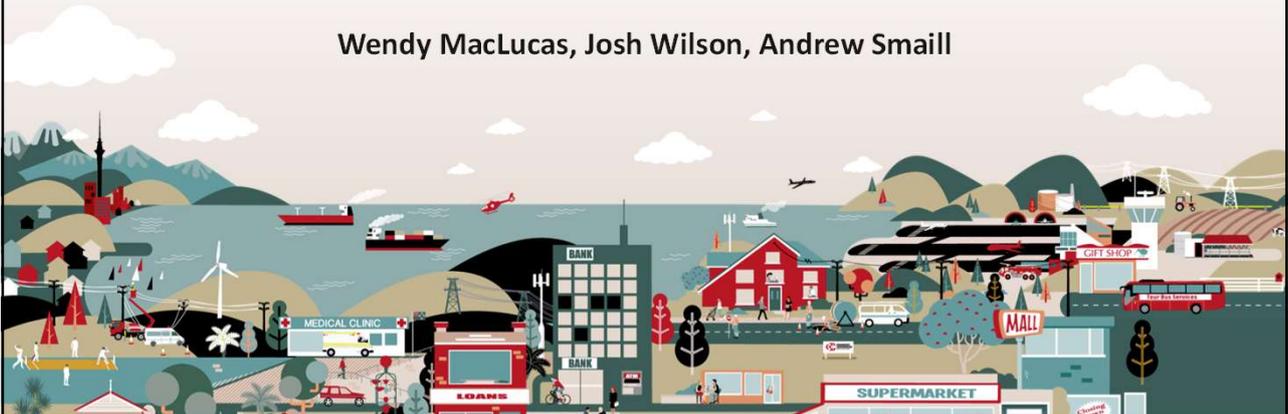


Capex IM draft decisions workshop

Commerce Commission

12 December 2019

Wendy MacLucas, Josh Wilson, Andrew Smail



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Purpose

- The purpose of this workshop is to discuss practical issues linked to the implementation of the Chorus Capex IM
- In particular, we intend to cover our draft decisions on:
 - timeframes and processes for each of the capex categories; and
 - mechanisms for dealing with forecasting uncertainty
- We will also address any clarification questions on the draft Chorus capex IM
- We hope the session will help inform stakeholder submissions on the capex IM

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Today's agenda



Times:	Agenda:
1.30 pm	Welcome and opening
1.40 pm	Overview
2.00 pm	Base capex
2.30 pm	Connection capex
3.00 pm	Quick break – tea/coffee
3.15 pm	Individual capex
3.45 pm	Other requirements
4.00 pm	Chorus perspective
4.30 pm	Clarification questions
4.45 pm	Next steps

3

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Overview

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Requirements for the capex IM



- Under s176(1)(d) of the Telecommunications Act 2001, the capex IM must include:
 - **Scope and specificity of information required**, extent of independent verification and audit, and the extent of consultation and agreement with other parties
 - The **criteria the Commission will use to evaluate** capex proposals
 - **Time frames and processes** for evaluating capex proposals

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The Chorus Capex IM



- The capex IM is only relevant to regulated providers that are subject to PQ regulation
- Our expectation is that only Chorus will be subject to PQ regulation in the immediate future
- We have developed the capex IM with Chorus's likely capex profile in mind and therefore refer to the input methodology as the Chorus capex IM
- Should another provider become subject to PQ regulation we will determine the applicable capex IM rules and processes at the time, drawing on the Chorus capex IM where appropriate

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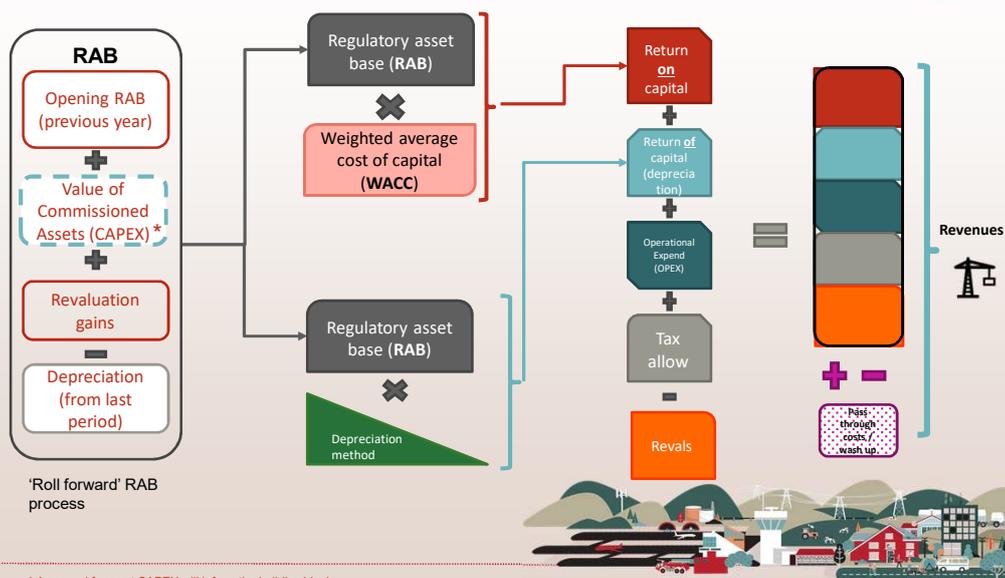
Role of the capex IM

- The capex IM outlines the rules and processes we will use to determine the capex allowance for upcoming regulatory periods
- The capex IM will help us address certain risks to setting an expenditure allowance:
 - Chorus undertaking inefficient investment
 - Chorus' incentives to over forecast

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The capex IM and the Building Blocks Model for price-quality regulation



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Capex categories

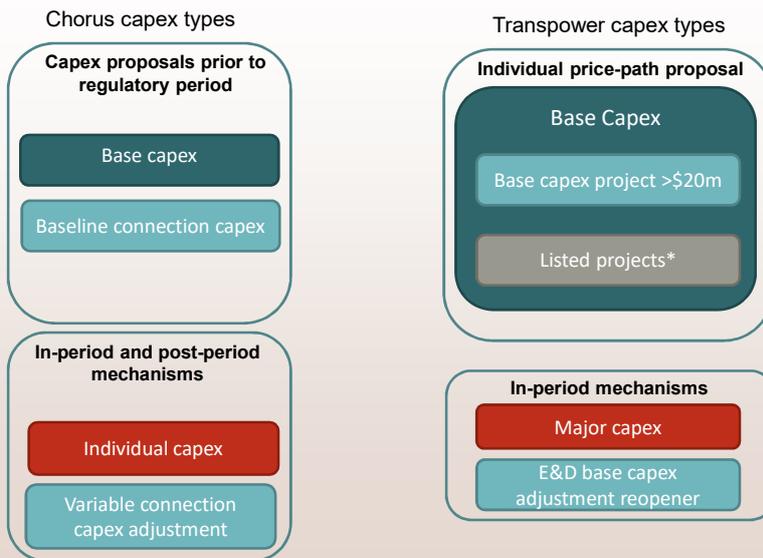


	Approval Prior to RP	Approval During/Post RP
Base capex <ul style="list-style-type: none"> Separated by expenditure sub-category Templates discussed and agreed or specified before submission Proposal submitted 14 mths prior to RP Substitutable 	<ul style="list-style-type: none"> Propose and assess Independent verification Evaluation based on expenditure objective and assessment factors 	
Connection capex <ul style="list-style-type: none"> Connection expenditure Baseline + Variable component Volumes and unit rates by connection type by year 	<ul style="list-style-type: none"> Baseline component based on forecast volumes Pre-approval of unit rates by connection type Evaluation based on expenditure objective and assessment factors 	<ul style="list-style-type: none"> Variable component to adjust for actual volumes at pre-approved unit rates
Individual capex <ul style="list-style-type: none"> Larger projects and programmes Expenditure > \$5m threshold High uncertainty Ring-fenced 		<ul style="list-style-type: none"> Propose and assess Staged approval Independent verification Evaluation based on expenditure objective and assessment factors

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Classification of expenditure and treatment in the capex IM



* Transpower must indicate listed projects in a base capex proposal but makes a separate application during the regulatory period.

* E&D means enhancement and development

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Evaluation criteria



Key points

- Two key parts to the evaluation criteria:
 - The capital expenditure objective
 - The definition of good telecommunications industry practice
- We also outline assessment factors to clarify the areas the Commission may focus on during an evaluation
- The evaluation criteria applies to all capex proposals received by the Commission

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The capital expenditure objective



- We have defined the capital expenditure objective as:

“capital expenditure that reflects the efficient costs that a prudent fibre network operator would incur to deliver regulated FFLAS at appropriate quality, during the upcoming regulatory period and over the longer term, having regard to good telecommunications industry practice”

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Good telecommunications industry practice



- We have defined good telecommunications industry practice to mean:

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

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Evaluation criteria



The expenditure objective:
forecast expenditure reflects efficient costs of a prudent supplier having regard to

Good telecommunications industry practice

In applying the expenditure objective, we will have regard to any of the following clarification factors:

Impact of exp. on layer 1 regulated FFLAS	Extent of options, alternatives and analysis	Capex/opex trade-offs for least whole of life cost	Consideration of historic rates of investment	Impact on competition
Compliance with Act and regs	Degree of uncertainty	Impact of exp. on quality	Any other factors	
Forecasting methodologies, assumptions and data accuracy	Extent of risk-based approaches	Deliverability and control of exp. during RPs	Consultation & customer engagement	

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How the evaluation criteria will be applied in practice



- A top-down assessment to approve expenditure that seeks assurance as to forecasts and business practices
- We will apply the level of scrutiny that is commensurate with the potential price and quality impacts of forecast expenditure on end-users
- Approach to applying the expenditure objective may differ depending on the type of expenditure being assessed

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Questions



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Base capex

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Base capex

Key features

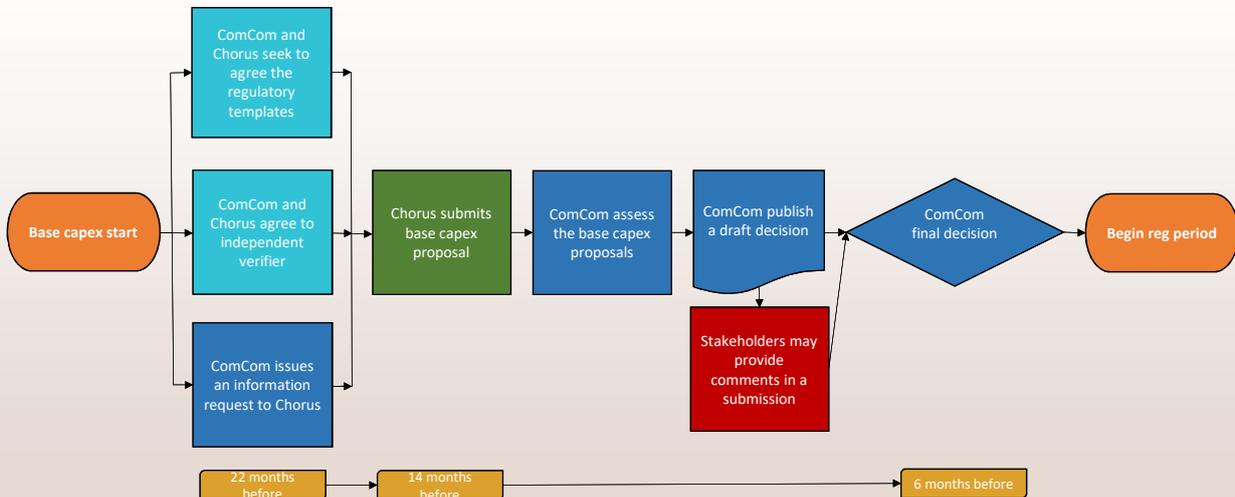
- Chorus will propose forecast capex allowance and Commission will evaluate against the expenditure objective
- Information requirements for a base capex proposal will be issued 8 months prior to the proposal submission date*
- Information requirements will be subject to the minimum requirements in the Chorus capex IM
- Assurance requirements to ensure information provided is reliable:
 - Independent verification (IV), audit and certification requirements
- Requirements on the Commission to consult on capex allowance decisions

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*Transitional arrangements apply to time frames for information requirements for the 1st regulatory period.

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Base capex – process diagram*



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*Note this diagram covers time frames from the 2nd regulatory period onwards. Transitional arrangements are discussed later in this presentation

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Regulatory templates

- We will discuss with Chorus and either agree or specify the form and content of regulatory templates 22 months prior to the start of the regulatory period*
- The regulatory templates must:
 - include a list of base capex sub-categories; and
 - provide for quantitative information related to the forecast in the base capex proposal
- The regulatory templates will provide some of the quantitative financial information for the proposal

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*Transitional arrangements apply to time frames for regulatory templates for the 1st regulatory period.

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Regulatory templates – examples



	\$m	RCP2					RCP3						
		2015/16	2016/17	2017/18	2018/19	2019/20	RCP2 Total	2020/21	2021/22	2022/23	2023/24	2024/25	RCP3 Total
Base Capex													
Capex spend incl. IDC	Constant 2017/18 \$	181.9	220.1	227.6	258.7	255.3	1,143.6	268.0	272.6	233.6	223.1	219.1	1,216.4
Unallocated adjustments	Constant 2017/18 \$	-	-	-	-	-	-	(60.3)	(21.7)	10.1	20.6	37.4	(14.0)
Capex spend including adjustments	Constant 2017/18 \$	181.9	220.1	227.6	258.7	255.3	1,143.6	207.7	250.8	243.7	243.7	256.5	1,202.4
Inflation adjustment	CPI, RPE and FX	(5.6)	(3.0)	0.0	5.8	13.0	10.2	23.4	34.4	38.1	44.6	52.4	192.9
Proposed Capex Spend	Nominal \$	176.3	217.1	227.6	264.5	268.3	1,153.8	231.1	285.2	281.8	288.3	309.0	1,395.4

Asset Grouping	Expenditure excluding IDC, constant 2017/18 \$ RCP2					Expenditure excluding IDC, constant 2017/18 \$ RCP3						
	2015/16	2016/17	2017/18	2018/19	2019/20	RCP2 Total	2020/21	2021/22	2022/23	2023/24	2024/25	RCP3 Total
Power Transformers	7.2	11.9	23.0	25.8	22.7	90.6	17.4	16.6	10.9	8.6	4.5	58.0
Indoor Switchgear	1.2	8.2	11.8	11.0	6.7	38.8	3.9	7.6	0.8	5.6	5.3	23.2
Outdoor Circuit Breakers	3.9	6.0	4.9	3.4	6.9	25.2	1.7	1.2	2.1	2.0	4.0	11.0
Outdoor Instrument Transformers	4.9	5.8	4.0	2.0	2.0	18.7	2.2	2.1	0.9	1.3	1.7	8.2
Structures & Buswork	13.5	5.4	1.6	0.8	0.5	21.7	-	-	4.6	4.6	4.6	13.7
Other AC Substation Equipment	1.3	2.9	2.3	3.9	1.1	11.6	4.8	6.7	3.5	2.1	1.4	18.7
Outdoor 33KV switchyards: Outdoor to Indoor Conversion	16.7	18.9	15.1	16.7	19.1	86.4	15.4	9.4	6.9	5.5	3.4	40.6

21 Source: Transpower's RCP3 Base Capex Proposal – Regulatory Template Expenditure Forecasts

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Information requirements for a base capex proposal



- We will issue an information request for a base capex proposal 22 months prior to the start of a regulatory period*
- The information request:
 - will be based on the minimum information requirements set out in the Chorus capex IM for a base capex proposal
 - will identify which capex sub-categories will require more or less information to enable application of the expenditure objective
 - can be satisfied by the information provided in the integrated fibre plan

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*Transitional arrangements apply to lime frames for information requirements for the 1st regulatory period.

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Integrated fibre plan



- Provides a holistic description of Chorus's forecast expenditure
- Is separated into component reports to support:
 - targeted reporting of the most relevant details
 - management of confidential information
- The component reports are:
 - An overview
 - Quality report
 - Governance report
 - Demand report
 - Investment report
 - Delivery report
 - Engagement plan

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Assurance requirements



- Independent verification:
 - The base capex proposal must be verified by an independent verifier
- External audit:
 - The base capex proposal must include a report by an external auditor
- Certification:
 - At least 2 directors of Chorus must provide certification in relation to the base capex proposal

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*These requirements do not include any transitional arrangements. These are discussed later in this presentation

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Questions



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Connection Capex



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Connection capex



Key features

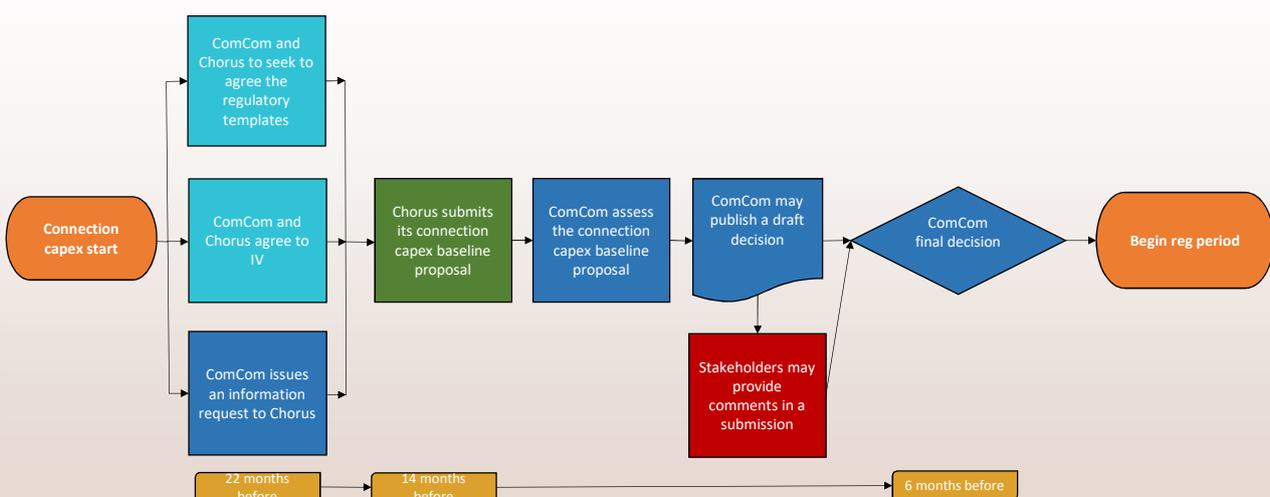
- Chorus will propose forecast capex allowance and Commission will assess against the expenditure objective
- Information requirements for a baseline connection capex proposal will be issued and agreed 8 months prior to the proposal submission date*
- Assurance requirements to ensure information provided is reliable:
 - Independent verification, audit and certification requirements
- Commission must consult on draft connection capex baseline allowance decisions
- Annual reporting of actuals against forecast amounts
- Variable capex amount will be determined at the end of the regulatory period

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*Transitional arrangements apply to time frames for information requirements for the 1st regulatory period.

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Baseline connection capex – process diagram

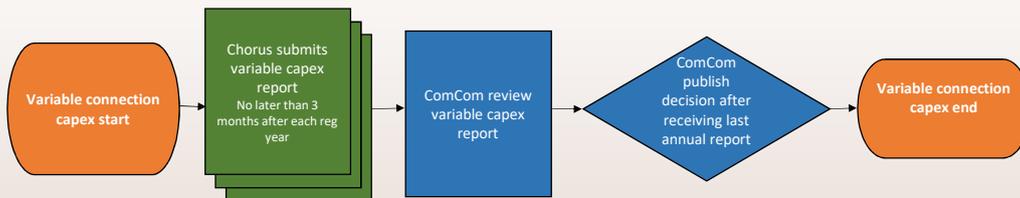


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*Note this diagram covers time frames from the 2nd regulatory period onwards. Transitional arrangements are discussed later in this presentation

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Variable connection capex – process diagram



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Connection capex components

Connection capex baseline component

- Based on forecast connection unit rates by connection type multiplied by the forecast baseline volume
- The draft IM doesn't specify the connection types. Chorus will propose these to the Commission and they will be agreed as part of regulatory templates
- Possible options for connection types include types differentiated by geography (e.g. UFB1, UFB2 ...), land use (Brownfield, greenfield, infill...), and/or premise type (e.g. SDU, MDU, right of way)

Connection capex variable component

- Based on the connection unit rates by connection type multiplied by the difference between actual and baseline volumes

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Connection capex – simplified worked example



Connection capex baseline proposal

For the example, assume there are only three connection types, with the following forecast connection unit rates:

- UFB1 Urban - \$1100 per premise
- Non-UFB Semi Rural - \$1600 per premise
- UFB2 Rural - \$1700 per premise

For the example, assume the forecast volumes by connection type are flat for each over the regulatory period, with a baseline forecast and actual reported volumes of:

Volumes	Urban	Semi Rural	Rural
Baseline forecast	70,000	40,000	30,000
Actuals	80,000	55,000	45,000

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Connection capex – simplified worked example continued



Baseline connection capex allowance

- Assuming the Commission assesses the information provided by Chorus supports the proposed connection unit rates, the approved connection baseline capex for the regulatory period would be:
- Approved connection capex baseline allowance = Urban (70,000 x \$1100) + Semi Rural (40,000 x \$1600) + Rural (30,000 x \$1700) = **\$192m**

Connection capex variable adjustment

- The connection capex variable allowance equals the difference between the actual number of premises connected and the volumes allowed for in the baseline multiplied by the connection unit rates in each year. For the example:
- The connection capex variable adjustment = Urban ((80,000 – 70,000) x \$1100) + Semi Rural ((55,000-40,000) x \$1600) + Rural ((45,000-30,000) x \$1700) = **\$60.5m**

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Information requirements



- Information requirements for a connection capex baseline proposal:
 - the connection types relevant to the forecast expenditure and a description of each
 - forecast initial connection unit rates by connection type, and
 - forecast connection volumes by connection type
- Additional information to support the evaluation of baseline connection capex will be gathered via:
 - Regulatory templates agreed prior to the submission of a proposal
 - An information request
- Chorus must provide a connection capex annual report for each regulatory year of a regulatory period

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Assurance requirements



- A connection capex baseline proposal must be accompanied by:
 - A report by an external auditor
 - An IV report
 - Certification by the CEO
- An annual connection capex report must be accompanied by:
 - Certification by the CEO
 - An audit report by an external auditor

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Questions



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Individual Capex



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Individual capex



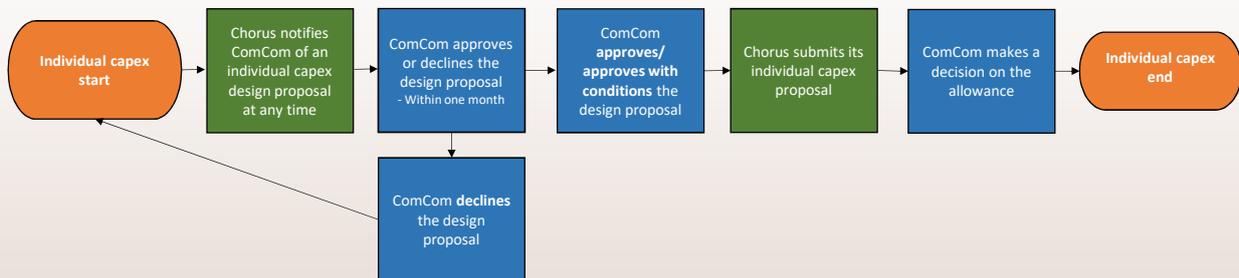
Key features

- Chorus may apply for capex allowances for individual projects/programmes and we will assess these against the expenditure objective
- Chorus can apply for an individual capex proposal at any time
- Individual capex proposals must meet eligibility requirements. The proposed expenditure must:
 - relate to one or more **base capex sub-categories**
 - relate to a project or programme where the forecast regulated FFLAS component amounts to **at least \$5 million**
 - be **additional to base capex**, and
 - have been unreasonable for Chorus to forecast as part of base capex proposal or the Commission determined it should be proposed as individual capex
- Staged application approach

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Individual capex - process diagram



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Information requirements and key parameters



Key parameters in an individual capex design proposal

- the need for investment
- the timing of the capital expenditure
- any relevant technology development plans
- identification of alternative options and any impact on quality
- a proposed consultation plan and explanation of the degree of consultation required
- Parameters of proposed independent verification

Minimum info requirements for an individual capex proposal

- enough information for the Commission to assess the individual capex proposal
- evidence that appropriate internal governance has been applied
- economic analysis
- any technical information and standards relied upon
- evidence of any consultation
- an explanation of the impact the expenditure will have on quality
- any expert reports or advice that contributed to the individual capex proposal

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Assurance requirements



- An individual capex proposal must be accompanied by:
 - an **independent verification** report commensurate with the proposal
 - **certification** by the CEO of Chorus
 - a **statement** from an **external auditor** that:
 - the individual capex proposal complies, in all material respects, with the agreed information requirements and key parameters in the **design proposal**, and
 - the proposed individual capex is additional to and not a substitute for the approved base capex allowance

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Questions



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Other requirements



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Consultation



Consultation provisions relating to Chorus

- requirements on Chorus to provide information relating to its engagement with its customers (**access seekers** and **end-users**)
- Capex evaluation will take into account the level of consultation undertaken by Chorus and evidenced in the proposal

Consultation provisions relating to the Commission

- Publish and consult on draft decisions or decisions relating to the relevant capex proposal or application
- After receiving a capex proposal, the Commission may:
 - seek the views of any person the Commission considers has expertise on a relevant matter
 - consider the confidentiality of any material when publishing consultation material

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Transitional arrangements



- We have included three transitional arrangements to apply to the **1st regulatory period** only
- Process and time frames for base capex proposal and baseline connection capex proposal **information requests** and **regulatory templates**:
 - the Commission and Chorus will agree to the form and content of the templates no later than 17 months prior to the start of the regulatory period
 - the Commission will issue an information request for a base capex proposal 16 months prior to the start of the regulatory period
- **Independent verification** requirements for a base capex proposal
 - An independent verification report will not be required for the first regulatory period

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Questions



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Chorus's presentation



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CHORUS

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Draft Capex IM

Commission has asked us to share context on our capex, and our perspective on timeframes, processes, and information requirements

- Chorus context
- RP1 capex
 - composition
 - uncertainties
 - price-quality
- Preparation process
- Information requirements

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CHORUS

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Chorus Context

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Transition

- > Demerger from Telecom eight years ago
- > Nearing end of UFB build programmes
- > Copper to fibre transition
- > Build, connect, extend, operate, evolve
- > Shifting from UFB to Building Blocks Model



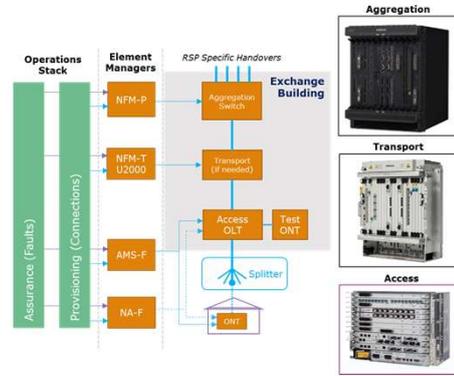
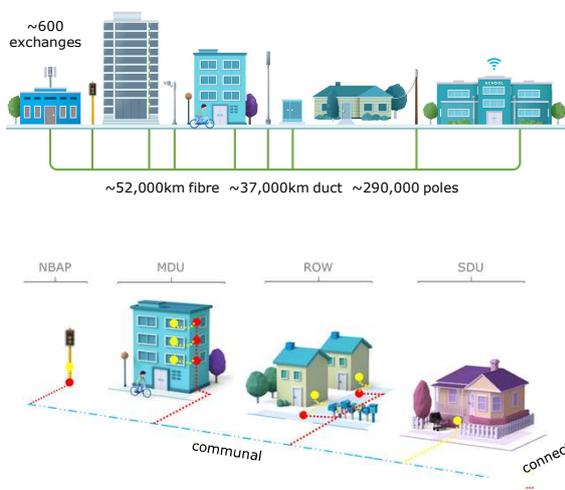
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CHORUS PRESENTATION – CAPEX IM WORKSHOP

CHORUS

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Our network infrastructure



RP1 capex



Tree map

Tree map provides context on RP1 capex programme.

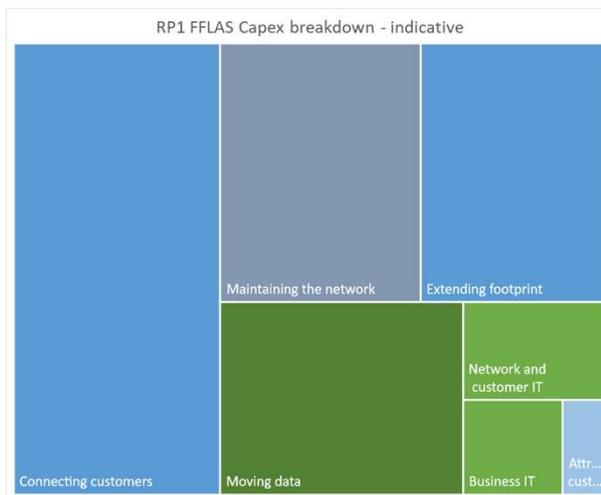
View is indicative only:

- FFLAS definition and cost allocation are working implementations
- expenditure subject to external verification, another planning round, updated forecasts, more engagement and consultation
- connection spend highly dependent on demand trends

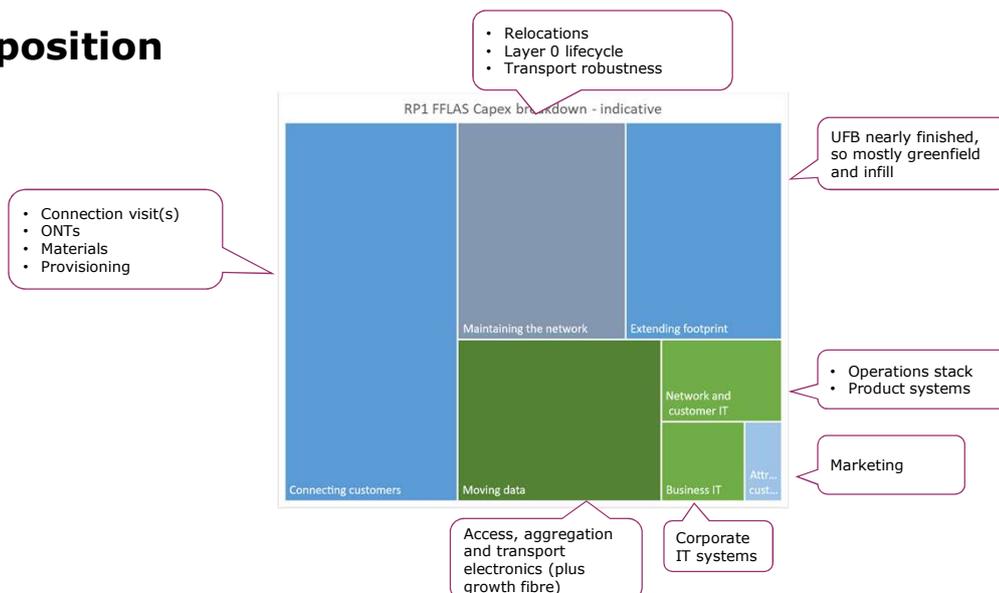
RP1 capex taken as 3 years from July 2022 – largely post-UFB period, and past peak connection activity. Profile transitioning towards post-build activities.

Testing ways to communicate – welcome feedback on tree map?

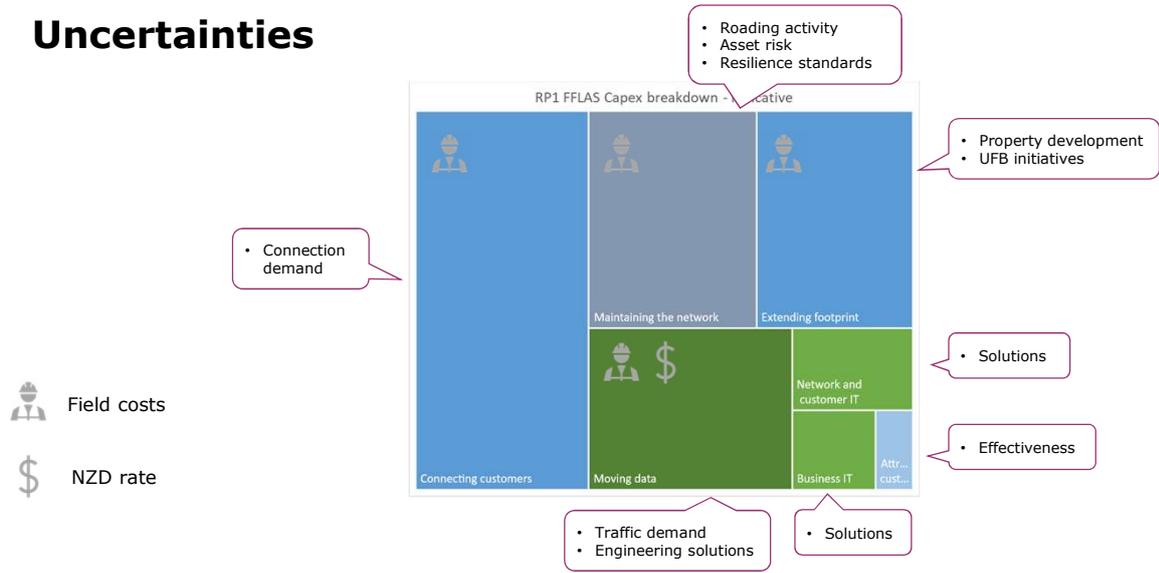
Following slides use this diagram to provide more context on RP1 capex.



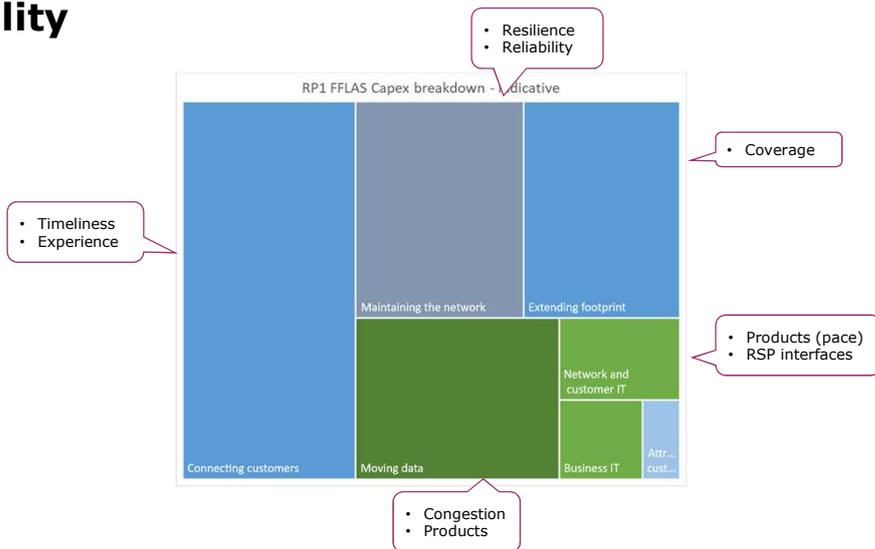
Composition



Uncertainties



Price-quality



Price-Quality Proposal development

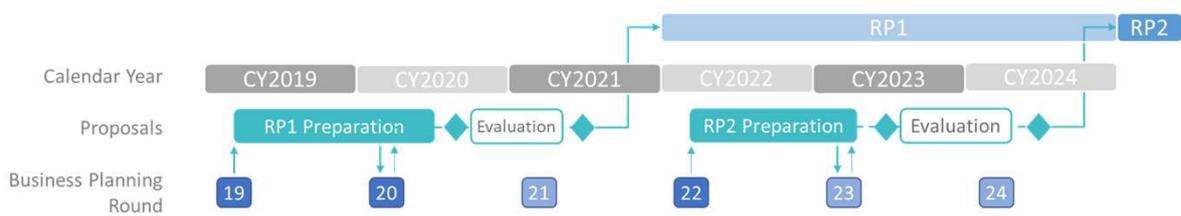


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Regulatory and Business planning cycles



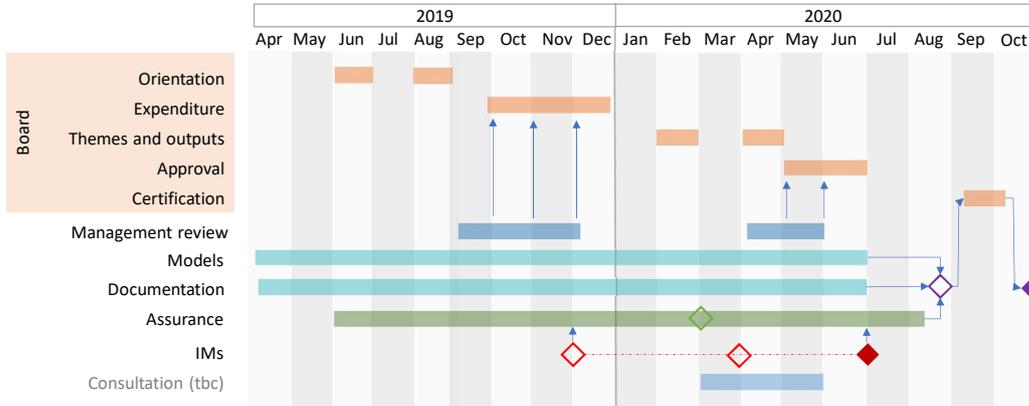
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CHORUS

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RP1 preparation (on a page)



Information requirements

```

public interface IButtonFactory {
    public IButton CreateButton();
}

public class WinButtonFactory : IButtonFactory {
    public IButton CreateButton() {
        return new WinButton();
    }
}

public class OSButtonFactory : IButtonFactory {
    public IButton CreateButton() {
        return new OSButton();
    }
}

public class WinButton : IButton {
    public void Paint() {
        System.out.println("WinButton");
    }
}

public class OSButton : IButton {
    public void Paint() {
        System.out.println("OSButton");
    }
}

public class Main {
    public static void Main() {
        IButtonFactory factory = new WinButtonFactory();
        IButton button = factory.CreateButton();
        button.Paint();

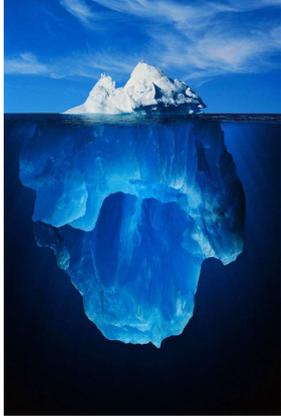
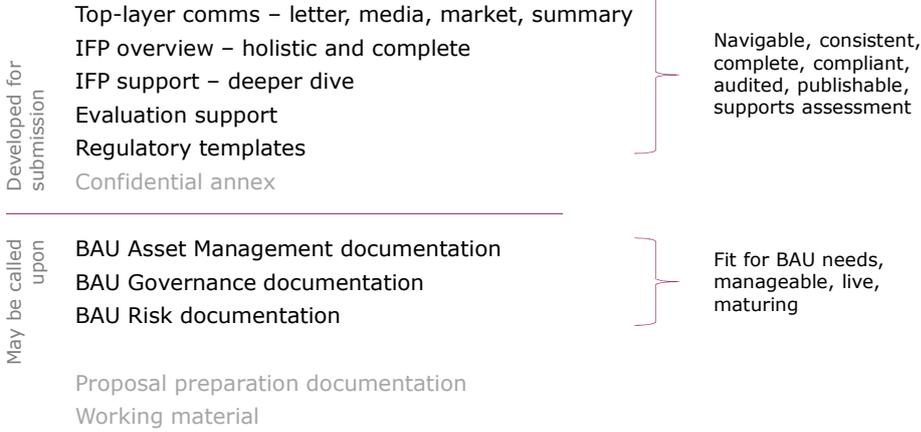
        factory = new OSButtonFactory();
        button = factory.CreateButton();
        button.Paint();
    }
}

// THIS IS JUST FOR THE BUILT-IN FACTORY
public class Main {
    public static void Main() {
        IButtonFactory factory = new WinButtonFactory();
        IButton button = factory.CreateButton();
        button.Paint();

        factory = new OSButtonFactory();
        button = factory.CreateButton();
        button.Paint();
    }
}

public static string appearance = "WinButton";
public static string appearanceArray = "WinButton";
public static int randomNumber = 1;
return appearance;
    
```

Information requirements



Clarification questions

Next steps