimensions applied for the PQ quality standards.³³⁸
- 7.65 In making our decisions we also considered Chorus' PQ expenditure proposal including relevant published plans and forecasts in relation to quality, such as those set out in Chorus' paper titled "Our fibre plan 2020."

Process and approach paper and quality IM

- 7.66 In making our final decisions, we have taken into account our process and approach paper and the quality IM. We reference these, where relevant, when explaining the reasons for our decisions.

Decisions on the optional quality dimensions

- 7.67 The quality IM states that quality standards may be specified for the optional quality dimensions of ordering, provisioning, switching, faults, and customer service.³³⁹
- 7.68 This section sets out our decisions on quality standards for these optional quality dimensions.

Optional quality dimensions

- 7.69 We have not set quality standards for any of the optional quality dimensions provided for in the fibre IMs (listed in paragraph 7.67 above).

Our draft decisions on the optional quality dimensions

- 7.70 In our draft decisions we did not propose to set quality standards for any of the optional quality dimensions outlined in the fibre IMs.³⁴⁰

³³⁸ See Commerce Commission "Fibre PQID - Quality ID working group session slides" (9 September 2021).

³³⁹ *Fibre Input Methodologies Determination 2020* [2020] NZCC 21, clause 3.6.2.

³⁴⁰ Commerce Commission "Chorus' price-quality path from 1 January 2022 – Draft decision – Reasons paper (Updated)" (27 May 2021), paras 5.65-5.73.

- 7.71 We said given the serious enforcement consequences of a breach of a quality standard, we do not consider that it is proportionate to impose quality standards for the optional quality dimensions at this stage.

Provisioning, faults, and customer service

- 7.72 We proposed not to set quality standards for the provisioning, faults, and customer service quality dimensions. We considered the declared services should provide incentives for Chorus to continue to deliver appropriate FFLAS quality for anchor services and DFAS. Market-based incentives such as competition from FWA providers means there are already strong incentives in these dimensions.
- 7.73 We proposed setting quality metrics and performance measures for provisioning, faults, availability, performance, and customer service under ID regulation. We considered that this would provide adequate visibility of Chorus' PQ FFLAS performance and provide incentives for Chorus to maintain PQ FFLAS quality.
- 7.74 Finally, we noted that faults are implicitly included in the 'average downtime' metric for our proposed availability quality standards.

Ordering and switching

- 7.75 We proposed not to set quality reporting measures for ordering and switching in our draft ID decision and so did not consider it appropriate to specify quality standards under PQ regulation either.
- 7.76 We noted that we had not seen sufficient evidence that ordering and switching were important to the purpose of PQ regulation at this stage. We also noted that switching is covered by the TCF Customer Transfer Code.

Submissions received on our draft decisions on the optional quality dimensions

- 7.77 2degrees submits that it is not valid to exclude applying standards for the optional dimensions on the basis that there are serious enforcement consequences.³⁴¹
- 7.78 Vodafone expresses its disappointment at the light touch of regulation. It submits that little consideration was given to issues raised in the joint submission from 2degrees, Spark, Vocus and Vodafone on the quality aspects of the draft IMs, and that we relied on mechanisms that it considers are likely to be ineffective.³⁴²

³⁴¹ 2degrees "Chorus' price-quality path from 1 January 2022 – Draft decision reasons paper – 2degrees submission" (8 July 2021), p. 8.

³⁴² Vodafone "Vodafone Aotearoa submission on the draft price-quality path to be applied to Chorus – Public version" (8 July 2021), paras 20, 21.

7.79 Vodafone suggests that there should be a quality standard for provisioning because:³⁴³

The fibre install experience remains a major source of complaints from our customers. There have been wait times of several months in the past, missed appointments confusion and poor workmanship.

7.80 Chorus disagrees in its cross-submission that there is a need for quality standards to be determined for the optional dimensions, noting in relation to each optional dimension:³⁴⁴

7.80.1 Provisioning:

7.80.1.1 Chorus states that there are strong market incentives to get provisioning right. Chorus also notes:³⁴⁵

Provisioning is also likely to be subject to regulated service levels under declared service regulations and therefore quality standards are doubly unnecessary.

7.80.2 Faults:

7.80.2.1 Chorus states that there are strong market incentives for fault restoration under declared service regulations. Chorus also notes that faults are a component of the measurement of availability, and so will be implicitly controlled through the availability quality standards.

7.80.3 Customer service:

7.80.3.1 Chorus states:³⁴⁶

RSPs have a significant role to play in connection satisfaction and applying a quality standard for customer service would violate the principle of controllability.

The establishment of new access seekers was more important when UFB was starting but is less critical for PQP1 as the number of new access seekers each year is relatively small.

7.80.4 Ordering:

7.80.4.1 Chorus states:³⁴⁷

³⁴³ Vodafone "Vodafone Aotearoa submission on the draft price-quality path to be applied to Chorus – Public version" (8 July 2021), para 19.

³⁴⁴ Chorus "Cross-submission on Price-Quality draft decision" (3 August 2021), p. 21-22.

³⁴⁵ Chorus "Cross-submission on Price-Quality draft decision" (3 August 2021), p. 21.

³⁴⁶ Chorus "Cross-submission on Price-Quality draft decision" (3 August 2021), p. 22.

³⁴⁷ Chorus "Cross-submission on Price-Quality draft decision" (3 August 2021), p. 21.

Service levels relating to ordering are ancillary in both the fibre reference offer and regulated copper Standard Terms Determinations meaning they are reported against only and there are no service credits payable for failure.

7.80.5 Switching:

7.80.5.1 Chorus states that switching is not only relevant for Chorus, and all parties involved need to play their part to make switching work effectively for end-users. Chorus notes:³⁴⁸

Disconnections and intact provisioning (the steps in a switch) are both subject to service levels under our customer contracts. These service levels are likely to be incorporated in declared services regulation. Therefore, switching will be regulated by other instruments in the framework.

Our final decisions on the optional quality dimensions

- 7.81 Our view is that availability and performance are the two key quality dimensions that require quality standards for PQP1.
- 7.82 We remain of the view that, for PQP1, quality standards for the optional quality dimensions are not warranted at this stage, and the range of other regulatory tools, in particular ID regulation, and external factors such as FWA competition, are sufficient to produce outcomes in the long-term benefit of end-users.
- 7.83 For PQP1, we see ID regulation as a key tool we will use to collect relevant data on the optional dimensions of quality. We can use information collected during PQP1 to inform subsequent price-quality decisions to promote the long-term benefits of consumers. In response to Vodafone's submission around a provisioning standard, we continue to believe that ID measurements of meeting an agreed installation time is sufficient for PQP1.
- 7.84 Furthermore, as Chorus submits, it will be bound by the service levels in the declared services regulations which we consider further mitigates the need for quality standards for the optional quality dimensions for PQP1.³⁴⁹

Decisions on the mandatory quality dimensions

- 7.85 The quality IM requires a PQ determination to specify quality standards for the mandatory quality dimensions of availability and performance.³⁵⁰

³⁴⁸ Chorus "Cross-submission on Price-Quality draft decision" (3 August 2021), p. 22.

³⁴⁹ Chorus "Cross-submission on Price-Quality draft decision" (3 August 2021), p. 21-22. As set out in footnote [13] Chorus commenced judicial review proceedings challenging the legality of the declared services regulations. We note our decision to not set any optional quality standards is appropriate even if Chorus is successful in seeking an order quashing the regulations.

³⁵⁰ *Fibre Input Methodologies Determination 2020* [2020] NZCC 21, clause 3.6.1.

7.86 This section sets out our decisions on the availability and performance quality standards for the mandatory quality dimensions.

Decisions on quality standards for the availability quality dimension

7.87 For the availability quality dimension, we have determined an “average net unplanned downtime” metric with the following quality standards:³⁵¹

7.87.1 the average net unplanned downtime for layer 1 must not exceed 160 minutes in a given availability POI area in a regulatory year; and

7.87.2 the average net unplanned downtime for layer 2 must not exceed 40 minutes in a given availability POI area in a regulatory year.

Calculation of the availability quality standards

7.88 ‘Average net unplanned downtime’ for a regulatory year in an availability POI area is calculated in accordance with the following formula:³⁵²

$$\sum_{i=1}^{12} \frac{\sum NUD_i}{ANAC_i}$$

where—

NUD	means net unplanned downtime for that calendar month in that availability POI area ;
ANAC	means average number of connections for that calendar month in that availability POI area ; and
i	means the calendar month in the regulatory year, where 1 = January, ..., 12 = December.

Exclusions from the availability quality standards

7.89 Unplanned downtime attributed to force majeure events is excluded from the availability quality standard. Force Majeure events include:

7.89.1 fire, floods, storms, earthquake or other act of God;

7.89.2 any act of a public enemy, war, riot, act of civil or military authority;

7.89.3 nuclear, chemical or biological contamination; and

³⁵¹ Note that we have updated the wording in the PQ determination from defining 'average unplanned downtime' to 'average net unplanned downtime' to reflect that we use 'net unplanned downtime' in the calculation of the availability quality standards rather than 'unplanned downtime'.

³⁵² *Fibre Price-Quality Path Determination 2021* [2021] NZCC 27, Schedule 4(1).

- 7.89.4 any act of a third party (not being an employee, agent or subcontractor of Chorus) engaged in subversive or terrorist activity or sabotage.
- 7.90 Force majeure events do not include events that are within Chorus' reasonable control and could have been substantially prevented, avoided, overcome or mitigated by:
- 7.90.1 implementation of any contracted business continuity or disaster recovery service, or any contingency plans agreed between Chorus and the Commission or which Chorus has represented it has in place;
 - 7.90.2 Chorus exercising a reasonable standard of care; or
 - 7.90.3 Chorus using information provided by the Commission or which is available in the public domain.
- 7.91 Unplanned downtime caused by faults to non-diverse transport services and port utilisation equal to or above 95% are also excluded from the measurement of the availability quality standard.

Differentiation by layer

- 7.92 As noted above, we have set separate standards for layer 1 and layer 2 average net unplanned downtime. Within these standards, we also differentiate by availability POI area.

Availability POI areas

- 7.93 POI areas are UFB geographic areas listed in the Notice of points of interconnection under section 231 of the Act issued by the Commission on 19 December 2019.
- 7.94 We have amalgamated the three smallest POI areas (by number of connections) with neighbouring/common POI areas to form 'availability POI areas' for the purposes of the availability quality standards. The reasons for this are discussed below under our final decisions on the availability quality standards.

Our draft decisions on the quality standards for the availability quality dimension

Separate availability quality standards by layer

7.95 In our draft decisions, we proposed to separate the quality standards for layer 1 and layer 2.³⁵³ We considered that having separate standards applying for layer 1 and layer 2 recognised that layers of the network perform differently and are susceptible to different levels and types of disruption. We also noted that the service levels used in the UFB arrangements (which we have used as a starting point for the standards) are separated by layer 1 and layer 2. This was also consistent with our draft decisions on the availability quality measures under ID regulation.

Measurement of the availability quality standards

7.96 In our draft decision, we proposed availability quality standards measured on a monthly basis for each POI area for layer 1 and layer 2.³⁵⁴ We proposed that Chorus would be subject to a maximum of one breach, for each layer 1 and layer 2 standard, per regulatory year (that is, even if there were multiple exceedances of the standard threshold during the regulatory year, it would only qualify as one breach, for a given layer, for that regulatory year).

7.97 We proposed measuring by POI area, consistent with the UFB arrangements, to ensure that service quality across the network remains above a minimum level of availability regardless of the POI area to which PQ FFLAS is provided.³⁵⁵

7.98 We considered that monthly measurement of average unplanned downtime was appropriate:

7.98.1 because if the standards were set at an annual level, rather than monthly, for example, then extreme events within a month may be missed through averaging across the period. These events can cause consumer harm and we considered that they could warrant investigation if they exceeded the proposed standard levels; and

7.98.2 to allow us a sufficiently large sample set to perform robust analysis with different standard levels.

³⁵³ Commerce Commission "Chorus' price-quality path from 1 January 2022 – Draft decision – Reasons paper (Updated)" (27 May 2021), paras 5.82-5.84.

³⁵⁴ Commerce Commission "Chorus' price-quality path from 1 January 2022 – Draft decision – Reasons paper (Updated)" (27 May 2021), paras 5.85-5.108.

³⁵⁵ Commerce Commission "Chorus' price-quality path from 1 January 2022 – Draft decision – Reasons paper (Updated)" (27 May 2021), paras 5.85-5.96.

- 7.99 We proposed that the average unplanned downtime standard apply across a fixed regulatory year for each layer rather than a rolling period (such as is applied in the UFB arrangements). Therefore, for PQP1 there would only be one possible breach of the quality standards per service layer per regulatory year. In reaching our draft decisions we considered that:
- 7.99.1 although a rolling standard may be slightly more theoretically appealing, it can introduce complexity in enforcement and uncertainty around timing of subsequent exceedances of the standard;
 - 7.99.2 for the first regulatory period it is important that all parties have certainty around how the standards are applied and implemented for compliance purposes; and
 - 7.99.3 we can apply our enforcement discretion in a scenario where there are multiple (possibly related) exceedances that cross regulatory years.
- 7.100 We also noted the link between quality outcomes and expenditure Chorus can recover over the PQ period. Chorus has not proposed significant expenditure with the intent to improve quality from current levels.³⁵⁶

Level of the availability quality standards

- 7.101 In our draft decisions, we used service levels from the UFB arrangements as the starting point in setting our proposed quality standard levels. We assumed that the network has been built to meet this level and therefore we have considered whether the UFB service levels should be adjusted for the purposes of applying to Part 6.
- 7.102 For the layer 1 and layer 2 availability quality standards we proposed standard levels based on the service levels from the UFB arrangements with an additional buffer to:³⁵⁷
- 7.102.1 account for the greater enforcement consequences and uncertainty that result from a breach of a Part 6 quality standard compared with the UFB contractual mechanisms;
 - 7.102.2 reduce the probability of unnecessary breaches (ones which do not reflect declines in underlying service performance, but instead random variation in performance);

³⁵⁶ Commerce Commission "Chorus' price-quality path from 1 January 2022 – Draft decision – Reasons paper (Updated)" (27 May 2021), para 5.112.

³⁵⁷ Commerce Commission "Chorus' price-quality path from 1 January 2022 – Draft decision – Reasons paper (Updated)" (27 May 2021), paras 5.85-5.111.

7.102.3 account for our estimated probability that Chorus exceeds the standard level over a given year or three-year regulatory period; and

7.102.4 to allow for expected greater variability between POI areas.

7.103 The additional buffer amounts in the standard levels (above those of the UFB arrangements) were informed by analysis of Chorus' historical performance for each layer and the associated standard deviation as a measure of variation.³⁵⁸

Exclusion of force majeure events and faults to non-diverse transport services

7.104 In our draft decisions, we considered that Chorus should only be exposed to enforcement action and potential statutory penalties if a breach of the quality standard was due to its own behaviour and not caused by a significant event beyond its reasonable control. We noted that were we to include these 'force majeure' events within the standard, it may result in unnecessary investigation and dilute the effectiveness of quality standards.

7.105 We applied the definition for 'force majeure' from the UFB arrangements considering that the list of events it captures, and the exclusions for events within Chorus' control were appropriate. We noted that it is an industry measure that parties have been operating under for the duration of the UFB initiative.

7.106 Force majeure events and faults to non-diverse transport services do not count towards average unplanned downtime.³⁵⁹

Port utilisation measured as downtime

7.107 In our draft PQ determination, for the definition of unplanned downtime, we defined 'fault' as meaning an unplanned outage in PQ FFLAS, or a reduction in performance, specified as port utilisation equal to or greater than 90%.

Submissions received on our draft decisions on the quality standards for the availability quality dimension

Separate availability quality standards by layer

7.108 We did not receive any submissions that disagreed with applying a separate layer 1 and layer 2 standard for availability.

³⁵⁸ Commerce Commission "Chorus' price-quality path from 1 January 2022 – Draft decision – Reasons paper (Updated)" (27 May 2021), paras 5.88-5.91.

³⁵⁹ Commerce Commission "Chorus' price-quality path from 1 January 2022 – Draft decision – Reasons paper (Updated)" (27 May 2021), paras 5.113-5.120.

Measurement of the availability quality standards

7.109 In its submission on our draft decisions, Chorus states that the proposed availability quality standards are inconsistent with the aim of holding quality stable over the first price-path. Chorus states that it is almost certain to breach the proposed availability quality standards every year and that the standards are not achievable with the current network and planned expenditure.³⁶⁰

7.110 Chorus states that:³⁶¹

The granular and frequent application of the proposed availability standards will result in punishing events which are expected and consistent with operation of the network in accordance with good industry practice. In the absence of a long series of reliable historic data, the Commission must consider how the network is built and the impact of expected events in order to set sensible quality standards for availability.

7.111 Chorus suggests that the availability quality standards should be aggregated:³⁶²

7.111.1 over time (for example, requiring multiple exceedances of the availability quality standards threshold in a given regulatory year to result in a breach, or returning to the 12-month rolling average approach applied in the UFB arrangements); and

7.111.2 geographically (for example, requiring exceedances of the availability quality standards threshold in multiple POI areas in a given month to result in a breach, or aggregating POI areas into groups of similar size to avoid incentives to favour smaller POI areas).

7.112 Chorus suggests that aggregating over time would help filter out 'bad months' and ensure that the availability quality standards were only picking up potential deterioration in network quality. Chorus also notes that the 12-month rolling average approach used in the UFB arrangements has informed its business planning and expenditure proposal.

7.113 In its submission on our draft decisions, Vodafone also suggests that it may not be possible for Chorus to meet the layer 1 and layer 2 availability quality standards without substantial over-investment under the proposed monthly measurement of the standards.³⁶³ Vodafone recommends retaining the annual rolling average measure from the UFB arrangements.

³⁶⁰ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), para 174.

³⁶¹ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), para 177.

³⁶² Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), paras 198-202.

³⁶³ Vodafone "Vodafone Aotearoa submission on the draft price-quality path to be applied to Chorus – Public version" (8 July 2021), para 22.

- 7.114 Chorus notes that the number of connections across different POI areas can vary dramatically across the network. Chorus suggests that grouping POI areas would ensure standards are set against a reasonable sample size and remove the incentive to favour small POI areas, giving an example of three geographic areas of Auckland, rest of North Island and South Island.³⁶⁴
- 7.115 Chorus agrees with the proposed maximum of one breach per regulatory year if measures are set on a monthly basis for measuring the standards.³⁶⁵ However, it notes that this would provide little comfort where the availability quality standards are set at such a level that a breach every year is almost certain.
- 7.116 In its submission on our draft decisions, 2degrees queries the proposed maximum of one breach per service layer per regulatory year.³⁶⁶ It notes that this would essentially provide Chorus with a 'free pass' and provide no incentive to ensure it does not exceed the quality standard level again once it has already breached for a given regulatory year. 2degrees states that it is unclear how this would protect service quality or promote the long-term benefits of end-users.³⁶⁷
- 7.117 Chorus also proposes an alternative approach of setting the availability quality standards on a reporting-only basis against targets set by the Commission (rather than having binding quality standards apply). Chorus suggests that this is appropriate because:³⁶⁸
- 7.117.1 there is not a reliable historical dataset;
 - 7.117.2 the consequences of a quality standard breach are potentially severe;
 - 7.117.3 breach reporting would allow the Commission to identify whether the measures are capturing the right kind of events that would warrant a quality standard breach;
 - 7.117.4 PQP1 is short; and
 - 7.117.5 this was the approach applied in Transpower's first PQ path.

³⁶⁴ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), paras 198-200.

³⁶⁵ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), paras 192.

³⁶⁶ 2degrees "Chorus' price-quality path from 1 January 2022 – Draft decision reasons paper – 2degrees submission" (8 July 2021), p. 9.

³⁶⁷ 2degrees "Chorus' price-quality path from 1 January 2022 – Draft decision reasons paper – 2degrees submission" (8 July 2021), p. 9.

³⁶⁸ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), paras 193-197.

Level of the availability quality standards

7.118 As noted above, while Chorus did not submit specifically on the level of the availability quality standards, it states that:³⁶⁹

We estimate we would have failed the Commission's proposed layer 1 downtime standard twice and the layer 2 downtime standard once in the year to March 2021. It is almost certain we would breach the proposed availability standards every year.

7.119 On the layer 1 standard level Vodafone submitted:³⁷⁰

We often apply the rule of thumb that a fibre will be cut about once every 18 months. So, allowing for a single event occurring once every 12 months and lasting up to two hours is reasonable.

7.120 In its submission on our draft decisions, 2degrees states that it does not consider a buffer above the levels in the UFB arrangements is needed.³⁷¹ 2degrees also questions our draft decision reasoning on how the buffer is consistent with what is applied in Part 4 as there are no comparable arrangements to the UFB arrangements under Part 4.

7.121 Responding to 2degrees' submission in its cross-submission, Chorus states:³⁷²

We agree that the UFB SLAs are the appropriate starting point for thinking about quality standards. But it would be clearly inappropriate to transpose contractual service levels into regulatory compliance obligations without considering the different circumstances. We have submitted on this point several times and we are pleased the Commission has recognised this in its draft PQ determination.

Exclusion of force majeure events and faults to non-diverse transport services

7.122 Chorus agrees that the proposed exclusions from the measurement of average unplanned downtime (downtime due to force majeure events and faults on non-diverse transport links) were appropriate.³⁷³ However, it noted that even with the proposed exclusions, the way that the availability quality standards were proposed to be measured would still not avoid capturing expected events leading to breaches.

³⁶⁹ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), paras 174.

³⁷⁰ Vodafone "Vodafone Aotearoa submission on the draft price-quality path to be applied to Chorus – Public version" (8 July 2021), para 22.

³⁷¹ 2degrees "Chorus' price-quality path from 1 January 2022 – Draft decision reasons paper – 2degrees submission" (8 July 2021), p. 9.

³⁷² Chorus "Cross-submission on Price-Quality draft decision" (3 August 2021), p. 22-23.

³⁷³ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), paras 190-192.

Port utilisation measured as downtime

7.123 Chorus submits that utilisation above 95% will continue to count as a fault under its customer contracts. It notes that if the Commission is proposing a separate port utilisation standard, Chorus considers that we should remove the requirement to count utilisation above 95% as downtime under the layer-2 availability quality standard to avoid double jeopardy.³⁷⁴

Our final decisions on the quality standards for the availability quality dimension

7.124 In this section, we explain our final decisions on the availability quality standards. Having regard to the legal framework from paragraph 1.14, and for the reasons in this section, we consider these final decisions best give effect to the purposes in ss 166(2) and 192.

7.125 In particular, we consider the availability quality standards are realistic and achievable, providing Chorus with the incentives to invest in its fibre network and service quality (s 162(a)). The quality standard can also be clearly calculated and applied without penalising Chorus for events outside of its reasonable control, providing Chorus with incentives to supply FFLAS of a quality that reflects end-user demands (s 162(b)).

7.126 We have considered submissions on our draft decision as well as gathered and considered updated quality data via Chorus information requests to reach our final decisions on the availability quality standards.

Separate availability quality standards by layer

7.127 Separate availability quality standards for layer 1 and layer 2 recognise that layers of the network perform differently and are susceptible to different levels and types of disruption. For example, layer 1 is more susceptible to cable cuts (that take longer to resolve) whereas layer 2 is more susceptible to equipment related issues (that take less time to resolve).

7.128 We maintain our draft decision to specify different availability quality standards for layer 1 and layer 2 as set out above. This will ensure a minimum level of quality at each layer and incentivise Chorus to make sufficient investments in layer 1 and layer 2 services respectively (s 162(a)). This remains consistent with our decisions on the availability quality measures under ID regulation.

³⁷⁴ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), paras 213-215.

7.129 We have used the service levels in the UFB arrangements as a starting point for our availability quality standards.³⁷⁵ We have applied this annual approach to account for differences in the structure of the UFB contractual standards (which worked on a 'rolling' basis) and our PQ standards (where we consider an 'annual' approach appropriate). These levels have been in place for the duration of the UFB initiative, so we presume that the network has been built to meet these standards.

Measurement of the availability quality standards

7.130 From submissions on our draft decision, a key theme was that the monthly measurement of average unplanned downtime would be very challenging and could pick up expected events that do not necessarily indicate a deterioration in service quality.

7.131 Our draft decision was based on analysis of availability data relating to the UFB arrangements, which was a 12-month rolling average measurement, rather than the standalone monthly values. We requested monthly up to date data via Chorus information requests and analysed the impact of our proposed draft decisions. Taking into account the submissions received on the matter, we acknowledge there is a risk that a monthly measurement could lead to an excessive number of breaches and provide perverse incentives on Chorus during PQP1.³⁷⁶

7.132 Taking account of the issues submitters raised with our draft decision, we decided to move away from a monthly measurement approach and have adopted a fixed annual measurement approach. A simple annual approach would measure availability over a regulatory year, and assessment against the availability quality standards would be done at the conclusion of the regulatory year.

7.133 In our view there are a number of benefits to a fixed annual measurement approach including:

7.133.1 it is an approach that is simple to calculate and apply, reducing uncertainty in compliance and measurement for PQP1;

³⁷⁵ Under the UFB arrangements, the availability service levels are 120 minutes (annualised) for layer 1 and 30 minutes for layer 2. This translates to monthly standards of 10 minutes for layer 1 and 2.5 minutes for layer 2.

³⁷⁶ For example, applying a quality standard where Chorus considers it is likely to breach every year would dilute the effectiveness of the quality standard; or setting strict monthly measurement could incentivise inefficient investment (for instance, in certain geographic areas that do not reflect overall consumer demands and/or where the costs of doing so are not justified).

- 7.133.2 there is a consistent standard across regulatory years because the measurement does not change based on whether there is a breach or if it is the beginning of the measurement period (which, as noted further below, is an issue with a rolling average approach); and
- 7.133.3 the approach will provide Chorus with incentives to maintain quality and ensure that availability does not degrade over the long term.
- 7.134 We also recognise that there are some potential disadvantages with applying a simple annual approach for the availability quality standards:
- 7.134.1 A simple annual approach will apply over an arbitrary fixed 12-month period based on the regulatory year (as is the issue with any fixed period). Therefore, there may be instances where a rolling average approach would have picked up a quality standard breach where the simple annual approach does not. However, if there was a true degradation in quality of service in a given area, we would expect this to be picked up regardless of whether a simple annual or rolling average approach was applied.
- 7.134.2 Because there is only one standard applying across the regulatory year for each availability POI area, there may be concerns around Chorus not having incentives to maintain FFLAS quality in certain POI areas if it has already breached, or is far from breaching, the standard for the regulatory year. This will depend on the extent to which Chorus has the ability to make quality related changes to FFLAS within a regulatory year.
- 7.135 With this approach we do not consider that Chorus could make short term changes to its expenditure operations to an extent that it could have a significant impact on FFLAS availability. Maintaining quality requires a longer-term strategic focus on investment and maintenance rather than short term changes to take advantage of whether a quality standard is likely to be breached, or has been breached, in a given POI area.
- 7.136 We also considered the option of moving to a 12-month rolling average approach (as suggested in submissions). Under this approach the oldest month gets removed from the measurement as the newest month is added. The measure would also be reset whenever there is a breach.
- 7.137 We agree with submissions that the rolling average approach has some theoretical advantages, but on balance, we have decided that it would not be the optimal approach for PQP1 for a number of reasons.

- 7.137.1 With a rolling average approach, for the first 12 months of the regulatory period there would be less than 12 months' historical availability data to average over.³⁷⁷ If we were to use historical data from the UFB arrangements, Chorus could be doubly penalised for historical performance.³⁷⁸
- 7.137.2 Averaging over less than 12 months (especially when using just one month or averaging over a few months) means that Chorus' measured availability, and hence chance of breaching a quality standard, would be significantly more sensitive to average unplanned downtime. This is particularly so given the measurement by availability POI areas. This could result in breaches in the first 12 months of the period, or following a prior breach, that would not necessarily warrant an investigation if there had been 12 months' worth of data.
- 7.137.3 As noted in our draft decision, a rolling average approach can introduce unnecessary complexity for enforcement and uncertainty around subsequent breaches of the standards.³⁷⁹ This could involve having multiple breaches in a given POI area within a regulatory year (as the measure resets after a breach). This may also not necessarily correlate with a 'deterioration' in service quality if there are some poor months which are measured over fewer than 12 months.
- 7.137.4 Compared with a simple annual approach, a rolling average approach would be complex in its application, particularly following a breach when the measure would be reset for that POI area. We consider that for PQP1 simplicity should be preferred for the quality standards where practicable.
- 7.138 Having taken submissions into account, and for the reasons set out above, we consider that a simple annual measure for the availability quality standards will most effectively promote the quality of FFLAS that end-users demand, providing the right level of incentives to invest (and not over-invest) in the network to meet the availability quality standards. This will apply by measuring the cumulative 'average net unplanned downtime' by availability POI area for each layer for a regulatory year.

³⁷⁷ As this is the first time that quality standards have applied for Chorus under Part 6, the measurement of a rolling average for all availability POI areas and layers would have to begin from scratch.

³⁷⁸ In addition, it would be inappropriate to hold Chorus to account for historical quality performance when it was not subject to the quality standards at the time.

³⁷⁹ Commerce Commission "Chorus' price-quality path from 1 January 2022 – Draft decision – Reasons paper (Updated)" (27 May 2021), paras 5.102.1.

- 7.139 In future resets, when we have more historical data and understanding of Chorus' performance against the standards, we can consider whether other approaches may be more appropriate.
- 7.140 In addition, when there is a breach of a quality standard, we undertake analysis and decide on the appropriate enforcement response, which will take into account the extent to which Chorus has exceeded the standard and the harm caused to consumers.³⁸⁰
- 7.141 We consider that applying a simple annual approach for the availability quality standards provides Chorus with incentives to invest in its network and supply fibre of a quality that reflects end-user demand, thereby best giving effect to the purpose of s 166(2) and 192 of the Act.
- 7.142 We will still be collecting monthly data on Chorus' availability for each POI area, differentiated by layer, under ID during PQP1. Chorus' performance during a given regulatory year will be considered in any breach investigation.

Geographic aggregation

- 7.143 We note Chorus' concerns around geographic disaggregation and potentially having incentives to favour smaller POI areas. In our draft decisions we proposed to measure at a POI area level as this was consistent with the UFB arrangements (which Chorus' fibre network has been built to) and to ensure a minimum level of availability regardless of the location to which PQ FFLAS is provided.
- 7.144 While we remain of the view that geographic disaggregation is important to ensure a minimum level of FFLAS quality is maintained across the network, we agree with Chorus that for the POI areas with significantly fewer connections it may create incentives to invest that do not justify the costs of doing so.³⁸¹
- 7.145 Therefore, we have decided to amalgamate the three smallest POI areas (by average connection as at July 2021) with their respective neighbouring POI area. We consider that, for pragmatic purposes, fibre areas should be based on geographically adjacent areas.

³⁸⁰ If it was found that Chorus breached the availability quality standards and was not seen to efficiently resolve the issue, this could be taken into account. Conversely, if Chorus moved quickly to fix the poor performance despite exceeding the standard, this could also be considered.

³⁸¹ That is, in POI areas with a smaller number of connections, Chorus may need to spend a disproportionate amount of money to ensure that it does not breach the quality standards. Chorus also notes that the reason it has so few connections in these smaller POI areas is because it is not the main UFB provider in the area, thereby providing Chorus with incentives to focus network reliability in areas where it is not the main provider of FFLAS.

7.146 This means a change from 26 POI areas, as specified in our draft decision, to 23 POI areas, which we refer to as the 'availability POI areas'. We have combined:

7.146.1 Whanganui with the Palmerston North POI area;

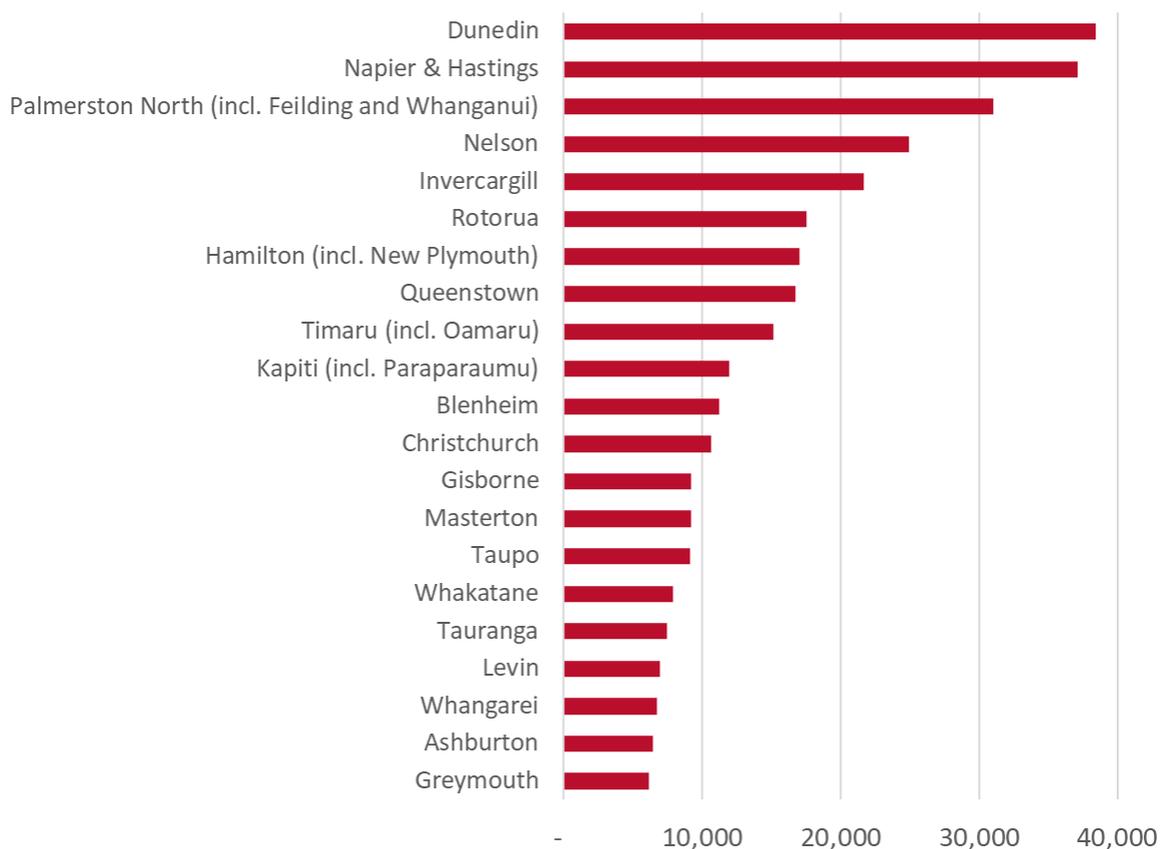
7.146.2 New Plymouth with the Hamilton POI area; and

7.146.3 Oamaru with the Timaru POI area.

7.147 This results in more consistent connection numbers across the measurement areas and removes the issue of having POI areas with significantly smaller numbers of connections being measured separately against the availability quality standards.

7.148 Figure 7.1 below demonstrates the number of average connections for each availability POI area, as at July 2021, excluding Wellington and Auckland (which are significantly larger by connection numbers).³⁸²

Figure 7.1 Average number of connections by availability POI area (excluding Wellington and Auckland) as at July 2021



³⁸² Note that the average connection numbers may differ from those published by Chorus elsewhere due to the way the Commission we requested these be calculated (average number of connections over the month).

7.149 We consider that applying the availability quality standards across each of the availability POI areas provides Chorus with incentives to prudently invest in each area of its network and supply fibre of a quality that reflects end-user demand, thereby best giving effect to the purpose of s 166(2) and 192 of the Act.

Maximum number of breaches of the availability quality standards

7.150 Following our decision to measure the availability quality standards using an annual approach, we have decided to remove the one breach per layer limit on the number of times Chorus can breach the availability quality standards per regulatory year.

7.151 The annual approach for measuring the availability quality standards means that compliance against the quality standards will only be assessed once for the regulatory year (as opposed to twelve times using a monthly measurement or 12-month rolling average approach), for each availability POI area and each service layer.³⁸³

7.152 This means that the availability quality standards for each availability POI area, for each service layer, could each be subject to a potential separate quality standard breach in a given regulatory year. This could result in the following maximum number of breaches:

7.152.1 23 potential breaches in a regulatory year for layer 1 (compliance with the quality standard is assessed for each availability POI area at the conclusion of a regulatory year); and

7.152.2 23 potential breaches in a regulatory year for layer 2 (compliance with the quality standard is assessed for each availability POI area at the conclusion of a regulatory year).

7.153 Based on our move away from monthly availability quality standards, we no longer consider the one breach per layer limit for the availability quality standards to be appropriate because if there were multiple breaches in a regulatory year then:

7.153.1 each of the breaches in the different availability POI areas may not be able to be fully investigated individually as they would if they were separate breaches; and

7.153.2 the maximum penalty associated with a single breach may not be commensurate with the consumer harm from multiple outages across the impacted availability POI areas.

³⁸³ We also note that the UFB arrangements do not appear to limit the number of breaches in respect of availability service levels.

- 7.154 We consider that Chorus should be held accountable for availability in each geographic area for which it supplies FFLAS and have incentives to appropriately invest in its network to reflect consumer demands. We consider this to be more practicable with annual measurement of the availability quality standards. This is also similar to our regulation of EDBs in New Zealand where we apply quality standards to each of the local electricity networks.
- 7.155 Our decision has been informed by 2degrees' submission where it argues that a maximum of only one possible breach per service layer per regulatory year would essentially provide a 'free pass' that once Chorus has breached, and there would be no incentive to ensure the quality standard is not breached again in the same regulatory year.³⁸⁴
- 7.156 We agree with 2degrees and also note that end-users can experience different levels of service quality in different geographic areas. It is important that Chorus FFLAS quality in each POI area reflects the quality that end-users demand and availability quality standards can be assessed and breached by availability POI area.
- 7.157 While Chorus' response to a breach could be relevant to our enforcement response, we consider that it is important Chorus has an incentive to ensure it meets the quality standards for each availability POI area even if it has breached quality standards in another area.
- 7.158 Notwithstanding this, we note the change from measuring availability on a fixed monthly basis (as was our draft decision) to an annual measurement means that it is easier for Chorus to meet the availability quality standards because poor performance months can be averaged out over time.
- 7.159 As discussed below, based on Chorus' historical performance against our fixed annual quality standards, we consider that Chorus has a low probability of breaching either the layer 1 or layer 2 standards during PQP1. Therefore, multiple breaches in a given regulatory year would be significant and warrant investigation as it would imply a substantial drop in network quality.
- 7.160 We consider that allowing for a breach for each availability POI area by layer for each regulatory year better provides Chorus with incentives to prudently invest in each area of its fibre network, improve efficiency and deliver FFLAS of a quality that reflects end-users demands, thereby best giving effect to the purpose of s 166(2) and 192 of the Act.

³⁸⁴ 2degrees "Chorus' price-quality path from 1 January 2022 – Draft decision reasons paper – 2degrees submission" (8 July 2021), p. 9.

Level of the availability quality standards

- 7.161 We have adjusted the buffer amounts in the availability quality standards levels from our draft decisions to take into account our decision to aggregate certain POI areas into the availability POI areas. Our final decision is also supported by more up-to-date data from a Chorus information request.
- 7.162 For layer 1, we have set a revised standard of 160 minutes applying to each availability POI area for each regulatory year. This standard is based on:
- 7.162.1 the UFB contractual level of 120 minutes; plus
 - 7.162.2 an additional 'buffer' of 40 minutes.
- 7.163 We have included the additional 40 minute buffer amount to:
- 7.163.1 account for the greater enforcement consequences and uncertainty that result from a breach of a Part 6 quality standard compared with the UFB contractual mechanisms;
 - 7.163.2 reduce the probability of breaches which do not reflect declines in underlying service performance, but instead random variation in performance; and
 - 7.163.3 allow for variability between POI areas.
- 7.164 The 40-minute buffer for the layer 1 standard has been informed by the estimate of two standard deviations of the average rolling 12-monthly 'average net unplanned downtime' by availability POI area (approximately 16 minutes for one standard deviation).³⁸⁵
- 7.165 For layer 2, we set a revised standard of 40 minutes applying to each availability POI area for each regulatory year. This standard is based on:
- 7.165.1 the UFB contractual level of 30 minutes; plus
 - 7.165.2 an additional 'buffer' of 10 minutes.
- 7.166 As with the buffer for the layer-1 standard, we have included a buffer for layer 2:
- 7.166.1 to account for the greater enforcement consequences and uncertainty that result from a breach of a Part 6 quality standard compared with the UFB contractual mechanisms;

³⁸⁵ We have used a 12-month rolling average in the calculation of the standard deviation to allow for a robust number of observations based on historical data (using annual values would only give four observations).

- 7.166.2 to reduce the probability of unnecessary breaches (ones which do not reflect declines in underlying service performance, but instead random variation in performance); and
- 7.166.3 to allow for variability between POI areas.
- 7.167 The 10-minute buffer for the layer 2 standard has been informed by the estimate of two standard deviations of the average rolling 12-monthly 'average net unplanned downtime' by availability POI area (approximately four minutes for one standard deviation). As noted above, we have used a 12-month rolling average in the calculation of the standard deviation to allow for a robust number of observations based on historical data.
- 7.168 We have used the service levels under the UFB arrangements as a starting point in setting the levels for the availability quality standards. We assume that the network has been built to this level and therefore we have considered whether the UFB level should be adjusted for Part 6 as explained.
- 7.169 The reasoning for our final decisions has not changed. Rather, the necessary changes to the buffer amounts account for:
- 7.169.1 the updated standard deviations using:
- 7.169.1.1 the amalgamated availability POI areas; and
- 7.169.1.2 the longer time series of data gathered from Chorus;
- 7.169.2 our decision to measure the availability quality standards on an annual basis.
- 7.170 We note 2degrees' submission questioning our reference in the draft reasons paper to the use of two standard deviations in Part 4. This was intended to refer to the two standard deviations being used as a measure of variation when setting quality standards (e.g., for quality standards applying to EDBs). There is nothing similar to the UFB arrangements in Part 4, but we still use standard deviation as a measure of variability, around a target or historical average, to reduce the chances of unnecessary breaches arising from natural variations.
- 7.171 We consider the UFB contractual service levels (ie, 120 minutes for layer 1 and 30 minutes for layer 2) to be 'target' levels for PQP1, but the quality standard levels under Part 6 for enforcement purposes are 160 minutes for layer 1 and 40 minutes for layer 2.

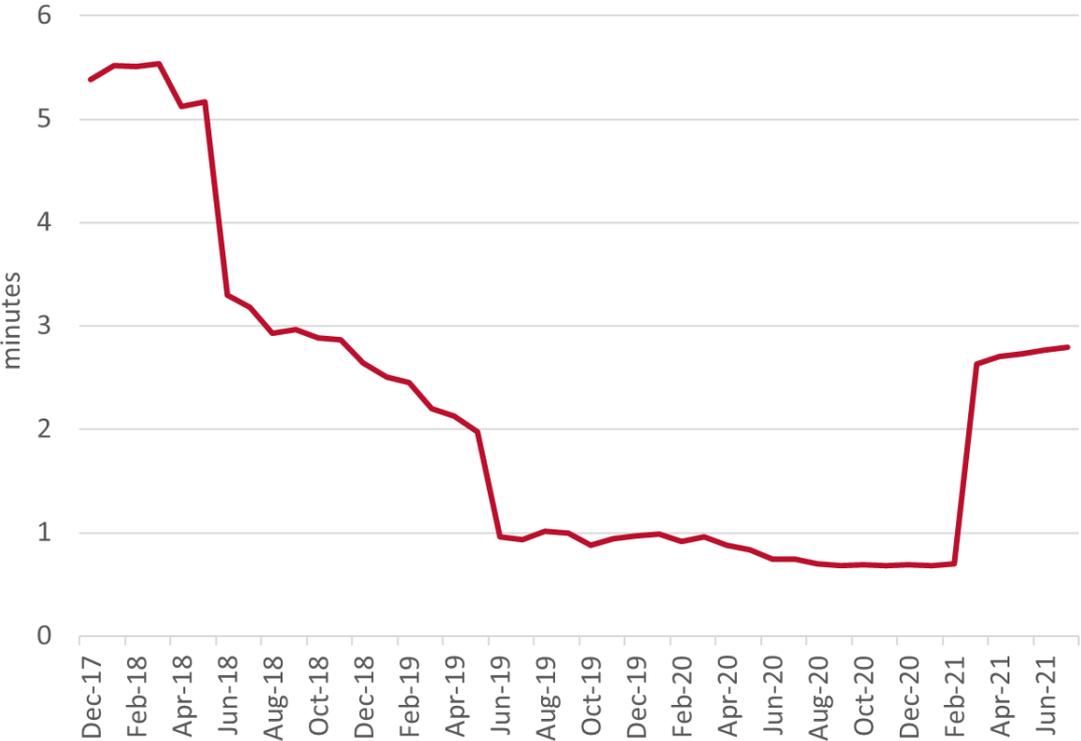
- 7.172 The quality standards we set under Part 6 carry more serious consequences for a breach compared with default payments under the UFB arrangements. Therefore, we see the buffer on the availability quality standards as necessary to reduce the chances of quality standard exceedances that do not warrant investigation and enforcement action.
- 7.173 The 160-minute (for layer 1) and 40-minute (for layer 2) standards are the same in all availability POI areas. This means that quality outcomes across the network should be above a minimum level of availability regardless of the availability POI area to which PQ FFLAS is provided.
- 7.174 We also applied our decision on the level of the availability quality standards to Chorus' historical performance data (to the beginning of 2017). This resulted in:
- 7.174.1 no historical breaches of the layer 1 availability quality standard; and
 - 7.174.2 two breaches of the layer 2 availability quality standard, both for the 2017 regulatory year (ie, two availability POI areas would have breached in 2017).
- 7.175 For context, below we set out two figures showing Chorus' historical 'average net unplanned downtime' performance for layer 1 and layer 2. We have used a national 12-month rolling average to demonstrate the change in quality over time at a national level.³⁸⁶ Note that this is Chorus' national availability performance but there can be significant variation within POI areas throughout the fibre network.

³⁸⁶ Note that we have only shown data from where there was 12-months' worth of data to ensure consistent measurement across observations. Ie, the first 11 months of data we received are not shown on the figures below.

Figure 7.2 Chorus national layer 1 average net unplanned downtime (rolling 12-month average)



Figure 7.3 Chorus national layer 2 average net unplanned downtime (rolling 12-month average)



7.176 We consider that the availability quality standards levels for layer 1 and layer 2 provide Chorus with incentives to prudently invest in its fibre network and supply FFLAS of a quality that reflects end-user demand, thereby best giving effect to the purpose of s 166(2) and 192 of the Act.

Exclusion of force majeure events

7.177 We maintain our view that Chorus should only be exposed to enforcement action and potential statutory penalties if a breach of the availability quality standards is due to its own behaviour and not caused by a significant event beyond its reasonable control. Were we to include these 'force majeure' events within the availability quality standard, it may result in unnecessary investigation and dilute the effectiveness of the quality standards.

7.178 We have applied the definition for 'force majeure' from the UFB arrangements. We consider that the list of events it captures, and the exclusions for events within Chorus' control are appropriate. It is an industry measure that parties have been operating under for the duration of the UFB initiative.

7.179 In Chorus information requests, we obtained historical data which excludes these force majeure events from availability service levels under the UFB arrangements. As such, we maintain our view that the availability quality standards should also exclude force majeure events.

Exclusion of faults to non-diverse transport services

7.180 We also maintain our view that 'average net unplanned downtime' in the availability quality standards should exclude faults to non-diverse transport services.³⁸⁷

7.181 This approach is consistent with the approach in the UFB arrangements. We have done this for two reasons:

7.181.1 further investment in additional redundancy would need to be considered alongside the costs of doing so – we do not consider this appropriate for the first regulatory period; and

7.181.2 as with force majeure events, to set a proportionate standard using historical data that applies a particular way of measuring standards, the standard should be designed consistently.

³⁸⁷ Non-diverse transport services are transport services where there is only one traffic path and no diverse path in the event of a network failure. As an example, some remote areas with a low number of connections may only have one traffic path into the area.

7.182 Chorus agrees with our draft decisions that the proposed exclusions are appropriate and states that its proposal did not include expenditure for these types of events.

Port utilisation measured as downtime

7.183 For the definition of 'unplanned downtime', we have defined 'fault' as meaning a reduction in performance, specified as port utilisation equal to or greater than 95%, as specified in the PQ determination. This updates our draft decision which specified port utilisation equal to or greater than 90%.

7.184 As previously discussed, when port utilisation reaches a certain level, it can result in a port being unavailable at the layer 2 level. This could be picked up in both the layer 2 availability and performance quality standards.

7.185 In submissions, Chorus noted that 95% port utilisation constitutes a fault under Chorus' customer contracts.³⁸⁸ We agree with Chorus, and we have updated our final decision to reflect this.

7.186 By changing port utilisation to 95% under the fault definition, it means that Chorus will not be potentially penalised twice (through both the availability and performance quality standards) for the same event. Otherwise, it could unevenly weight different events and lead to potentially inconsistent measurement for the mandatory quality standards. We also recognise that 95% is widely considered to be the level where the fibre network associated with that port is considered to be non-performing.³⁸⁹

7.187 As shown in paragraph 7.88, the calculation of the availability quality standards uses 'net unplanned downtime' in the calculation of 'average net unplanned downtime'. Net unplanned downtime means unplanned downtime excluding the elements of unplanned downtime not included in the availability quality standard. As stated in the PQ determination, net unplanned downtime means unplanned downtime minus the length of time an access seeker or end-user experiences a fault to their PQ FFLAS attributable to:

7.187.1 a force majeure event;

7.187.2 non-diverse transport services; and

7.187.3 port utilisation equal to or above 95%.

³⁸⁸ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), paras 213-215.

³⁸⁹ Chorus "Congestion Free Networks White Paper" (September 2016), pages 7-8.

7.188 Therefore, faults caused by port utilisation equal to or above 95% will be excluded from unplanned downtime specifically in relation to the availability quality standard.

Our final decisions on the quality standard for the performance quality dimension

7.189 For the performance quality dimension, we have determined a 'port utilisation' metric with the following quality standard:³⁹⁰ For the performance quality standard applying for a regulatory year, the percentage of Chorus' ports experiencing port utilisation, upstream or downstream, equal to or exceeding 90% in any five-minute interval in one or more calendar months, must not exceed 0.12%.

Calculation of the performance quality standard

7.190 'Port utilisation' is calculated as a percentage figure in accordance with the following formula:³⁹¹

$$\frac{octets \times 8}{5 \times 60 \text{ seconds} \times PS} \times 100$$

where—

<i>octets</i>	means the number of octets at a port , being the greater of the inOctets or the outOctets , measured over the 5-minute interval in accordance with RFC 2863 , and includes framing characters, but excludes Ethernet preamble, start from delimiter, and interpacket gaps; and
<i>PS</i>	means port speed and is measured in bps .

7.191 Port utilisation measurement includes all physical, virtual and sub-interfaces within the physical ports that are within the regulated provider's fibre access network (**FAN**) excluding User Network Interface (**UNI**), ENNI and PON ports.

7.192 We have not specified differentiating the performance quality standard by geography or otherwise.

³⁹⁰ "Port" means all physical, virtual and sub-interfaces for the exchange of traffic and excludes UNI, E-NNI and PON ports.

³⁹¹ *Fibre Price-Quality Path Determination 2021* [2021] NZCC 27, Schedule 4(2).

Our draft decisions on the quality standard for the performance quality dimension

Measurement of the performance quality standard

- 7.193 In our draft decisions, we proposed a performance quality standard based on a 90% port utilisation threshold for each month. We considered 90% utilisation to be a timely indicator of network stress and that if a port reaches this level, then investment is required to upgrade infrastructure. Only a very low percentage of ports should ever reach or exceed the 90% threshold.
- 7.194 We proposed that the performance quality standard for PQ FFLAS should be measured at an aggregate level across the fibre network. We noted that the quality standard would pick up any significant proportion of ports with utilisation at or above 90%. We proposed that, based on our draft ID decisions, we would be able to see performance at a POI level through the ID disclosures, which prescribed a performance metric and measure differentiated by POI area.
- 7.195 We proposed that, for PQP1, there could be a maximum of one possible breach of the quality standard per regulatory year.

Level of the performance quality standard

- 7.196 We proposed a quality standard of 0.10% of ports with utilisation equal to or above 90% for PQ FFLAS, measured each month and aggregated across the fibre network. This standard level was significantly above the mean and median values of the historical data (0.019% and 0.016% respectively) and took into account the 'long-tailed' nature of the performance data.
- 7.197 We expected that only in extreme circumstances would Chorus exceed this level in a given month, which we considered would warrant investigation and potential enforcement action as it would imply insufficient investment.

Submissions on our draft decisions on the quality standard for the performance quality dimension

Measurement of the performance quality standard

- 7.198 In its submission on our draft decisions, Chorus agrees with the decision not to disaggregate the performance quality standard.³⁹² It notes that this is consistent with supporting good overall capacity planning. It states:³⁹³

A geographically disaggregated standard would not be workable or consistent with the purpose of quality standards. We also note the Commission says, although there will not be standards in each POI area, the Commission will be able to identify any local congestion issues in ID disclosures.

³⁹² Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), paras 203-204.

³⁹³ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), para 204.

- 7.199 Chorus submits that, consistent with its reasoning on the availability quality standards, it believes that reporting against targets would be the most appropriate approach for PQP1 (rather than having binding quality standards).³⁹⁴
- 7.200 Chorus suggests that a 95% port utilisation threshold would be more appropriate than our proposed 90%. Chorus notes that 95% is more appropriate because:³⁹⁵
- 7.200.1 95% is the current utilisation threshold under the UFB arrangements so the 90% proposal increases the network capacity requirement;
- 7.200.2 95% utilisation is the level which will trigger a fault, and it would be inconsistent to set a lower quality standard based on a lower threshold;
- 7.200.3 its expenditure proposal includes allowances for capacity augmentation based on a 95% utilisation threshold, and if this was lowered it would be inconsistent with the proposal; and
- 7.200.4 at 90% utilisation there is unlikely to be any performance degradation experienced by end-users.
- 7.201 In its submission on our draft decisions, Vodafone agrees with setting the quality standard based on the 90% utilisation threshold.³⁹⁶ It states that 90% utilisation represents a good threshold for an unacceptable level of performance. Additionally, it notes “[p]ort utilisation above 80% will result in a poor customer experience, however, we agree that the blunt enforcement approach chosen requires some buffer”.³⁹⁷
- 7.202 We did not receive any submissions on our draft decision to set a maximum of one possible breach of the performance quality standard per regulatory year.

Level of the performance quality standard

- 7.203 On the proposed proportion of ports above the maximum threshold for the performance quality standard, Chorus states that the 0.1% level is appropriate provided that:³⁹⁸
- 7.203.1 the maximum port utilisation threshold is increased to 95%; and

³⁹⁴ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), para 205.

³⁹⁵ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), paras 207-209.

³⁹⁶ Vodafone "Vodafone Aotearoa submission on the draft price-quality path to be applied to Chorus – Public version" (8 July 2021), para 22c.

³⁹⁷ Vodafone "Vodafone Aotearoa submission on the draft price-quality path to be applied to Chorus – Public version" (8 July 2021), para 22c.

³⁹⁸ Chorus "Submission on price-quality path draft decision – Public version" (8 July 2021), paras 210-212.

7.203.2 ports where utilisation above the threshold is caused by network failures are excluded from the calculation.

Our final decisions on the quality standard for the performance quality dimension

- 7.204 In this section, we explain our final decisions on the performance quality standard. Having regard to the legal framework from paragraph 1.14, and for the reasons in this section, we consider these final decisions best give effect to the purposes in ss 166(2) and 192.
- 7.205 In particular, we consider the performance quality standard is achievable and measured appropriately providing Chorus with incentives to innovate and invest in its fibre network (s 162(a)) and supply FFLAS of a quality that reflects end-user demands (s 162(b)).
- 7.206 We have considered submissions on our draft decision as well as gathered and considered updated quality data via Chorus information requests to reach our final decisions on the performance quality standard.

Measurement of the performance quality standard

- 7.207 We maintain our decision to measure the performance quality standard at equal to or above 90% port utilisation each month. We consider that it is important to capture extreme events that occur within a month that are in exceedance of our performance quality standard level.
- 7.208 In its expenditure proposal, Chorus indicated that 90% is the appropriate threshold as a timely indicator of network stress and more meaningful than other methods of measurement.³⁹⁹
- 7.209 Chorus uses a traffic light system to highlight network planning for port utilisation.⁴⁰⁰ The threshold of 90% is where Chorus considers end-users may start to notice reduction in performance.
- 7.210 If a port reaches 90% utilisation, then investment is needed to upgrade infrastructure. It therefore follows that a very low percentage of ports should ever reach or exceed this level.

³⁹⁹ Chorus' expenditure proposal overview document, Chapter 5, Our Fibre Plans, 2020, page 52.

⁴⁰⁰ Chorus "Congestion Free Networks White Paper" (September 2016), page 7.

- 7.211 We consider 90% port utilisation to be the right measure as it will capture deteriorating performance before consumers are adversely affected. Further, Chorus itself applies 90% port utilisation to plan for augmenting capacity and its investment decisions.⁴⁰¹ In our view, this is preferable to a 95% port utilisation threshold where quality has already deteriorated to such a degree that consumer experience is impacted.
- 7.212 Chorus suggests that moving from the 95% utilisation threshold in the UFB arrangements to a 90% threshold for the quality standard increases the network capacity requirements. This depends on the proportion of ports above the maximum utilisation threshold that we set for the quality standard level (even if we were to use a 95% utilisation threshold the network capacity requirement would also change if we did not simply adopt the UFB contractual levels).
- 7.213 We have set the quality standard level based on Chorus' historical performance of ports exceeding the 90% utilisation threshold (while it has been operating under the UFB arrangements). Therefore, we consider that the performance expected under this quality standard is consistent with service quality that Chorus has been providing to consumers historically, in line with our target of no degradation in service quality.
- 7.214 Chorus states that there is unlikely to be any performance degradation at 90% port utilisation. However, Vodafone submits that customers will experience some degradation at over 80% utilisation, and that 90% represents a good threshold for unacceptable performance.
- 7.215 We agree with Vodafone, given the high rate of growth of traffic (expected to be approximately 4 - 5% per month), the expected time to go from exceeding 90% utilisation to exceeding 95% utilisation of a port is relatively short (1 - 2 months). Given the short expected timeframe between exceeding 90% and 95% utilisation for a given port, we consider 90% to be a better timely indicator of investment need.⁴⁰² By the time a given port has exceeded 95% it is too late and consumers will be adversely impacted.

⁴⁰¹ Chorus states that it plans based on a two-year forecast and updates these over time to signal where investment is required. For utilisation from 70 to 90% Chorus will likely have planning well underway to augment capacity. Capacity planning never intends utilisation to reach 90% and if it reaches 95% then the network has failed. See: Chorus "Congestion Free Networks - Technical white paper" (2016).

⁴⁰² While the UFB arrangements measure a 95% utilisation threshold, a 90% utilisation threshold in the context and for the requirements of the quality standard is appropriate and will not have a significant impact on Chorus' investment requirements. It is also consistent with observed historical performance.

- 7.216 We consider that this creates meaningful incentives for Chorus to continue investing in network capacity, consistent with s 162(a), in addition to promoting incentives for Chorus to continue to deliver service at a level of quality that meets end-user demand.
- 7.217 We also maintain our draft decision that exceeding the performance quality standard level in one or more calendar months in a regulatory year will result in a breach of the performance quality standard. That is, even if there are multiple monthly exceedances in a given regulatory year, this will only constitute one quality standard breach.
- 7.218 If there are widespread or repeated exceedances of the standards in a given regulatory year, we will take this into account in our enforcement discretion and can consider further quality performance measures or quality standards if it is causing harm to end-users.
- 7.219 We have not specified differentiating the performance quality standard by geography or otherwise. Although there will not be standards in each POI area, we will be able to see performance through the ID disclosures, which prescribes a performance metric and measure differentiated by geography (by POI area).
- 7.220 This is supported in Chorus' expenditure proposal document where it states that aggregation of network port utilisation is where it has the best baseline data and is consistent with the UFB arrangements.⁴⁰³ This is also supported by Chorus' submission on our draft decisions where it notes an aggregated port utilisation supports good overall capacity planning.
- 7.221 The performance quality standard (and associated ID disclosures) will only measure performance on the FAN portion of Chorus' fibre network. The performance quality standard does not measure performance on the regional ethernet network (REN) portion of Chorus' fibre network.⁴⁰⁴ We note that the REN portion of Chorus' fibre network is extremely small, and it is not practical to include it within the performance quality standard.
- 7.222 This further detail aims to provide more clarity on our decision for the measurement of the performance quality standard. We note:
- 7.222.1 the approach is consistent with the UFB arrangements;

⁴⁰³ Chorus "Our Fibre Plans 2020" (2020), page 52.

⁴⁰⁴ Chorus essentially operates two aggregation networks: The Regional Ethernet Network (REN) and the Fibre Aggregation Network (FAN). The REN principally supports copper services, and the FAN supports fibre services. Historically, Chorus only reported port utilisation on the FAN to CIP because all UFB traffic was supported by the FAN.

- 7.222.2 the approach captures almost all of the PQ FFLAS over Chorus' fibre network (a very small amount of FFLAS is excluded); and
- 7.222.3 Chorus estimates that only approximately 2.3% of the traffic on the REN at peak time is FFLAS, and that this is expected to reduce over time.⁴⁰⁵
- 7.223 It would be difficult to try to measure the FFLAS component of the REN consistently and accurately, and we consider it not to be proportional when it only applies to such a small proportion of PQ FFLAS on the overall fibre network.
- 7.224 We have specified a port utilisation calculation to ensure that the measure is applied and assessed consistently over the price-path, and across PQ and ID regulation. If we did not specify a method of calculation, there could be incentives to vary the calculation methodology to enhance reported performance.
- 7.225 We consider our calculation of port utilisation is in accordance with standard industry practice. We based the calculation on calculations from CIP's UFB performance management and reporting document which we understand is applied in practice by Chorus under the UFB arrangements.⁴⁰⁶
- 7.226 We consider that setting the performance quality standard to measure the proportion of ports with utilisation equal to or above 90% for PQ FFLAS, across Chorus' fibre network, provides Chorus with incentives to prudently innovate and invest and supply FFLAS of a quality that reflects end-user demands, thereby best giving effect to the purpose of s 166(2) and 192 of the Act.

Level of the performance quality standard

- 7.227 Generally, we use a historical average and some statistical measure of variation to set quality standards. This is based on an assumption of normally distributed data. However, for port utilisation, the data does not exhibit a normal distribution (that is, it has significant positive skewness)⁴⁰⁷ and so we cannot apply the usual standard deviation approach to set a standard.

⁴⁰⁵ Note that the 2.3% value is the proportion of traffic on the REN at peak time and not a proportion of monthly data usage.

⁴⁰⁶ Crown Infrastructure Partners "UFB Performance Management and Reporting" (June 2017).

⁴⁰⁷ Positive skewness means that the data is skewed to one side. A majority of the observations in the data are zero with a 'long tail' of a small number of observations with a high proportion of port utilisation above 90%. Data with a normal distribution has a skewness of zero as the data (in a bell curve) is symmetrical around the mean.

7.228 After receiving more up to date data via Chorus information requests, we have updated the performance quality standard so that for PQ FFLAS, the percentage of Chorus' ports experiencing port utilisation, upstream or downstream, equal to or exceeding 90% in any five-minute interval in one or more calendar months, must not exceed 0.12%.

7.229 Based on available information, we consider this standard level to be the most accurate and suitable. The standard level is significantly above the mean and median values of the historical data (0.02% and 0.015% respectively) and takes into account the potentially long-tailed nature of the measure.⁴⁰⁸ We further note that:

7.229.1 Chorus states that historic data shows that it has never exceeded 0.2% of ports equal to or above 90% utilisation;⁴⁰⁹

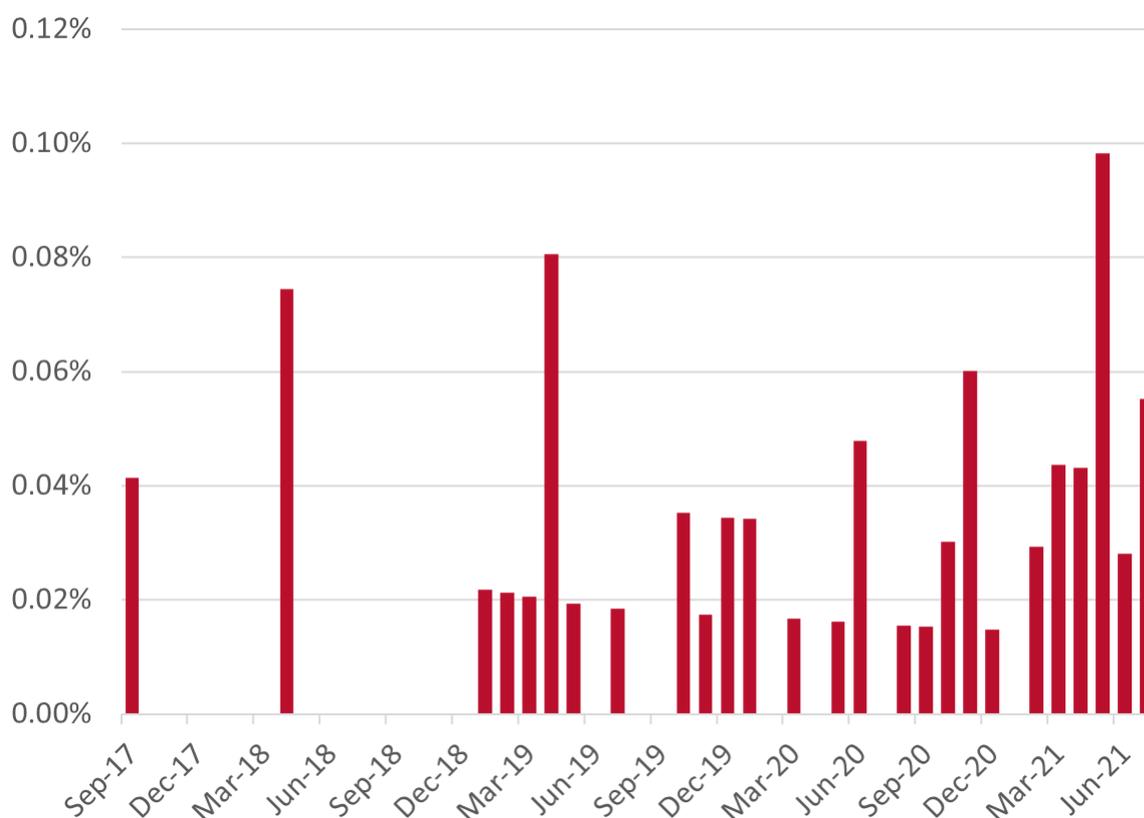
7.229.2 we would expect that only in extreme circumstances would Chorus exceed the 0.12% level in a given month which we consider would warrant investigation.

7.230 Figure 7.4 below shows data based on Chorus' historical port utilisation performance. The figure is based on the proportion of INNI and network ports on the REN with utilisation equal to or above 90%.

⁴⁰⁸ The historical monthly port utilisation data is the proportion of ports equal to or above 90% utilisation from September 2017 to July 2021.

⁴⁰⁹ Chorus "Our Fibre Plans 2020" (2020), pages 52, 53.

Figure 7.4 Chorus aggregated proportion of ports with utilisation ≥ 90%



7.231 We consider that the level of the performance quality standard provides Chorus with incentives to prudently innovate and invest in its fibre network and supply FFLAS of a quality that reflects end-user demand, thereby best giving effect to the purpose of s 166(2) and 192 of the Act.

Decision on incentives and compensation schemes

Our final decision

7.232 A PQ path may include penalties and rewards, and compensation schemes.⁴¹⁰

7.233 Our decision is not to implement a revenue-linked incentive (reward or penalty) or compensation scheme for PQP1.

7.234 We did not receive any submissions on our draft decisions on incentives and compensation schemes.

Reasons

7.235 We continue to consider that our quality standards provide adequate incentives for Chorus to maintain an appropriate level of quality in its supply of FFLAS for PQP1.

⁴¹⁰ Sections 194(3)(a), (b) and (c).

- 7.236 As set out in paragraph 7.59 above, in making our final decisions, we considered the regulatory requirements under Part 6 as a whole, including ID regulation requirements, the declared services regulations and s 201 requirements. For example, the declared services regulations include compensation to access seekers for missed service levels for provisioning and faults.
- 7.237 We consider imposing an incentive in the absence of clear information about the value end-users place on a given level of service quality runs the risk of creating significant perverse incentives if the incentive rate is set too high or too low. For example, if we set an incentive rate that is too high (low), based on insufficient information on cost-quality trade-offs, Chorus may be incentivised to significantly increase (decrease) service quality in a way that does not reflect consumer preferences in a given area or geography. End-users may not be willing to pay more for improved service quality from current levels, but an incorrectly calibrated incentive scheme could potentially lead to this outcome (and vice versa).
- 7.238 As previously noted, we consider that a key purpose of PQP1 is to collect relevant information through ID and ensure a smooth transition for Chorus and other industry participants into the new regulatory framework. We can reassess whether quality incentives are appropriate in future resets using information from quality performance, and potentially cost-quality trade-offs during PQP1.
- 7.239 For the reasons set out above, having regard to the legal framework from paragraph 7.15, we consider our decisions on the incentives and compensation schemes best give effect to the purposes of ss 166(2) and 192.

Decisions on reporting and compliance

Our final decisions

Compliance reporting

- 7.240 Our decision is that Chorus must report on all quality standards at the end of each regulatory year.⁴¹¹

Breach reporting

- 7.241 Where any quality standard is breached, Chorus would also be required to publish a breach report in respect of all exceedances of the quality standards during that regulatory year. The report must contain an explanation of the breach, including the cause and action taken to remedy the breach.

⁴¹¹ Section 193(2).

Reasons

- 7.242 In its submission on our draft decisions, 2degrees noted its support for our proposed decisions on the requirement to publish a breach report in respect of all exceedances of the quality standards during that year, and for Chorus to produce this report following the end of the year where the breach occurred.⁴¹²
- 7.243 We continue to consider that annual reporting of the information necessary to assess compliance adequately balances our need to monitor compliance in a timely manner against the need to limit undue regulatory burden. As all of the quality standards are assessed on an annual basis, we consider annual reporting to be appropriate.
- 7.244 Our decisions on reporting and compliance accord with s 194(3)(d), which provides a PQ path may include “reporting requirements, including special reporting requirements in asset management plans, if the provider fails to meet the quality standards”.
- 7.245 We have also based our decisions on existing fibre reporting requirements under Part 4AA where disclosure is made annually. We also note that under Part 4, reporting is done on an annual basis.
- 7.246 Data from the Chorus information requests shows our decisions on reporting and compliance are consistent with, and no more onerous than, Chorus' current reporting practices under the UFB arrangements where reporting is monthly and published quarterly. We consider the reporting requirements we have specified will provide the appropriate level of granularity to analyse trends in Chorus' FFLAS quality against the quality standards over a regulatory year.
- 7.247 We have also set reporting and compliance obligations for the availability quality standards differentiated by availability POI areas as explained in paragraphs 7.143 to 7.149 above.
- 7.248 We also continue to consider it necessary that Chorus publish a report where it exceeds a quality standard during a regulatory year. The report must contain an explanation of the breach, including the cause and action taken by Chorus to remedy the situation. This breach reporting provides interested parties with clarity on causes of events impacting service quality and expected steps to resolve these issues.

⁴¹² 2degrees "Chorus' price-quality path from 1 January 2022 – Draft decision reasons paper – 2degrees submission" (8 July 2021), p. 10.

7.249 For the reasons set out above, having regard to the legal framework from paragraph 7.15, we consider our decisions on reporting and compliance best give effect to the purposes of ss 166(2) and 192.

Attachment A Technical details for revenue path and wash-up mechanisms

Purpose and structure of this attachment

- A1 This attachment explains our final decisions on the design and implementation of the revenue path and wash-up mechanisms, and our reasons for them.
- A2 It starts by discussing what we have considered when reaching these final decisions. It then covers our approach to the revenue cap, and then our approach to the wash-up.

Relevant considerations

- A3 Under s 166(2) of the Telecommunications Act 2001 (the Act), we must make determinations and decisions that we consider best give, or are likely to best give, effect:
 - A3.1 to the purpose in s 162; and
 - A3.2 to the extent that we consider it relevant, to the promotion of workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services.
- A4 The final decisions we have made about the revenue path and wash-up are in part an application of the fibre IMs (predominantly the specification of price and revenues IM) but in most cases require an exercise of judgement.
- A5 Where the final revenue path and wash-up decisions and/or the fibre IMs require us to exercise judgement, we have explained why those decisions best give, or are likely to best give, effect to the s 166(2) purposes (within the requirements of other provisions of the Act).
- A6 Where we must make our decisions according to specific legal requirements that constrain the exercise of judgement, we have explained our decisions by referencing our specific obligations under the fibre IMs or the Act.
- A7 All our individual decisions have been made because we consider that they contribute towards our aim of determining a revenue path and wash-up mechanism that best gives or is likely to best give, effect to the s 166(2) purposes. We have not considered it necessary to specifically explain why each individual recommended final decision best gives, or is likely to best give, effect to the s 166(2) purposes. Rather, each individual recommendation, and our rationale for each recommendation, is intended to contribute to our overall determination of the revenue path and wash-up that best gives, or is likely to best give, effect to the s 166(2) purposes.

- A8 However, where promotion of the purpose of Part 6 or workable competition are determinative for individual decisions, we have identified how they are relevant, and discussed how our decisions best promote them, relative to other realistic alternatives.
- A9 In addition to the s 166(2) matters, there are also specific statutory provisions we must give effect to when making decisions about the revenue path and wash-up. Specifically:
- A9.1 the purpose of PQ regulation (s 192);
 - A9.2 the requirements for what a PQ path must specify (s 194);
 - A9.3 the requirement to specify maximum revenues and not maximum price or prices (s 195);
 - A9.4 the requirement to apply a wash-up mechanism for over- or under-recovery during PQP1 (s 196);
 - A9.5 the requirement to smooth revenues if, in our opinion, it is necessary or desirable to minimise undue financial hardship to regulated providers or to minimise price shocks to end-users (s 197); and
 - A9.6 the requirement to apply the relevant IMs when determining prices (s 175).
- A10 Finally, we need to consider the interactions between our decisions on the revenue path and wash-up and the regulations in respect of anchor services and DFAS under ss 227 and 228.
- A11 Our discussion of the relevant considerations comprises:
- A11.1 the relevant limbs of the s 162 purpose, as set out in paragraphs A12-A13;
 - A11.2 the relevance of the promotion of workable competition in telecommunications markets, as set out in paragraphs A14-A16;
 - A11.3 the purpose of PQ regulation, as set out in paragraphs A17-A18;
 - A11.4 how our revenue path and wash-up decisions fulfil some of the requirements for a PQ path, as set out in paragraphs A19-A22, including the requirement to specify a revenue cap and not a price cap;
 - A11.5 the requirement to specify a wash-up, as set out in paragraphs A23-A24;
 - A11.6 the requirement to consider revenue smoothing, as set out in paragraphs A25-A29;

- A11.7 interactions with declared services, as set out in paragraphs A30-A33;
- A11.8 the relevant requirements of the fibre IMs, as set out in paragraph A34;
and
- A11.9 the relevant economic principles, as set out in paragraphs A35-A41.

Relevant limbs of the section 162 purpose

- A12 In considering how to best give effect to the purpose of Part 6 when making decisions about the revenue cap and wash-up, we are concerned with:
 - A12.1 Chorus' incentives to invest under s 162(a) – a credible pathway to recovering past and future investments is necessary for Chorus to have on-going incentives to invest and access to the capital it needs to fund this investment;
 - A12.2 Chorus' incentives to improve efficiency under section 162(b) – inclusion of a wash-up for a given component of the revenue path effectively removes Chorus' incentives to manage it, so we need to ensure this does not adversely affect incentives for efficiency; and
 - A12.3 limiting excessive profitability under s 162(d) – the revenue path substantially determines profitability over the short term, wash-up does so over the long term.
- A13 The other limb of the purpose statement is less directly relevant to the revenue path and wash-up. However, as discussed in Chapter 2, our obligation to best give effect to the purpose applies to our PQ decision as a whole, and we consider that other aspects of the PQ path adequately promote the other limb.

Relevance of the promotion of workable competition in telecommunications markets

- A14 We must also promote workable competition in telecommunications markets for the long-term benefit of end-users of telecommunications services where relevant. We consider competition is relevant to our revenue path decisions in three ways:
 - A14.1 the risk the flow-on impact on Chorus' pricing decisions may affect the ability of fixed wireless access (FWA) providers and unbundled layer 2 providers to compete with Chorus in access markets;
 - A14.2 the risk of the wash-up mechanism allowing Chorus to artificially lower the prices of its products in the short term, while remaining whole in present value terms via the wash-up, again threatening competition from FWA providers or unbundled layer 2 providers; and

A14.3 conversely, the revenue recovery profile we determine should where possible provide Chorus the opportunity to compete effectively.

A15 We have not attempted to use the revenue path and wash-up mechanism to eliminate these risks. As a tool that works in the aggregate, the revenue path is not well suited to such a task. Instead, our decisions have focused on avoiding the regulation distorting pricing where possible. As discussed in relation to alternate depreciation of the FLA, we consider an approach that maintains real per-user revenue at current levels best achieves this in the short term.

A16 We consider other tools (such as the pricing and contract disclosures in our ID final decisions, the declared services, or equivalence and non-discrimination obligations under the fibre deeds) are better suited to managing competition risks from pricing.

Purpose of PQ regulation

A17 The purpose of PQ regulation under s 192 is to regulate the price and quality of FFLAS provided by regulated providers. The revenue path must act as a regulatory constraint on the price of Chorus' FFLAS.

A18 We consider that our revenue path decisions meet the purpose of PQ regulation in s 192 by specifying an amount of allowable revenue in respect of FFLAS that best gives effect to the s 166(2) purposes, and through compliance requirements that fall before pricing decisions are made.

Our revenue path and wash-up decisions fulfil some of the requirements for a PQ determination

A19 Our decisions (across the PQ determination) on the revenue path and wash-up fulfil two of the requirements under section 194(2):

A19.1 setting 'allowable revenue' specifies "the maximum revenues that may be recovered by a regulated fibre service provider" under s 194(2)(b);⁴¹³ and

A19.2 requiring ex ante compliance with the revenue path and the date or dates by which compliance must be demonstrated under s 194(2)(e).⁴¹⁴

⁴¹³ Section 195(1)(a) applies for PQP1 and PQP2 despite s 194(2)(b) and requires us to specify the maximum revenues that may be recovered by a regulated provider.

⁴¹⁴ For regulatory years 2023 and 2024 compliance is ex ante. For regulatory year 2022, compliance is substantially ex ante as compliance reporting is required by 31 March 2022.

A20 We discuss how we have fulfilled the requirements under s 194(2) related to quality standards and the dates by which compliance with the quality standards must be demonstrated in Chapter 7. The remaining requirements are specified in paragraphs 2.52.1-2.52.2.

Requirement to specify a revenue cap and not a price cap

A21 For PQP1 and PQP2, we must determine a revenue cap for Chorus and not a price-cap.⁴¹⁵ While the two forms of control are distinct, the lines between the two forms of control are not absolute. In determining our approach to the revenue cap, we must consider whether particular measures would cause the form of control to take on price cap-like characteristics, contrary to s 195.

A22 As we noted in our draft decision, the key distinguishing characteristics of a revenue cap we are concerned with are:⁴¹⁶

A22.1 the extent to which demand risk (in present value terms) is borne by end-users rather than Chorus; and

A22.2 the extent of flexibility retained by Chorus to allocate revenue recovery between different classes of end-users, including by restructuring tariffs or by introducing new products.

Requirement to specify a wash-up

A23 Section 196 of the Act requires us – from PQP2 – to apply a wash-up mechanism that provides for any over- or under-recovery of revenue in respect of PQP1. As these over- or under-recoveries will occur in PQP1, we must specify at least some of the features of the wash-up mechanism prior to the start of PQP1. As noted above, we have specified these features through an amendment to the fibre IMs.

A24 However, the Act does not define what constitutes an over- or under-recovery. As such, deciding the scope of the wash-up is an exercise in judgement that must meet the s 166(2) purposes.

Requirement to consider revenue smoothing

A25 When we determine our first PQ path, we must smooth revenues over two or more regulatory periods if we think it necessary or desirable to minimise any undue financial hardship to a regulated provider or to minimise price shocks to end-users.

⁴¹⁵ We note Vodafone's submission on this point, see Vodafone "Submission on fibre price-quality path" (8 July 2021), paragraph 17f.

⁴¹⁶ Commerce Commission "Chorus' Price-quality path from 1 January 2022 – Draft decision" (27 May 2021 – Updated 16 May 2021), paragraphs A20.1 to A20.2.

Price shocks

- A26 We assess price shocks in terms of the rate of increase in ‘allowable revenue’ (relative to current revenues for 2022). This is because ‘allowable revenue’ is a material determinant of the prices end-users face and is what we regulate.
- A27 By contrast, we have not in general considered the rate of change in any individual tariff or class of tariffs. This is because, under a revenue path, we do not have responsibility for regulating pricing, and consider other regulatory tools such as pricing disclosures and the regulations in respect of anchor services and DFAS under ss 227 and 228 are better able to manage individual price shocks.

Undue financial hardship

- A28 Any temporary under-recovery of revenue will have to be financed by Chorus before it has the opportunity to recover this revenue. This may be financed through retaining earnings or through increasing borrowing. However, both these options have limits, and could have flow-on impacts, particularly on willingness to invest.
- A29 In general, our position in Part 4 has been that the burden of proof for claims of financial hardship lies with the regulated provider. We have decided on the same approach for Chorus. We also note that Chorus has not claimed financial hardship.

Interactions with declared services

- A30 We do not have responsibility for determining declared services.⁴¹⁷ Instead, the Minister has responsibility for recommending that declared services regulations be made and MBIE has released the initial anchor services and DFAS declared services regulations.⁴¹⁸ However, as the regulations for these services contain price terms that will cap the prices of certain products, we considered their interactions with the revenue path.⁴¹⁹
- A31 Firstly, the anchor services and DFAS will directly protect some of Chorus’ customers from price shocks but not others. As such, we have considered the impacts of price shocks on non-anchor/DFAS customers when making revenue path and smoothing decisions.

⁴¹⁷ However, we may review anchor services under s 208 and DFAS under s 209 of the Act and recommend that regulations be made.

⁴¹⁸ Clauses 14 and 15 of schedule 1AA of the Act provide that the Minister may recommend that initial anchor services and DFAS regulations be made even though we have not conducted a review.

⁴¹⁹ MBIE “Declaration of anchor and direct fibre access services under the Telecommunications Act 2001” (26 May 2021).

- A32 Secondly, as the declared services in effect create a hybrid revenue-price cap, we must make sure that we do not overdetermine Chorus' prices, leading to situations where compliance is impossible.
- A33 Finally, we need to ensure consistency with details of the declared services' price terms (for example, by taking a consistent approach to CPI inflation albeit lacking perfect alignment).

Relevant requirements of the fibre IMs

- A34 Under s 175, we have an obligation to apply the fibre IMs when determining revenues.⁴²⁰ The relevant IMs in this case are:
- A34.1 The specification of price and revenues IM – this IM sets the fundamental requirements for how the revenue cap is defined and how compliance with it must be demonstrated. Many of our decisions simply implement these requirements.⁴²¹
- A34.2 The Chorus capex IM – specifically, the capex IM requires that any 'connection capex variable adjustment' and any 'individual capex' determined after a regulatory period commences is accounted for via the wash-up.⁴²²

Economic principles

- A35 Two of our economic principles are relevant to decisions on the revenue cap and wash-up. These are
- A35.1 real financial capital maintenance (RFCM); and
- A35.2 risk allocation.

Real financial capital maintenance

- A36 Maintaining RFCM is a fundamental goal of our revenue path and wash-up. This is because RFCM is key to maintaining incentives to invest while still limiting excessive profits. As discussed in more detail below (where relevant), we have ensured that the combination of decisions we make are consistent with Chorus having the ex ante expectation of a normal return.

⁴²⁰ Section 175 refers to determining "prices", and s 164 defines "price" as including "revenues".

⁴²¹ To provide increased certainty about the operation of the specification of price and revenues IM, we have made IM amendments that make clear that the revenue cap may operate on a forecast basis, and that provide detail about the calculation of the wash-up mechanism and how it is carried forward into future regulatory periods.

⁴²² *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.7.1(4)(b).

A37 This does not mean, however, that Chorus' allowable revenue in any given year (or even any given regulatory period) needs to perfectly reflect building blocks costs. We have instead focused on decisions that maintain RFCM on a long-term present value basis. There may be other reasons (such as the need to manage price-shocks and undue financial hardship) for us to alter the profile of Chorus' revenue recovery.

Risk allocation

A38 Ideally, we allocate risks to regulated providers or end-users depending on who is most able to manage that risk, unless doing so would be inconsistent with s 166(2) or with other provisions of the Act.

A39 For the revenue path and wash-up mechanism, this is relevant to deciding what risks we do and do not provide wash-ups for. For example, it is not appropriate to provide a wash-up for risks that Chorus is largely able to control (such as connection unit costs).

A40 However, in many cases, risk allocation is not dictated by this principle, as other considerations predominate. In some cases, these are requirements imposed by the Act (such as end-users bearing demand risk via a revenue cap, consistent with s 195).

A41 In making these assessments, we must also consider what risks Chorus is compensated for via the WACC.

Final decision on the revenue path

A42 This section gives details of how the revenue path will work, and our reasons why we consider it meets the criteria in s 166(2) of the Act.

A43 It covers:

A43.1 the overall structure of the revenue path;

A43.2 how 'forecast allowable revenue' is calculated;

A43.3 how forecast pass-through costs are accounted for;

A43.4 how CPI inflation is treated;

A43.5 the real (net of inflation) slope of the revenue path;

A43.6 how in-period revenue smoothing is accomplished;

A43.7 how Chorus must demonstrate compliance with the revenue path; and

A43.8 when Chorus must demonstrate compliance with the revenue path.

Final decision on the overall structure of the revenue path

A44 This section covers the fundamental design of the revenue path, and specifically how we have applied the requirements in the Fibre IMs.⁴²³

Final decision

A45 As required by the fibre IMs and with the final IM amendments, the revenue cap will be based on requiring that in each year of the regulatory period, Chorus set prices such that 'forecast total FFLAS revenue' must be less than or equal to 'forecast allowable revenue'.

Draft decision

A46 The final decision is consistent with our draft decision. For our reasons for amending the fibre IMs to clarify that this assessment may be done on a forecast basis, see Chapter 6 of our final IM amendment reasons paper.⁴²⁴

Submissions

A47 Stakeholders did not submit on this PQ draft decision directly, and Chorus' submission on the draft IM Amendments indicated support.

Final decision on calculating 'forecast allowable revenue'

A48 Under the fibre IMs 'forecast allowable revenue' is composed of:⁴²⁵

A48.1 forecast building blocks revenue;

A48.2 forecast pass-through costs; and

A48.3 a wash-up amount.⁴²⁶

A49 The IMs leave the Commission discretion to decide how these are implemented and in particular how 'forecast building blocks revenue' and the 'wash-up amount' are specified.

Final decision

A50 To implement the requirements in the fibre IMs,⁴²⁷ and to support our decisions below on pass-through costs, treatment of CPI, and the slope of the revenue path, we have:

⁴²³ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1.

⁴²⁴ Commerce Commission "Fibre input methodologies main 2021 amendments: final decisions – final reasons paper" (29 November 2021), paragraphs 6.11 to 6.13.

⁴²⁵ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(2).

⁴²⁶ For PQP1 we have specified a value of \$0.

⁴²⁷ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(2).

- A50.1 specified forecast building blocks revenue for 2022 (year one of the regulatory period) as a defined nominal value;
- A50.2 specified forecast building blocks revenue in 2023 and 2024 (years two and three of the regulatory period) by reference to the following formula.⁴²⁸

$$FBBR_{t-1} \times (1 + \Delta CPI_t)(1 + \Delta Q_t)$$

Where:

$FBBR_{t-1}$ is 'forecast building blocks revenue' for the previous regulatory year

ΔCPI_t Is the forecast change in CPI for the regulatory year

ΔQ_t is the real slope of the revenue path, specified as the change in quantities.

A51 Using this formula allows us to specify the real value of forecast building blocks revenue (before adjusting for inflation) from the outset of the regulatory period but – consistent with our decision below on treatment of CPI – for the revenue path during the period (expressed in nominal terms) to move in line with forecast and actual inflation.

A52 The change in quantities factor is analogous to the “X-factor” used when regulating revenues under Part 4 of the Commerce Act, in that it specifies the real slope of the revenue path. We have labelled it ‘change in quantities’ such that it better reflects the basis of the decision. The values are different for years two and three of the revenue path and reflect our decision on in-period smoothing discussed below at A96 to A104. The rates are:

A52.1 6.1% in year two (2023); and

A52.2 3.5% in year three (2024).

Draft decision and alternatives

A53 The main alternative we considered was specifying building blocks revenue in each year of the regulatory period as fixed nominal values.

A54 Our final decision is close to our draft decision. Since the draft decision, we have changed:

⁴²⁸ Under s 164 of the Act, “prices” (which includes revenues) may be specified by reference to a formula by which specific numbers are derived.

- A54.1 the brackets in the formula that specifies the forecast building blocks revenue for years two and three at paragraph A50.2.
- A54.2 the approach to CPI for the three years of the regulatory period, which we cover in the final decision on the approach to CPI treatment starting at paragraph A67.
- A54.3 The 'change in quantities' rates for years two and three, at paragraph A52.

Submissions

A55 In relation to the specified forecast building blocks revenue for 2022, Chorus submitted requesting that:⁴²⁹

[T]he 2022 revenue allowance is at least equivalent to Chorus' pricing from 1 October 2021 such that no material revenue reduction should be required in 2022.

A56 In relation to the formula that specifies the forecast building blocks revenue for years two and three, Chorus submitted:

A56.1 That the formula in the draft determination at Schedule 1 clause (2) should be corrected as "It is necessary to multiply FBBR by both $1+\Delta\text{CPI}$ and $1+\Delta\text{Q}$, rather than by $(1+\Delta\text{CPI}+\Delta\text{Q})$ ";⁴³⁰

A56.2 proposing an alternative forecast approach for the ΔCPI formula at clause (3) of Schedule 1 for regulatory years 2023 and 2024, submitting our proposed method would not meet RFCM.⁴³¹

Analysis

A57 This decision is an implementation one, necessary to implement other policy decisions that we consider best give effect to the criteria in s 166(2) of the Act.

A58 We agree with Chorus' submission on the brackets in the formula that specifies the forecast building blocks revenue for years two and three at paragraph A50.2. Our draft decision did not fully adjust for inflation and we have corrected this.⁴³² Our final decision in response to Chorus' submission for a forecast approach for the ΔCPI formula is in the final decision on treatment of CPI inflation, at paragraphs A71.

⁴²⁹ Chorus ["Submission on Fibre PQ draft decisions"](#) (8 July 2021), paragraphs 246 to 252.

⁴³⁰ Chorus ["Submission on Fibre PQ draft decisions"](#) (8 July 2021), Appendix B7.

⁴³¹ Chorus ["Submission on Fibre PQ draft decisions"](#) (8 July 2021), Appendix B8-B9.

⁴³² The difference between the draft decision approach and our recommended approach is the addition of the term $\text{FBBR}_{t-1}\Delta\text{CPI}_t\Delta\text{Q}_t$, which is the revenue component from the application of inflation to growth.

Final decision on treatment of pass-through costs

Final decision

- A59 Our final decision is that Chorus must prepare ‘demonstrably reasonable’ forecasts of pass-through costs for the regulatory year when calculating forecast allowable revenue, where the relevant forecasts are those prepared by Chorus on an annual basis. We have clarified this in the PQ determination.
- A60 Differences between these forecasts and the actual costs Chorus faces over the regulatory year are accounted for via the wash-up, as discussed below.

Alternatives

- A61 The alternative we considered was specifying nominal values of forecast pass-through costs in advance of the regulatory period.

Submissions

- A62 Chorus appeared to agree in principle with our decision but submitted that more detail should be provided, proposing this could be in a s 221 Notice or a combined determination.⁴³³

Analysis

- A63 This final decision is one that we consider best gives effect to the intention of the fibre IMs. This is to ensure that the most up-to-date values for these costs are passed through to prices as intended.
- A64 Were the values of forecast pass-through costs likely to have a significant impact on forecast allowable revenue, for revenue stability reasons we would consider fixing these values in advance. However, as they are only a minor component of total forecast allowable revenue, we do not consider this necessary in PQP1.
- A65 We have decided to include clarifying language in the PQ determination to resolve ambiguity where there could be confusion with the forecasts of pass-through costs provided, but not used, as part of Chorus’ expenditure proposal. This supports our overall policy intention that pass-through costs should pass through to access seekers.
- A66 We note that this should remain a matter for each PQ reset.

⁴³³ Chorus [“Submission on Fibre PQ draft decisions”](#) (8 July 2021), Appendix C4.

Final decision on treatment of CPI inflation

A67 The revenue path is required to be specified in nominal terms.⁴³⁴ As the costs Chorus will face, and the value of the revenue it receives from access seekers, will be nominal dollars, we need to make allowance for inflation when specifying the revenue path.

A68 This use of CPI is distinct from the forecast CPI used to determine revaluations.

Final decision

A69 The revenue path for all years will initially be determined based on RBNZ's forecasts of CPI inflation. This will determine forecast building blocks revenue in year 1 of the regulatory period, and will determine forecast building blocks revenue in years 2 and 3 via the smoothing building block discussed below.

A70 Over the course of the revenue path, forecast building blocks revenue will change based on revised forecasts and actual CPI inflation, with a wash-up at the end of the regulatory period for years 2 and 3.⁴³⁵

A71 Our final decision on the treatment of CPI inflation to determine the initial revenue path (and initial smoothed BBR) for the regulatory period is to specify:

A71.1 RBNZ forecasts of CPI inflation available at the end of August 2021, consistent with the timing of the forecast CPI that is used to forecast input cost inflation,⁴³⁶

A71.2 The forecast change in CPI inflation for regulatory year t will be modelled as:⁴³⁷

$$\Delta CPI_t = \frac{CPI_{Mar,t} + CPI_{Jun,t} + CPI_{Sep,t} + CPI_{Dec,t}}{CPI_{Mar,t-1} + CPI_{Jun,t-1} + CPI_{Sep,t-1} + CPI_{Dec,t-1}} - 1$$

A72 Our final decision on annually updating the revenue path for CPI inflation is to:

⁴³⁴ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, definition of "forecast total FFLAS revenue" in clause 1.1.4(2).

⁴³⁵ The applicable wash-up for the differences between any forecast CPI values referred to in the PQ determination and actual CPI is specified in *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(11)(f).

⁴³⁶ RBNZ Monetary Policy Statement August 2021 (18/08/21).

⁴³⁷ *Fibre Price-Quality Path Determination 2021* [2021] NZCC 27, clause (3) of Schedule 1.

- A72.1 specify that Chorus will annually calculate forecast BBR for years two and three, on the basis of the four-quarter average of updated forecast CPI at paragraph A71.2,⁴³⁸ and
- A72.2 apply our IM amendment decision that these updated forecast values will then be subject to a residual wash-up for actual CPI.⁴³⁹

Draft decision and alternatives

- A73 In our draft decision we indicated that the timing of the CPI forecast would match the timing of the forecast CPI that is used to forecast input cost inflation.⁴⁴⁰ We have now specified that date as 31 August 2021.⁴⁴¹
- A74 In our draft decision, we specified the revenue path for regulatory years 2 and 3 by reference to lagged actual CPI.⁴⁴² We have changed this to a forecast CPI approach that Chorus updates each year using the most recent RBNZ forecasts.⁴⁴³
- A75 As a correction to our draft decision, we have revised the Δ CPI formula at clause (3) of Schedule 1 by including the constant '-1'. This is an algebraic error correction to appropriately compensate for inflation. We did not receive submissions on this point.
- A76 In our draft decision, we indicated that annual CPI updating applies to regulatory years 2023 and 2024 forecast allowable revenue.⁴⁴⁴ Our final decision is also that annual CPI updating applies to regulatory years 2023 and 2024, with the addition of the residual wash-up at the end of the regulatory period for these years.

Submissions

- A77 Relating to our draft decision on the treatment of CPI inflation to determine the initial revenue path:
- A77.1 We did not receive submissions on our proposal to initially determine the revenue path based on RBNZ forecasts of CPI inflation;

⁴³⁸ In practice Chorus will update these forecasts by 30 June using the forecasts in the RBNZ May MPS, and will update the forecasts ex ante for the following regulatory year. Fibre Price-Quality Path Determination 2021 [2021] NZCC 27, at clause (4) of Schedule 1.

⁴³⁹ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(11)(f).

⁴⁴⁰ Commerce Commission "Chorus' Price-quality path from 1 January 2022 – Draft decision" (27 May 2021 – Updated 16 May 2021), paragraph A60.

⁴⁴¹ This is to reflect the RBNZ Monetary Policy Statement August 2021, consistent with the timing of NZIER's Quarterly Prediction for September 2021.

⁴⁴² [Draft] Fibre Price-Quality Path Determination 2021 (27 May 2021), clause (3) of Schedule 1.

⁴⁴³ Fibre Price-Quality Path Determination 2021 [2021] NZCC 27, clause (4) of Schedule 1.

⁴⁴⁴ Commerce Commission "Chorus' Price-quality path from 1 January 2022 – Draft decision" (27 May 2021 – Updated 16 May 2021), Table A1.

A77.2 We did not receive submissions on our proposal that the timing of the CPI forecast would match the timing of the forecast CPI that is used to forecast input cost inflation;

A77.3 Chorus submitted proposing a forecast approach to change in CPI inflation for regulatory years 2 and 3 as an alternative to the lagged actual approach, suggesting our proposed method would not meet RFCM.⁴⁴⁵

A78 Chorus also submitted proposing a CPI wash-up:⁴⁴⁶

(...) that prices are set based on forecasts of CPI for year t, with a subsequent wash-up for the difference between forecast and actual CPI for this purpose (as recommended in the wash-up section and Chorus' recent submission on August 2021 IM amendments).

Analysis

A79 In exercising judgement in making this decision, we have considered:

A79.1 the impact of forecast inflation risk on Chorus' incentives and ability to invest, promoting s162(a); and

A79.2 the impact of inflation risk on profitability, as variations from forecast inflation may create windfall gains, contrary to s 162(d).

A80 We do not consider the promotion of workable competition relevant to this decision.

A81 We consider our decision best promotes the purpose of Part 6 under s 166(2)(a) relative to the realistic alternatives we have identified. The choice and timing of the calculation of the forecast CPI that is used to smooth the revenue path within the period is not defined by the fibre IMs, and we consider that the forecast CPI we use, and its timing, should match our forecasts of input cost inflation.

A82 Matching the timing of these forecasts means that Chorus' exposure to forecast inflation risk from the input cost building blocks and smoothing of the revenue path is limited. This allows for expected inflation in the revenue path that is sufficient to cover inflation in input costs, and hedges the inflation forecast risk.

A83 Conceptually, a 'CPI plus Q' revenue path restricts revenues from increasing each year by more than CPI plus a quantity factor to account for forecast growth on Chorus' network.

⁴⁴⁵ Chorus ["Submission on Fibre PQ draft decisions"](#) (8 July 2021), Appendix B8-B9.

⁴⁴⁶ Chorus ["Submission on Fibre PQ draft decisions"](#) (8 July 2021), Appendix B8.

A84 More specifically, in the unsmoothed/smoothed building blocks revenue model, we have decided to specify the 'forecast building blocks revenue' for the first regulatory year of the regulatory period in the determination. In remaining years of the regulatory period, forecast building blocks revenue is defined by reference to the prior year, with a CPI and quantity adjustment.

A85 Real FCM is achieved, according to the simultaneous equations:

$$\text{Smoothed } BBR_{t+1} = \text{Smoothed } BBR_t \times (1 + \Delta CPI_t) \times (1 + \Delta Q_t)$$

and

$$NPV_{WACC_v}(\text{Smoothed } BBR_t)_{t=1}^3 = NPV_{WACC_v}(\text{Raw } BBR_t)_{t=1}^3$$

A86 Applying these formulae ensures the area under the smoothed revenue path equals the sum of the unsmoothed building block costs, in net present value terms.

A87 Unlike the Part 4 EDB IMs, the Fibre IMs do not determine the approach to forecasting inflation when setting a price or revenue path.⁴⁴⁷ We must therefore decide which CPI index to use and on what timing basis.

A88 We have identified two options for the choice of CPI index:

A88.1 RBNZ inflation forecast for CPI, as we use in Part 4;

A88.2 'market based' inflation forecasts.

A89 We consider that the RBNZ inflation forecast for CPI is a suitable starting point for revenue smoothing given it is:

A89.1 unlikely to be biased;

A89.2 an enduring publication (unlikely to be discontinued);

A89.3 the same forecast series used in the WACC determination when setting a price or revenue path.

A90 In practice, our decision is:

⁴⁴⁷ Compare for example the *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1 to *Electricity Distribution Services Input Methodologies Determination 2012*, as amended on 30 March 2020, clauses 3.1.1(7)-(8).

- A90.1 To use forecasts based on the RBNZ forecasts of inflation issued as part of the Monetary Policy Statement, consistent with the timing of the forecast CPI we use for input cost inflators,⁴⁴⁸
- A90.2 For the out-years, beyond where RBNZ forecasts are available, to assume a linear reversion to the RBNZ inflation target of 2%.
- A90.3 Then on a yearly basis from year two, for Chorus to update the CPI forecast value with an updated forecast.
- A91 We agree with Chorus that RFCM requires consistency between the present value of the building blocks model and the PV of smoothed revenues across the regulatory period.
- A92 However, we note that the forecast approach is not necessarily the only approach and that other approaches using a lagged rate of inflation for revenue smoothing could also ensure RFCM on a long-term PV basis.
- A93 While RFCM does not require that Chorus' allowable revenue in any given year (or even any given regulatory period) needs to perfectly reflect building blocks costs, the forecast approach may better align the two as well as reducing complexity and promoting workability without detriment to s162.
- A94 Our final decision is consistent with Chorus' submission. We did not receive other submissions on this decision area.
- A95 This decision is necessary to implement the forecast approach to CPI proposed by Chorus, which we consider better promotes RFCM.

Final decision on the real slope of the revenue path

- A96 In addition to having the revenue path move in line with CPI, we also 'slope' the revenue path relative to CPI. This determines the 'real' slope of forecast allowable revenues over the period. The analogous concept in PQ regulation under Part 4 of the Commerce Act is the use of an "X-factor".

Final decision

- A97 For PQP1, we have decided to slope the revenue path in line with forecast aggregate growth in demand for Chorus' FFLAS services, consistent with the decision to use forecasts of weighted average growth and with expenditure decisions

⁴⁴⁸ Unlike Part 4, these are not necessarily determined at the same time as the determination of the weighted average cost of capital (WACC).

A98 Our final decision on the 'change in quantities' rates for years two and three uses these revised values, consistent with expenditure decisions:

A98.1 6.1% in year two (2023); and

A98.2 3.5% in year three (2024).

A99 Note that these forecast rates will not (unlike CPI) be updated for actual demand for the purposes of determining forecast allowable revenue. To do so would in effect create a price-path, as Chorus would be bearing demand risk, contrary to s 196 of the Act.

Alternatives considered

A100 We also considered setting the real slope of the revenue path to zero, in effect leaving revenue constant in real terms over the period. In other circumstance (such as where it was necessary to smooth revenues to avoid price shocks) we could have determined some other slope (as we have done when determining alternative “X-factors” under Part 4 of the Commerce Act).

Submissions

A101 Submitters proposed alternatives to the underlying demand forecasts but did not challenge our fundamental reasons for this sloped revenue path approach.

A102 2degrees submitted support for a revenue path that grows with demand.⁴⁴⁹

A103 In relation to our draft decision to not update for actual demand:

A103.1 Vodafone submitted that the smoothing of the allowable revenue is one of three places where forecast volumes are not adjusted for actuals, and considered this could cause sharp price changes.⁴⁵⁰

A103.2 Chorus cross-submitted in response to Vodafone that:

the initial three-year revenue path reduces the risk of forecast error while the ability to smooth revenues within and across regulatory periods mitigates the risk of price shocks to consumers.⁴⁵¹

⁴⁴⁹ Two Degrees [“Submission on Fibre PQ draft decisions”](#) (8 July 2021), page 10.

⁴⁵⁰ Vodafone [“Submission on Fibre PQ draft decisions”](#) (8 July 2021), paragraph 26.

⁴⁵¹ Chorus [“Cross- Submission on Fibre PQ draft decisions”](#) (5 August 2021), Appendix C13.

Analysis

- A104 In the context of a network where demand is still forecast to grow, we consider a revenue path that grows in line with demand best promotes the long-term benefit of end-users. This approach means that average revenue per customer will be approximately constant over the regulatory period, allowing (though not requiring) prices to be relatively stable. Additionally, this is consistent with the price terms of the declared service. As revenue derived from these services will grow as customer numbers grow, revenue growing over the period will account for this.
- A105 This does not extend to an actual demand wash-up, however, as to do so would in effect create a price-path, as Chorus would be bearing demand risk, contrary to s 196 of the Act.
- A106 This approach enables approximately stable real prices while maintaining incentives for investment under s 162(a).

Final decision on achieving in-period revenue smoothing

- A107 Given the decisions above about CPI and the real slope of the path, we must consider how to give effect to this in-period smoothing of allowable revenue.
- A108 Note that this is distinct from the between-period revenue smoothing that we must consider where it is necessary to avoid price-shocks or undue financial hardship.⁴⁵² As discussed in Chapter 3, we do not consider either of these are at risk of occurring.

Final decision

- A109 Our final decision is to determine an additional ‘in-period smoothing’ building block. The value of this smoothing building block is determined by the nominal difference between the ‘raw’ forecast building blocks revenue and the smoothed amounts that result from applying the simultaneous equations in paragraph A85 above.

Draft decision and alternatives

- A110 Our final decision is consistent with our draft decision.

Submissions

- A111 Chorus submitted in support of our draft decisions on in-period smoothing.⁴⁵³

⁴⁵² Section 197.

⁴⁵³ Chorus [“Submission on Information Disclosure draft decision”](#) (8 July 2021), Appendix B1.

A112 Vodafone submitted that the smoothed allowable revenue does not update forecast volumes for actuals, and that this could expose customers to sharp price changes.⁴⁵⁴ Chorus cross-submitted that the three year revenue path reduces the risk of forecast error and that within period revenue smoothing mitigates the risk of price shocks to consumers.⁴⁵⁵

Analysis

A113 This decision is a pure implementation decision necessary to give effect to other decisions we consider promote the Part 6 purpose. As such, we have chosen this approach as we consider it:

A113.1 transparent; and

A113.2 simple to implement.

Final decision on demonstrating compliance with the revenue path

A114 To ensure the revenue path is effective, we must require Chorus to demonstrate compliance with it. We have the power under s 193(2) of the Act to issue Chorus with a notice requiring it to provide any or all of:

A114.1 a written statement that states whether it has complied with the revenue path;

A114.2 a report on this written statement that is signed by an auditor in accordance with any form specified by the Commission;

A114.3 sufficient information to enable the Commission to properly determine whether the revenue path has been complied with; and

A114.4 a certificate, in the form specified by the Commission and signed by at least one director, confirming the truth and accuracy of any information provided.

Final decision

A115 We have decided that Chorus must provide:

A115.1 a statement that it has (or has not) complied with the revenue path;

A115.2 the supporting information described below (at paragraphs A118 to A119); and

⁴⁵⁴ Vodafone "[Submission on fibre price-quality path](#)" (8 July 2021), paragraph 26 a.

⁴⁵⁵ Chorus "[Cross- Submission on Fibre PQ draft decisions](#)" (5 August 2021), page 32, Appendix C13.

A115.3 that for the annual compliance statement (but not for any mid-year updates) this statement and supporting information are subject to director certification requirements.

A116 Chorus must demonstrate this:

A116.1 in a one-off compliance statement by 31 March 2022 for regulatory year 2022 compliance;

A116.2 by 30 August 2022 for regulatory year 2023 compliance and by 30 August 2023 for regulatory year 2024 compliance; and

A116.3 30 working days prior to any other time Chorus intends to change its prices (this includes where Chorus intends to change prices applying in regulatory year 2022 part-way through 2022).⁴⁵⁶

A117 Chorus must provide director certification for the regular annual price path compliance statement but is not required for mid-regulatory year updates when Chorus intends to change its prices.⁴⁵⁷ Chorus is not required to provide audit for price path compliance.

A118 To determine that the price path has been complied with, we have specified that ‘forecast total FFLAS revenue’ must be broken down into its component parts. Specifically, Chorus must provide the information used to calculate forecast total FFLAS revenue in accordance with the formula:

$$FTFR = \sum_i (P_i - D_i) \times FQ_i + FOFI$$

Where-

i is each tariff;

P is the corresponding price for that tariff;

D is any discount to the price;

FQ is the relevant forecast quantity; and

FOFI is forecast other FFLAS income.

⁴⁵⁶ Submission of a compliance statement alongside the 30 August 2022 compliance statement in respect of 2023 would meet this requirement.

⁴⁵⁷ Commerce Commission “Notice to supply information to the Commerce Commission under section 193(2) of the Telecommunications Act 2001 – Compliance statements for the first regulatory period” (16 December 2021), clause A4(b)(i) of Attachment A.

- A119 Chorus must provide this supporting information as a schedule of products (broken down into the relevant tariffs that apply to that product) and corresponding prices, discounts, and quantities. Where prices will change at some point over the regulatory year, Chorus must itemise these separately.
- A120 We have specified these requirements in a notice under s 193(2) of the Act, rather than incorporating them as part of the s 170 PQ determination.⁴⁵⁸

Draft decision and alternatives

- A121 Our draft and final decisions on demonstrating compliance differ in timing and in the specification of the forecast total FFLAS revenue formula, where we have decided to add the additional term FOFI. There is no further change to our decision on demonstrating compliance.
- A122 In our draft decision we proposed that Chorus must provide:
- A122.1 a statement that it has (or has not) complied with the revenue path;
 - A122.2 the supporting information described below; and
 - A122.3 that this statement and supporting information are subject to audit and certification requirements.⁴⁵⁹
- A123 We note that our draft decision included an inconsistency with our draft s 193(2) notice. Our draft s 193(2) notice did not require audit of the price path compliance statement and instead only required audit of the annual compliance statement, contrary to paragraph A93 of our draft decision.⁴⁶⁰
- A124 We also proposed that Chorus must demonstrate this on an ex ante basis, at the start of each regulatory year, and then any other time Chorus intends to change its prices.

⁴⁵⁸ Commerce Commission "Notice to supply information to the Commerce Commission under section 193(2) of the Telecommunications Act 2001 – Compliance statements for the first regulatory period" (16 December 2021), clauses A3-A4, A8 of Attachment A.

⁴⁵⁹ Commerce Commission "Chorus' price-quality path from 1 January 2022 – Draft decision – Reasons paper (Updated)" (27 May 2021), paragraph A93.

⁴⁶⁰ Commerce Commission "[Draft] Notice to supply information to the Commerce Commission under section 193(2) of the Telecommunications Act 2001 – Compliance Statements for the first regulatory period" (27 May 2021), clause A6(d) and A9 of Attachment A.

A125 And we specified that ‘forecast total FFLAS revenue’ must be broken down into its component parts. Specifically, our draft decision proposed that Chorus must provide the information used to calculate forecast total FFLAS revenue in accordance with the formula:

$$\sum_i (P_i - D_i) \times FQ_i + FOFI$$

Where-

- i is each tariff;
- P is the corresponding price for that tariff;
- D is any discount to the price; and
- FQ is the relevant forecast quantity.

A126 In clause (4) of Schedule 3 of the PQ draft determination, we specified this draft formula for "forecast total FFLAS revenue". While we did not specify the exact form for this information in the draft decision, we indicated that we anticipated that a schedule of products (broken down into the relevant tariffs that apply to that product) and corresponding prices, discounts, and quantities would meet this requirement. We also indicated that where prices will change at some point over the regulatory year, we expect that these are itemised separately.

Submissions

A127 Chorus submitted several alternatives in relation to our draft decision on demonstrating compliance with the revenue path. Chorus proposed:

A127.1 director certification as an alternative to our draft decision audit requirements;⁴⁶¹

A127.2 on the time dimension, altering the forecast total FFLAS revenue formula by including the additional term FR_i for products that are not calculated on a P*Q basis such as colocation and hand-over links, submitting that this additional term will make compliance more workable;⁴⁶²

A127.3 to include "forecast" in the definition of price and discounts, and to replace $(P_i - D_i)$ with $(FP_i - FD_i)$ in the total FFLAS revenue compliance formula;⁴⁶³

⁴⁶¹ Chorus [“Submission on Fibre PQ draft decisions”](#) (8 July 2021), Appendix B2

⁴⁶² Chorus [“Submission on Fibre PQ draft decisions”](#) (8 July 2021), Appendix B3

⁴⁶³ Chorus [“Submission on Fibre PQ draft decisions”](#) (8 July 2021), Appendix B3

A128 Chorus also submitted to change the definition of price and discounts. Chorus proposed:

A128.1 to exclude incentive payments from prices⁴⁶⁴; and

A128.2 that we interpret discount D_i as "discounts to listed prices, rather than incentive payments", and submitted that this is consistent with the application of discounts in EDB IMs and should be defined as such to avoid confusion.⁴⁶⁵

A129 RSPs cross-submitted that incentive payments are a price and a form of price discrimination.⁴⁶⁶

Analysis

A130 We have considered Chorus' proposal for director certification as an alternative to our draft decision audit requirements. Our final decision is that director certification is required for the regular annual price path compliance statements but is not required for mid-regulatory year updates where Chorus intends to change its prices. We have also decided that audit is not required for the price path compliance statement. As the ex ante compliance statement is a forecast, we agree that audit would add limited additional value. We note that our final decision and s 193(2) notice has removed the inconsistency referred to in paragraph A123. Audit of actual data for quality compliance will still be required.

A131 We have considered Chorus' proposal to include the additional term FR_i for and our final decision is to include a term 'forecast other FFLAS income' (FOFI) in the formula; this term will have a narrower application than the term that Chorus proposed.

A132 We agree with Chorus that there are certain kinds of FFLAS income that cannot be expressed in "price" terms (such as gains on asset sales, or refunded incentive payments). These need to be accounted for to avoid over-recovery (and therefore excess profits under s162(d)). However, we do not consider that Chorus' colocation and hand-over links examples fall into this category as even if an access seeker buys only one unit of these, there is still a P*Q basis.

⁴⁶⁴ Chorus "[Submission on Fibre PQ draft decisions](#)" (8 July 2021), Appendix B3

⁴⁶⁵ Chorus "[Submission on Fibre PQ draft decisions](#)" (8 July 2021), Appendix B3.

⁴⁶⁶ Spark "Cross-submission on Fibre PQID draft decisions" (5 August 2021), paragraph 35a. Russell McVeagh for Spark cross-submitted that incentives are a "price", see Spark "Cross submission on Fibre PQ draft decisions – Russell McVeagh treatment of incentive payments as capex" (5 August 2021), paragraph 12. Frontier for Vodafone cross-submitted incentive payments are a form of price discrimination, see Vodafone "Cross-submission on Fibre PQ draft decisions – Incentive Payments" (5 August 2021), paragraph 2.1.

- A133 We have considered Chorus' proposal to include "forecast" in the definition of price and discounts, and our final decision is not to do so. We do not consider it is necessary to distinguish between forecast and actual prices.
- A134 We have also reconsidered our definition of price in response to submissions. In our draft decisions we defined price as "an individual fee or charge, in nominal terms exclusive of GST, for the provision of PQ FFLAS", and our final decision is to maintain this. We consider that the definition of "total FFLAS revenue" in the fibre IMs already excludes customer incentives payments for the purpose of specifying price, and that further definition would add complexity with no further benefit to s 162 or s 166(2)(b). As we have noted at A132, unachieved incentives "on the way out" are treated as capex. However, "on the way back" where they are recovered from an access seeker by Chorus, they are not treated by GAAP as capex, so are an income item.
- A135 We note also that this definition of "price" applies only for the purposes of calculating "total FFLAS revenue". This does not mean that incentives are excluded from "price" in different contexts, such as compliance with s 201, where the specifics of the specification of price and revenues IM and PQ determinations do not apply.
- A136 We have considered Chorus' submission on the interpretation of discount and our decision is to leave the definition of discount unchanged. As with the definition of price, our view is that the definition of "total FFLAS revenue" in the fibre IMs already clarifies this and that a change is unnecessary. We also consider that further definition would add complexity with no further benefit to s 162 or s 166(2)(b).

Final decision on timing of revenue path compliance

- A137 We are required by s 194(2)(e) to specify the date or dates on which Chorus must demonstrate compliance with the revenue path (by providing the information discussed above at paragraphs A115 to A120).

Final decision

- A138 We have decided that Chorus must demonstrate this:
- A138.1 in a one-off compliance statement by 31 March 2022 for regulatory year 2022 compliance;
 - A138.2 by 30 August 2022 for regulatory year 2023 compliance and by 30 August 2023 for regulatory year 2024 compliance; and

A138.3 30 working days prior to any other time Chorus intends to change its prices (this includes where Chorus intends to change prices applying in regulatory year 2022 part-way through 2022).⁴⁶⁷

Draft decision and alternatives considered

A139 Our draft decision, in our reasons paper, was for Chorus to provide this information:⁴⁶⁸

A139.1 with respect to regulatory year 2022, 30 working days following the start of the regulatory period; and

A139.2 for all years of the regulatory period, 30 working days prior to any time Chorus intends to change its prices.

A140 Relating to this draft decision, our draft determination specified that Chorus must provide the information:⁴⁶⁹

A140.1 no later than 30 working days after the start of each regulatory year; and

A140.2 30 working days before any time Chorus intends to change its prices.

A141 We note the discrepancy between these.

A142 We also considered:

A142.1 a single compliance statement in respect of the whole period; and

A142.2 only requiring compliance at the start of each regulatory year.

Submissions

A143 Chorus submitted on our draft decisions on the timing of the revenue path compliance and proposed alternatives. Chorus also noted the discrepancy between our draft decision and draft determination.⁴⁷⁰

A143.1 On the timing of regular annual compliance, Chorus proposed that this should be by June 30 for each year; and

⁴⁶⁷ Our understanding is that this would occur in advance of 1 Oct 2022. Submission of a compliance statement alongside the 30 August 2022 compliance statement in respect of 2023 would meet this requirement.

⁴⁶⁸ Commerce Commission "[Chorus' Price-quality path from 1 January 2022 – Draft decision](#)" (27 May 2021 – Updated 16 May 2021), paragraph A99.

⁴⁶⁹ Commerce Commission "[\[Draft\] Fibre price-quality path determination 2021](#)" (27 May 2021) Clause 9.1.1

⁴⁷⁰ Chorus "[Submission on Fibre PQ draft decisions](#)" (8 July 2021), Appendix B4.

A143.2 On the timing of compliance for price updates, Chorus opposed this requirement and submitted that it should only be required to produce a price compliance report once per year. Chorus considered that the draft decision compliance timing requirements would be unworkable. Chorus submitted that a combined June report would align with its price setting and internal reporting requirements and be more accurate as it would reflect the 1 October price change.⁴⁷¹

Analysis

A144 In response to Chorus' submission, we have reconsidered the draft decision requirement for Chorus to demonstrate compliance ex ante at the start of each regulatory year. Our final decision is that Chorus must demonstrate compliance by 30 August each year for the following regulatory year, and must provide a one-off compliance statement by 31 March 2022 for regulatory year 2022 compliance.⁴⁷²

A145 We consider this approach – with compliance before prices for the relevant regulatory year are determined – responds to the compliance concerns Chorus raised, while still best promoting the purpose of PQ regulation and Part 6. The decision adequately balances:

A145.1 the need for flexibility – as the timing of price changes is subject to change, and may not necessarily follow a regular annual cycle, and even where it does, this may not align with regulatory years – including a requirement for updates is consistent with this; and

A145.2 the need for timely information to allow us to assess whether the revenue path has been complied with.

Annual compliance

A146 Provided ex ante compliance is demonstrated covering all of the regulatory period, a change in the timing to before the start of Chorus' pricing year (for consistency with Chorus' other pricing requirements (declared services, contractual terms)) reduces regulatory cost and complexity without undermining s 162 and s 166(2)(b).

A147 We agree with Chorus' submission that a revenue path compliance process that is aligned with its pricing cycle would reduce compliance cost, without adverse impact in 166(2) or purpose of PQ regulation terms.

⁴⁷¹ Chorus "[Submission on Fibre PQ draft decisions](#)" (8 July 2021), Appendix B4

⁴⁷² As we have previously noted, for regulatory years 2023 and 2024 compliance is ex ante. For regulatory year 2022, compliance requirements are substantially ex ante as the first compliance requirement is by 31 March 2022.

- A148 However, we do not agree that this permits mid-year compliance generally (as Chorus proposed). For the revenue path to regulate Chorus' pricing (the purpose of PQ regulation), and to avoid unintentional non-compliance with the revenue path, compliance must still be demonstrated before the prices take effect. The revenue path being an effective control on prices is critical for it to deliver on the s 162 outcomes.
- A149 Compliance in the middle of the regulatory year means that only a single quarter of that regulatory year will have prices that have not already been determined. Compliance at the start of the pricing year means that the whole year will not yet have prices set, but that one quarter (the December quarter of the final year) may be subject to a future update (which the PQ determination allows for).
- A150 Given prices that will apply for the first three quarters of the 2022 regulatory year will already be in place, genuinely ex ante compliance for 2022 is not possible. As such, we have specified a one-off 31 March 2022 compliance statement.

Mid-year compliance updates

- A151 We have retained the requirement that Chorus provide a compliance update mid-year. As noted above at paragraph A148, where possible compliance should be demonstrated before the relevant prices take effect. Where prices change outside a regular annual cycle, this requires updating.
- A152 However, to reduce the regulatory burden of these updates, we have:
- A152.1 clarified that only information in respect of prices that are changing needs to be provided;
 - A152.2 removed the requirement that updates be director certified; and
 - A152.3 not imposed the update requirement on newly introduced products.
- A153 The exclusion of new products from this requirement also helps remove a barrier to product innovation, consistent with incentives to innovate under s 162(b). Any revenue derived from new products will still contribute to the calculation of actual 'total FFLAS revenue, so will be accounted for by the wash-up.

Wash-up mechanism

- A154 While the wash-up mechanism does not form part of the revenue path in PQP1, it is a key part of the overall regulation of Chorus' revenue over the long-term. Because of this, we have chosen to specify how the wash-up will function as part of the specification of price and revenues IM.

A155 Details of these amendments can be found in Chapter 4 of our final IM amendments reasons paper.⁴⁷³

A156 This section covers:

A156.1 the overall structure of the wash-up mechanism;

A156.2 how wash-up accrual will be calculated;

A156.3 how ‘actual total FFLAS revenue’ will be calculated;

A156.4 how ‘actual allowable revenue’ will be calculated; and

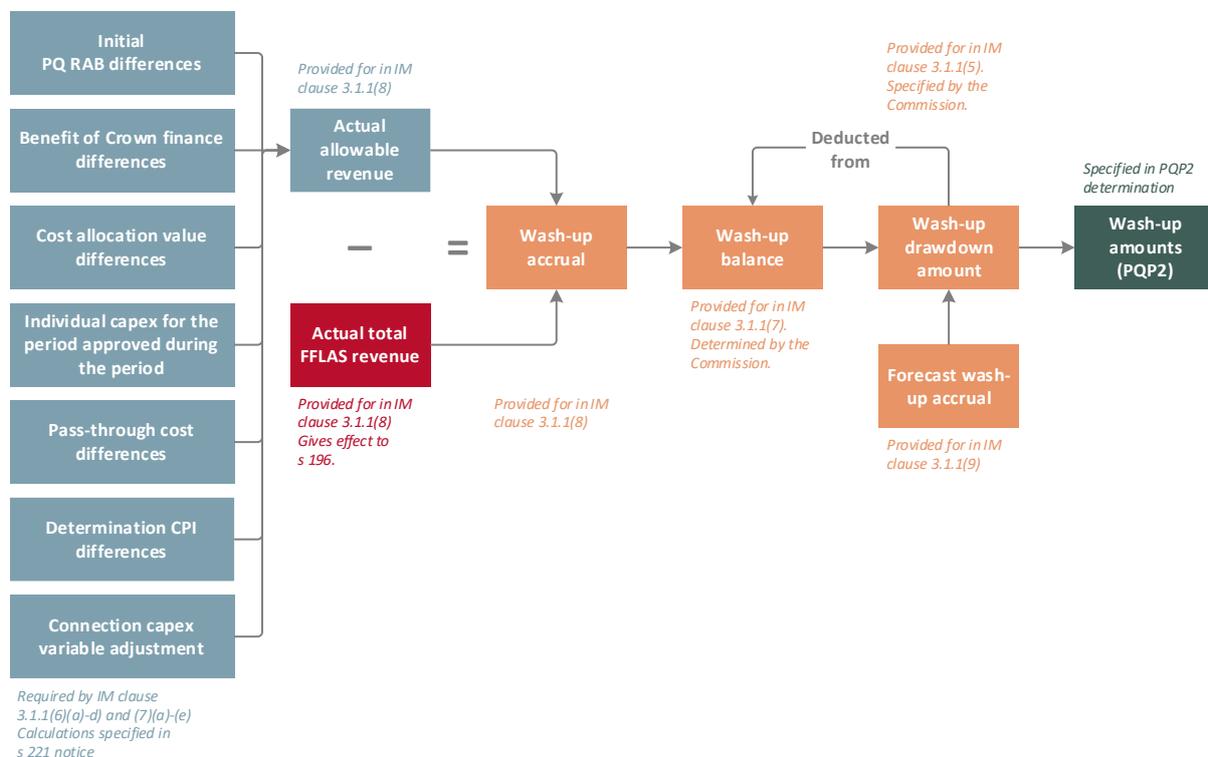
A156.5 the scope of the wash-up for PQP1.

Structure of the wash-up

Final decision

A157 We have implemented a single wash-up across all aspects that are being washed-up, composed of a wash-up accrual, a wash-up balance, and an eventual drawdown ‘wash-up amount’ in future regulatory periods.⁴⁷⁴

Figure A1 Illustration of the wash-up mechanism



⁴⁷³ Fibre Input Methodologies Determination 2020, as amended on 29 November 2021, Chapter 4.

⁴⁷⁴ Fibre Input Methodologies Determination 2020, as amended on 29 November 2021, clauses 3.1.1(4)-(12).

Alternatives considered

A158 We also considered different wash-ups for different factors, or a ‘rolling’ wash-up without an accrual/balance/draw-down approach.⁴⁷⁵

Reasons

A159 While this decision required an exercise of judgement (it is not determined by the Act), this is an implementation decision (necessary to implement other revenue path decisions that promote s 162 and workable competition), so s 166(2) is not relevant to the analysis.

A160 We took this approach because:

A160.1 it is straight-forward; and

A160.2 transparent.

A161 Additionally, this approach has the benefit of minimising revenue and price volatility.

A162 We also note that this approach satisfies the requirements of s 196, which require us to:

apply a wash-up mechanism that provides for any over-recovery or under-recovery of revenue by the regulated fibre service provider during the previous regulatory period to be applied in a manner that is equivalent in present value terms (as calculated in the manner that the Commission thinks fit) over 1 or more future regulatory periods.⁴⁷⁶

A163 As discussed in more detail below, the wash-up is broader than just what is required to meet this requirement.

Calculation of wash-up accruals

Final decision

A164 A wash-up accrual is calculated based on the difference between the “actual” version of ‘allowable revenue’ and the “actual” version of ‘total FFLAS revenue’, where a positive value means Chorus may recover more in future (is “owed” future additional revenue) and where a negative value means it must recover less (Chorus “owes” access-seekers a future reduction). This will mean all relevant aspects of the wash-up are captured.

⁴⁷⁵ Commerce Commission “[Fibre Information disclosure and price-quality regulation – proposed process and approach for the first regulatory period](#)” (15 September 2020), Chapter 5.

⁴⁷⁶ Section 196.

Draft decision

A165 This final decision is consistent with our draft decision.

Alternatives considered

A166 We considered alternatives based on:

A166.1 'forecast total FFLAS revenue' versus 'actual total FFLAS revenue' – this would only capture in-year demand risk;

A166.2 'forecast allowable revenue' versus 'actual total FFLAS revenue' – this would capture only in-year demand risk and any under-charging relative to 'allowable revenue'; or

A166.3 "actual" 'allowable revenue' versus "actual" 'total FFLAS revenue', and a limit to wash-up accruals based on undercharging.

Submissions

A167 Submissions on this draft decision focussed mainly on our proposal to include an unlimited accounting for undercharging. Chorus submitted support for the draft decision to not limit wash-up accruals based on undercharging:⁴⁷⁷

We are pleased the wash-ups are symmetric and unconstrained, as required by the Act. We agree there is no need for service-specific price caps or an undercharging wash-up limit.

A168 Vodafone and Spark disagreed with this aspect of the draft decision and submitted that leaving the amount of voluntary under-charging that can be included in the wash-up account uncapped created the risk that Chorus could price below costs to reduce or distort competition, for example for Chorus 1G and Hyperfibre products.⁴⁷⁸

A169 Vodafone and Spark submitted several proposals:

A169.1 Vodafone submitted that the Commission must reconsider the risk that Chorus will price below cost and reconsider the approach to identifying and addressing this.⁴⁷⁹

⁴⁷⁷ Chorus "Submission on Fibre PQ draft decisions" (8 July 2021), paragraph 32.

⁴⁷⁸ Vodafone "[Submission on fibre price-quality path](#)" (8 July 2021), paragraph 9-14, Spark "[Fibre ID and PQ draft decisions submission](#)" (8 July 2021), paragraph 78-82.

⁴⁷⁹ Vodafone "[Submission on fibre price-quality path](#)" (8 July 2021), paragraph 14.

A169.2 Vodafone submitted that the Commission must limit how the wash-up can be used to account for pricing below cost, and proposed the approach to EDBs in Part 4 as an option.⁴⁸⁰

A169.3 Spark recommended that the Commission consult separately on requirements to mitigate undercharging risk.⁴⁸¹

A170 Chorus cross-submitted, disagreeing with the RSPs that it has incentives to price below cost or that the wash-up could be used to distort competition:

Chorus has concerns about our longer-term ability to recover our investment in the fibre network due to increasing levels of competition from alternative technologies. While it is efficient, and beneficial to consumers, for Chorus to tailor pricing to ensure our services remain attractive, it would not be rational to forego revenues when it appears likely that there will not be an opportunity to recover these revenues in future.

A171 Chorus disagreed with Vodafone's proposal to limit voluntary undercharging in the wash-up, stating that "s196 of the Act does not permit any limits".⁴⁸² Chorus also opposed Vodafone's suggestion for a Part 4 undercharging limit approach.

A172 Chorus opposed Spark's recommendation for the further consultation on requirements to mitigate undercharging risk, stating:⁴⁸³

It is not clear what these suggested requirements would be, or how they would be consistent with s196. It is also not clear what process or timeframe the proposed consultation would fit within.

Analysis

A173 Incentives to invest under s 162(a), incentives to improve efficiency under s 162(b), and limits on excess profitability under s 162(d) have informed our judgement on this specific decision.

A174 We also consider workable competition relevant under s 166(2)(b), as the availability of the wash-up mechanism allows Chorus freedom to price below cost in the short term while still recovering revenue from end-users in the long term in a manner that may harm competition.

⁴⁸⁰ Vodafone "[Submission on fibre price-quality path](#)" (8 July 2021), paragraph 14.

⁴⁸¹ Spark "[Fibre ID and PQ draft decisions submission](#)" (8 July 2021), paragraph 82.

⁴⁸² Chorus "[Cross-submission on Fibre ID draft decisions](#)" (5 August 2021), Appendix C10.

⁴⁸³ Chorus "[Cross-submission on Fibre ID draft decisions](#)" (5 August 2021), Appendix C12.

- A175 We consider our decision best promotes the purpose of Part 6 per s 166(2)(a) relative to the realistic alternatives we have identified because it enables our over-all approach to the wash-up, with all factors (both those that cause actual 'allowable revenue' and those that cause actual 'total FFLAS revenue' to differ from forecasts) to be accounted for.
- A176 To best promote incentives to invest (the outcome promoted under s 162(a)), Chorus requires a reasonable expectation that it will be able to earn a normal return (via the eventual wash-up draw down), factoring in things such as un-forecast 'individual capex' or lower than expected inflation (which depresses forecast 'allowable revenue').
- A177 On the end-user side to best promote the outcome under s 162(d) of Chorus being limited in their ability to extract excessive profits, we must ensure that Chorus does not benefit from wind-fall gains based on factors beyond its control (such as lower than forecast demand for connection capex) creating excess profits.
- A178 Finally, we need to ensure that things Chorus can control (such as the efficiency of its real opex or the efficient timing of its capex) are not washed-up for, preserving its incentives to improve efficiency (the outcome promoted under s 162(b)).
- A179 We consider that our approach to the wash-up mechanism promotes the outcomes in s 162(a), s 162(b) and s 162(d) because it would:
- A179.1 consistent with s 162(a), give Chorus a reasonable expectation that it will be able to earn a normal return (via the eventual wash-up draw down);
- A179.2 consistent with s 162(b), give Chorus incentives to improve efficiency in its expenditure on matters within its control; and
- A179.3 consistent with s 162(d), ensure that Chorus does not benefit from wind-fall gains based on factors beyond its control.
- A180 We consider this decision best promotes workable competition under s 166(2)(b) relative to the realistic alternatives we have identified because, in terms of promoting workable competition, we are concerned that the wide scope of this wash-up – specifically the inclusion of an unlimited accounting for undercharging – could in some circumstances harm workable competition from FWA providers in access markets.

- A181 Since making our draft decision we have reconsidered the risk of Chorus undercharging and reconsidered our draft decision to not limit wash-up accruals based on undercharging. We acknowledge that not limiting wash-up accruals based on undercharging could give Chorus the ability to manipulate prices in the way described by Vodafone and Spark’s submissions and recover revenue through the wash-up. However we still consider this risk unlikely during PQP1. The short-term cashflow incentives Chorus faces (and has cited in its proposed approach to alternate depreciation) act counter to the risk of under-charging the revenue cap.⁴⁸⁴
- A182 On its alternative depreciation method proposal for the FLA (see paragraphs 6.82 to 6.85 on depreciation), Chorus claims that it is making the depreciation proposal on the basis that it has a material uncompensated economic asset stranding risk, which is expected to increase.⁴⁸⁵ Chorus refers to expert evidence in support of its application.⁴⁸⁶ It also claims that its proposal is consistent with the smoothing of prices under s 197 of the Act, and that if it were unable to bring forward depreciation, it would suffer a material revenue reduction at the start of the first regulatory period.⁴⁸⁷
- A183 Chorus has indicated that it is incentivised to recover revenues early to buffer against uncompensated economic asset stranding risk, a risk it claims is material and expected to grow. Chorus’ proposal for the alternative depreciation method was made on this basis. We consider that together, these two elements of Chorus’ submissions - Chorus’ proposal for alternative depreciation and Chorus’ reasons for that proposal - are counter to the risk of under-charging.
- A184 We note there is still a residual risk that Chorus has incentives to undercharge on a more limited basis – those products where it faces actual or potential competition. Under a revenue path, our tools to manage this risk – the relative pricing of different products – are limited under a revenue cap.
- A185 Our view more widely is that Chorus’ incentives are counter to the risk of under-charging and therefore, unlikely to lead to an outcome that doesn’t promote the s 166(2) purposes.

⁴⁸⁴ Chorus [“Submission on Fibre PQ draft decisions”](#) (8 July 2021).

⁴⁸⁵ Chorus “Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice” (14 May 2021), paragraph 16.

⁴⁸⁶ Chorus “Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice” (14 May 2021), paragraph 17.

⁴⁸⁷ Chorus “Response to Attachment A of the Commerce Commissions 13 May 2021 section 221 notice” (14 May 2021), paragraph 18.

- A186 We also consider that adding additional constraints (like the “limit on voluntary under-recovery” applied to EDBs) increases regulatory complexity, increasing compliance costs and the possibility of over-determined prices.
- A187 Having considered the realistic alternatives we have identified in paragraph A166 in relation to Vodafone and Spark’s suggestion to include a limit on wash-up accruals based on undercharging, we consider that our decision best gives effect to the purposes s 166(2) as explained in paragraphs A173 to A179.
- A188 In addition, we also consider that our approach is the least complex. Therefore, we consider that our approach reduces compliance costs, while still reducing the risk of outcomes eventuating that would not best give effect to the s 166(2) purposes.

Calculating actual total FFLAS revenue

Final decision

- A189 We have decided that Chorus would have to calculate the total FFLAS revenue component of the wash-up accrual on the basis of prices (net of discounts), actual quantities and actual other FFLAS income.

$$ATFR = \sum_i (P_i - D_i) \times AQ_i + AOFI$$

- A190 This is the same approach applied as for the calculation of 'forecast total FFLAS revenue', with actuals substituted for reasonable forecasts of quantities.

Alternatives considered

- A191 We also considered an approach where prices were updated as well as quantities. However, this approach undermines ex ante compliance, with prices being able to be changed after the fact in a way that is not influenced by the revenue cap. Under the compliance approach illustrated in Figure A1 above, prices and discounts remain unchanged between the calculation of 'forecast total FFLAS revenue' and 'actual total FFLAS revenue', meaning the only difference is in forecast quantities and forecast other FFLAS income.

Reasons

- A192 We consider this is a pure implementation decision, necessary to give effect to our other decisions. As such, our decision is for this option because it is straightforward and transparent.
- A193 We received no submissions on this issue.

Calculating actual allowable revenue

Final decision

A194 The actual allowable revenue will be calculated based on a re-running of the building blocks model, with only the washed-up inputs to it updated, by substituting actual pass-through costs for forecast ones, and by substituting forecasts of CPI for actual values of CPI.

Alternatives considered

A195 We also considered an approach where each component of what is being washed up is calculated separately.

Reasons

A196 This is a pure implementation decision, that simply enables an overall mechanism that best gives effect to the purpose of Part 6 and promotion of workable competition.

A197 Our reason for recommending this approach is that it is straight-forward to calculate and would not require complex formulae to be specified in advance. This should minimise the chances of any error.

A198 We will specify the requirements for re-running of the model in a s 221 notice, that we will issue to Chorus and publish on our website.

Scope of the wash-up mechanism

A199 As we have specified the scope of the wash-up mechanism in the fibre IMs,⁴⁸⁸ our reasoning for the scope of the wash-up is discussed in the IMs reasons paper.⁴⁸⁹ Table A1 below summarises what aspects of the revenue path will be subject to a wash-up.

⁴⁸⁸ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, clause 3.1.1(11).

⁴⁸⁹ Commerce Commission "Fibre input methodologies main 2021 amendments: final decisions – final reasons paper" (29 November 2021), Chapter 4.

Table A1 Scope of the wash-up mechanism

Factor	Wash-up	Mechanism to be applied	Rationale
Real WACC	No		Economic principle is ex ante RFCM
Nominal WACC	Yes	Hedged against revaluation CPI	Required by existing IMs
PQP1 return on/of initial RAB	Yes	Wash-up	Maintains RFCM/limits excessive profits
Enduring impact of initial RAB	Yes	PQP2 reset	Required by existing IMs
Asset allocator values	Yes	Wash-up	Risk allocation, consistency with demand wash-up
Depreciation	Partial	PQP2 reset	Required by existing IMs
Revaluation CPI	Yes	Hedged against nominal WACC	Required by existing IMs
Real unallocated opex	No		Incentives to improve efficiency
Cost allocator values	Yes	Wash-up	Risk allocation, consistency with demand wash-up
Real base capex	Partial	PQP2 reset	Incentives to improve efficiency
Connection capex real unit cost	Partial	PQP2 reset	Incentives to improve efficiency
Connection capex volumes	Yes	Wash-up	Required by existing IMs
Individual capex	Yes	Wash-up	Required by existing IMs
Expenditure input price inflation	Partial	Hedged against revenue path CPI	Risk allocation, consistency with revenue path CPI
Benefit of Crown financing rates	No		Required by existing IMs
Benefit of Crown financing level/mix	Yes	Wash-up	Consistency with IMs and Incentive framework
Tax	Partial	Via recalculation of other factors	Consistency with other building blocks
Stranding allowance	No		Required by existing IMs
Revenue path CPI	Partial	Annual updating Wash-up mechanism	Risk allocation, consistency with input price inflation
Pass-through costs	Yes	Wash-up	Consistency with existing IMs policy intent
Demand forecasts	Yes	Wash-up	Required by section 196

Attachment B Summary of final decisions for expenditure allowances

B1 This appendix provides a summary of our final decisions and sets out the differences between Chorus' proposal, our draft decision, our final decision and the change in our decision from draft to final for the base capex and opex allowances and sub-categories of the expenditure.

Table B1 Our base capex final decisions

Expenditure items in PQ final decision	Chorus Proposal (\$m)	Draft decision (\$m)	Final decision (\$m)	Change from Draft to Final (\$m)	Change from Proposal to Final (\$m)
Extending the network: Augmentation	10.4	10.4	10.4	-	-
Extending the network: New Property Developments	21.4	21.4	21.4	-	-
Extending the network: UFB Communal	39.7	39.7	39.7	-	-
Installations: Complex Installations	6.6	4.2	5.7	1.5	-0.8
Installations: Standard Installations	95.4	63.1	81.3	18.2	-14.2
IT and Support: Business IT	32.3	32.3	32.2	-0.1	-0.1
IT and Support: Corporate ⁴⁹⁰	42.3	6.3	9.0	2.7	-33.2
IT and Support: Network & Customer IT	76.2	75.2	76.2	1.0	-
Network Capacity: Access	71.7	71.7	71.7	-	-
Network Capacity: Aggregation	48.4	45.7	45.7	-	-2.7
Network Capacity: Transport	47.8	45.4	45.4	-	-2.4
Network Sustain and Enhance: Field Sustain	63.1	61.2	61.2	-	-1.9
Network Sustain and Enhance: Relocations	13.0	13.0	13.0	-	-
Network Sustain and Enhance: Resilience	37.0	37.0	37.0	-	-
Network Sustain and Enhance: Site Sustain ⁴⁹¹	36.8	36.8	56.5	19.7	19.7
Base capex adjustment	-	-28.2	-24.9	3.3	-24.9
Total	642.1	535.2	581.6	46.4	-60.5

⁴⁹⁰ Leases are not included in the Chorus proposal value, however leases have been added in the final decision.

⁴⁹¹ Leases are not included in the Chorus proposal value, however leases have been added in the final decision.

Table B2 Our opex final decisions

Component of PQ final decision	Chorus Proposal (\$m)	Draft decision (\$m)	Final decision (\$m)	Change from Draft to Final (\$m)	Change from Proposal to Final (\$m)
Customer: Customer operations	18.9	18.9	18.9	-	-
Customer: Product, Sales & Marketing	70.4	70.4	67.9	-2.5	-2.5
Network: Maintenance	91.3	82.3	84.7	2.4	-6.7
Network: Network Operations	43.4	43.4	41.5	-1.9	-1.9
Network: Operating costs	23.3	23.3	22.1	-1.2	-1.2
Support: Asset Management	38.9	38.9	37.5	-1.4	-1.4
Support: Corporate	144.6	122.8	127.4	4.6	-17.3
Support: Technology	57.0	57.0	55.1	-1.9	-1.9
IT efficiency adjustment	-	-21.3	-21.3	0.0	-21.3
Total	487.8	435.6	433.8	-1.8	-54.1

Attachment C Incentive payment expenditure

Purpose and structure of this attachment

- C1 In this attachment we outline our decisions on incentive payments for PQP1, the reasons for our final decision and how we have considered submissions on our draft decisions and additional consultation on incentive payments.

- C2 We have structured this appendix as follows:
 - C2.1 Our final decision;
 - C2.2 Key reasons for our final decision;
 - C2.3 Summary of the process we have taken to reach our decision (including the different consultation steps);
 - C2.4 Submissions on our draft decision and additional consultation; and
 - C2.5 Reasons for our final decision and consideration of stakeholder views.

Our final decision

- C3 Our decision is to include incentive payment expenditure of \$18.6m in the base capex allowance for 2022. This is a change from our draft decision.

- C4 Our decision is that Chorus will have to submit Individual Capex (IC) proposals to us if it wishes to seek approval of incentive payment expenditure for 2023 and 2024. This is the same as our draft decision.

Key reasons for our final decisions

- C5 These decisions recognise that:
 - C5.1 The incentive expenditure we are approving for 2022 can qualify as capex;
 - C5.2 Incentive payments can improve efficiency and be procompetitive (although they can also reduce efficiency and be anticompetitive);
 - C5.3 The incentive expenditure we are approving for 2022 meets our economic test since the expected incremental revenues from incremental end-users outweighs the incremental costs. Therefore, in the aggregate and on balance, it is likely to improve efficiency and be procompetitive;
 - C5.4 Approving the incentive expenditure for 2022 as base capex will provide some certainty for the market and avoid disrupting the potential pro-competitive benefits of incentive payments during 2022;

- C5.5 From our assessment of the available information, we do not consider that there are significant concerns that the proposed incentive payments for 2022 would contravene s 201 or Chorus' non-discrimination obligations;
- C5.6 There is less concern that disallowing incentive expenditure for 2023 and 2024 would disrupt the market since Chorus will have the opportunity to seek approval for that expenditure under IC approvals in advance of those years;
- C5.7 There is greater uncertainty as to the economic merit of the incentive expenditure for 2023 and 2024 and whether it would be compliant with s 201 and Chorus' non-discrimination obligations; and
- C5.8 We will monitor Chorus's compliance with s 201 during the regulatory period and take steps to address compliance concerns relating to incentive payments ex post should issues arise.

Summary of the process we have taken to reach our decision

- C6 In this section we outline Chorus' proposal to include incentive payments in its expenditure allowances, our draft decision relating to incentive payments and the additional consultation we conducted on incentive payments.

Chorus' proposal for incentive payment expenditure

- C7 Incentive payments are payments Chorus makes to RSPs to incentivise acquisition of new customers to its fibre network or to incentivise existing customers to upgrade to new services. Chorus has included incentive payment expenditure in its base capex proposal (in the complex and standard installation expenditure sub-categories) and in its connection capex baseline allowance.
- C8 These incentive payments (also called customer retention costs) are capitalised as customer retention assets by Chorus in accordance with GAAP.
- C9 Chorus proposed \$44.4 million (nominal) expenditure on incentive payments over PQP1. Chorus uses incentive payments to promote both:
 - C9.1 the quantity of new fibre connections (eg, through incentivising migration of customers to the fibre network), and
 - C9.2 increased intensity of usage of the network by existing customers (eg by incentivising up-selling existing end-users to higher speed plans).
- C10 Chorus' current and potential incentive offerings for 2022 are discussed below in paragraphs C22 to C25 and C93 to C103.

Our draft decision on incentive payments

- C11 We published our draft decision on incentive payments on 27 May 2021 as part of our PQ draft decisions.
- C12 Our draft decision was to reject the incentive expenditure both for new connections in the connection capex proposal \$10.2m⁴⁹² and for existing connections in the base capex proposal \$34.2m.
- C13 We considered that all incentive payments (both related to new and existing connections) should be assessed as individual capex proposals. We considered that this would:
- C13.1 allow a greater degree of scrutiny to ensure the payments are not excessive, overstated or anticompetitive; and
 - C13.2 allow us to require Chorus to ring-fence the expenditure and report on it separately.
- C14 We considered that if the expenditure was not approved as part of the base capex allowance now, Chorus could seek approval under the individual capex mechanism if the expenditure met the criteria for an IC proposal.
- C15 In our draft decision we indicated that we considered that depending on the specifics, incentive payments could either benefit or harm end-users in the long term (s 162), and either be pro or anticompetitive (s 166(2)(b)).
- C16 We outlined and consulted on an economic test to apply to Chorus' proposed expenditure on incentive payments. The test aimed to give us confidence that the proposed level of incentive payments—in the aggregate, rather than individual payments—was not excessive, overstated, or anticompetitive. The test we consulted on was:
- C16.1 Is there evidence to show that the expected incremental revenues exclusively from the incremental end-users outweigh the incremental costs?
- C17 We also outlined two further questions that we would need to consider when assessing a proposal seeking approval of incentive payments:

⁴⁹² We did not consider that incentive payments met the definition of variable connection capex, so we excluded them from the approved connection capex baseline allowance.

- C17.1 Question1: Do the proposed incentive payments comply with the geographically consistent pricing requirement under s 201? We signalled that we considered the broad definition of price in s 164(1)(b) included incentive payments and that prices with the incentive payments must meet the s 201 geographic consistency requirement.
- C17.2 Question 2: Do the costs Chorus incurs in making incentive payments to obtain contracts with RSPs meet the definition of “capex”?
- C18 We received submissions from Chorus (plus a submission from NERA Economic Consulting (NERA)) and four RSPs (plus submissions from Frontier Economics (Frontier) and Russell McVeagh) on our draft decisions before the closing date for submissions.
- C19 Four further submissions were received from other RSPs after the closing date for submissions. After further consideration of our process timeline and the date for our final PQ decisions we decided to accept the late submissions.
- C20 Key points from these submissions are summarised below in paragraphs C32 to C43.

Additional consultation on incentive payments

- C21 Before making our final decision on incentive payments, we considered it appropriate to seek additional information from Chorus, and to consult further with stakeholders on the additional Chorus information and the late submissions.
- C22 The additional information included an overview of Chorus’ RSP consumer and business incentive offers that were currently in the market and a range of commentary on the incentive offers.⁴⁹³
- C23 Chorus indicated in its response that, while its suite of RSP consumer offers for 2022 was still under development, it expected to continue to offer the Mix it Up and Hyperfibre Installation consumer incentives and its current suite of business incentives during 2022.
- C24 Chorus’ website, as at the decision date, also reflected that the Mix it Up and Hyperfibre Installation incentive offers would continue to run between 1 January and 30 June 2022 and noted that for the Mix it Up offer it had removed the marketing plan eligibility requirement.⁴⁹⁴

⁴⁹³ Chorus “Chorus response to RFI 024 – Customer incentive payments” (22 September 2021), available at https://comcom.govt.nz/__data/assets/pdf_file/0030/266934/Chorus-response-Fibre-PQ-Expenditure-RFI-24-Additional-information-on-incentive-payments-22-September-2021.pdf.

⁴⁹⁴ <https://sp.chorus.co.nz/product-update/rsp-consumer-incentives-january-june-2022>

- C25 Chorus' explanations included the following points about its incentive offerings:
- C25.1 It had developed internal assessment processes for ensuring its FFLAS pricing was consistent with the geographic consistent pricing requirement in s 201.
 - C25.2 Its incentives did not differentiate between RSPs or end-users based on their geographic location and, for the most part, were nationally available.
 - C25.3 Its incentives were designed so that all RSPs could participate, and to have extensive RSP participation.
 - C25.4 All of its proposed incentive offers would continue to be assessed to ensure that the criteria for eligibility were non-locational factors. For example, an incentive offer could be targeted at a particular end-user demographic (e.g., senior citizens in retirement villages) wholly unrelated to the geographic location of the RSP or end-user. Chorus considers that these types of incentives would be compliant with the obligation in s 201.
 - C25.5 In some limited cases its incentives were offered on a more targeted basis. One example of this is incentives to encourage end-users with intact ONTs to take the next step and get connected to fibre.⁴⁹⁵ The address list for the current Intact ONT incentive is geographically dispersed and geographic location is not the determining factor. We now understand that Chorus has proposed stopping offering these types of incentive payments due to low take-up. We consider that incentive offers of this type are the most at risk of being non-compliant with s 201.
 - C25.6 Where an incentive relates to services to which non-discrimination obligations apply, its incentive offers are made available to all RSPs at the same time and on the same terms, but it does not tailor its incentive offers to meet the needs of individual RSPs.
 - C25.7 It consults with RSPs on proposed incentives which ensures that all RSPs have an equal opportunity to provide feedback and any RSP feedback is considered in light of its non-discrimination obligations.
 - C25.8 Its incentives will be capitalised as assets under GAAP in accordance with NZ IFRS 15.

⁴⁹⁵ We note that Chorus now (as at 3 November) appears to have dropped the intact ONT offer for 2022. Chorus (2021), *Our current consumer incentives on offer are changing*, 7 September 2021. Available at <https://sp.chorus.co.nz/product-update/our-current-consumer-incentives-offer-are-changing>.

- C26 We consulted further on incentive payments on 30 September 2021. We invited stakeholders' views on Chorus' response to our RFI, the additional material and the late submissions.
- C27 Specifically, we sought stakeholders' view on:
- C27.1 Whether the information provided by Chorus on incentive payments raised any compliance issues with respect to the geographically consistent pricing requirement under s 201 or Chorus' non-discrimination obligations, and whether the costs Chorus would incur when making incentive payments to obtain contracts with RSPs would meet the definition of "capex" in the fibre IMs.
 - C27.2 Any general views on the consultation material and how we should take account of the additional material in our final PQ decisions on Chorus' expenditure allowances.
- C28 We received submissions from Chorus and five RSPs.
- C29 Key points from these submissions are summarised below in paragraphs C32 to C43 (with the earlier submissions).

Submissions on our draft decision and additional consultation

- C30 We received submissions both for and against incentives. The submissions we received related to the following general topics:
- C30.1 The competition impact of the incentives in the market;
 - C30.2 The economic test that we proposed to apply when assessing the incentive payments;
 - C30.3 Whether the incentive payments would comply with s 201 and Chorus' non-discrimination obligations; and
 - C30.4 Whether the incentive payments would qualify as capex.
- C31 We note below the key points from submissions that relate to the approval of an expenditure allowance for incentive payments, with reference to competition effects, the purpose of Part 6 and the economic test, ex ante compliance issues and whether incentive expenditure is capex.

Submissions referring to competition effects, the purpose of Part 6 and the economic test

C32 Chorus submitted:^{496, 497}

- C32.1 The Commission focused heavily on the theoretical risks of incentive payments being set too high. The Commission had missed the commercial context for incentive payments and the substantive risks to competition in retail telecommunications markets if incentive payments were set too low or not approved at all.
- C32.2 It had been making incentive payments for many years and they had encouraged fibre uptake. The incentive payments in the expenditure proposal were based on historical offers developed in consultation with RSPs.
- C32.3 The Commission's starting point should be to consider whether historical levels were reasonable or if they needed to be adjusted, not to set incentive payments to zero.
- C32.4 The Commission should be wary of Spark's objections to the incentive capex proposal. The fact that Chorus' incentive investment is opposed by a competing owner and supported by independent RSPs lends weight to the view that the investment has pro-competitive benefits.
- C32.5 Chorus considered that its proposal met the Commission's economic test, even though it considered a less stringent test would be appropriate.

C33 Spark submitted:^{498, 499}

- C33.1 The Commission should not rely on a presumption that incentive payments are benign if marginal revenue is more than the marginal cost. Even where marginal revenue exceeds marginal cost, there may still be incidental effects on competition.

⁴⁹⁶ Chorus "Submission on price-quality path draft decision" (8 July 2021).

⁴⁹⁷ Chorus "Cross-submission on Price-Quality draft decision" (3 August 2021).

⁴⁹⁸ Spark "Fibre ID and PQ draft decision: Cross-submission" (8 July 2021).

⁴⁹⁹ Spark "Fibre ID and PQ draft decision: Cross-submission" (5 August 2021).

- C33.2 The test used to assess incentive payments is insufficient. Spark suggested the Commission should examine the likely effect of the incentive payment, with the net marginal revenue but one factor. Spark submitted that there is a risk otherwise that the test ends up similar to the courts' approach to s 36 of the Commerce Act, where a dominant firm can show that they have not "taken advantage" of market power if they can point to the conduct being rational for a smaller firm.
- C33.3 Allowing incentive payments as approved expenditure promotes anticompetitive conduct by Chorus.
- C33.4 Spark disagreed with Chorus' suggestions that the only issue is the level of connection incentive, and that because the current levels had been in the market for some time they should be taken forward. Spark noted that, contrary to Chorus' claims, that its analysis suggested the concerning incentives were not a long-established market practice and have been subject to continual change. The bonus credits and hurdle rates that concern Spark were launched in April and September 2020 respectively, and there had been four further variants with different qualifying criteria or credits since then.
- C33.5 The new entrant RSPs that Chorus was seeking to support were, in practice, large businesses that offered their own electricity or pay-TV bundles. The bundling of telecommunications with other services is a feature of the market, and the only practical difference between Chorus' preferred RSPs and others is that its preferred RSPs were not investing in competing telecommunications infrastructure.
- C33.6 Spark submitted that through the connection incentive initiative, Chorus was able to segment and differentiate prices in the market. For example, the incentives were structured to:
- C33.6.1 Segment the market between end-users who were on Chorus copper, on Chorus fibre and on alternative networks, and price discriminate between these end-users.
 - C33.6.2 To identify and segment "active" end-users who are more likely to become customers of alternative networks, and price discriminate between these customers and Chorus' other customers.
 - C33.6.3 Segment the market between RSPs who support entry level fibre variants in the market and others, providing incentives that undermine low performing fibre services in the market.

C34 Trustpower submitted:^{500, 501}

- C34.1 Incentive payments enable Trustpower to compete with larger RSPs and are therefore pro-competitive.
- C34.2 The regulatory challenge is to determine the appropriate value for the incentive payments that should be allowed in the PQ path. In general, this is a matter of finding the balance between a value that is sufficient to enable a process of workable competition, but that is not excessive so as to potentially be anticompetitive.
- C34.3 Introducing ex ante regulation of incentive payments could detrimentally effect RSPs ability to compete and setting the expenditure allowance should be kept separate from the process of ensuring compliance with s 201 and the non-discrimination obligations.

C35 Vodafone submitted:^{502,503}

- C35.1 It agreed with the test to evaluate incentive payments.
- C35.2 The incremental costs considered must be both the costs of the incentive payments and the incremental costs of servicing the connection.
- C35.3 The incremental revenues must exceed the incremental costs during the period of the incentive payment, not over a full average customer lifetime, as customers that seek incentive payments can be transient and shift from service to service.
- C35.4 The draft decision may allow Chorus to undermine competition by using the wash-up and incentive payments to price below cost in the short-term.
- C35.5 It disagreed that the non-discrimination rules mitigate any of the risks associated with incentive payments.

⁵⁰⁰ Trustpower “Trustpower submission: consultation on Chorus’ price-quality path from 1 January 2022 – draft decision” (8 July 2021).

⁵⁰¹ Trustpower “Trustpower submission: additional information published relating to incentive payments” (14 October 2021)

⁵⁰² Vodafone “Vodafone Aotearoa’s submission on the draft price-quality path to be applied to Chorus” (8 July 2021).

⁵⁰³ Vodafone “Vodafone Aotearoa’s cross submission on the draft price-quality path to be applied to Chorus” (5 August 2021).

C35.6 Responding to NERA's (for Chorus) claim that information provided to the Commission as well as the independent verifier was already consistent with the test proposed by the Commission (ie that marginal revenue must exceed marginal cost), Vodafone noted that while it had not had visibility of this information the assessment of revenues and costs must take account of the following issues:

C35.6.1 It agreed with NERA that incremental revenue must account for the fact that some customers offered the incentive would have joined or upgraded regardless. Vodafone noted that it dealt with this issue frequently in its internal processes for approving its own discounts. In evaluating the business case for any incentive-based campaign Vodafone assumed that a percentage of customers would purchase the relevant services regardless of the campaign. The revenues from these customers must be netted off the assessment of marginal revenue.

C35.6.2 Chorus must also identify the appropriate marginal cost associated with these connections. There are two key marginal costs that need to be considered, namely, changes in variable costs, such as overheads due to increased connections and the costs of connection.

C36 NERA (for Chorus) submitted:⁵⁰⁴

C36.1 Incentive payments are a normal feature of competitive markets and can benefit customers in a regulatory context by expanding demand.

C36.2 Concerns that Chorus will distort competition through excessive incentive payments are overstated, given the economic test proposed by the Commission and other constraints Chorus faces (the Commerce Act and non-discrimination obligations).

C36.3 The economic test proposed by the Commission would promote the sharing of efficiency gains and ensure competition is not distorted. However, it is likely to be overly narrow from the context of promoting the purpose of the Act, as it focuses on private benefits and costs to Chorus. However, a broader test would be difficult to operationalise in a mechanical/quantitative way. The Commission's test is appropriate if a mechanical/quantitative test is desired.

⁵⁰⁴ NERA "Customer incentive payments and the long-term benefit of end-users: Chorus New Zealand Limited" (7 July 2021).

C36.4 The economic test may be overly narrow given it omits factors such as:

C36.4.1 The increase in downstream competition by aiding RSPs to overcome customer inertia. There is evidence that small RSPs rely on incentives more than large RSPs. Network competition may increase if downstream competition also facilitates more switching between networks.

C36.4.2 Consumer surplus and the social benefits of the adoption of UFB, which will not be entirely captured by Chorus' incremental revenue as the 'benefit' of the programme.

C36.4.3 Cost savings from shutting down the copper network.

C37 Frontier (for Vodafone) submitted:⁵⁰⁵

C37.1 Including incentive payments in the RAB allows Chorus to generate monopoly profits and is therefore contrary to the purpose of Part 6. The solution is not to allow incentive payments to enter the RAB.

C37.2 If Chorus offers incentive payments, the Commission should be cognisant of the possibility of predatory behaviour relying on cross-subsidisation between customer groups even if there is no specific allowance – as it would for any other company with a significant degree of market power.

C37.3 Frontier was in general agreement with the Commission that the incremental revenue > incremental cost test is an appropriate approach for assessing incentive payments if the Commission was concerned about the potential for anticompetitive pricing.

C37.4 Frontier agreed that an incremental revenues > incremental costs approach would be consistent with how a firm in a competitive market would offer such incentives, and could not be predatory. However, it noted that the test raised several questions about how incremental costs and revenues might be measured:

⁵⁰⁵ Frontier Economics "Incentive payments: A note for Vodafone New Zealand" (4 August 2021).

- C37.5 Incremental revenues: The incremental revenues that Chorus would earn from new customer acquisition are effectively the monthly access charges for the average life of each group of customers acquired (net of the incentive payment), suitably discounted to reflect risk. However, it is likely that some new customers that take advantage of the incentive payment would have joined regardless of whether that payment was offered, so the true incremental gain in revenue may be somewhat lower than the full amount (this is also recognised by NERA on behalf of Chorus). Frontier noted that this is likely to be how a commercial business would consider discounts.
- C37.6 Incremental costs: The incremental costs of servicing customers on a wholesale network with substantial sunk costs already incurred in network rollout are likely to include connection costs and ongoing network maintenance costs.
- C38 We also received submissions from a number of RSPs (Vocus, Devoli, Now, and Sky) supporting the inclusion of incentive payments from Chorus. These stakeholders:
- C38.1 Supported the inclusion of incentive payments in Chorus' proposed allowance.
- C38.2 Were concerned about the complexity of the proposed process for the approval of incentives and supported a simple and clear process for RSPs to engage with Chorus on incentive payments so they can plan and arrange their business activities for the ultimate benefit of end-users.⁵⁰⁶
- C38.3 Noted that adverse changes to Chorus' incentive framework would most likely result in RSPs passing on the changes to end-users by way of higher prices⁵⁰⁷, and potentially hinder innovation.⁵⁰⁸
- C38.4 Stated that incentive payments allowed them to compete with larger RSPs that have their own network.⁵⁰⁹

⁵⁰⁶ Devoli, "Consultation on the treatment of Chorus incentives as part of Chorus' fibre price quality determination (15 September 2021), page 6; Sky "Draft decision on Chorus' price-quality path" (24 September 2021), page 1; and Vocus "Chorus incentives – regulatory approval process" (31 August 2021), page 1.

⁵⁰⁷ Devoli "Consultation on the treatment of Chorus incentives as part of Chorus' fibre price quality determination (15 September 2021), page 4.

⁵⁰⁸ Sky "Draft decision on Chorus' price-quality path" (24 September 2021), page 2; and Vocus "Chorus incentives – regulatory approval process" (31 August 2021), page 1.

⁵⁰⁹ Now untitled letter (1 September 2021), page 1; Vocus "Chorus incentives – regulatory approval process" (31 August 2021), page 1 and 2; and Sky "Draft decision on Chorus' price-quality path" (24 September 2021), page 2.

- C38.5 Considered the IC proposal mechanism was too slow to enable Chorus to adapt its offering and provides a competitive advantage to RSPs with their own networks.
- C38.6 Noted that incentive payments don't influence locations targeted and therefore would not create a breach of s 201.

Submissions received on ex-ante compliance issues

- C39 Spark submitted:^{510, 511, 512}
- C39.1 The Commission cannot determine an expenditure that is inconsistent with Chorus' obligations under the Act.
- C39.2 Incentive payments are non-compliant with s 201, particularly incentive offers where offnet individual addresses were targeted as part of incentive offering.
- C39.3 Incentive payments likely breach Chorus' non-discrimination obligations.⁵¹³
- C39.4 The Commission does not have a compliant expenditure proposal to consider.
- C40 Russell McVeagh provided an opinion (submitted by Spark) stating:⁵¹⁴
- C40.1 There is a material risk that the incentive payments do not comply with s 201 and/or the non-discrimination obligations.
- C40.2 Before including incentive payment expenditure as capex the Commission must reach evidenced conclusions that the incentive payments would not breach s 201 or breach the non-discrimination obligations.

⁵¹⁰ Spark "Fibre ID and PQ draft decision: Cross-submission" (8 July 2021).

⁵¹¹ Spark "Fibre ID and PQ draft decision: Cross-submission" (5 August 2021).

⁵¹² Spark "Chorus additional information relating to incentive payments" (14 October 2021).

⁵¹³ Telecommunications Act 2001, section 69XB.

⁵¹⁴ Russel McVeagh "opinion on legal risks of including incentive payments as capex for Chorus' price-quality path" (5 August 2021).

- C41 Vodafone submitted:^{515, 516, 517}
- C41.1 Chorus is prepared to use incentive payments to unfairly disadvantage RSPs that do not sell fibre only.
- C41.2 Chorus' requirement for RSPs to undertake fibre-focused marketing in order to qualify for incentives discriminates against RSPs that offer alternative technologies.
- C42 Vector submitted:⁵¹⁸
- C42.1 Some of Chorus' commercial practices relating to incentives appear to contravene s 201 and the non-discrimination obligations.
- C42.2 Chorus' statements about compliance should not be accepted at face value and it should not be allowed to police its own behaviour.

Submissions received on whether incentive payments are capex

- C43 Spark submitted:⁵¹⁹
- C43.1 GAAP is not relevant to whether the incentive payments are capex.
- C43.2 Incentive payments are designed to drive demand and are not expressed to cover any capital costs involved in connecting the customer to a fibre service.
- C43.3 It would "stretch" the meaning of fibre asset in s 177 of the Act to interpret it as including the costs of acquiring customer contracts.
- C43.4 The assets generated by Chorus' incentives are not available to be employed in the provision of FFLAS, because they are specific to the end-user and are not available to subsequent RSPs or FFLAS end-users, and the associated costs sit outside the definition of FFLAS because they relate to downstream assets or retail costs.

⁵¹⁵ Vodafone "Vodafone Aotearoa's submission on the draft price-quality path to be applied to Chorus" (8 July 2021).

⁵¹⁶ Vodafone "Vodafone Aotearoa's cross submission on the draft price-quality path to be applied to Chorus" (5 August 2021).

⁵¹⁷ Vodafone "Vodafone Aotearoa's submission on incentive payments as part of fibre price-quality decisions on expenditure allowances" (13 October 2021).

⁵¹⁸ Vector "Vector Fibre: Submission to the Commerce Commission on Chorus' incentive payments" (14 October 2021).

⁵¹⁹ Spark "Chorus additional information relating to incentive payments" (14 October 2021).

C43.5 The underlying difficulty is that in practice Chorus' incentive scheme is a discounted price for some end-users rather than the acquisition of a fibre asset.

Reasons for our final decision and consideration of stakeholder views

C44 Following consideration of submissions, cross submissions, additional information and submissions on the additional information, we have arrived at decisions on how to treat the incentive payments under the fibre IMs and to give effect to the purposes of s 166(2) for PQP1.

C45 Our decisions are set out in the following sections:

C45.1 The categorisation of incentive payments as capex;

C45.2 Competition and efficiency impacts and economic justification of incentive payments;

C45.3 Responses to submissions on competition and efficiency and our economic test;

C45.4 Our view on the approach to ex ante and ex post scrutiny of incentive payments in relation to s 201 and the non-discrimination obligations;

C45.5 Our view on section 201 and the non-discrimination obligations;

C45.6 Our ex ante scrutiny of Chorus' proposed incentive payments in relation to s 201 and the non-discrimination obligations;

C45.7 The potential competition effects of inappropriately disallowing or approving proposed incentive expenditure;

C45.8 Our decision to approve incentive expenditure for 2022 and disallow incentive expenditure for 2023 and 2024;

C45.9 Our implementation of the economic test; and

C45.10 Ex post monitoring and scrutiny of compliance with s 201.

The categorisation of incentive payments as capex

C46 We have considered Spark's submissions that Chorus' incentive payments may not qualify as capex. However, we consider that the incentive payments should be treated as capex at this stage.

C47 The questions of whether incentive payments qualify as capex and whether the related customer retention assets will qualify as fibre assets must be answered by reference to the Act and the fibre IMs.

- C48 The IMs reflect the distinction between opex and capex. The effect of the fibre IMs is that if a payment gives rise to a capital asset in Chorus' financial statements, it cannot be characterised as opex for regulatory purposes.
- C49 The definition of capex in the fibre IMs proceeds on the basis that capex involves costs incurred in acquiring and developing "core fibre assets" or "UFB assets". The Act and the fibre IMs do not define an "asset", but the fibre IMs defines a "core fibre asset", being the relevant category of asset for purposes of the assessment of Chorus' incentive expenditure. The IMs' definition of a core fibre asset is in turn based on the definition of a fibre asset in the Act.⁵²⁰
- C50 In summary, subject to a limited number of exclusions, expenditure will qualify as a core fibre asset if it is capitalised as an asset under GAAP and the asset is used or (available for use) in the provision of FFLAS.
- C51 We consider the treatment of the expenditure under GAAP to be relevant to our consideration as to whether the incentive expenditure will qualify as an asset. The Act recognises GAAP as a relevant consideration in the regulatory treatment of transactions in s 177, and we did so in our formulation of the fibre IMs generally and in relation to assets specifically.⁵²¹ We therefore disagree with the opinion expressed by Russell McVeagh (for Spark) that GAAP is not relevant to the regulatory treatment of the costs.
- C52 Incentive payments are investments made by Chorus as part of its FFLAS business that support the generation of FFLAS revenue. Chorus further has a practice of capitalising the incentive payments as assets under NZ GAAP in its audited financial statements applying NX IFRS 15 "Revenue from Contracts with Customers". No party has challenged the correctness of Chorus' accounting treatment of incentive payments and Chorus has stated that this practice will continue during PQP1.
- C53 While we recognise that the customer retention assets that are generated by the incentive payments can be distinguished from plant, property and equipment over which the service is physically supplied, we consider they can qualify as core fibre assets on a purposive interpretation, because they:
- C53.1 are constructed or acquired by Chorus through the making of incentive payments and can be recognised as assets in accordance with GAAP; and
- C53.2 are acquired in connection with and to support the provision of FFLAS.

⁵²⁰ Section 177(6).

⁵²¹ See, for example, clause 2.2.13 of the fibre IMs.

- C54 We see no indication that Parliament intended the phrase "fibre assets" to be read narrowly.
- C55 There is also no reason to disqualify the incentive payments from being treated as capex based on the economic effect. Whether an incentive payment is conceptualised as capex, opex or as foregone revenue, when properly implemented in the regime, does not fundamentally alter the financial implications for Chorus under Part 6.
- C56 We therefore consider that Chorus' incentive payments are capable of being treated as capex under the fibre IMs and should be treated as capex for purposes of our expenditure assessment.

Competition and efficiency impacts and economic justification of incentive payments

- C57 We have maintained the position set out in the draft decision on the competition and efficiency impacts of incentive payments and the appropriate economic test that we should apply when carrying out our assessment of incentive expenditure.
- C58 In relation to s 162, we observe that incentive payments can result in lower average prices where the fixed network costs are recovered over more fibre end-users. This can be efficiency-enhancing to the extent that prices are closer to marginal cost, and therefore promote the outcome in s 162(b). However, where excessive, they can result in overall higher costs (and therefore prices). Also, much like any proposed expenditure, Chorus may overstate it so that end-users pay for forecast incentive payments that are not made, which would detract from the outcome in s 162(d).
- C59 In relation to s 166(2)(b), we observe that incentive payments are consistent with the behaviour we expect in workably competitive markets: they can be pro-competitive and benefit end-users. However, the level of the payments, if excessive, can be anticompetitive (ie, have an exclusionary effect akin to predatory pricing). Chorus may have an incentive to excessively use these payments in an anticompetitive way. The extent to which it has the ability to do so is influenced by our regulation (ie, the extent to which the regime allows Chorus to recover these payments. We call this 'regulatory effects').
- C60 As noted in the draft decision, it is not feasible to completely eliminate the risks to competition described above when setting a PQ path and the relevant expenditure allowances.

- C61 Our approach is to assess whether a rational, profit maximising firm could be expected to make the incentive payments absent any benefits that would accrue from anticompetitive or regulatory effects, such as expected higher future prices that result from a lessening of competition, or from the regime allowing recovery of excessive incentive payments.
- C62 We would also be concerned if the recoupment strategy included recovering the cost of the incentive payments from the whole of the customer base over which the firm enjoyed substantial market power.
- C63 The economic test we apply is therefore whether the expected incremental revenue exclusively from the incremental end-users/upgrades that the incentive payments drive outweigh the incremental costs, including the incentive expenditure itself.
- C64 The test does not rely on an expectation of future higher prices which could result from a lessening of competition or regulatory effects. We discuss our application of the economic test below in paragraphs C72 to C74 and C123 to C124.

Responses to submissions on competition and efficiency and our economic test

- C65 On review of submissions in respect of the competition and efficiency impacts of the incentive payments, we agree with:
- C65.1 Chorus that considering the reasonableness of historical levels of incentive payments is a relevant consideration. We also agree with Spark that the fact that the current levels may have been in the market for some time does not necessarily mean they should be approved. As noted above, incentive structure also matters and like Spark, we also understand that the structure/conditions of incentives have been subject to continual change. We consider that our test will produce an overall allowance that on balance is likely to promote the purpose of Part 6. The historical levels of expenditure are a useful reasonableness check;
- C65.2 We note Spark's view that the economic test is "but one factor" and despite us approving an allowance that in the aggregate meets the test, it is possible that Chorus spends the approved allowance in ways that are anticompetitive. However, we do not consider that the detailed exercise suggested by Spark is feasible or practical in the context of an ex-ante scrutiny of an overall allowance. We therefore consider that the other matters raised by Spark are best approached through ex-post compliance assessments and enforcement of other obligations (such as s201, non-discrimination obligations, s 36). In addition, we note that we will consider Chorus' behaviour in informing our future approval of incentive payments, in order to deter undesirable conduct.

C66 NERA argues that the economic test is too narrow, but that a broader test would be difficult to operationalise. It is correct that, in some circumstances, there could be social benefits which are not easily monetised by Chorus. Requiring that all investments be NPV positive might forego some investments that are, in a strict sense, socially valuable. However, this can happen in any market, whether competitive or regulated. This could be mitigated by allowing Chorus to use various mechanisms (such as price discrimination) to capture the value of some of those social benefits. If Chorus could capture the value of the social benefits the problem would not arise at all. However, our framework has legal constraints that prevent price discrimination, such as s 201 and the non-discrimination obligations. Therefore, a broader test would likely result in a larger expenditure allowance and higher prices, with no guarantee that Chorus would make those investments, especially since they are privately NPV negative to Chorus. Furthermore, we agree that a broader test would be hard to operationalise and that the increased effort would risk not being proportionate.

C67 We also received submissions on the inputs to the economic test including measurement of incremental revenues and costs for the test:

C67.1 Revenues - 'end-user life': Vodafone submitted that the incremental revenues must exceed incremental costs during the period of the incentive payment, not over a full average customer lifetime, as customers that seek incentive payments can be transient and shift from service to service. However, Frontier (for Vodafone) submits this should be the average life of each group of customers acquired. We agree with Frontier. In the absence of better information, we used monthly average revenue per user over four years, as this is the timeframe over which Chorus amortises incentive payments.

C67.2 Revenues - 'additionality': both Frontier and NERA submitted that it is likely that a proportion of new customers that take advantage of the incentive payment may have joined regardless of whether that payment was offered, so that the true incremental gain in revenue caused by the incentive payments may be somewhat lower than the full amount. They also submitted that this is likely to be how a commercial business would consider discounts. We agree with these views, and have incorporated an 'additionality' assumption as an input into the economic test model.

- C67.3 Cost: Vodafone and Frontier submitted that we should include changes in variable costs, such as overheads due to increased connections and ongoing maintenance costs; and the costs of connection. We agree and included the costs of lead-ins, which is a material cost of servicing the connection, in our analysis. There may be other incremental overheads which we are not considering, but we would expect them to be small in comparison, and therefore unlikely to materially influence the overall allowance for incentive payments.
- C68 Frontier submitted a report on behalf of Vodafone that argues that including incentive payments in the RAB creates monopoly profits and is therefore contrary to the purpose of Part 6. Frontier submits that the solution is not to allow incentive payments to enter the RAB. We disagree with Frontier.
- C69 While Frontier's approach is helpful to clarify thinking, we do not think it is correct, as we now explain. Frontier's position is based on table 2 of their submission (reproduced below). We refer the reader to Frontier's submission to see the full worked example, which may aid understanding.⁵²²

Table 2: Example of pricing with revenue cap with incentive payments deductible from the RAB

Year of customer's contract	1	2	3	4
Net Prices (allowing for the incentive payment)	\$4	\$13	\$13	\$13

Source: Frontier Economics

Table 2 assumes the \$3 incentive payment is capex and is added to the RAB, so that the allowable revenue over the four years of a customer's contract increases to \$43. Although the real resource cost of serving a customer for the four years remains at \$40, the firm is now able to generate monopoly profits: its long-run average cost remains at \$10; but its average revenue per customer is \$10.75.

- C70 The example produced confuses the net price in year 1 with revenue in year 1. Net price is rightly \$4, but revenue is \$7. If you use the \$7 revenue for year 1, then the revenue for years 2 to 4 should be \$12 each, rather than the \$13 that Frontier use. Using the correct revenue in year 1 results in total revenues that are equal to total costs (\$43) for the 4 years, and therefore no excessive profits.

⁵²² Frontier Economics "Incentive payments: A note for Vodafone New Zealand" (4 August 2021), pages 6-8.

C71 We produced another stylised example using Frontier's numbers to show the impact of incentive payments and/or price discounts on revenues, prices, costs and profits. The below example shows that the firm does not make excessive profits when incentive payments are added to the RAB.

Figure C1 Base case: no incentive payments nor price discounts

<i>Base case</i>	1	2	3	4	
Cost	10	10	10	10	40
Revenue	10	10	10	10	40
Price (gross)	10	10	10	10	10
Price (net)	10	10	10	10	10
Profit	0	0	0	0	0

Figure C2 Incentive payment of \$3 in year 1; price discount of \$3 in year 1⁵²³

<i>Price discount + incentive payment</i>						
Cost	13	10	10	10	43	>> higher cash outflow in T1
Revenue	7	12	12	12	43	>> lower cash inflow in T1
Price (gross)	7	12	12	12	10.75	
Price (net)	4	12	12	12	10	
Profit	-6	2	2	2	0	

C72 According to the economic test, incentive payments must be NPV positive (or zero, at the limit). So, the net present value of the stream of additional (incremental) cash-flow (revenue less cost) should exceed (or equal) the allowance for incentive payments.

C73 We consider the economic test mitigates the risk that proposed incentive payments in the aggregate (ie we have not applied the test to specific incentive offers) are:

⁵²³ Notes:

Cost: the \$3 incentive payment is an additional expenditure (ie a cost) in year 1. This brings total costs to \$43.

Revenue: \$7 in year 1 due to \$3 price discount. In years 2 to 4 this is now \$12: the \$3 discount + the \$3 incentive payment are recovered evenly through higher revenue over years 2 to 4 (ie \$2 per year). Total revenue is \$43.

Price: gross price includes only the consumer's cash outflows, while net price includes cash inflows. Net price in year 1 = outflow - inflow = \$7 - \$3 = \$4. Net price is equal to gross price in years 2 to 4 since there's no cash inflow to the consumer.

Profit: revenue minus cost. Total profit unchanged at \$0

- C73.1 Excessive: an incentive payment is excessive where it is greater than the NPV of additional cash-flow (ie revenue less cost) that it generates. Where this happens, then the costs would outweigh the benefits, and therefore be inefficient and result in higher prices to end-users (s 162(b)). The test mitigates this risk by requiring that the incentive payments allowance is at most equal to the additional cash-flow it drives.
- C73.2 Overstated: an incentive payment is overstated where Chorus asks for expenditure up-front at the reset that it may not spend. Where we approve this expenditure, prices are higher than they need to be, which contributes to inefficiency and excessive profits (s 162(b) and (d)). The test mitigates this risk by requiring that the incentive payments allowance is at most equal to the additional cash-flow it drives. This is because Chorus has an incentive to spend the approved amount, since it should drive additional cash-flow that are greater than the approved amount.
- C73.3 Anticompetitive: an incentive payment is anticompetitive where it has the intent or effect of lessening competition. This can happen where Chorus expects to recoup the incentive payment expenditure in the future via higher prices caused by regulatory effects and/or lessening of competition. Where this happens, there is a risk that incentive payments are anticompetitive (exclusionary conduct akin to predatory pricing) if the competition does not have an equivalent ability to recoup their own incentive expenditure.
- C73.4 By requiring that the incentive payments allowance is at most equal to the additional cash-flow it drives (holding average revenue per user constant), the test mitigates this risk because similarly efficient competitors would also find it profitable to offer incentive payments at a similar level. Notice that our test does not rely on recouping the incentive payments from other end-users (captive or not), nor through higher future revenues. In other words, the test ensures we are in a situation where Chorus would still have a commercial incentive to make incentive payments even if it was unregulated. Therefore, our application of the test and approval of the resulting allowance should promote competition s 166(2)(b).
- C73.5 Further, Chorus is under a revenue cap, whereas its rivals aren't. Where one of its rivals offers the same incentive payment and wins an additional customer, it makes additional revenue. This would not be the case with Chorus if we did not allow it to earn more aggregate revenue when it wins a customer. By including the forecast incentive payments into the expenditure allowance, we allow Chorus to earn more revenue, which maintains the incentive to compete and grow demand (which is efficiency enhancing) and is consistent with providing an expectation of FCM.

C74 The above discussion on how the economic test promotes competition addresses Vodafone's argument that incentive payments are anticompetitive because they are a form of "costless discounting".⁵²⁴

Our view on the approach to ex-ante scrutiny and ex-post scrutiny of incentive payments in relation to s 201 and the non-discrimination obligations

C75 Submitters disagreed on the approach that the Commission should take to the assessment of Chorus' capex proposals, and in particular:

C75.1 The proper extent of the Commission's ex ante scrutiny in circumstances where the Commission retains an ex post enforcement role; and

C75.2 The role of the geographic consistency requirement in s 201 and the non-discrimination obligations in the assessment of proposed incentive payment expenditure.

C76 Chorus and submitters such as Devoli, Sky, Vocus and Trustpower submitted that the Commission's ex ante scrutiny should be limited, while Spark argued that the Commission should satisfy itself that the proposed incentives would not breach s 201 before approving the related allowance.

C77 We consider there is a role for both ex ante and ex post scrutiny in relation to compliance with s 201 and Chorus' non-discrimination obligations. We perform ex ante scrutiny before approving expenditure by assessing whether there are reasons to believe that the proposed expenditure would breach Chorus' legal obligations (ex ante scrutiny), and ex post scrutiny by subsequently monitoring and enforcing Chorus' compliance with legal obligations during the regulatory period (ex post scrutiny).

C78 We consider that the assessment of potential non-compliance ex ante is different to an ex post compliance exercise where there would be greater information on potential breaches.

⁵²⁴ Vodafone "Vodafone Aotearoa's cross submission on the draft price-quality path to be applied to Chorus" (5 August 2021), paragraphs 6, 11, 12.

- C79 We do not accept Chorus' submission that it is unnecessary and unworkable to consider compliance with s 201 and non-discrimination obligations at all when assessing a capex proposal. As Chorus notes, whether we approve a capex proposal for a particular set of proposed incentive payments does not constrain Chorus' ability to offer those incentive payments during the regulatory period. However, if Chorus wishes to include a capex allowance for that expenditure, then we must be satisfied that it is likely to meet the applicable requirements under the IM which includes, where relevant, compliance with applicable legal and regulatory requirements during the regulatory period.
- C80 Nor do we accept Spark's suggestion that incentive payments cannot be approved as capex without a "thorough compliance investigation, and court proceedings if necessary" such as might follow a complaint in the context of ex post enforcement. Rather, we consider we have to make an assessment, based on the information available, the stage of the regulatory process and the risks of inappropriately disallowing or approving proposed expenditure, taking into account whether we have reason to think that the proposed payments will (or will not) comply with the applicable requirements.
- C81 We also do not agree with submitters that the lack of specific information necessarily means that we should reject incentive payments. Ex ante assessments by their nature involve scrutiny of information that have degrees of uncertainty and incompleteness
- C82 As we stated in our guidance note on s 201, the obligation to ensure compliance with s 201 (and the non-discrimination obligations) rests principally with Chorus.⁵²⁵ Chorus therefore bears responsibility for ensuring that its pricing decisions, including any incentive payments, comply with the requirements of s 201. Chorus also has full knowledge of the suite of services it provides across the country so it can ensure that where it supplies materially the same service in different locations, the service is provided at the same price.
- C83 Furthermore, approval of any incentive payments as capex does not constrain ex post enforcement and does not constitute any warranty that those incentive payments will not, in application, breach s 201 or the non-discrimination obligations.

⁵²⁵ Commerce Commission "Geographically consistent pricing - guidance on our intended approach to s 201 of the Telecommunications Act 2001" (30 September 2021), paragraph 30.

C84 Accordingly, the fact that we approve incentive payment expenditure does not mean that the future incentive payments will necessarily be treated as complying with s 201 (or Chorus' non-discrimination obligations) when we assess or investigate compliance ex post (including any complaints received ex post). In many instances Chorus' compliance with s 201 and its non-discrimination obligations would only be able to be determined with confidence following the type of compliance investigation envisaged by Spark.

Our view on section 201 and the non-discrimination obligations

C85 The effect of s 201 is that, where Chorus supplies FFLAS that is “in all material respects the same” in more than one geographic location, it must charge the same price for that service wherever it is supplied if the service is subject to PQ regulation.⁵²⁶ We consider that the reference to the “same price” requires adjustments to the price, including incentive payments, to be accounted for.

C86 In our view the geographic consistency requirement is not confined to the urban/rural divide as Chorus suggests, but is also intended to prevent pocket pricing whereby Chorus leverages its dominant position to discourage competition from alternative technologies in particular areas.

C87 Section 201 is concerned with price differentiation that is based on or linked to the geographic location of the end-user. We do not agree with those RSPs which assert that any price differentiation necessarily breaches s 201.

C88 As a general observation, Chorus is constrained from implementing cost-based differentiation in the provision of FFLAS between different geographical areas subject to PQ regulation. As we noted in our guidance, we consider that it would likely raise issues if Chorus offered any incentives to access seekers linked to the geographic location of the end-user, whether at the regional, city, suburb or street level.⁵²⁷

C89 The non-discrimination obligation in relation to the supply of a relevant service, prohibits Chorus from treating access seekers differently except to the extent that a difference in treatment is objectively justifiable and does not harm, and is unlikely to harm, competition in any telecommunications markets. This includes a difference in treatment in relation to price.

⁵²⁶Commerce Commission "Geographically consistent pricing - guidance on our intended approach to s 201 of the Telecommunications Act 2001" (30 September 2021), paragraph 29.

⁵²⁷Commerce Commission "Geographically consistent pricing - guidance on our intended approach to s 201 of the Telecommunications Act 2001" (30 September 2021), paragraph 43.

- C90 The non-discrimination obligation is designed to prevent Chorus leveraging its monopoly position for the supply of FFLAS to treat access seekers differently in a way that distorts the competitive dynamic, and in that sense aligns with s 166(2)(b). This includes indirect discrimination that affects access seekers in their capacity as providers of technologies competing with Chorus.
- C91 Assessing difference in treatment requires consideration of both the terms on which the offer is made and the effect on access seekers. Although Chorus cannot be expected to tailor its offer to each individual access seeker (eg, to accommodate the access seeker's commercial structure), an offer that is structured in such a way that it could never be taken up by certain categories of access seekers could still result in a difference in treatment.
- C92 Further information about our view of the non-discrimination obligations can be found in our guidance on the non-discrimination obligations.⁵²⁸

Our ex ante scrutiny of Chorus' proposed incentive payments in relation to s 201 and the non-discrimination obligations

- C93 Spark suggested that we had already identified concerns that Chorus' incentive payments would breach s 201. This is incorrect, as our draft decision simply identified that compliance with s 201 would need to be considered carefully.
- C94 We also do not agree with Spark that on the face of the information provided by Chorus the incentive payments in themselves are illegal and outside the scope of the allowable expenditure, and therefore cannot be considered by the Commission.
- C95 We have limited information about the specific incentive offers Chorus is proposing for PQP1, noting that some incentive offers are still under development. We also recognise that there will always be some level of uncertainty about the incentive payments Chorus will offer since it is able to change its incentive offers after we approve the incentive payment expenditure.
- C96 We have information about Chorus' current in-market incentives and an indication as to the offers which are expected to continue during 2022, namely, the Mix it Up offer, the Hyperfibre Installation offer, and the various business incentives.
- C97 Due to the timing of the development of Chorus incentive offers and their evolving nature, we have little or no information about the proposed incentive offers for 2023 and 2024, and therefore very little ability to carry out any meaningful ex ante scrutiny for those years.

⁵²⁸ Commerce commission, "Equivalence and non-discrimination – guidance on the Commission's approach for telecommunications regulation (30 September 2020).

- C98 We have looked at the information on Chorus' proposed incentives, and based on the information available to us at this time, do not consider that there are any obvious concerns that suggest that Chorus' proposed incentive offers (the Mix it Up offer, the Hyperfibre Installation offer, and the various business incentives) are likely to breach s 201 or the non-discrimination obligations.
- C99 None of the current incentives or proposed incentive offers appear to be linked to the locations of the access seekers or end-users in a way that would be proscribed by s 201.
- C100 In particular, with respect to s 201, we note that:
- C100.1 The incentive payments will be offered to all RSPs in all locations; and
- C100.2 The incentive payments are not linked to the locations of end-users.
- C101 We had initial concerns with Chorus' intact ONT incentive offer where individual addresses of offnet customers were used to target RSP activity. However, we note that Chorus halted this specific incentive payment offer with effect from 31 October 2021.⁵²⁹
- C102 Based on the available information we further do not consider that the current or proposed incentive payments give rise to real non-discrimination concerns.
- C103 We considered whether business incentives that were related to fibre focussed marketing - the requirement for fibre-focused marketing which was part of the Mix It Up offer has been removed⁵³⁰ - would raise non-discrimination concerns on the basis that they could disfavour RSPs who offer competing technologies and who are therefore more constrained from adopting fibre-focused marketing.⁵³¹ However, even if there is an argument that these incentives amount to a difference in treatment, based on the information we have at this time we do not consider that these incentive payments reach the threshold of raising real concerns regarding a breach of Chorus' non-discrimination obligations.
- C104 Chorus has also provided assurances that its internal processes will ensure that any offers to the market will meet the s 201 and non-discrimination requirements.

⁵²⁹ Reference Chorus' website/notice where this is mentioned

⁵³⁰ See Chorus' notification of 27 October 2021, RSP consumer incentives January – June 2022 | Chorus service providers.

⁵³¹ See <https://sp.chorus.co.nz/product-offers>.

- C105 As discussed below in paragraphs C127 to C133, we will monitor Chorus' compliance with s 201, with a specific focus on incentive payments, including requiring director certification.
- C106 We consider that Chorus is incentivised to ensure that it does not breach s 201 or the non-discrimination obligations given our ex post compliance monitoring and enforcement functions and the ongoing nature of our approvals of incentive payment expenditure under the fibre IMs.
- C107 We note that RSPs are also able to make a complaint with us regarding Chorus' non-compliance, which would be expected by Chorus to lead to an investigation. Section 218 of the Act further allows any person to seek an injunction where Chorus' incentives payments will contravene, or be likely to contravene s 201.
- C108 In the future we would expect to receive better information about the proposed incentive payments so as to further reduce any ex ante uncertainty as to whether the incentives would be likely to breach s 201 or the non-discrimination obligations.

Potential competition effects of inappropriately disallowing or approving proposed expenditure

- C109 We recognise that it will generally not be feasible to conclude that all of Chorus' incentive offers during a regulatory period will comply with s 201 or meet its non-discrimination obligations when we perform our ex ante scrutiny. However, there will also, often equally be no clear reason to consider it likely that Chorus' incentive payments would breach these obligations.
- C110 We consider that there is a balance to be struck between the benefits provided by the incentives and the potential risk associated with possible non-compliance of Chorus' incentive offers with s 201 and its non-discrimination obligations.
- C111 In the absence of being able to take a definitive position on s 201 and non-discrimination obligation compliance ex ante, and having regard to the purposes in s 166(2) and the expenditure objective in clause 3.8.5 of the fibre IMs, we consider it appropriate to weigh up the potential competition and economic benefits and disbenefits of approving or disallowing expenditure taking account of the timing of the proposed expenditure.
- C112 In particular, consistent with the purposes in s 166(2) and the expenditure objective in clause 3.8.5 of the fibre IMs we have considered the consequence of our decision on competition and efficiency and the potential benefits and disbenefits of inappropriately disallowing or approving the proposed expenditure for each regulatory year of the regulatory period.

- C113 In general, we consider incentive payments to be pro-competitive where the expenditure is set at an appropriate level, ie, a level that meets our economic test:
- C113.1 The incentive payments are likely to lead to a higher uptake of fibre services resulting in lower average prices to cover the same fixed costs (more efficient).
 - C113.2 Incentive payments appear to enable greater competition and thereby bring improved outcomes for consumers. A number of the smaller submitters argued that the incentives were important in enabling them to compete with MNOs.
 - C113.3 We also consider that the uncertainty that would be caused by not approving the incentive expenditure, particularly for smaller RSPs, could cause some disruption in the market and negatively impact competition.
- C114 On balance, we further consider that, even if Chorus were to contravene s 201 and/or the non-discrimination obligations in respect of some of the incentive expenditure, this would likely cause less harm to competition and consumers than the harm that would be caused by disallowing the incentive expenditure that would be compliant.
- C115 We note in the above regard that if there were breaches of s 201 and/or the non-discrimination obligation they would likely be limited in scope relative to the overall amount of incentive expenditure approved. We also consider that our ex post oversight of Chorus' decisions (and, if necessary, bringing enforcement action) will enable us to reduce potential harm from any non-compliant expenditure by taking ex-post enforcement action when it becomes apparent

Our decision to approve incentive expenditure for 2022 and disallow incentive expenditure for 2023 and 2024

- C116 We consider that approving incentive expenditure for 2022 (subject to the economic test for the expenditure being met) would better meet the purposes in s 166(2) and the expenditure objective in clause 3.8.5 of the fibre IMs, than disallowing the expenditure. However, we consider that the incentive expenditure for 2023 and 2024 should not be approved now.
- C117 In reaching our decision, we have taken account of the potential risks associated with the uncertainty as to the form of the incentive offers in the future and their compliance with s 201 and the non-discrimination obligations, which were some of the key reasons for proposing the approval of incentive payments under an IC mechanism in our draft decision. In this regard, we note that there is greater uncertainty and hence greater risk of non-compliance with s 201 and the non-discrimination obligations in relation to 2023 and 2024, than for 2022.

- C118 Approving the first year of incentive payments as base capex provides some certainty for the market. We note that there will be significantly greater uncertainty for the market if the incentive expenditures aren't approved now. We consider that concerns about potential harm to competition are more significant for 2022 than for 2023 and 2024. In particular, the uncertainty for smaller RSPs arising from not approving the incentive expenditure for 2022 may cause disruption in the market and negatively impact competition in circumstances where Chorus does not have an opportunity to seek and obtain approval of the expenditure through an IC proposal before the start of 2022. In contrast, Chorus will be able to seek approval of incentive expenditure through IC proposals for 2023 and 2024 before the start of those years, at a time when there will be greater certainty about the form of the relevant incentive offerings.
- C119 In reaching our decision we recognise that the outcome of an approval now, is not the same as approval under a future IC proposal, since any expenditure approved under an IC proposal after the start of PQP1 will only be reflected in the maximum revenues for PQP2 through the wash-up mechanism, while expenditure approved now will be included in the maximum revenues for PQP1. However, we remain of the view that the incentive payment expenditure for 2023 and 2024 should be disallowed and assessed closer to the relevant times if Chorus seeks approval of this expenditure by way of an IC proposal.
- C120 Approving incentive payment expenditure as base capex for 2022 will fund Chorus to continue making such payments, which are important to the ability of smaller RSPs to compete, and grow demand on the fibre network, which improves efficiency by allowing fixed costs to be spread over more end-users. At the same time, the remaining incentive expenditure for PQP1 will remain subject to scrutiny through IC proposals if Chorus chooses to apply for approval of such expenditure.
- C121 The nature of incentive payments, including their structure and quantum, are dependent on the market conditions at the time and there is significant uncertainty relating to interaction of the future payments with s 201 and on the economic merit of the incentive payments for 2023 and 2024. This has been demonstrated by the number of changes Chorus has made to its incentive offers since they were first offered.
- C122 Deferring consideration of the incentive expenditure for 2023 and 2024 will provide both an opportunity for additional assurance checks on the likelihood of compliance with s 201 and the non-discrimination obligations, and the opportunity to receive more complete information on the specific implementation for analysis on their likely impact in relation to the purposes in s 166(2).

Implementation of the economic test

- C123 Application of our test should result in an allowance that is less (or at most equal) to the net present value of the stream of incremental cashflow that the incentive payments generate. Here is how we approached the calculation:
- C123.1 estimate the NPV of incremental cashflow for new and intact connections, and upgrades;
 - C123.2 multiply the above NPV times forecasts for the number of new and intact connections, and upgrades; and
 - C123.3 apply low, medium and high sensitivities to reflect uncertainty.
- C124 Our analysis and application of the economic test shows that:
- C124.1 the expenditure amount sought by Chorus \$18.6m for 2022 falls within the estimated range. This means that in aggregate the amount of incentives sought is likely to support competition, efficiency, and is unlikely to be overstated.
 - C124.2 the \$18.6m that Chorus asked for in its expenditure proposal is in line—albeit slightly below—the historical aggregate spend on incentives in 2019 and [REDACTED] respectively. This supports the view that the proposed amount is not overstated. Further, we would expect this expenditure to trend down as the fibre network approaches saturation.
- C125 Based on this analysis, our final decision is to include expenditure of \$18.6m in base capex for 2022.
- C126 We note that Chorus will have to use IC proposals to seek approval of expenditure on incentive payments for 2023 and 2024. Chorus' observed level of spending in 2022 would be a relevant factor in our considerations of such proposals.

Ex post monitoring and scrutiny of compliance with s 201

- C127 We intend to monitor Chorus' compliance with s 201 ex post with a specific focus on incentive payments.
- C128 We have therefore included compliance reporting requirements relating to incentive payments in the s 193(2) notice that we have issued with our PQ decisions.
- C129 Under the s 193(2) notice Chorus is required to provide us with the following information on incentive payments on a semi-annual basis:

- C129.1 a summary of the incentive payments Chorus has offered, including which FFLAS the incentive applies to, the design principles, the criteria for, and structure of the incentive payments;
 - C129.2 documents that record the details of each incentive payment offering to RSPs; and
 - C129.3 a summary of the processes Chorus has taken to ensure that its prices charged for FFLAS, including any incentive payments comply with s 201.
- C130 Chorus will also have to provide a director's certificate in relation to its compliance.
- C131 In our ID determination we also included a number of ID requirements on incentives that capture incentive payments. While this information was required to ensure we had accurate pricing information to help us evaluate the efficiency of prices (per s 162) and price trends that might indicate the emergence of competition (per s 166(2)(b)), this information will also assist us in monitoring Chorus' compliance with s 201.
- C132 We consider that this package of information will both disincentivise Chorus from contravening s 201 and enable us to effectively monitor Chorus' compliance with s 201.
- C133 We may revise the s 193(2) requirements over time as new circumstances arise, and where we consider that different requirements are necessary to properly monitor compliance.

Attachment D Scope of FFLAS

Purpose of this attachment

- D1 This attachment sets out:
- D1.1 our interpretation of which services come within the meaning of “fibre fixed line access services” (FFLAS) in the Act; and
 - D1.2 our assessment of whether Chorus has properly applied this definition in preparing its estimate of fibre asset values in its initial PQ RAB estimate and its PQ expenditure proposal.
- D2 It also sets out how we will treat any other fibre services that LFCs may introduce in future.
- D3 Our approach to the scope of FFLAS is relevant to our decisions on matters related to Chorus' initial PQ RAB and PQP1 decisions more generally because:
- D3.1 the question of whether assets are employed, or costs are incurred in the provision of FFLAS determines how costs are allocated;⁵³² and
 - D3.2 whether a service is a FFLAS will determine whether the revenues that Chorus receives in respect of that service will be included in the calculation of “forecast total FFLAS revenue” for the revenue path. The total FFLAS revenue forms a key component in determining the initial PQ RAB value.

Final decisions

- D4 A full list of the services we consider fall within the scope of FFLAS is set out in Table D1 below.

⁵³² When using the term general term “FFLAS”, we are referring to the following terms specifically: PQ FFLAS for the initial PQ RAB and forecast expenditure, and UFB FFLAS for the determination of the initial RAB value of the FLA).

Table D1 Categories of services within the scope of FFLAS

Category	IM Description	Chorus services ⁵³³	Chorus ID-Only instances	Other LFC services
Voice services	Services to enable the delivery of telephony and low speed data services over a fibre network (including, but not limited to, anchor services, baseband, ATA voice).	ATA Voice, Baseband	Where the FFLAS UNI is located in another regulated providers UFB coverage area and it was established as determined in our SFA database or could (as defined by the CIP shape files) have reasonably been established.	ATA Voice, Baseband
Bitstream PON services	Single or multi-class point-to-multipoint fibre access services (including, but not limited to, anchor services, Bitstream services, Bitstream 2, 3, 3A, Bitstream accelerate services, 10GPON, NGPON and multicast).	Bitstream 2 (Broadband Over Fibre, NGA Evolve, Home Fibre Bitstream 2 Accelerate, Evolve Education, Evolve Business, Small Business Fibre, Hyperfibre Home, Hyperfibre Small Business, RBI Bitstream 2), Bitstream 3/3A (NGA Business, Bitstream 3/3A Accelerate, Hyperfibre Business, Education 3A, Hyperfibre Education, RBI Bitstream 3/3A), Multicast	Where the FFLAS UNI is located in another regulated providers UFB coverage area and it was established as determined in our SFA database or could (as defined by the CIP shape files) have reasonably been established.	Bitstream 2/2A (GPON Bitstream, GPON Bitstream Educational), Bitstream 3/3A/3B, Multicast
Unbundled PON services	Point-to-multipoint layer 1 fibre access services (including, but not limited to, PON fibre access services (PONFAS) and unbundled fibre services).	PONFAS	Where the FFLAS UNI is located in another regulated providers UFB coverage area and it was established as determined in our SFA database or could (as defined by the CIP shape files) have reasonably been established.	PONFAS
Point-to-point services	Single, multi-class or layer 1 point-to-point fibre access services (including, but not limited to, Bitstream 4, enhanced Bitstream 4, HSNS, BFAS and DFAS).	Bitstream 3/3A P2P, Bitstream 4 (NGA Business Premium, Mobile Access, RBI Bitstream 4), DFAS, BFAS (Bandwidth Fibre Access Service), HSNS Lite over fibre, HSNS Premium, STM1, STM4, ATM, CNS Ethernet, CNS SDH/PDH	Where the FFLAS UNI is located in another regulated providers UFB coverage area and it was established as determined in our SFA database or could (as defined by the CIP shape files) have reasonably been established.	Bitstream 4 (P2P Bitstream, P2P Bitstream Educational), DFAS
Transport services	Layer 1 or managed throughput fibre services provided over the fibre network, to transport voice and data traffic between central offices, including central offices that are also POIs (including, but not limited to ICABS, TES and inter-CO fibre services; but excluding national / inter-candidate area backhaul services such as CRT).	ICABS HSNS Tail Extension (where it is not POI-to-POI), CRT (where it is not POI-to-POI).	Where the address of the UNI of the end-user who is the recipient of FFLAS to which the transport service is connected is located in another regulated provider's UFB coverage area and it was established as determined in our SFA database or it could (as defined by the CIP shape files) have reasonably been established and the Transport services other termination is at any location.	Inter-CO Fibre Service
Co-location and interconnection services	Network equipment accommodation and management services including network interconnection services (including, but not limited to, central office and POI co-location services, handover connections, Ethernet handover connections, tie cables and jumpering).	Handover Links, Handover Fibre, UFB Handover Connection, Tie cable, TPAD Central Office and POI co-location service, Commercial co-location supporting FFLAS Exchange space	Where the central office containing co-location service is located in another regulated providers UFB coverage area defined by the CIP shape files.	Handover Connection, Fibre Patching Service, Central Office and POI co-location service
Connection services	Services to install and enable FFLAS between communal fibre network infrastructure and an end-user's premises, building or other access point (including, but not limited to, pre-wiring, cable and duct fit-out).	Establishment of a new service instance of a FFLAS UNI for Voice services, Bitstream PON services, Unbundled PON services, point-to-point services.	Where the FFLAS UNI is located in another regulated providers UFB coverage area and it was established as determined in our SFA database or could (as defined by the CIP shape files) have reasonably been established.	Establishment of a new service instance of a FFLAS UNI for Voice services, Bitstream PON services, Unbundled PON services, point-to-point services.

⁵³³ Does not include every variant (eg, Hyperfibre has multiple speed variants 2, 4, 8 G).

Legal framework

- D5 Our approach to the scope of FFLAS involves interpreting provisions of the Act and assessing whether they have been properly applied. We have interpreted the relevant provisions in light of the purpose of Part 6 in s 162. We do not consider s 166(2) is relevant to this exercise.
- D6 In our main IMs reasons paper, we explained our interpretation of FFLAS and the concept of “service categories”⁵³⁴. We have applied this interpretation in determining which services are FFLAS. The relevant definitions from section 5 of the Act are included as follows by way of background.
- D7 “FFLAS” is defined as follows:
- (a) means a telecommunications service that enables access to, and interconnection with, a regulated fibre service provider’s fibre network;
 - (b) but does not include the following:
 - (i) a telecommunications service provided by a regulated fibre service provider (F) if the ultimate recipient of the service is F or a related party of F (as if the test for related parties were the same as the test in section 69U, applied with any necessary modifications):
 - (ii) a telecommunications service provided, in any part other than a part located within an end-user’s premises or building, over a copper line:
 - (iii) a telecommunications service used exclusively in connection with a service described in paragraph (ii).
- D8 “Fibre network” is defined as:
- a network structure used to deliver telecommunications services over fibre media that connects the user-network interface (or equivalent facility) of an end-user’s premises, building, or other access point to a regulated fibre service provider’s fibre handover point.
- D9 In turn, “telecommunications service” is defined as:
- any goods, services, equipment, and facilities that enable or facilitate telecommunication.
- D10 “Telecommunication” is defined as:
- the conveyance by electromagnetic means from one device to another of any encrypted or non-encrypted sign, signal, impulse, writing, image, sound, instruction, information, or intelligence of any nature, whether for the information of any person using the device or not.
- D11 The definition of FFLAS incorporates the broad definition of “telecommunications service”, which means any goods, services, equipment and facilities that both enable or facilitate telecommunication.

⁵³⁴ Commerce Commission, [Fibre input methodologies: Main final decisions – reasons paper](#), 13 October 202, page 45

D12 The definition of FFLAS is qualified by the requirement that the telecommunications service enables access to, and interconnection with, a regulated provider's fibre network. Therefore, FFLAS are limited to telecommunications services that relate to the fibre network of a regulated provider who is declared in regulations made under s 226 to be subject to PQ or ID regulation, or both.

Overview of our approach to determining the scope of FFLAS

D13 In order to determine the value of fibre assets within the initial PQ RAB, the services that fall within the definition of FFLAS must be clearly identified.

D14 In our main IMs reasons paper we explained which services would be FFLAS in terms of the definition in the Act.⁵³⁵ We set out seven service categories we consider qualify as FFLAS:

D14.1 Voice services

D14.2 Bitstream PON services

D14.3 Unbundled PON services

D14.4 Point-to-Point services

D14.5 Transport services

D14.6 Co-location and Interconnection services

D14.7 Connection services.

D15 Our starting point when determining the services which constitute FFLAS was to include the UFB Reference Offer services in Table A2, which have been grouped into our service categories.

D16 Regulated providers further tailor services within these service categories in order to meet market segments. Often these tailored services are given different market names. Where this is the case, we have included all of the relevant variants and grouped them under the UFB Reference Offers.

D17 We have also included fibre services that existed before the UFB initiative that we also consider to be FFLAS.

⁵³⁵ Commerce Commission "[Fibre input methodologies: Main final decisions – reasons paper](#)" (13 October 2020), page 42-59

- D18 We are mindful that the telecommunications market is highly dynamic and evolving. We are not excluding the possibility that services introduced in the future may meet the definition of FFLAS. When determining whether any given service is FFLAS, we will continue to apply the s 5 definition.

Summary of stakeholder submissions received and our responses

- D19 In its submission in response to our April consultation paper, Spark submitted that we had not clearly defined the service delivery points of FFLAS.⁵³⁶
- D20 In our IMs (as amended), we have defined “UNI in relation to ID or PQ FFLAS provided by a regulated provider”.⁵³⁷ This can be an ONT for service categories such as Voice services and PON Bitstream services; or a fibre termination for point-to-point services.
- D21 Connection services are all those installation activities that provide the establishment of a new service instance of FFLAS using a UNI for: Voice services, Bitstream PON services, Unbundled PON services, point-to-point services.
- D22 Spark submitted that including the services “HSNS, ATM and SDH services and Chorus’ competitive regional transport services, as FFLAS services”⁵³⁸ means that any future service that accesses the fibre network would be also considered FFLAS, irrespective of whether it promotes competition or is in end-users’ best interests.
- D23 Spark stated that “services that access the fibre network must either be FFLAS or use a FFLAS input service” and that legacy services should not be FFLAS in themselves, but rather, use FFLAS such as DFAS and ICABS as input services.⁵³⁹
- D24 In response to Spark’s submissions, we do not consider that the Act limits FFLAS to the existing UFB products. We have determined that point-to-point services, such as HSNS Lite over fibre, HSNS Premium, STM1, STM4, ATM, CNS Ethernet, CNS SDH/PDH meet the criteria to be FFLAS where they are provided over fibre to the UNI. We have excluded those variants that use copper to access the core fibre network.
- D25 While these point-to-point services meet the definition of FFLAS they are legacy services and are largely in decline and are being replaced by current services.

⁵³⁶ Spark NZ “[Chorus’ initial price-quality regulatory asset base](#)” (28 May 2021), page 9

⁵³⁷ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, definition of “connection” and “UNI” in clause 1.1.4(2).

⁵³⁸ Spark NZ, “[Submission on fibre PQID initial RAB and IM amendments draft decision](#)” (16 September 2021), page 3.

⁵³⁹ Spark NZ, “[Submission on fibre PQID initial RAB and IM amendments draft decision](#)” (16 September 2021), page 3.

- D26 For the transport services we have included ICABS and those other services HSNS tail extension and CRT variants that fill a similar role to ICABS. We believe that the CRT variant could be separated out to clarify that it is not the POI to POI variant.
- D27 Having considered submissions, our final decision is that the following services meet the definition of FFLAS: HSNS Lite over fibre, HSNS Premium, STM1, STM4, ATM, CNS Ethernet, CNS SDH/PDH, HSNS tail extension and CRT (where it is not POI-to-POI).

Table D2 UFB reference offer services

Category	UFB Services
Voice services	ATA Voice, Baseband
Bitstream PON services	Bitstream 2/2A, Bitstream 3/3A/3B, Multicast
Unbundled PON services	PONFAS
Point-to-point services	Bitstream 4, DFAS
Transport services	Inter-CO Fibre Service
Co-location and interconnection services	Handover Connection, Fibre Patching Service, Central Office and POI co-location service
Connection services	First time installation of a UNI for Voice services, Bitstream PON services, Unbundled PON services, point-to-point services.

Chorus' services which are included within the definition of FFLAS

- D28 Chorus have several service variants that fall within the scope of Bitstream 2. These are currently Broadband Over Fibre, NGA Evolve, Home Fibre Bitstream 2 Accelerate, Evolve Education, Evolve Business, Small Business Fibre, Hyperfibre Home, Hyperfibre Small Business, Rural Broadband Initiative (RBI) Bitstream 2.
- D29 Chorus also have several service variants that fall within the scope of Bitstream 3/3A. These are currently NGA Business, Bitstream 3/3A Accelerate, Hyperfibre Business, Education 3A, Hyperfibre Education, RBI Bitstream 3/3A.
- D30 Chorus have several service variants that fall within the scope of Bitstream 4 point-to-point services. These are currently NGA Business Premium, Mobile Access, RBI Bitstream 4.

- D31 Chorus' legacy point-to-point services STM1, STM4, CNS Ethernet, CNS SDH/PDH all have a fibre access component and therefore fall within the scope of FFLAS. The point-to-point service ATM can have either fibre or copper access. ATM with fibre access falls within the scope of FFLAS. The point-to-point service HSNS Lite can also have either copper or fibre access. HSNS Lite with fibre access falls within the scope of FFLAS.
- D32 Chorus' UFB Inter-CO fibre services are its ICABS. HSNS Tail Extension is also a transport service that provides extension of a service (eg, Bitstream) from a Central Office (CO) to a POI. Commercial Backhaul instances are also included where they are also used for CO to CO or CO to POI.
- D33 Chorus have several services that fall within co-location and interconnection services. These are Commercial co-location, Exchange Space, Tie Cables, TPAD, and the interconnection services of Handover Links, Handover Fibre, and UFB Handover Connection.
- D34 Co-location services include a CO footprint, equipment rack space, power and cables (ie, tie cables) to enable interconnection with Chorus' access network and backhaul service.
- D35 The service instances under each service category delivered under the RBI are also included as FFLAS.

Reasons for excluding Chorus Field and certain transport services from FFLAS

- D36 Our decision is that the following types of services are not FFLAS as they do not meet the statutory test of enabling access to, and interconnection with, a regulated fibre service provider's fibre network.⁵⁴⁰ We consider that both field services and transport should all be excluded when determining the initial PQ RAB (or when setting the PQP1 revenue path).

Field services

- D37 Chorus agree that field services are not FFLAS but have difficulty identifying the costs associated with the revenue and so have left the part revenue in its estimate of the total initial PQ RAB value as they state "the impact on the starting RAB is likely to be immaterial (ie, as these costs have corresponding revenue so largely net-out)."⁵⁴¹

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- D38 We consider that this approach is reasonable, and results in an outcome that is consistent with the intent of the definition of FFLAS in s 5. This is because the “netting out” impact (both the cost and the revenue being included) means that costs are not over-allocated to FFLAS.
- D39 However, this approach – effectively reducing the value of a FFLAS cost by the quantum of a non-FFLAS revenue – though consistent with the current IMs is not required by them.
- D40 We may need to consider an amendment to the fibre IMs in future to resolve the current inconsistency where the costs of these services (which are necessary to incur in the provision of FFLAS) are within the scope of the regime (ie, contribute to Chorus’ cost and asset bases) but revenues associated with them are not.

Chorus Regional Transport

- D41 Chorus included part of CRT which is a national backhaul service. We consider that in general, CRT is not FFLAS as it provides connectivity between POIs, which is beyond the scope of FFLAS as it is not connected to a fibre access service. Chorus agree that CRT is not FFLAS.
- D42 However, the distinction between ICABS (which is FFLAS) and CRT generally (which is not) is a result of the introduction of Part 6. On a historical basis, Chorus did not clearly distinguish between the two services.
- D43 For these historical reasons, Chorus has revenue allocated to CRT that is not actually the POI-to-POI service but rather, a Transport service similar to ICABS.⁵⁴²
- D44 We accept this explanation, and Chorus’ plan to rectify this within their internal systems in time to meet the reporting requirements of the Part 6 ID regime and so CRT (where it is not POI-to-POI) will be included in the initial PQ and ID RAB and all other CRT is excluded.

⁵⁴² Chorus Fibre PQ – Initial RAB - RFI 112

Attachment E Application of regulation 6

Purpose of this attachment

- E1 This section sets out:
- E1.1 our approach to the interpretation of reg 6 of the Regulations; and
 - E1.2 our final decision on whether Chorus has complied with reg 6 in preparing its initial PQ RAB estimate and PQ expenditure proposal when allocating costs and assets between its PQ FFLAS and ID-only FFLAS.
- E2 To give effect to reg 6, we need to identify the geographical areas where Chorus' FFLAS will be subject to PQ regulation, and those where FFLAS are exempt from PQ regulation – ie, geographical areas where a regulated fibre service provider (other than Chorus) has installed a fibre network as part of the UFB initiative (we refer to these as “ID-only areas”).

Final decisions

- E3 Our final decision, which is unchanged from our draft decision, is that the question of whether Chorus' FFLAS fall within reg 6, and are exempt from PQ regulation is assessed differently for different categories of FFLAS as follows:
- E3.1 for voice services, Bitstream PON, unbundled PON, point-to-point, and connections services, assessment of whether these fall within reg 6 and are exempt from PQ regulation will be based on whether the FFLAS UNI⁵⁴³ is located within another LFC's UFB coverage area, and either:
 - E3.1.1 the other LFC has installed UFB communal infrastructure based on our Specified Fibre Areas (SFA) database; or
 - E3.1.2 UFB communal infrastructure could reasonably be installed as defined in the CIP shapefiles (GIS shapefiles (maps) created by CIP for the purposes of the UFB contracts);
 - E3.2 for transport services, assessment of whether these fall within reg 6 and are exempt from PQ regulation will be based on whether the UNI address of the end-user to which the transport service is connected is located within another LFC's UFB coverage area, and either:

⁵⁴³ *Fibre Input Methodologies Determination 2020*, as amended on 29 November 2021, definition of "UNI" in clause 1.1.4(2).

- E3.2.1 the other LFC has installed UFB communal infrastructure based on our SFA database; or
 - E3.2.2 UFB communal infrastructure (as defined by the CIP shape files) could reasonably be installed;
 - E3.3 for co-location and interconnection services, assessment of whether these fall within reg 6 and are exempt from PQ regulation will be based on whether the CO containing the service is located within another regulated provider's UFB coverage area, as defined by the CIP shape files.
- E4 We consider that Chorus has correctly applied these approaches in preparing its initial PQ RAB estimate and PQ expenditure proposals.

Framework

Legal framework

- E5 Assessing whether Chorus' FFLAS fall within reg 6 involves interpreting the regulation and determining whether it has been applied appropriately. This means that our exercise of judgement in making decisions that best give, or are likely to best give effect to the s 166(2) purposes is constrained. We have therefore explained our assessment solely with reference to reg 6.
- E6 Reg 6 provides that all Chorus' 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, are subject to PQ regulation.
- E7 Reg 6 determines the scope for PQ regulation (including of the PQ RAB). It implicitly requires us to specify geographic boundaries for PQ regulation for services that are determined to be FFLAS, in order to define the geographical areas in which FFLAS are exempt from PQ regulation (ie, ID-only FFLAS). It therefore implicitly defines the scope of ID-only FFLAS and relatedly, the ID-only RAB.
- E8 Reg 6 also has implications for other provisions in the Act, such as the obligations on Chorus to provide certain types of regulated services under ss 198-200; and to meet the geographically consistent pricing requirement under s 201.
- E9 Reg 6 comes into force on 31 December 2021. By that time, Chorus will have largely completed, and the other LFCs will have completed installation of their fibre networks under the UFB initiative.⁵⁴⁴

⁵⁴⁴ Crown fibre infrastructure partners (CIP) has confirmed: Northpower limited UFB1 network build was completed April 2014 and UFB2 network build was completed December 2020; Enable networks UFB1 completed September 2018 with greenfield developments accepted up to December 2019; and Tuatahi fibre UFB1 build was completed June 2016 and UFB2 network build completed January 2020.

- E10 Beyond this point in time, however, Chorus and the other LFCs will likely explore opportunities to roll out their respective fibre networks further (ie, on a commercial basis, outside of the UFB initiative).⁵⁴⁵

What we said in previous consultations

- E11 In our main IMs reasons paper, we indicated we would make decisions regarding how to implement the Regulations—including how we define the geographic areas where PQ regulation applies— as part of our process for setting PQ and ID regulation.⁵⁴⁶
- E12 In our PQ process and approach paper, we considered that the contracted UFB candidate areas (defined in the UFB contracts as “coverage areas”) for each LFC would be a useful starting point for identifying the geographic areas where Chorus’ FFLAS would be exempt from PQ regulation (ie, ID-only areas). The coverage areas are where the LFCs were contractually required to construct a fibre network under the UFB initiative.
- E13 However, we noted that coverage areas are unlikely to provide the complete picture. There will likely be differences between the UFB contracted coverage areas and the as-built network coverage areas. The UFB contracts anticipated that developments such as an adjacent greenfield property development would be accommodated in the network build. Conversely, there may be pockets in other LFCs’ coverage areas, where Chorus has installed a fibre network, but the other LFC have elected not to install fibre assets.
- E14 Given that the LFCs other than Chorus have completed their UFB fibre network build, their ‘as-built’ UFB fibre network coverage areas provide the best starting reference for identifying the relevant geographic areas where Chorus’ FFLAS will be exempt from regulation (ie, the ID-only areas).

⁵⁴⁵ We cannot rule out that additional UFB initiative network expansions will not occur in the future. Our processes need to cater for such an event, should it occur, as any further expansion of the UFB initiative may increase the network coverage of regulated services providers, other than Chorus, and thereby the geographic areas where Chorus will be exempt from PQ-regulation.

⁵⁴⁶ Commerce Commission “[Fibre input methodologies: Main final decisions – reasons paper](#)” (13 October 2020), paragraph 2.69.

- E15 In our PQ approach paper, we proposed using the SFA database to identify the end-user premises in the geographic areas where Chorus would be exempt from PQ regulation (ie, the ID-only areas).⁵⁴⁷ On 19 December 2019, we published our initial SFA assessment. The SFA database, and the interactive map we published on our web site detail the address locations where specified fibre services are available to end-users.
- E16 Section 69AB(6) of the Act defines specified fibre services as either of the following:
- E16.1 a fibre fixed line access service; or
 - E16.2 a telecommunications service provided by a regulated fibre service provider (F) over fibre media where the ultimate recipient of the service is F or a related party of F (as if the test for related parties were the same as the test in section 69U, applied with any necessary modifications).
- E17 The SFA database identifies end-users' premises in geographic areas where a regulated service provider has installed fibre network, including fibre networks built under the UFB initiative. However, it does so at a level of granularity that is too precise for determining, at least initially, the geographic areas where Chorus is to be exempt from PQ regulation (ie, the ID-only areas). This was highlighted by Enable Network in its submission. We also referred to it in our process and approach paper in the two scenarios we envisaged.⁵⁴⁸ We will use these scenarios as the basis of our approach.

Final decisions

- E18 We have divided our approach to assessment of whether FFLAS fall within reg 6 and are exempt from PQ regulation by FFLAS type. These FFLAS types fall into two overarching categories:
- E18.1 FFLAS provided to end-user premises, which comprise:
 - E18.1.1 voice services;
 - E18.1.2 Bitstream PON services;
 - E18.1.3 unbundled PON services;
 - E18.1.4 point-to-point services; and

⁵⁴⁷ Commerce Commission "[Fibre Information disclosure and price-quality regulation – proposed process and approach for the first regulatory period](#)" (15 September 2020), Table 6.1, page 124.

⁵⁴⁸ Enable and Ultrafast Fibre "[Submissions on PQID process and approach paper](#)" (14 October 2020), in response to Commerce Commission "[Fibre Information disclosure and price-quality regulation – proposed process and approach for the first regulatory period](#)" (15 September 2020).

- E18.1.5 connection services;
- E18.2 aggregated services, which comprise:
 - E18.2.1 transport;
 - E18.2.2 co-location; and
 - E18.2.3 interconnection.

FFLAS provided to end-user premises

- E19 As set out in our process and approach paper, there are two broad scenarios where Chorus could potentially be considered to provide FFLAS in another LFC's UFB area, and where reg 6 means that Chorus' FFLAS are exempt from PQ regulation:⁵⁴⁹
- E19.1 where an LFC has already installed a FFLAS network under the UFB initiative
 - E19.2 where an LFC has the potential to install a FFLAS network.

Scenario 1 – existing LFC installed network

- E20 Under Scenario 1, where both Chorus and another LFC can provide FFLAS to an end-user, an access seeker can choose between competing LFCs. In this scenario, Chorus' FFLAS falls within reg 6, is exempt from PQ regulation, and is subject to ID regulation only (ie, it is ID-only FFLAS and the assets used (exclusively) in the provision of these services are part of the ID-only RAB).⁵⁵⁰
- E21 For these categories, if the premise that has (or would have) the UNI for the particular type of FFLAS is located in another LFC's UFB area, and that LFC has established UFB communal infrastructure that can serve that premise as recorded in our SFA database, the FFLAS are subject to ID regulation only.

Scenario 2 – potential LFC installed network

- E22 Under Scenario 2, where Chorus has installed a fibre network in another LFC's UFB coverage area and the other LFC has elected not to immediately overbuild Chorus' UFB fibre network, then the end-user and access seeker's only choice of fibre provider is Chorus.⁵⁵¹

⁵⁴⁹ Commerce Commission "[Fibre Information disclosure and price-quality regulation – proposed process and approach for the first regulatory period](#)" (15 September 2020), paragraph 6.32.1.

⁵⁵⁰ Commerce Commission "[Fibre Information disclosure and price-quality regulation – proposed process and approach for the first regulatory period](#)" (15 September 2020), paragraph 6.32.1.

⁵⁵¹ Commerce Commission "[Fibre Information disclosure and price-quality regulation – proposed process and approach for the first regulatory period](#)" (15 September 2020), paragraph 6.32.2.

- E23 Under this scenario, while there is no current competition, Chorus is still subject to (and end-users enjoy the benefits of) potential competition.
- E24 As discussed in our process and approach paper, the critical consideration when determining the boundary of a geographical area where Chorus will be exempt from PQ regulation under reg 6, is whether end-users are likely to enjoy the benefits of (actual or potential) competition between Chorus and the other regulated fibre provider.⁵⁵² In interpreting whether the geographic areas where end-users are likely to enjoy the benefits of (actual or potential) competition, we must be guided by what best promotes the long-term benefit of end-users and must not treat any of the s 162(a)-(d) outcomes as paramount.

FFLAS in both scenario 1 and scenario 2 are subject to ID regulation only

- E25 In our process and approach paper, the most reasonable interpretation of reg 6 is that under both scenario 1 and 2, end-users are likely to enjoy the benefits of (actual or potential) competition between Chorus and the other LFC. On this basis, we considered that all FFLAS falling within scenarios 1 and 2 should be treated as being within the “geographical area” where Chorus is exempt from PQ regulation under reg 6, and subject to ID regulation only at implementation date (ie, it is ID-only FFLAS).
- E26 To understand the extent of Chorus’ ID-only areas we should not —at least initially— rely solely upon information from our SFA database. We need to identify the geographical area that is bounded generally by each non-Chorus’ LFC’s ‘as-built’ UFB fibre network. By “bounded generally” we mean that it does not have to identify every individual property that the non-Chorus LFC has passed with its UFB build, given that the effects of competition will be present around the edges of the bounded area.
- E27 However, both the Commission and the industry do need to know whether a given property is considered in or out of an ID-only area (in order to determine whether it is exempt from PQ regulation). To that end, we will use the ‘as-built’ coverage areas, certified for CIP as the basis for determining the initial geographic extent of ID-only areas. We will use the ‘as-built’ network information to identify all properties within the SFA database that are within the ID-only areas and to publish that alongside the SFA information on our website.
- E28 We consider it important to maintain a record of PQ-exempt properties in our SFA database in order that they can be readily identified for compliance purposes and updated as necessary as a result of any future UFB builds or competition reviews.

⁵⁵² Commerce Commission “[Fibre Information disclosure and price-quality regulation – proposed process and approach for the first regulatory period](#)” (15 September 2020), paragraph 6.35.

Treatment of aggregated services

- E29 In our PQ Draft reasons paper, we said that the issue of whether aggregated services are classed as ID-only FFLAS would be determined by the location of end-users who are the ultimate recipients of FFLAS (up to the FFLAS ITP).⁵⁵³
- E30 This means that if Chorus provides FFLAS to an address that is recorded in the SFA database that meets the conditions of scenarios 1 and 2 above, then it is ID-Only FFLAS.
- E31 The types of aggregated services to which this would apply are transport services, co-location and interconnection services. The following scenarios are subject to ID regulation only (ie, they are ID-only FFLAS):
- E31.1 where the UNI to which the transport service is connected is located in another LFC's UFB coverage area where the LFC has, or could reasonably have established UFB communal infrastructure; and
 - E31.2 where the co-location service is located in another LFC's UFB coverage area.

Assessment of Chorus' approach

- E32 While our interpretation of the Regulations has a broader impact than just Chorus' initial PQ RAB and PQP1 expenditure proposals, these proposals are the most immediately relevant. Specifically, how Chorus has interpreted and applied reg 6 impacts how costs and assets are allocated between PQ FFLAS and ID-only FFLAS.
- E33 From our assessment, we are confident that Chorus has interpreted reg 6 consistent with our interpretation and applied this correctly in practice.
- E34 To assess this, we have obtained the GIS files (in simple terms, maps) that underpinned Chorus' categorisation of assets and costs into the "won" and "non" geographies (subject to PQ) and "lost" geography (ID-only), which are themselves based on the SFA database.

⁵⁵³ Commerce Commission "[Chorus' Price-quality path from 1 January 2022 – Draft decision](#)" (27 May 2021 – Updated 16 May 2021), p 26-27; Regulations under s 226.