

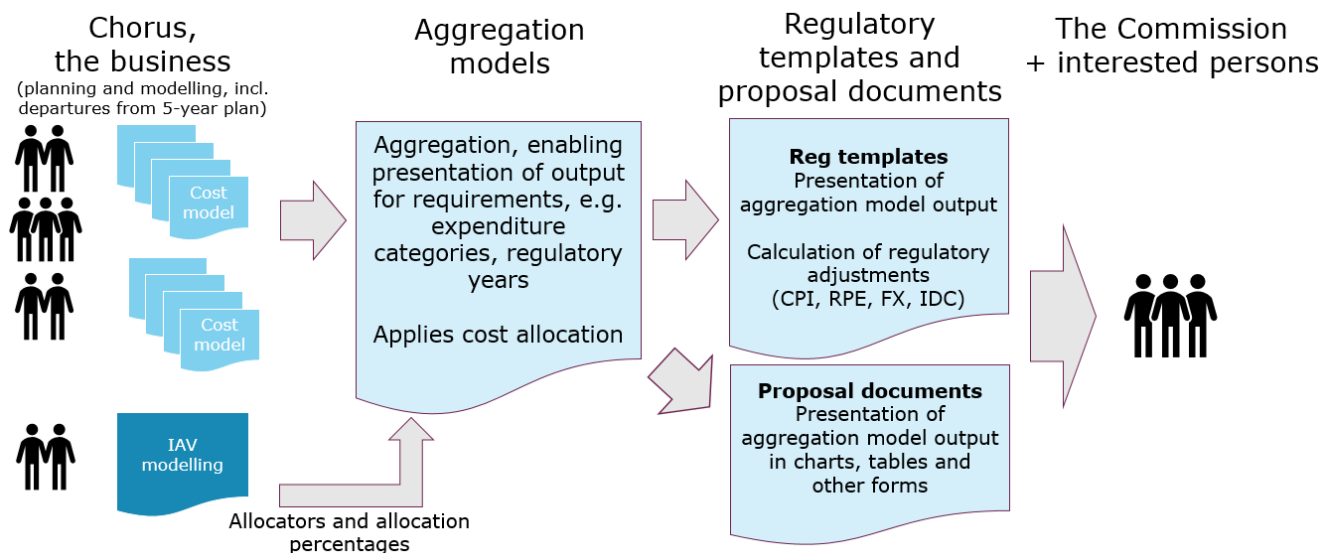
Modelling and cost allocation report

This report explains how we have developed our regulatory expenditure forecasts, for both capex and opex. It includes an explanation of our modelling approach and how we applied the cost allocation methodology.

Modelling approach

This section of our report describes how we have developed our forecast, as shown in Figure 1 below.

Figure 1: Forecast modelling overview



Financial forecast aggregation overview

Our forecast costs are presented in a set of regulatory templates and throughout proposal documents. The templates have been designed to be clear, easy to navigate and easy to understand. They show our forecasts in constant prices and the contribution that Consumer Price Index (CPI) and real price effects (RPE) have on the final nominal cost. They also provide other relevant information, such as cost allocation and geographic allocations.

The forecast inputs to the regulatory templates are sourced from separate opex and capex aggregation models. These models bring together the outputs of all the underlying opex and capex forecast cost models so that the output is enabled to present underlying forecast data in the required way, e.g. in regulatory expenditure categories and in regulatory (calendar) years.

Financial forecast development

The underlying business forecast cost models are the ones that are used for the annual 5-year business planning round (5YP). The business forecast cost models have a standardised interface template to feed the aggregation model.

The underlying forecast cost models use, in turn, output from several lower-level models. For example, where standardised inputs are required for connections and labour cost. A list of key models is provided in Appendix B - List of models. How we rely upon these models when forecasting base capex and opex sub-categories for our proposal is explained below.¹

Business forecasting approach

Investment managers are responsible for developing individual business forecast capex. These are grouped into decision packets (DPs), which are similar to business case groupings, i.e. grouped for expenditure with the same outcomes. Finance managers are responsible for developing individual business forecast opex models which are based around cost centres. We necessarily use different approaches for modelling depending on the type of expenditure and the availability of data.

¹ This responds to information requests A17.5 and A36.7, of the Commission's section 221 information notice, dated 18 November 2020 (Information Notice).

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Most of our expenditure is forecast using volumetric price x quantity models. This type of model is appropriate when cost and volume data is available. It is flexible as it can consider changes to prices and volumes over time, and the impact of assumptions can be tested. We use this approach for most of our installations, extending the network, and network capacity expenditure.

For expenditure that isn't based on demand or volume, we apply a Base-Step-Trend approach. This involves establishing a base level from historic information and then applying steps and trends to the base level. This type of model is appropriate for recurring expenditure such as rental and internal labour. We use this approach for most of our corporate opex.

When cost, volume or trends data is unavailable, we estimate expenditure based on our business experience (e.g. historical cost and volumes) and international benchmarks. We use this approach for our innovation and our project focused IT expenditure.

Assumptions are required for all our forecast models. In some cases, these are key assumptions (such as demand for connections), which are used directly as the quantity part of the model. Other assumptions, such as expected changes to interest rates, are less material as they only influence part of the price. In most cases we do not consider the extent of any uncertainty in our forecast (i.e. sensitivities). We have used the 5YP as our base and the business forecast cost models do not typically include sensitivity analysis. In a few cases, sensitivity analysis is done e.g. for maintenance in network opex or different network capacity scenarios.

Regulatory forecast development

The underlying business forecast from the FY21 5YP approved in June 2020 was the basis for our regulatory forecast. Some adjustments have been made to the forecast post the approval in June 2020.

Our variances to the 5YP were scrutinised, challenged and approved by management and Board. They have also been independently verified by CutlerMerz and reviewed by KPMG as part of their assurance. These variances included items where post business plan developments were needed and items where different treatment is required for regulatory purposes.

A summary of each variance from the Board approved 5YP is as follows:

- **aggregation electronics obsolescence** - accelerating swapping out of network equipment due to vendor enforced obsolescence that was not known when the 5YP was being prepared
- **asset management capability** - investment in asset management systems capability that was excluded from the 5YP while asset management maturity and the capability roadmap work was completed
- **mobile backhaul** - inclusion of the full value of the Rural Connectivity Group mobile backhaul business case in the proposal, noting the netting off of capital contributions
- **labour adjustment** - reduction in the scale of Customer and Network Operations labour cost reductions to reflect updated forecasts of labour required to meet predicted uplift in activity (migration of late adopters to fibre, support for new products, increase in switching activity)
- **change costs** - inclusion of forecast labour change costs flowing from changes in the size and capability of Chorus, as required to deliver on strategic plans reflected in the RP1 proposal. Omitted from 5YP while forecasts were developed
- **self-insurance** - inclusion of self-insurance costs for the uninsured portion of the network not covered via an existing insurance policy (omitted from 5YP while independent actuaries report was obtained)
- **pits/manholes** - a programme of inspection and remediation work required to assess and maintain the national network of pits and manholes. This addresses public safety risks identified through an audit of pits and manholes in public areas
- **Hyperfibre** - Hyperfibre volumes were updated in August 2020 to reflect latest volume forecasts and deployment plans
- **removal of 'un-solutioned' stretch efficiencies** - (over and above those flowing from major operating model changes, which are reflected in the 5YP).

Separate capex and opex input models were created to consolidate the source information of each variation from the approved 5YP. The input models were formulated on the same basis as the forecast cost models from the business (i.e. they contained the same data input requirements needed for the aggregation model) and subject to

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the same review as 5YP forecasts.² The variations were then treated in the same way as all other input models – they were consolidated into the aggregation model and included in the base set of data that informs the proposal and regulatory templates.

We also extended the forecast horizon beyond RP1 to include 2025 and 2026 calendar years. This was developed using a high-level approach to project the forecast forward, with bottom-up and top-down 'sense checking' and scrutiny through our proposal project executives. These forecast extensions were also subject to the assurance and certification process required by the IMs.

Capital Contributions

The definition of capital contribution is specified in the IMs.³ In summary, capital contributions are a payment from a third-party associated with building or maintaining the fibre network. Forecast capital contributions are deducted from our expenditure proposal.

We reviewed all forecast revenue to identify capital contributions, as specified in the IMs. In some cases, a ratio was applied as the forecast values contained both qualifying and non-qualifying revenue elements. These ratios were determined following analysis of supporting data and were subject to the assurance and compliance process required by the IMs.

An input model for revenue was created to capture qualifying items and map these to the related expenditure categories. This mapping ensured related revenue and expenditure were allocated on the same basis. This input model was treated the same as every other input model, in that it was consolidated into the aggregation model and forms part of the outputs for the proposal and regulatory templates.

Regulatory adjustments

Cost allocation is applied to the forecast in the opex and capex aggregation models. Our approach to cost allocation is explained further in this report in the section on cost allocation.

Pass-through costs (local authority rates, telecommunications levies, dispute resolution scheme membership fees) are identified in the aggregation models, cost allocation applied and then excluded from the PQ-FFLAS forecast.

The aggregation models also remove inflation from 5YP forecasts. Regulatory templates add regulatory inflation including CPI (as specified in the IMs) and RPE. Our approach to modelling for the regulatory templates is explained below.

Review and quality control

The underlying forecast cost models have been through several review rounds to minimise the risk of material misstatement.

In the first review, the majority of forecast cost models were peer reviewed individually against a checklist. This was done before the 5YP process started, at a stage when the models were just templates, without numbers. The purpose of the review was to refine the template models, before any numbers went in, to ensure that they were set up appropriately and had the appropriate output for our aggregation models – as well as ensuring consistently good modelling practice. The models were then populated as part of the 5YP process.

A set of models (from the previous business planning round) was provided to the Independent Verifier (IV) as part of their review of forecast expenditure.

A further round of forecast model reviews occurred during the 5YP process. At that stage, a subset of those models was peer-reviewed in detail. The subset was a list of models covering approximately 80% of total FFLAS expenditure. Those reviews were intended to ensure that all models had clearly set out and justified assumptions, calculations and links to source information or models as well as assessing their reviewability. The results of those

² Management challenge, independent verification, external review by KPMG and Board approval.

³ Commerce Commission, Fibre input methodologies determination, 3 November 2020 (1.1.4 (2)) capital contributions means:

- (a) *money or the monetary value of other considerations charged to or received in relation to the construction, acquisition or enhancement of a core fibre asset or UFB asset by a regulated provider from 1 or more of the following:*
 - (i) *an access seeker;*
 - (ii) *an end-user; or*
 - (iii) *any other party; and*
- (b) *includes the \$20 million fund established by Chorus for financial loss year 2013 in respect of non-standard installations; but*
- (c) *does not include any Crown financing*

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reviews, together with assessments and comments from the IV, were then incorporated into a revised set of models that were reviewed again by the IV.

The final reviews of forecast models were undertaken during the 5YP process at the same time as forecasts were being revised to take account of COVID-19. This final round was more targeted and included ensuring consistent treatment and isolation of forecast CPI and amounts incurred in foreign currencies.

Regulatory templates and opex and capex aggregation models have also been reviewed to mitigate the risk that errors could be introduced at that level. The review included multi-stage internal quality review and review by KPMG as part of assurance work.

Reconciliation to business plan

The aggregation model contains a reconciliation from the 5YP approved by the Board and each subsequent change/adjustment to arrive at the final regulatory forecast. Each change has been documented and agreed and forms part of both internal and external assurance processes.

Modelling done in the regulatory templates

Cost escalation

Our proposal is presented in real terms, while our allowances are approved on a nominal basis. We have converted forecast expenditure based on constant 2019/20 prices to nominal expenditure by applying CPI and RPE adjustments. Inflationary adjustments are calculated in the RT02 Cost Escalation Regulatory Template, using indices that can be applied to the forecast costs each year. The CPI index represents general economy-wide price increases and is applied equally to all costs. The RPE adjustment represents changes in specific cost inputs (e.g. Professional and Technical Labour) that are influenced by factors other than domestic CPI and so different cost categories will have different RPE indices.

CPI adjustment

The calculation for actual and forecast CPI is specified in the IMs, using the quarterly releases by Statistics New Zealand (for actuals) and the Reserve Bank New Zealand (for forecast) and so no judgment is applied in the calculation of annual CPI rates.

To provide comparability of expenditure over time, historical expenditure and expenditure forecast on a nominal basis are converted to real expenditure based on a CPI adjustment.

RPE adjustment⁴

RPE indices are calculated for each cost sub-category, based on a set of broadly-based RPE categories and the weightings applicable to those RPE categories. RPE categories are activities or costs for which we expect real-term price changes, for example labour costs, civil works, electronic equipment and fibre.

RPE category escalation rates were derived by NZIER, an external specialist consultancy, based on futures prices, market consensus, World Bank forecasts, foreign exchange rates and econometric models. We chose NZIER to do this work because of their experience working with Commerce Commission-regulated businesses.

We initially provided NZIER with a relatively granular list of activities associated with our opex and capex cost categories. These activities, which are listed in NZIER's reports from March 2020 and September 2020, included different types of labour activities (e.g. IT technical staff, accounting staff and field technicians) as well as different types of capital costs (e.g. network electronics, in-property hardware, ducts and fibre).

NZIER provided a report advising the most appropriate broadly-based indices for each activity. The result was that our initial granular list of activities mapped to six broadly-based RPE categories plus 'no RPE' (i.e. no cost changes other than economy-wide CPI). Those RPE categories are:

1. Labour cost index (LCI) professional and technical services (applicable to all labour types, except civil labour)

⁴ This section provides responses to information request A40 of the Information Notice.

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2. Producer price index (PPI) outputs: all industries (applicable to electricity costs and property maintenance/services)
3. PPI outputs: heavy and civil engineering (applicable to civil works, such as digging up roads)
4. USA producer price index: Fibre optic cable manufacturing
5. PPI published output commodities 'rent of commercial land and buildings' (principally leases)
6. PPI outputs: electronic and electrical equipment
7. No RPE – just CPI.

RPE category escalation rates for similar cost inputs are consistent between capex and opex.

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.

Then RPE indices for each of the opex and capex cost sub-categories are calculated by adding together the escalation rates for different RPE categories, while applying the weightings applicable to those RPE categories. For example, the "Installations – standard installations" capex category can be broken down into RPE categories of 4% ducts, 11% technical labour, 7% equipment and 4% fibre. So, the RPE index for "Installations – standard installations" is calculated using 4%, 11%, 7% and 4% respectively of the RPE escalation rates applicable to those RPE categories.

For some of the larger cost categories, such as "Installations – standard installations" in the example above, there is a significant component from fixed price contracts or contracts specifying annual CPI increases. In those cases, the RPE indices apply only to the costs that are subject to market variations. For example, for "Installation – standard installations", 74% of the cost increases just with CPI.

Foreign currency-based costs⁵

The output of the underlying forecast cost models includes a field identifying the base currency of the forecast costs. The output of the underlying forecast cost models is brought together in the aggregation models, which can be used to show the aggregate exposure to different foreign currencies.

While we do incur some costs in a number of different foreign currencies, the output from the aggregation models is that only U.S. dollars are used explicitly in the underlying forecast cost models. The exposure to USD is used in the RT02 cost escalation regulatory template for each regulatory year in order to update costs to the most recent available forecasts and to calculate any ex-post foreign exchange adjustments.

IDC and the related expenditure/commissioning bases

The capex forecasts are slightly different from the opex forecasts in that they must include the capitalisation of Interest During Construction (IDC). Underlying capex cost models do not separately forecast IDC, because they do not forecast the difference between the timing of capital expenditure and the assets' commissioning. Capital expenditure is when the cost is incurred, whereas commissioning is when the asset in question is available for use or employed by the business in providing services. During the time between capital expenditure and commissioning the assets are held in Work in Progress (WIP).

We add IDC to asset values when they have been in WIP for 30 days and so we are able to approximate the effective rate of capitalised IDC by using the average time that assets spend in WIP. That average time spent in WIP is also used to calculate the difference between capital expenditure and commissioning.

We calculated the amount of time that assets spend in WIP for each cost sub-category by allocating the opening and closing WIP and annual capex spend to those categories. The average WIP balance divided by the annual capex spend gives the average fraction of a year that assets in each category spend in WIP. The number of days spent in WIP for each of the cost sub-categories is also used as a simple time shift, to calculate the value of commissioned assets.

⁵ This section provides responses to information request A41 of the Information Notice.

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IDC of 5.16%⁶ is added to assets in WIP after 30 days and so we can calculate the number of days that assets in each cost sub-category attract IDC. We can then calculate an effective IDC rate for each cost sub-category by using this period, together with the average level of interest-bearing debt. No IDC is added to those cost categories where the modelling implicitly includes IDC in the base cost.

Presentation in regulatory templates

The forecast is presented in regulatory templates prescribed by the Commission, e.g. in regulatory expenditure categories and in regulatory (calendar) years.

For presentation of lease costs, we have chosen to present regulatory years 2021 to 2026⁷, as opex-like cash flows, i.e. not applying NZ IFRS 16. This is to facilitate a comparison between lease costs prior to RP1 and RP1 forecast, and to avoid the year-on-year irregularity of the NZ IFRS 16 capex presentation. Regulatory template RT01 provides for this presentation.

Cost allocation

Scope of regulated service

Our proposal is for fibre fixed line access services (FFLAS) in areas we are subject to price-quality regulation. Section 5 of the Telecommunications Act 2001 defines the regulated service FFLAS as:

“means a telecommunications service that enables access to, and interconnection with, a regulated fibre service provider’s fibre network [subject to specified exclusions”].

Services that are within the scope of FFLAS, as per the Commission’s Reason’s paper,⁸ include:

- **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, baseband⁹, ATA voice)
- **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)
- **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)
- **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)
- **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 Chorus Regional Transport)
- **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)
- **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).

⁶ At a company level IDC is added at a rate of 5.8% per annum (see note 1 in the 2020 financial statements), but the IMs cap IDC at the company’s weighted average cost of debt – which is 5.16% (see note 4 in the 2020 financial statements).

⁷ We note that Chorus adopted NZ IFRS 16 from 1 July 2017. Leases are therefore in capex from 1 July 2017 to 30 June 2020 as part of our actuals. Prior to 1 July 2017, leases were accounted for under NZ IAS 17, meaning there were operating leases within the opex numbers and finance leases within the capex numbers. We applied dual forecasting of capex and opex for the purpose of the proposal from our latest 5YP, therefore can only show both ways from 1 July 2020.

⁸ These FFLAS services are described in the Commerce Commission, Fibre input methodologies: Main final decisions - reasons paper, 13 October 2020, pp 45-46. (https://comcom.govt.nz/__data/assets/pdf_file/0022/226507/Fibre-Input-Methodologies-Main-final-decisions-reasons-paper-13-October-2020.pdf).

⁹ We note that there is no additional fibre baseband service. Our fibre voice only service is the ATA voice service.

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Key services excluded from FFLAS are:

- telecommunications services provided, in any part other than a part located within an end-user's premises or building, over a copper line, or a telecommunications service used exclusively in connection with such a service¹⁰
- transport services provided beyond the specified points of interconnection¹¹
- network services and new property developments.¹²

We have broadly incorporated the FFLAS categories outlined by the Commission above. We note however that the cost allocation may be reviewed as part of the IAV process so there may be some future adjustments.

Our FFLAS services are subject to price-quality regulation everywhere except where another local fibre company (LFC) has installed fibre networks under the UFB initiative. Our FFLAS services will be subject to information disclosure requirements in those areas, but not price-quality regulation.

Chorus network

The rationale behind Chorus' bid for the opportunity to build the UFB network was that we could draw on our existing infrastructure, such as exchange buildings, ducts, poles and manholes, in order to build the network in a timely and cost-effective manner.

At that time Chorus considered that our fibre-to-the-node (FTTN) network would provide a strong basis for fibre-to-the-home (FTTH) deployment.

The result of this approach is that Chorus operates one network that includes two technologies, copper and fibre, across different areas in New Zealand. This results in significant sharing of network and non-network assets.

Cost allocation is a significant exercise and will need to be dynamic going forward – not only due to copper to fibre migration, but the use of an asset can change over time.

Cost allocation approach¹³

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¹⁰ As set out in the exceptions in statutory definition of FFLAS under section 5 of the Telecommunications Act.

¹¹ The Commission prescribes the specified points of interconnection under section 231 of the Telecommunications Act and made its first determination last year. These specified POIs establish the fibre handover points and define the upstream boundary of a regulated fibre service provider's fibre network.

¹² While the Commission's preliminary views indicated that network services and new property development services might be considered FFLAS, they weren't included as FFLAS in the Commerce Commission, Fibre input methodologies: Main final decisions - reasons paper, 13 October 2020.

¹³ This explanation responds to information request A44 and A47.1 of the Information Notice.

¹⁴ We use the term 'non-FFLAS' as a shorter way of referring to 'services that are not regulated FFLAS' as defined in the Input Methodologies.

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Capex allocation approach overview

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How we disaggregate capex to Building Blocks Model (BBM) asset classes

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How we allocate capex to geographic regions

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Overview of base capex geographic breakdown

RT01 provides a geographic breakdown of estimate base capex – Urban, Rural and National for RP1 (also called PQP1). To develop the base capex breakdown estimate we have made an approximation of connection capex (and deduct that from total capex). The overview of the base capex breakdown for PQP1 is:¹⁷

- Urban – 72%
- Rural – 4%
- National – 24%

Opex allocation approach

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¹⁷ This responds to information request A49.7 of the Information Notice.

Appendix A - Cost allocation methodology applied

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¹⁸ This responds to information request A16.2.1 of the Information Notice.

¹⁹ This responds to information request A32.2.1 of the Information Notice.

²⁰ This responds to information request A45.1 of the Information Notice.

²¹ This responds to information request A45.1 (for causal relationship or proxy allocators applied) and A45.2 of the Information Notice.

²² This responds to information request A45.3 of the Information Notice.

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Cost Allocation outcomes

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Table 1:

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²³ This responds to information request A47.2 of the Information Notice.

[Chorus CI all text and tables]

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Opex allocation [Chorus CI text and tables]

Table 2.1:

Shared opex	Expenditure category	Allocation type	Causal/proxy ²⁴

²⁴ This column and its equivalent in the following capex table relates to information request A45.1 of the Information Notice.

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Table 2.2:

Expenditure type	Expenditure category	Allocation type	Causal/proxy

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Capex allocation [Chorus CI all table 3: text and table]

Table 3:

Shared asset	Expenditure category	Allocator type	Causal/proxy ²⁵

²⁵ This column and its equivalent in the following capex table relates to information request A45.1 of the Information Notice.

Appendix B – List of models

Table 4: List of capex models

Key:

- key model for this sub-category (defined as 50% or more of the forecast being derived from this model)
- 10-49% of the forecast for this sub-category is derived from this model
- minor model (less than 10% of the forecast for this sub-category is derived from this model)

Capex models

Model	Explanation of the model	Extending the Network			Installations		IT and Support			Network Capacity			Network Sustain and Enhance			
		Augmentation	New Property Developments	UFB Communal	Complex Installations	Standard Installations	Business IT	Corporate	Network & Customer IT	Access	Aggregation	Transport	Field Sustain	Relocations	Resilience	Site Sustain
C001	Forecast costs investment in property, engineering services, and corporate accommodation															
C002	Forecasts costs for upgrading/maintain the NetMap records database															
C010	Forecasts access electronics for Network Capacity & Installations															
C011	Forecasts costs for UFB2/2+ connections															
C012	Forecasts costs for Connections (including fibre access, but not UFB2/2+ which are in DP2429). Includes MDUs and ROWs.															
C013	Forecasts all NZ IFRS 15 related expenditure, including incentives															
C014	Forecasts costs for business fibre connections, high cost connections, new property developments, and Roadworks															
C015	Forecasts costs for fibre lifecycle replacements, extension of the network to rural communities, network robustness and resilience															
C021	Forecasts IT capex															
C023	Forecasts aggregation electronics for Network Capacity															
C024	Forecasts transport electronics for Network Capacity															
C028	Forecasts capex for sustaining/maintaining the network, including poles. Also Overhead to Undergrounding (OHUG)															
C048	Forecasts costs for the completion of the UFB Communal build															
C051	Forecasts capital contributions and applies to expenditure categories															
C052	Additions to the forecast made after 5YP approval or for regulatory purposes															

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Table 5: List of opex models

Opex Models

Model	Explanation of the model	Customer		Network			Support		
		Customer operations	Product, Sales & Marketing	Maintenance	Network Operations	Operating costs	Asset Management	Corporate	Technology
C050	Forecasts leases on both a capex and cashflow basis (shown under opex models for the purposes of the proposal)								
O001	Forecasts all CNO related expenditure, excluding labour								
O002	Forecasts technology and NOC costs								
O004	Forecasts all PSM related expenditure								
O005	Forecasts all CEO related expenditure								
O006	Forecasts all SBO related expenditure								
O007	Forecasts all CR related expenditure								
O008	Forecasts all GCO related expenditure								
O009	Forecasts all CFO related expenditure								
O010	Forecasts all P&C related expenditure								
O011	Forecasts all CTO labour								
O012	Forecasts CTO consultant, project opex, travel and other miscellaneous costs								
O098	Model to assign the overhead recovery portion of labour rates to correct BBM opex categories for cost allocation purposes. Model also assists with aligning recoveries back to where the costs originate (GL and functional unit)								
O099	Model to assign the overhead recovery portion of labour rates to correct BBM opex categories for cost allocation purposes. Model also assists with aligning recoveries back to where the costs originate (GL and functional unit)								
O100	Additions to the forecast made after 5YP approval or for regulatory purposes								
T046	Forecast ringfences CTO's NZ IFRS 15 related expenditure (the same model is used as an input into the C013 capex model, showing the equal and opposite capitalisation)								
T048	Forecasts CNO labour								

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Other key models

Other key models, affecting most (if not all) expenditure categories

T001 This is the model for forecasting our connection volumes

T002 This is the underlying model for forecasting labour costs across the business - outputs from this model are used in capex and opex models, as required

T100 This model extrapolates the 5YP numbers into CY 2025 and 2026, adjusting for forecast step or trend changes

Other key "Tier 3" models (models that are key inputs to other models listed in the tables above)

T012 This is a project cost estimation tool, used to help determine the pricing of IT projects. It is used as an input for capex model C021

T013 This model tracks the terms and forecasts for the leasing arrangements with Spark, both for as lessee and lessor. It is a key input to the C050 lease model

T018 The model forecasts our electricity expenditure and is an input to the O001 opex model

T020 The model forecasts our maintenance expenditure and is an input to the O001 opex model

T031 This model forecasts bandwidth growth and is used within Network Capacity forecasts

T043 This ringfences NZ IFRS 15 related forecasts for the offshore service desk. It is an input to the C013 capex model

T044 This ringfences NZ IFRS 15 related forecasts for the onshore service desk. It is an input to the C013 capex model

T045 This forecasts all our incentives. It is an input to the C013 capex model.