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#### STOCK EXCHANGE ANNOUNCEMENT

25 March 2019

#### **Chorus investor roadshow**

The attached presentation has been prepared for our upcoming US roadshow.

#### ENDS

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# **Introducing Chorus**

New Zealand's largest fixed line communications infrastructure business



25 March 2019

## **An overview of Chorus**

#### > New Zealand's largest fixed line communications infrastructure business

- established in Dec 2011 following demerger from Telecom NZ
- Iisted on NZX and ASX:CNU
- ADR ticker:CHRYY
- ~NZ\$2.5 billion market capitalisation (at 20 March 2019)
- S&P "BBB" stable; Moody's "Baa2" stable

#### > A nationwide copper and growing fibre (FTTH) network

- ~1.5m connections, including ~1.2m broadband
- 70% of way through 11-year fibre to the premises rollout
- ~900 employees supported by ~4,000 contractors/subcontractors
- 51% fibre uptake, well ahead of expectations
- streaming video services driving significant data consumption

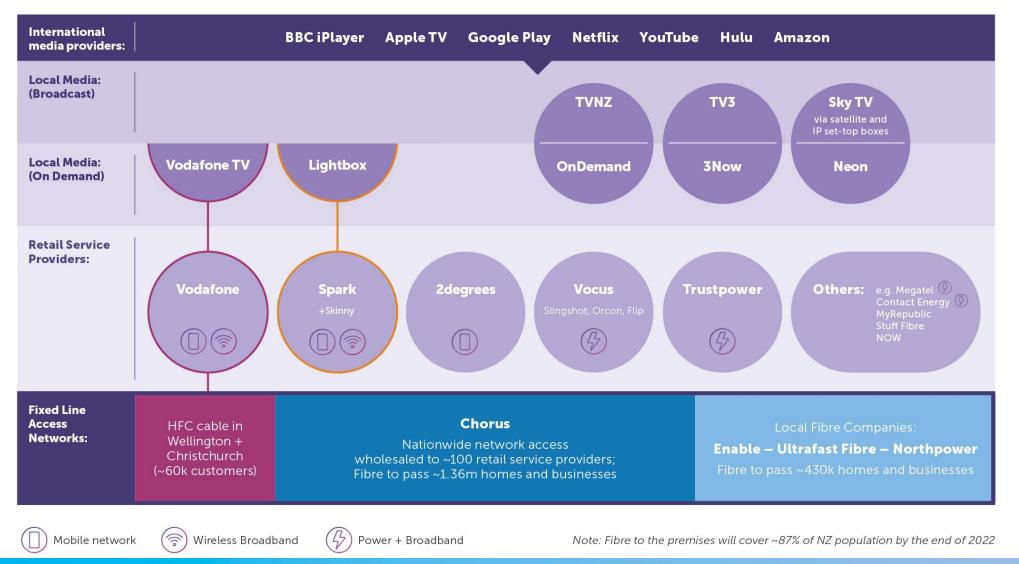


# Dow Jones Sustainability Indices

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## An open access wholesale network



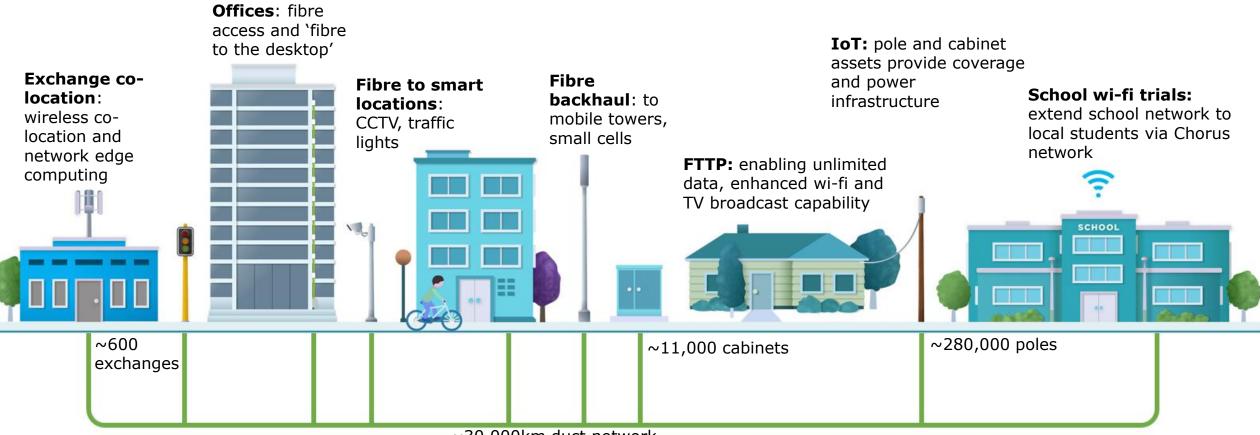
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**INVESTOR ROADSHOW** 

# **Our network infrastructure**

Copper VDSL to ~80% of lines; Fibre to pass ~1.36m end customers by 2023



~30,000km duct network



**INVESTOR ROADSHOW** 

## New Zealand is taking fibre further

> Ultra-fast broadband (UFB): a Government objective

- original objective (UFB1): fibre to premises covering 75% of population by 2020
- subsequent agreements (UFB2 and UFB2+) extended coverage goal to 87% of population by the end of 2022

> Chorus was awarded ~75% of the fibre rollout

- requirement that Chorus split from Telecom NZ to participate: demerger in December 2011
- Crown partnerships with four fibre companies: Chorus, Enable, Northpower, Ultrafast Fibre (WEL Networks)



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## **Crown financing**

\$800m received at 31 December from Crown Infrastructure Partners (CIP)

> up to \$1.33 billion available by 2023 (57:43 equity/debt)

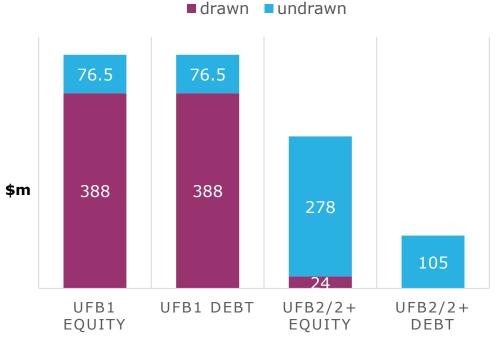
#### CIP equity securities

- unique class of security with no right to vote at shareholder meetings, but entitle the holder to a right to repayment preference on liquidation
- an increasing portion of the securities will attract dividend payments from 30 June 2025 onwards
- the dividend rate is based on 180 day NZ bank bill rate, plus 6% p.a. margin
- may be redeemed at any time by cash payment of total issue price or the issue of Chorus shares (at a 5% discount to the 20-day VWAP for Chorus shares)

#### CIP debt securities

- unsecured, non-interest bearing and carry no voting rights at shareholder meetings
- Chorus is required to redeem the securities in tranches from 30 June 2025 to 2036 by repaying the issue price to the holder

#### AS AT 31 DECEMBER





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# FY19 is peak communal build year

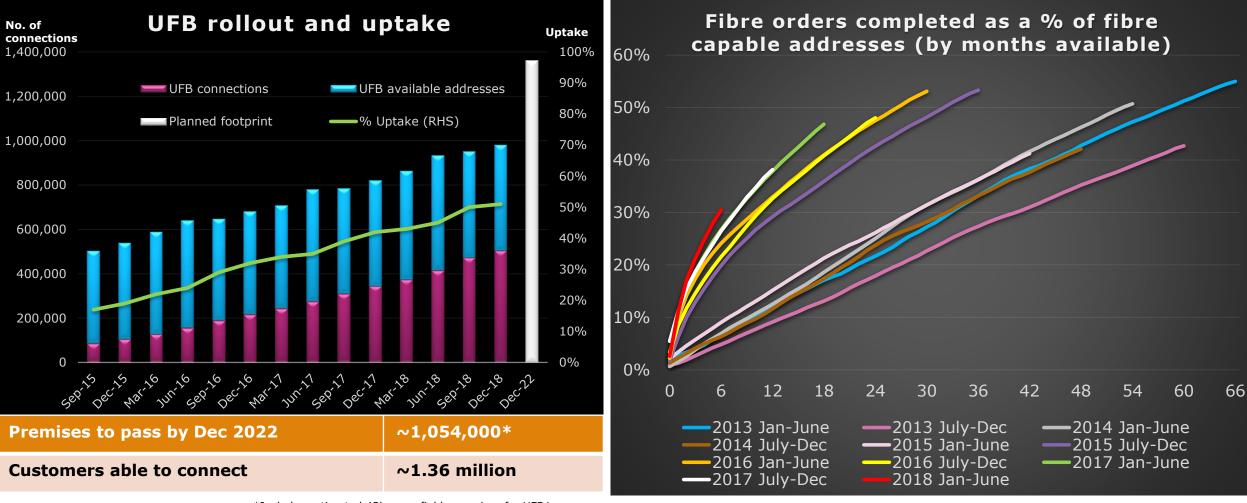
- ~120,000 brownfields premises to be passed across UFB1 and UFB2
- expect to claim another ~18k UFB1 greenfields premises already passed in prior years

Programme guidance		Notes	No. of	Į	UFB rollout - indicative				
UFB1 communal	\$1.75 - \$1.8 billion	<u>Tracking towards the top end</u> of guidance and excludes growth (e.g. additional splitter investment)	premises 160,000						
UFB1 cost to connect (CPPC)	\$1,050 - \$1,250	For a standard residential connection, including layer 2 and service desk costs, and in 2011 dollars. <u>Tracking towards the top half</u> of the range.	120,000						
UFB2* communal	\$505 - \$565 million	Combined guidance range for UFB2 and 2+	60,000 — 40,000 —						
UFB2* cost to connect	\$1,650 - \$1,850	In 2017 dollars and including layer 2, backbone costs for MDUs and rights of way with 10 or fewer premises and service desk costs	20,000 — 0 —	FY18	FY19	FY20	FY21	FY22	FY23
* combined UFB2 a	nd 2+ rollout plans			. 🔳 ÜF	B1 brownfields	UFB2/2+	UFB1 g	reenfields	

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# UFB rollout 70% complete; 51% uptake

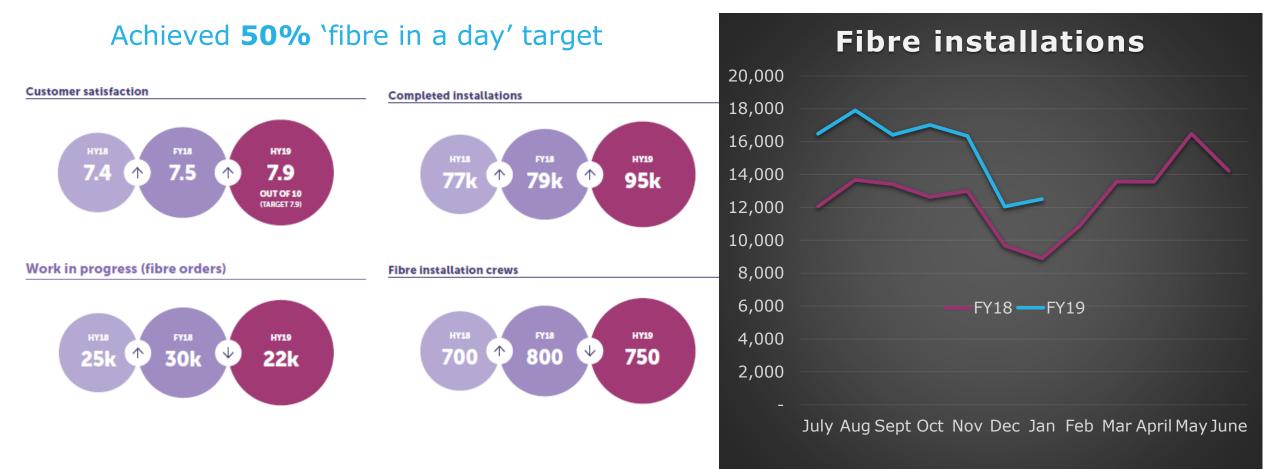


\*Includes estimated 43k greenfields premises for UFB1



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## **Record fibre demand and customer satisfaction**





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# **Transition to a regulated utility**



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## **Legislation passed in November 2018**

> New regulatory framework to be implemented to replace UFB contractual framework (UFB1 ends Dec 2019)

#### 87% of population where fibre will be available by end of 2022

#### Fibre access network

- Regulated asset base (RAB) with revenue cap to be determined by Commerce Commission
- Two fibre anchor products (voice only + entry level broadband) at 2019 prices + CPI
- 3 years after new regime commences, the Commission can review the revenue cap model and anchor products, subject to specified conditions and statutory criteria

#### Where fibre is available:

- Copper network to be deregulated and Telecommunications Service Obligation (TSO) removed
- Chorus can withdraw copper service, subject to minimum consumer protection requirements

Remaining 13% of population

#### Where fibre is not available:

- Copper remains regulated and TSO applies
- Copper pricing capped at 2019 levels
  with CPI adjustments
- Commission required to review pricing framework no later than 2025

Note: existing copper regulatory framework uses benchmarking and Total Service Long Run Incremental Cost, with pricing last set in late 2015 for a 5-year period

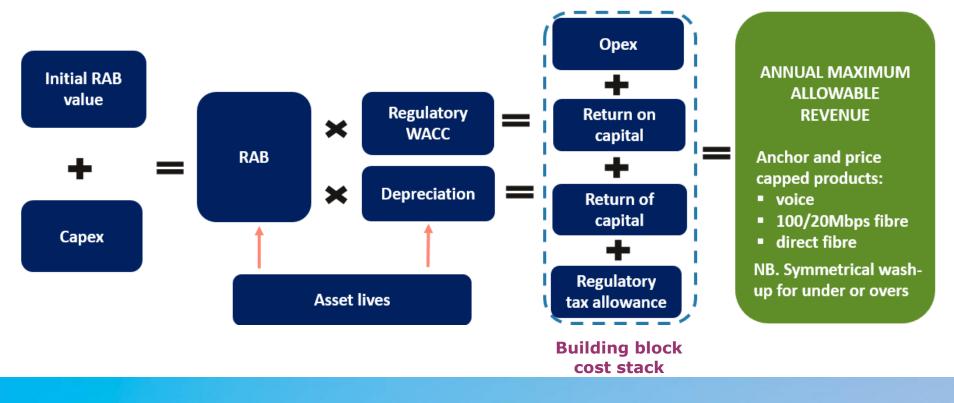
Regulated copper pricing	Line only (monthly)	With broadband (monthly)
From mid Dec 2018	\$31.19	\$42.02
From mid Dec 2019	\$31.68	\$42.35

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## **Regulated Asset Base implementation**

> Commerce Commission will determine the starting value of the RAB, regulatory WACC, cost allocations, expenditure allowances and maximum allowable revenue





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# **Implementation of new fibre framework**

> Commerce Commission to complete process by 1 January 2022

Input methodologies: emerging views paper due in May; draft decision in November

#### Transition period: 1 December 2019 to January 2022

Chorus can charge <u>up to</u> the product price caps agreed with Crown Infrastructure Partners. Price caps 'frozen' until 2022, with annual CPI adjustment in July

- voice only: \$25
- 30/10Mbps: \$42.50
- 100/20Mbps: \$46
- 200/20Mbps: \$55
- 1Gbps: \$65
- Direct Fibre Access Service: \$355

Unbundled fibre (commercial price) to be available in UFB1 areas from January 2020.

#### First regulatory period: 1 January 2022 to January 2025

Start of first regulatory period under new RAB framework

Price caps and CPI adjustments continue for voice service, broadband service (product to be confirmed) and Direct Fibre Access Service

Price caps are removed from other products

Unbundled fibre to be available in UFB2/2+ areas from January 2026

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# **Key implementation parameters**

Parameters	Chorus view
Asset valuation	RAB to include all assets supporting fibre access services, including fibre in LFC areas. Valuation method defined by Act as actual cost incurred for post 2011 assets; book value for pre-existing. The Commission has acknowledged real financial capital maintenance as key principle underpinning the building block model.
Depreciation	Act requires straight line depreciation for initial RAB valuation.
Allocation of shared costs between fibre access and other services	No method prescribed in Act. The Commission will need to determine allocation for initial RAB valuation and then principles for cost allocation after the implementation date. Precedent is accounting based cost allocation, but more complexity for telco networks given high degree of asset sharing and rapidly growing fibre uptake.
Unrecovered losses	Act prescribes adding an asset to RAB to enable recovery of financial losses on investment prior to implementation. The Commission has proposed using a building block methodology.
Crown financing	Act requires actual cost of Crown financing to be considered in valuing the financial losses asset, but no method prescribed. Commission should recognise CIP financing was not costless given contractual terms and financing structure.
WACC	WACC to be set for loss calculation period <u>and</u> for post implementation period. Nature of Chorus/fibre business and international comparators support WACC uplift.



# **Proposed RAB framework similar to NZ electricity sector**

#### Growing number of wholesale communication network comparators

Country	Company	Business type	Market cap	EV/EBITDA	Net Debt /EBITDA	Credit rating	WACC
New Zealand	Vector	Electricity distribution network	NZ\$3.5b	10.9x <sup>2</sup>	4.37x	BBB - S&P Baa1 - Moody's	In April 2018 the NZ Commerce Commission determined a FY19 WACC of 5.19% (post tax, 67 <sup>th</sup> percentile) for electricity distribution businesses
New Zealand	Chorus	Wholesale communications network (copper + fibre)	NZ\$2.5b	7.1x <sup>2</sup>	3.82x	BBB – S&P Baa2 – Moody's <sup>1</sup>	Fibre WACC yet to be determined under new regulatory framework. In Dec 2015, the NZ Commerce Commission determined WACC of 5.56% (post tax, 50 <sup>th</sup> percentile) for Chorus' legacy network
Singapore	Netlink NBN Trust	Wholesale communications network (fibre only)	NZ\$3.4b	15x <sup>2</sup>	2.2x <sup>2</sup>	Not rated	In 2017, IMDA - the Singapore regulator - determined WACC of 7% (pre-tax) under a RAB framework for the Jan 2018 to Dec 2022 period
Czech Republic	CETIN	Wholesale communications network (fixed + mobile)	Not listed			BBB – Fitch Baa2 – Moody's	In 2015, CTU - the Czech regulator - determined WACC (post tax) of 9.07% for NGA network and 6.39% for legacy network <sup>3</sup>

Source: Financial metrics based on Bloomberg data as at 20 March 2019

1. Moody's Investor Services has noted Chorus' transition to a regulated utility model could support a higher leverage profile within the Baa2 credit rating. 2. Based on trailing 12 month financials.

3. In 2016, a European Commission report recommended higher WACCs be applied to Next Generation Access networks to reflect different characteristics from legacy networks, including systematic demand risks, intensive capital leverage and long-term pay-offs.



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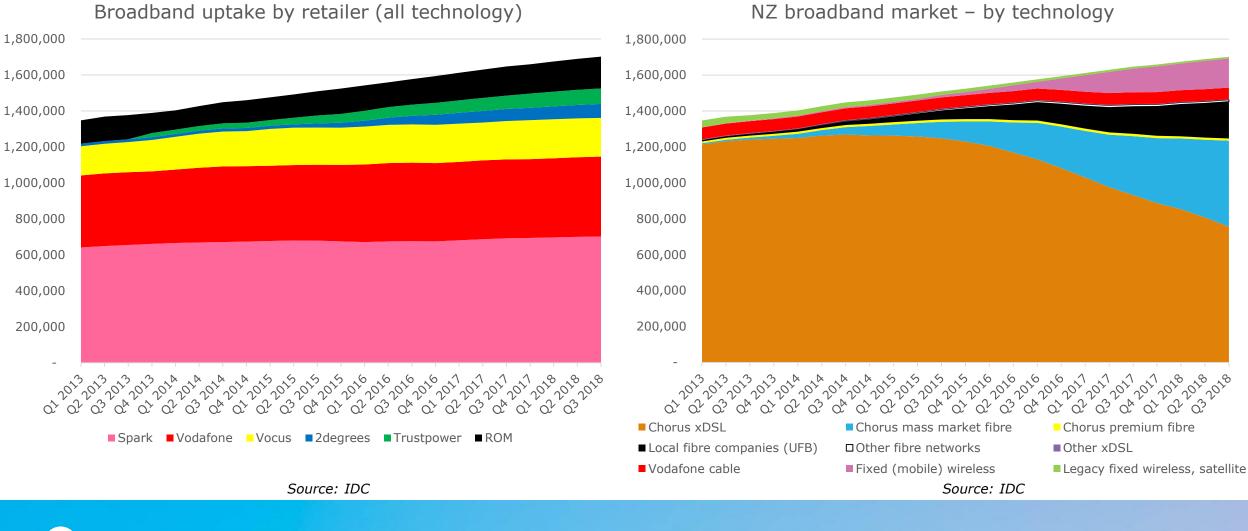
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# **Broadband: the 4th utility**



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# NZ market: population and premises growth

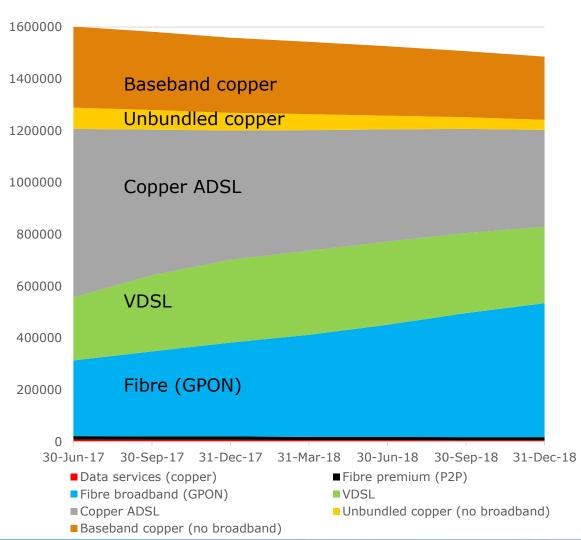


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# **Chorus connection trends**

	31 Dec 2017	31 March 2018	30 June 2018	30 Sept 2018	31 Dec 2018
Unbundled copper	68,000	62,000	53,000	45,000	39,000
Baseband copper (no broadband)	290,000	279,000	268,000	255,000	244,000
Fibre broadband (GPON)	362,000	394,000	433,000	479,000	517,000
VDSL (includes naked)	320,000	325,000	321,000	309,000	295,000
Copper ADSL (includes naked)	499,000	465,000	433,000	402,000	374,000
Data services (copper)	7,000	6,000	6,000	5,000	5,000
Fibre premium	13,000	12,000	12,000	12,000	12,000
Total connections	1,559,000	1,543,000	1,526,000	1,507,000	1,486,000



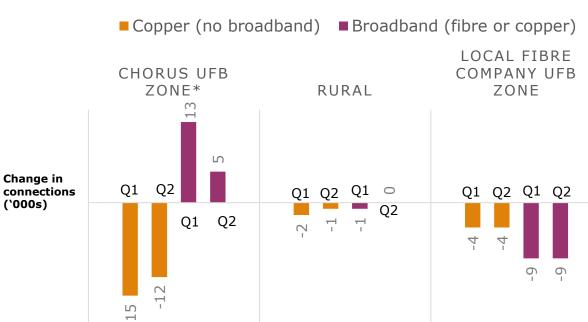
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# **Connection movements by Zone**

- Total fixed line connections decreased by 40k to 1,486,000 (H1 FY18:-43k)
  - copper lines with no broadband decreased by 38k, mostly in Chorus UFB areas
  - 1k reduction in data services over copper
- Total broadband connections decreased by 1k to 1,186,000 (H1 FY18:-5k)
  - strong growth in Chorus UFB areas, offsetting reductions in LFC areas
  - VDSL and vectoring upgrades helping limit rural wireless effect
  - Note: disconnections typically higher in Q2

#### INDICATIVE CONNECTION CHANGES BY ZONE



Total connections at 31 Dec**	1,099,000	202,000	168,000
Broadband connections	922,000	153,000	111,000
Copper (no broadband) connections	177,000	49,000	57,000

\* Includes planned UFB1, 2 and 2+ coverage

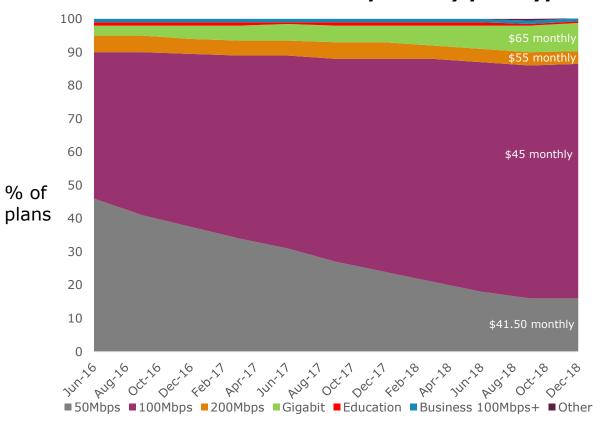
\*\*Excludes 17k fibre premium and data services (copper) connections

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## Fibre connections pass 500k

Total mass market fibre uptake by plan type



- > **84,000** mass market fibre connections added in H1
  - 71% of mass market fibre connections on 100Mbps
  - 44,000 connections on gigabit plans (FY18: 30,000)
  - glide path announced for 1Gbps pricing:
    - Residential: \$60 from July 2019; \$56 from July 2020
    - Business: \$75 currently; \$70 from July 2019; \$66 from July 2020

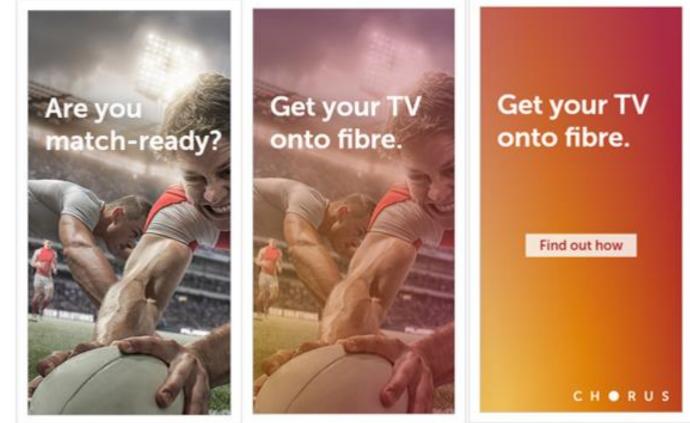
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## Stream big

#### Shift to online delivery steps up

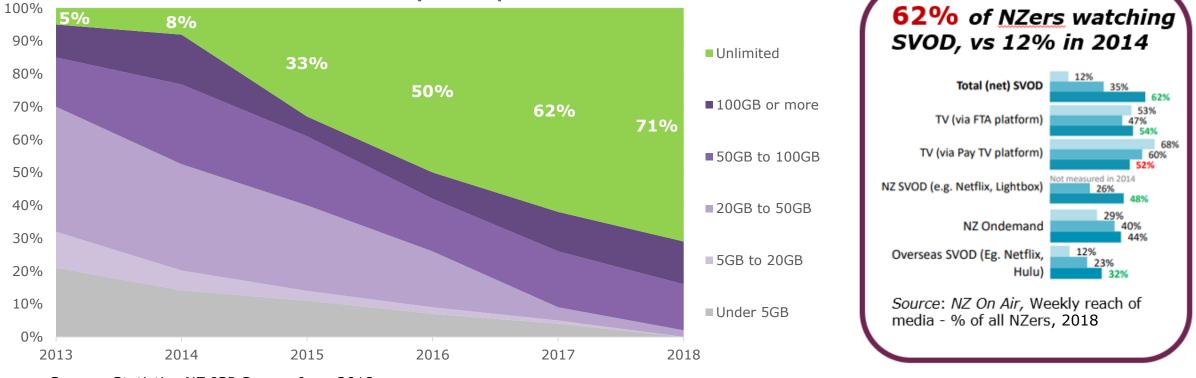
- new Freeview smartvu device streams channels without need for TV aerial or satellite dish
- Vodafone leveraging Sky Sport via their Vodafone TV platform
- Spark launching sports streaming service





## Streaming is driving shift to unlimited data plans

### 71% of NZ broadband connections have no data cap



Share of connections by data cap

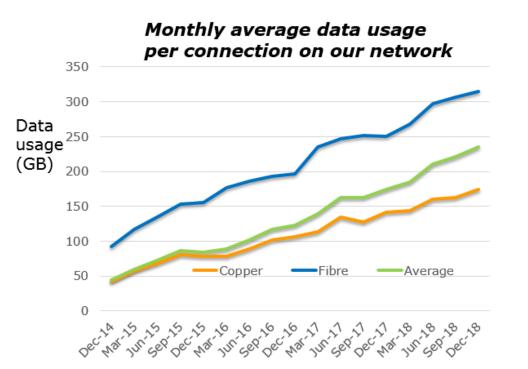
## Source: Statistics NZ ISP Survey June 2018

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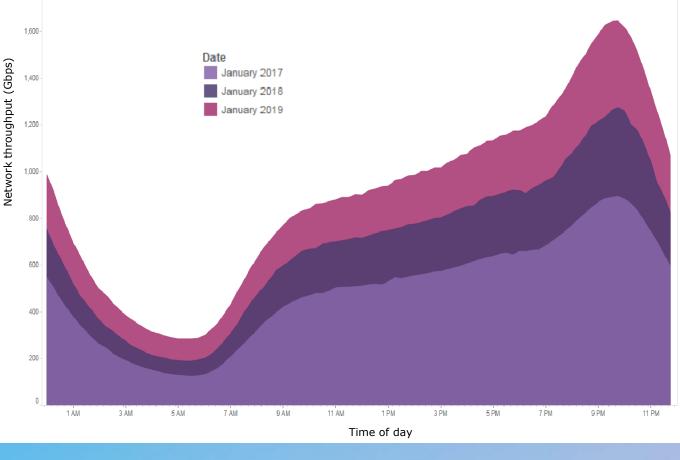
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# Data demand isn't slowing

- Monthly average data usage per connection on our network grew to 235GB from 210GB (June 2018)
  - **315GB** on fibre (June:297GB)
  - **174GB** on copper (June:160GB)



> Traffic at peak time has almost doubled since 2017

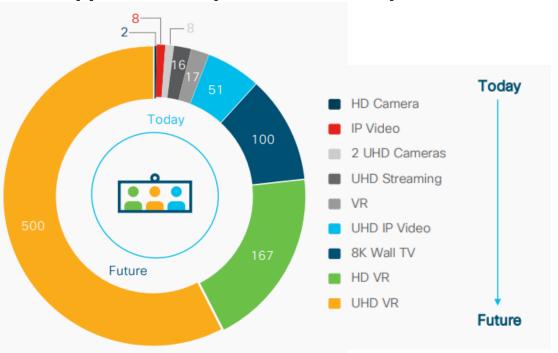




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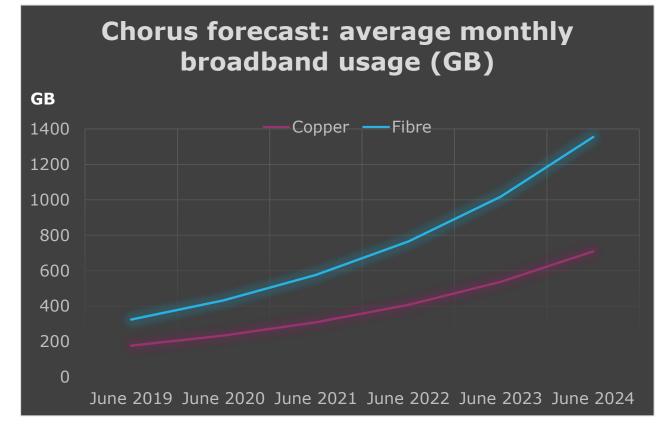
# 1,000 Gigabytes per month by 2023...

### Video content and 4K, 8K to drive usage



**Application requirements in Mbps** 

Source: Cisco VNI, Forecast and Trends, 2017-2022

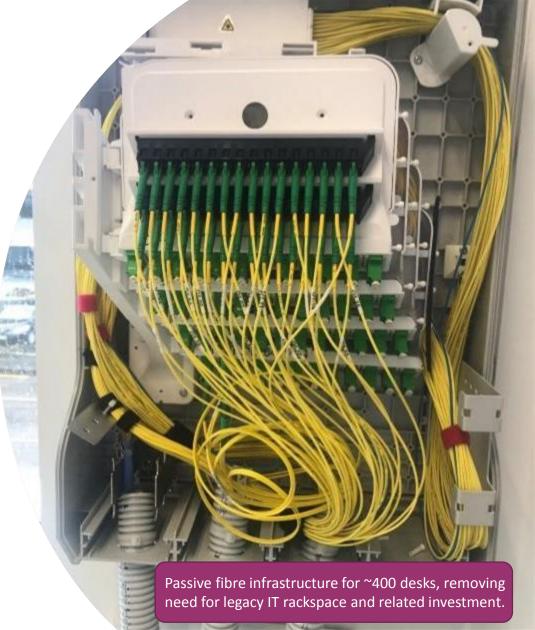




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## Innovation

- trialling 10 Gigabit PON and wireless PON
- infrastructure re-use trialled for **IoT** delivery
- 'fibre to the desktop' concept trials in two schools and two new office premises
- school trials proving wi-fi potential to bridge digital divide
- network edge computing: three exchange sites under development for Q3 FY19
- 4K TV trial: clear medium term potential for broadcasting role



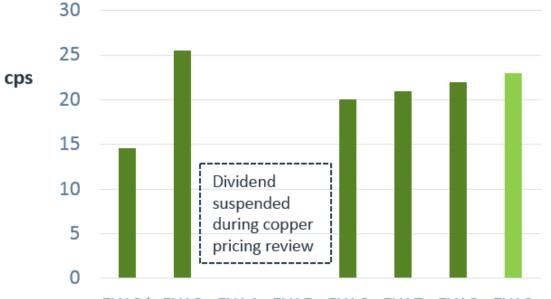
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# Capital and financial management



## **Capital management**

#### **Chorus dividend profile**



#### FY12\* FY13 FY14 FY15 FY16 FY17 FY18 FY19

FY12\*: prorated for the post demerger period of seven months

During the UFB build programme to 2020, the Board expects to be able to provide shareholders with modest dividend growth from a base of 20cps paid for FY16, subject to no material adverse changes in circumstances or outlook.

- The Chorus Board considers that a 'BBB' credit rating or equivalent credit rating is appropriate for a company such as Chorus. It intends to maintain capital management and financial policies consistent with these credit ratings.
- > FY19 dividend guidance of 23 cps, subject to no material adverse changes in circumstances or outlook.
- > A Dividend Reinvestment Plan has been available to NZ and Australian resident shareholders with a 3% discount to prevailing market price

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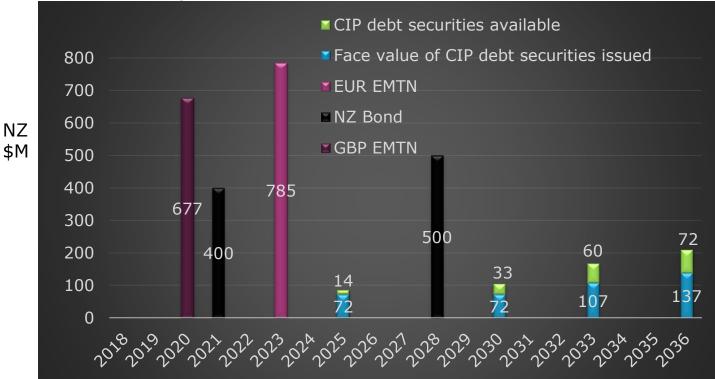
## Debt

	As at 31 Dec 2018 \$m
Borrowings	2,362
+ PV of CIP debt securities (senior)	137
+ Net leases payable	<u>238</u>
Sub total	2,737
- Cash	(281)
Total net debt	2,456
Net debt/EBITDA	3.82 times

- Financial covenants require senior net debt/EBITDA ratio to be no greater than 4.75 times
- S&P rating down driver adjusted debt/EBITDA greater than 4x for a sustained period

- > At 31 Dec, debt of \$2,362m comprised:
  - Long term bank facilities of \$350m undrawn;
  - NZ bond: \$400m and \$500m
  - Euro Medium Term Notes \$1,462m (NZ\$ equivalent at hedged rates)

### Term debt profile



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## **FY19 guidance summary**

FY19 EBITDA	\$625 – 645m
FY19 Gross capex	\$820 – \$860m
Fibre capex	\$685m - \$715m
Fibre connections & layer 2 capex	\$310m - \$340m (based on mass market 175,000-195,000 fibre connections, and 19,000 backbone builds and including service desk costs)
Copper capex	\$75m - \$95m
Common capex	\$55m - \$70m
UFB1 Cost Per Premises Passed (CPPP)	\$1,500 - \$1,600
UFB2/2+ communal capex	<b>\$90m - \$110m</b> (based on estimated starting premises of 45,000 to 55,000 and premises handed over of 25,000 to 35,000)
UFB1 Cost Per Premises Connected (CPPC)	\$1,000 - \$1,150 (excluding layer 2 and including standard installations and some non-standard single dwellings and service desk costs)



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## **Capex: common and copper**

Common capex	H1 FY19 \$m	H2 FY18 \$m	H1 FY18 \$m
Information technology	17	18	17
Building & engineering services	7	11	9
Other	1	3	0
Subtotal	25	32	26

Copper capex	H1 FY19 \$m	H2 FY18 \$m	H1 FY18 \$m
Network sustain	19	29	16
Copper connections	1	1	1
Copper layer 2	6	18	16
Product	1	2	2
Customer retention costs	12	18	29
Subtotal	39	68	64

- > ongoing investment in poles, proactive maintenance and roadworks projects
- reduced spend following end of ~\$20m VDSL vectoring rollout in FY18
- reducing as incentives are more targeted and RSP focus shifts from VDSL to fibre uptake



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## **Capex: Fibre**

- Cost per UFB1 premises passed (CPPP): ~\$1,662 vs \$1,500 \$1,600 guidance
- 38,000 premises passed (H1 FY18 32,000) included 13,000 UFB 2/2+ premises
- ~80,000 brownfields premises to be completed in H2 FY19

Fibre capex	H1 FY19 \$m	H2 FY18 \$m	H1 FY18 \$m
UFB communal	119	118	113
Fibre connections & layer 2	161	149	145
Fibre products & systems	7	7	10
Other fibre connections & growth	36	37	28
Customer retention costs	8	8	5
Subtotal	331	319	301

- > UFB1 rollout \$78m; UFB2/2+ rollout \$41m
- > 95,000 new installations in H1 FY19 (H1 FY18: 77,000)
- > pole replacement programme and growing housing demand
- > targeted RSP campaigns to drive fibre uptake and win back off-net connections

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# **Capex: Fibre connections & layer 2**

#### Connections capex of **\$161m**

- Cost per UFB1 premises connected (CPPC): \$1,038\* vs \$1,000 \$1,150 guidance
  \* excludes layer 2 and includes standard installations, some non-standard single dwellings and service desk costs
- 95,000 single dwelling unit and apartment connections completed (includes 5,000 UFB2)
- Layer 2 spend reducing as UFB1 rollout comes to an end; ongoing spend for UFB2/2+, growth and bandwidth demand

Fibre connections & layer 2 capex	H1 FY19	H2 FY18	H1 FY18
Layer 2 (long run programme average of \$100 per connection)	\$9m	\$16m	\$16m
Premium business fibre connections	\$4m	\$5m	\$6m
	600 connections	600 connections	800 connections
Single dwelling units and apartments connections	\$100m	\$79m	\$84m
	95k connections	79k connections	77k connections
Backbone build: multi-dwelling units and rights of way	\$48m	\$49m	\$39m
* Estimated 55-60% requiring backbone build now completed	9.5k completed	7.3k completed	5.8k completed
TOTAL SPEND	\$161m	\$149m	\$145m



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## **Income statement**

	H1 FY19 \$m	H2 FY18 \$m	H1 FY18 \$m		
Operating revenue	489	491	499	> total connections decreasing	
Operating expenses	(171)	(167)	(170)		
Earnings before interest, tax, depreciation and amortisation (EBITDA)	318	324	329		
Depreciation and amortisation	<u>(196)</u>	<u>(195)</u>	<u>(192)</u>	> increasing as a result of long life assets	
Earnings before interest and income tax	122	129	137		
Net interest expense	<u>(79)</u>	<u>(74)</u>	<u>(70)</u>	> NZ\$500 million bond issued in December, Crown	
Net earnings before income tax	43	55	67	funding notional interest increasing	
Income tax expense	<u>(13)</u>	<u>(17)</u>	<u>(20)</u>		
Net earnings for the period	30	38	47		



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## Revenue

	H1 FY19 \$m	H2 FY18 \$m	H1 FY18 \$m
Fibre broadband (GPON)	136	108	90
Fibre premium (P2P)	37	38	40
Copper based voice	56	64	69
Copper based broadband	181	202	219
Data services copper	10	13	14
Field Services	39	35	35
Value added network services	16	16	17
Infrastructure	12	11	12
Other	2	4	3
Total	489	491	499

- > revenue growing as fibre uptake increases
- > some churn to lower input fibre services or other networks

copper revenues declining as customers migrate to fibre or competing fibre/wireless networks. Annual increase in regulated copper line and broadband pricing in mid December.

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> increase in chargeable network relocation and subdivision activity

## **Expenses**

	H1 FY19 \$m	H2 FY18 \$m	H1 FY18 \$m	
Labour	37	34	39	>
Provisioning	3	2	4	
Network maintenance	38	44	43	>
Other network costs	18	19	15	>
IT	26	27	27	
Rents, rates and property maintenance	13	13	11	>
Regulatory levies	8	6	7	
Electricity	9	7	8	
Consultants	4	2	3	
Insurance	2	2	1	
Other	13	11	12	
Total	171	167	170	

- 6% reduction in staff numbers from H1 FY18; offset partially by CPI increases
- > fault volumes reducing overall, helped by fewer extreme weather events and retailers using API tools to reduce unnecessary truck rolls

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- > increase in third party requests for network relocation activity
- > rates increasing as fibre network expands



## **Our focus**

- connecting more customers to fibre, while continuing to lift satisfaction levels
- growing broadband connections and enhancing our product portfolio
- continuing to shape our business for a fibre future

To achieve our objective to return to modest EBITDA growth in FY20, subject to no material changes in expected regulatory environment or competitive outlook

## Dow Jones Sustainability Indices

In Collaboration with RobecoSAM 👀

WE'RE FOCUSSED ON CUSTOMER Transform customer experience

DIGITAL

Nothing happens

if it's not digital

#### PEOPLE

We are committed to enabling our people

#### OPTIMISATION

We improve by getting better at what we do

#### INNOVATION

New revenue opportunities



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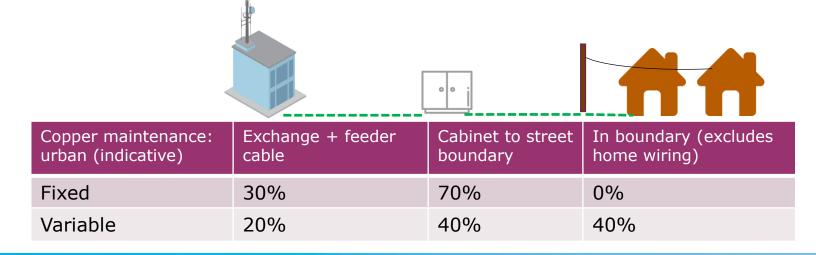
# Appendices

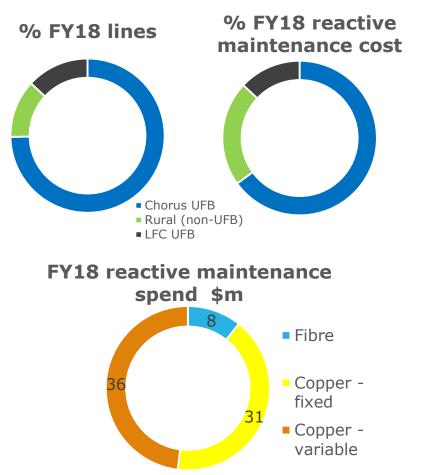


# **Appendix A: Understanding network maintenance**

### Fibre uptake initially reduces variable copper costs only

- Rural areas are disproportionately more expensive to maintain than urban areas
- Copper costs don't reduce in proportion to the number of connections there is a significant fixed element
- Fibre share of maintenance will grow, but at a lesser rate than copper because variable fault rate is lower on fibre (although costlier to fix)
- In the long run, we think there is around an annual \$10m saving from full copper to fibre migration in Chorus UFB areas





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# Appendix B: copper deregulated in fibre areas from January 2020

#### Fibre uptake is above 71% in 10 exchange areas

Exchange area (>1,000 connections)	Region	Fibre penetration: % of total Chorus connections	Fibre penetration: % of Chorus broadband connections
Whitby	Wellington	82%	83%
Corstorphine	Dunedin	74%	78%
Lynmore	Rotorua	73%	78%
Ngongotaha	Rotorua	73%	77%
Halfway Bush	Dunedin	73%	79%
North East Valley	Dunedin	72%	76%
Kelvin Grove	Palmerston North	71%	79%
Browns Bay	Auckland	71%	76%
Belmont	Wellington	71%	74%
Gleniti	Timaru	71%	77%

 within our UFB1 areas, there are ~350 nodes (approx. 200 customers) with fewer than 10 copper connections remaining

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