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Submission for Chorus in response to

Draft Pricing Review Determinations for Chorus' Unbundled Copper Local Loop and Unbundled Bitstream Access Services (2 July 2015)

Chorus

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Summary

- The Commission has acknowledged that there are New Zealand specific factors that drive costs in New Zealand. However, some of those unique factors have been ignored in the Commission's modelling.
- The Commission should use the best available evidence of the costs and conditions in New Zealand.
- With UFB and RBI, the Commission has real world information about the efficient cost of rolling out a nationwide network in New Zealand today – these are the same costs a hypothetical operator would face.
- Because Chorus competitively tenders transactional work with service companies, the Commission has efficient cost information for transactions on the copper network in New Zealand today. There is no reason to benchmark against other countries that bear no resemblance to New Zealand.
- Choosing the lowest cost point that can be achieved in a particular area and assuming it can be achieved nationwide ignores the geographic differences across New Zealand.
- Regulatory decisions should not be dependent on the timing of the decision.
- If the Commission had done the TSLRIC modelling before UFB was committed, the price would be higher. If the Commission had completed its decision in December, the price would be higher. Taking an inconsistent approach over time discourages future investment.
- The Commission has acknowledged that the initial benchmarked price was wrong and had a distortionary effect. The Commission argued in front of the Court of Appeal that an initial benchmarked price should be substituted with the final price, and the Court agreed. It would be consistent with past precedent to substitute the final price.

EXECUTIVE SUMMARY

The Commission has accepted that there are New Zealand specific factors, such as end-user dispersion and New Zealand's unique geography, that mean internationally benchmarked prices were too low. Setting a TSLRIC price in a timely manner using the best available evidence and reflecting the reality of building a network in New Zealand is critical for the industry and end-users.

The Government and industry acknowledge that enabling economic and social progress through faster and better broadband investment and innovation, including through the ultra fast broadband (**UFB**) and rural broadband initiatives (**RBI**), is a matter of national importance. Providing improved infrastructure and services on an open basis to all retail service providers enables innovation and competition that benefits end-users. To enable the industry to focus on delivering to end-users the copper pricing processes must conclude in December without any further delay.

In the revised draft determinations, the Commission assumes that it does not need to incentivise further investment or innovation because UFB investment is committed. This is at odds with New Zealand's vision and the industry structure in place to support it.

Ongoing investment in copper and fibre infrastructure and services is required over the next five years that this determination covers and beyond. Extending communications infrastructure connectivity, resilience and performance is vital to enabling New Zealand's economic development and the inclusion of all New Zealanders – urban, regional and rural - in the digital world.

The Commission's view also suggests that had the final pricing review determinations been made before the UFB investment was committed the position would be different. This sort of time inconsistency in the regulatory environment is known in economic literature as "regulatory opportunism". It says that at the time investment and innovation is made, it should be assumed that the investment and innovation may be immediately treated as sunk and unworthy of an appropriate return. This is a negative signal to send to domestic and international investors who enable the improvement and innovation in network industries to meet changing and future end-user demands.

The Commission has gone to great lengths to recap on its thorough public consultation process in the revised draft determinations. We acknowledge the Commission's extensive effort in updating the TSLRIC modelling between the December 2014 draft determinations and the revised draft determinations released on 2 July 2015. At this stage, it is essential that the Commission's focus is on the market reality and outcomes for New Zealand that will be impacted by the final decisions.

The abstraction and assumptions inherent in the application of a hypothetical network approach carries with it a great responsibility to remember that pricing and signals are to a real market and industry in New Zealand. This grounding in reality and risk is well recognised in regulatory precedent provided to the Commission.

Monthly charges

We acknowledge that the issues in the modelling process for monthly charges have been narrowed following a substantial consultation process. However, the improvements in the modelling since December have been overshadowed by the countervailing effect of around a 20% downwards adjustment (from $46 to $38 per metre) in the average trenching rate between the December 2014 and July 2015 draft determinations.

The Commission's cost modelling is complex. However Analysys Mason has advised that the cost of digging the trench, traffic management and arborist costs and the cost of reinstating the trench – which are key drivers of cost when building a nationwide network – equate to a national average rate of $38 per metre in the TERA model.[1] This is around half the cost that we calculate could be achieved for a nationwide network rollout in New Zealand based on our real world UFB and RBI experience.[2]

As an NZX and ASX listed company, and one that has had extraordinary external scrutiny and has reshaped its business as a result of the initial benchmarked decisions, Chorus has every incentive to ensure costs are efficient.

The Commission is in a unique position to have real and recent build evidence available from the UFB and RBI build, which has Crown oversight. Any hypothetical operator would face the same conditions (e.g. soil conditions and local council requirements) and costs as Chorus in rolling out a network in New Zealand. However neither the Commission nor its advisers appear to have adequately considered the most complete and comprehensive set of data on trenching costs in New Zealand today.

The reduction in the average trenching rate between December and July was not explained in the Commission's documentation. However, based on the model, the Commission's hypothetical average trenching rate of $38 appears inconsistent with advice from the Commission's own expert Beca. For example, Beca's advice is that chain digging cannot be used in urban areas, which is consistent with Chorus' experience of the constraints placed by local councils. In ignoring this recommendation, the Commission has effectively assumed away the New Zealand-specific conditions.

The Commission appears to have dismissed Chorus' cost information because of a misunderstanding that the information is unduly influenced by Auckland and Wellington costs. Chorus' information is based on **[RI:]** of network deployment across New Zealand between 2013 and 2014 with a degree of optimisation applied. Auckland and Wellington account for around 40% of New Zealand's population, so these costs have been captured. However, the higher costs in those regions have not unduly

[1] The Commission has referred to a trenching rate of $85 per metre in its revised draft determination. However this rate includes other costs, such as the costs of ducts and manholes, and was used for the purposes of comparing New Zealand rates to international benchmarks. Because of the different modelling approaches, taking just the trenching, traffic management, arborist and reinstatement costs allows a "like-for-like" comparison between the Commission and Chorus' data.

[2] This cost information was made available to the Commission in December, as part of Chorus' cost model. Chorus' costs include the cost of taking the network from the duct down the street to the property boundary (known as laterals). These costs are not accounted for in the Commission's modelling.

affected the nationally averaged trenching cost outside these areas because Auckland and Wellington costs were ring-fenced to those regions.

It is surprising that Beca has said they have not been asked to look at Auckland as the most costly area in the country and that they haven't been asked to look at Chorus' cost information. It is also surprising that in the Commission's model the costs in Arthur's Pass are higher than in Auckland, which bears no resemblance to reality.

Our submission focuses on the big choices the Commission has made that reduce the cost, and therefore the prices, and which depart from what any network operator would need to do in New Zealand. For example, the Commission has excluded the cost of a large proportion of the national network on the basis that a hypothetical operator would recover the cost of this part of the network by levying end-users upfront. This ignores the reality that Chorus is required to provide a nationwide network, and isn't receiving a capital contribution for new UFB connections. The Commission's approach distorts the price downwards by around $5.

Reconciling some of these highly hypothesised decisions and the real world New Zealand evidence is also at odds with statements that suggest TSLRIC is generous, which influences the Commission's approach to WACC.

WACC is a significant parameter that impacts price materially. The WACC has reduced by 44 basis points between the December and July draft determinations, mainly due to market factors. This volatility comes from the Commission's use of a one month average of data for the risk-free rate and means that the WACC is unlikely to reflect the market conditions over the next five years. It is also another example of the outcome being highly dependent on the timing of the Commission's decisions and Chorus is wearing all of the downside. If the Commission had finalised its decision in December 2014, the difference in WACC alone would have added almost $1.30 to the aggregate UCLL and UBA price.

The Commission also reasons that no uplift to the WACC is required because, for example, outages in telecommunications are less severe than for electricity, including because they are more localised. This is at odds with:

- The Minister initiating a review of outages in Canterbury following (localised) storms;
- The potential impact of an outage in Auckland - which would be localised but would affect a significant number of business and residential customers who rely on domestic and global connectivity and resilient broadband; and
- The high vulnerability of the telecommunications regulatory framework of benchmarking and TSLRIC and its impact on incentivising investment, quality and price coherently. This is in stark contrast to regulated asset base models where the Commission says it is important to take account of new investment.

Given the Commission's highly hypothesised approach which is disconnected with reality we have tested the consistency of the hypothetical operator's revenue, cost and capital

structure assumptions. We prepared an integrated set of financial statements based on the assumptions in the revised draft determination. In short, the key assumptions are not internally consistent. The leverage and other financial metrics derived from the financial statements do not align with the BBB+ long term credit rating the Commission has assumed. In the simplest possible terms – in our view, the hypothetical operator isn't financeable on the basis the Commission has assumed.

In many instances, the Commission has also chosen the lowest cost option from a range of nationwide costs when deciding on particular modelling parameters. For example, the Commission has taken the lowest price for accessing electricity lines company poles and assumed that this price can be achieved nationwide. However, the reality is that the lowest cost option cannot be achieved nationwide because of geographical differences and constraints. It is like deciding the par for a golf course by taking the lowest score ever achieved on each individual hole. Or in cost modelling terms, it's like assuming the whole of New Zealand is made up of flat terrain with soft soil and ignoring the fact that there are mountains, lakes, rivers, volcanic rock and cities.

While the Commission reasons that TSLRIC is not generous because no performance adjustment is made, the examples above show that the Commission's approach is not generous. Performance adjustments are also inconsistent with regulatory precedent, with only one jurisdiction applying an adjustment via legislative change.

The combined effect of modelling choices that are disconnected from New Zealand experience and conditions is that the Commission's proposals are isolated from market reality and real network and service quality demands. The result is to propose artificially low, inefficient prices. For example, the Commission's modelling implies an aggregate urban price of $29.56 (an urban UCLL price of $18.72 plus the levelised UBA uplift of $10.84). Using a New Zealand based sense check, this implies the UFB network (which is being built in urban areas) could be built 30% cheaper than Chorus' 2020 entry level UFB product, or 40% below the price Enable said it requires to cover its costs.

Transaction (non-recurring) charges

For the first time, the Commission has provided a view on transaction charges in the revised draft determinations. Without explanation, the Commission assumes that Chorus' transaction costs (which are competitively tendered) are not efficient. It then turns to international benchmarks to justify a reduction to Chorus' costs of 30%.

At best, the international benchmarks could have provided a sense check as to whether Chorus' costs were efficient. Chorus falls well within the range of benchmarks – suggesting that Chorus is efficient, despite the New Zealand specific circumstances that make New Zealand's costs higher.

Instead, the Commission uses the benchmarks to adjust each of Chorus' cost to the lowest transaction time in the selected benchmark set. This approach to benchmarking is inconsistent with the Commission's previous decisions – which has been to select the mid-point or above of the benchmarks.

These non-recurring charges are based on activity in the retail market where Chorus does not operate or compete with its customers. Real costs are negotiated at arms-length with and paid to real suppliers for these activities. It is unclear how and why the Commission considers that the 30% discount can be absorbed by either Chorus or its suppliers in the New Zealand market or what the consequences might be.

Chorus' competitively tendered rates are the best and most up to date evidence of the costs a hypothetical efficient operator would face in New Zealand today. **[CI:**

] Using competitively tendered charges for this TSLRIC exercise also avoids the need to engage in benchmarking (which the Commission notes has serious limitations) and avoids leaving real costs being unable to be recovered as fair prices for fair work.

Substituting the wrong price with the more correct price

A final pricing review process is essentially a review by the Commission of its own work using a different prescribed methodology. In both the December and July draft determinations, the Commission has established that the initial benchmarked monthly prices were wrong. These prices should now be corrected.

The Commission has acknowledged that the initial benchmarked prices are not reflective of the New Zealand environment. This will come as no surprise to retail service providers (**RSPs**). On 13 August 2013, six RSPs, including the three that account for the majority of the retail market, wrote to the Minister saying that the aggregate copper price should be comparable to the entry level fibre price – at that time, $37.50. Knowing that the entry level fibre price cap tracks to $42.50 by 2020, they said $37.50 should be frozen and the price reviews withdrawn.

All three Commissioners acknowledge the distortion in the market created by the benchmarked prices but two of them say the distortion should not be corrected. This means that the wrong prices have been allowed to apply, and how long they continue to apply for is completely dependent on the date the Commission completes its process.

The third Commissioner disagrees. He proposes a middle ground of a commencement date of 1 December 2014. His reasons align more closely with the Commission's previous positions, submissions to the Court and what parties should expect.

The Commission has published it submissions to the Court of Appeal in 2006. The Commission's view then was that the final price should be substituted for the initial price because it is more correct. This is consistent with the Court of Appeal's view. Some of things that the Commission said then about the inter-relationship of the initial pricing process with the second phase review were:

- A pricing review determination is "*a fresh look, using a different technical approach, and the relevant provisions contemplate the substitution of the review determination for what had been stipulated in the initial determination*."

- *".. all parties to an initial pricing determination will know within 15 days of it being delivered whether it is being reviewed, and the commission, in the context of the statutory regime, performs an analogous role to that which the high court does on judicial review."*
- The dictionary defines a "review" as the "*act of looking over something (again), with a view to correction or improvement*."
- "*until either the period for filing an application for review has elapsed, or a final pricing review determination is issued by the commission, the initial pricing determination can only sensibly be seen as an interim finding pending the more detailed assessment pursuant to the final pricing principle.*"
- *"…all participants know.. of the prospect that an adjustment may occur while the review is pending*"
- "*if reviews do not have operative effect from the initial determination date, then the party that is likely to benefit from a higher (or lower) price will be disadvantaged in circumstances where the Commission is unable to expedite the pricing review process for any of a range of legitimate reasons.*"
- "*the party advantaged by the determination should not be deprived of the benefits by virtue of delays that are beyond its control, including the pressure of other legitimate commitments on the Commission*."
- "*the s18 aim of promoting competition for the long term benefit of end-users will be advanced if the efficient price is actually imposed, at a minimum, for the period of the initial determination*."
- The aims of the Act "*will be substantially frustrated if the more thoroughly analysed proxy for the deficient price determined on review does not apply to the period in respect of which the original application was made."*
- "*a wind fall from the non application of a reviewed price is a situation that would clearly offend against the purposes of this part of the act, set out in s18. The converse also applies if benchmarking has set the initial price too low, and the service provider establishes on a TSLRIC assessment, that the efficient price should be higher*."

Bearing in mind these views, and that the Commission has previously corrected errors, not correcting the initial price with the final price highlights the lack of predictability in the regime – even where there is Court precedent and Commission precedent. The Commission's reasoning that it can distinguish previous views by the existence of expiry dates in previous determinations is not sound. The existence of an expiry date was not key to the Commission's submissions in 2006 or the views expressed by the Court of Appeal.

If the Commission was right that substitution of the initial price is a matter for its discretion each time, this exacerbates the lack of predictability and lack of accountability in the regime.

More importantly, the Commission has not adequately turned its mind to the potential benefits of ongoing investment at the wholesale level if the distortionary benchmarked

price is corrected. Nor has it considered what it may hinder if investment is not incentivised. There have been direct consequences of the initial prices in the market including network extension subsidies being removed, proactive maintenance being deferred, transition from Spark IT systems being delayed and discretionary investment being deferred. With a nationwide open access network, all RSPs and end-users benefit from reversing some of these market impacts and from new additional investment that may be enabled.

As the Court of Appeal noted, in the knowledge that a final pricing review has been triggered in the short statutory timeframe available all parties are on notice and have to commercially provision for that uncertainty. Commercial arrangements can also be flexible enough to work through resulting adjustments and any wash ups. Chorus has offered to work through this transparently with RSPs, customers and the Commission.

The focus of this submission is primarily on draft decisions by the Commission that have changed from those in its December 2014 draft determination, and on areas where there is new or further evidence to support Chorus' view. There are a number of issues in the revised draft determination where the Commission has not changed its view and where the arguments have been comprehensively set out in previous submissions. Where this is the case, we have only briefly summarised our position and/or refer the Commission to our previous submissions and expert reports in full.

A summary of our response to the detailed implementation of the Commission's TSLRIC models for the UCLL, SLU and UBA services is summarised in the following tables.

UCLL and SLU

Input	Response to revised draft determination	Further detail – see paras
UCLL MEA	Select the MEA with the lowest cost to end-users that is capable of providing the same functionality as the existing UCLL and SLU services. Even if the Commission adopts a "core functionality" approach, the core functionality of the UCLL service must include the ability of the service to be unbundled at Layer 1. Fixed Wireless Access (**FWA**) therefore cannot be in the MEA.	[40], [44] – [47]
Asset valuation	Select Optimised Replacement Cost (**ORC**) methodology, consistent with the Act's requirement to model forward-looking TSLRIC and is consistent with Commission's concept of HEO.	[178] – [180]
Performance adjustments	No adjustments based on technological performance or consumer preference.	[40]
Network footprint	Model a network capable of providing the UCLL and SLU services to all end-users to whom Chorus may be obliged to provide the service under the Act and STD.	[42] – [43]

Input	Response to revised draft determination	Further detail – see paras
Optimisation	Use a scorched node approach assuming no re-use of Chorus assets and: • do not optimise exchange boundaries (given limitations on available techniques to address geographic complexity). The algorithm used by the Commission is likely to cause error because it does not take all major geographical constraints into account; and • account for equivalent spare capacity in the FTTH network as an HEO would prudently account for this from an engineering perspective.	[48] – [54]
Capital contributions	Include the capital costs of all assets required to provide the UCLL and SLU services to all end-users to whom Chorus may be obliged to provide the services under the Act and the STD. If capital costs are excluded, use of the areas in which Chorus is obliged to maintain network used to serve end-users in December 2001 (the **TSO areas**) as a proxy for where contributions would not be sought may be better than other possible proxies, but: • the TSO areas should be corrected to include all end-users' locations existing in December 2001; and • the assumed capital contribution should be implemented as a "one off" payment. Costs of lead-ins and post-2001 subdivisions should not be excluded. Chorus did not fully recover these costs and no HEO would do so given the need to connect all demand.	[55] – [79]
Trenching costs	Adopt the best evidence of forward-looking build costs. Chorus' UFB and RBI data is the best available evidence of a current, nationwide, network build and which takes account of New Zealand's geographical conditions and cost constraints. Analysys Mason's analysis of national trenching rate takes proper account of urban and rural areas, including carefully ring-fencing the impact of the higher cost centres of Wellington and Auckland so the national rate is not distorted. If Beca cost estimates are used, then corrections need to be made to the model, including: • adjusting the model so that the deployment costs reflect that the cheapest method may not always be used; • recognising some trenching methods, such as mole plough and chain digging, cannot be used where there are existing underground services; • ensuring that drilled holes can physically accommodate duct size;	[80] – [110]

Input	Response to revised draft determination	Further detail – see paras
	• correction of the harmonic weighting calculation; and • accounting for the cost of laterals.	
Omitted costs	Include arborist costs, aerial cables, overhead costs, handling fees and cable hanging/mounting fees for fibre cable costs included in Chorus' price lists and installation costs for copper and fibre cabling.	[111]
Modelling issues	Revisit the mapping of buildings to road sections to ensure buildings are allocated to the closest road section as set out in the Analysys Mason report. Appropriately account for laterals and lead-in assets on rights-of-way as set out in the Analysys Mason report.	[113]
Aerial deployment • *Extent*	Reduce the extent of aerial deployment in the Commission's model to reflect real world evidence (both of Chorus UFB/RBI deployment and statements from Vector) that a greater proportion of available electricity distribution poles cannot be economically used for telecommunications network deployment.	[116] – [120]
Aerial deployment • *Costs*	Ensure that the full costs of securing nationwide access to electricity distribution poles are included in the model. Use a weighted average of access charges, rather than the cheapest per pole price charged in any region, and include the following omitted costs: • surveying and pole assessment costs; and • resource consenting costs.	[121] – [128]
Fixed Wireless Access modelling	FWA should not be included in the MEA, as it is not capable of meeting either the full or core functionality of the UCLL service. If FWA is to be included then adjustments should be made, including to: • the throughput assumption to reflect the expected demand for the UBA service in the regulatory period; • assumed sharing of infrastructure which cannot be shared in practice; • include the costs of the active electronics which are currently omitted; • coverage assumptions (many more base stations are required); and • include the full costs of providing voice and data services over FWA.	[129] – [136]
Operating costs	Use Chorus' actual operating costs as the starting point for its analysis. In addition:	[137] – [144]

Input	Response to revised draft determination	Further detail – see paras
	• a fibre efficiency adjustment of 40% is not appropriate and is applied to costs which are not technology dependent. Evidence indicates an adjustment of between 15% and 30% following a shift from legacy copper assets to fibre assets may be appropriate; • do not take into account exceptional short term effects on a single foreign operator to reduce Chorus' long term opex based on the LFI adjustment; and • appropriately account for the higher opex for aerially deployed network, based on publicly available ARMIS data which indicates at 27% increase in annual maintenance cost for the Commission's chosen level of aerial network.	

UBA

Issue / Input	Response to revised draft determination	Further detail – see paras
UBA "Additional costs" MEA	MEA for the "additional costs" of providing the UBA service based on Chorus' existing FTTN/Copper network.	[147] – [150]
Asset valuation	Select ORC, consistent with the Act's direction to model forward-looking costs and orthodox TSLRIC.	[178] – [180]
Optimisation - Throughput	Model the "additional costs" so that it is sensitive to throughput. The Commission's model should account for throughput effects on the subrack chassis and RSP ports on the first data switch as set out in the Analysys Mason report.	[151] – [158]
Omitted costs	Include omitted costs for design, testing and commissioning of new assets and correct direct units costs as set out in the Analysys Mason report.	[168] – [171]
Modelling issues	Correct cost data, spare capacity and handover connection issues identified in the Analysys Mason report.	[172] – [173]
Capital contributions	Capital costs required to deliver the UBA service cannot be removed from the TSLRIC on the basis of assumed capital contributions. No account should be taken as the funding recovered through the RBI initiative. In particular, DSLAM costs were not funded by the RBI initiative, and their exclusion reduces the monthly rental charge beyond what it would have been had Chorus not participated in RBI.	[159] – [167]

Issue / Input	Response to revised draft determination	Further detail – see paras
Cost allocation (bitstream and other services)	Allocate costs using a capacity based approach where sufficient data is available. Where insufficient data on capacity exists (the costs of fibre between DSLAM and cabinet, and cabinet and FDS), allocate costs based on TERA recommendations.	[174] – [175]
Cost allocation	Account for any demand for unregulated bitstream services during the regulatory period by undertaking a review of the cost allocation between regulated and unregulated services if and when required.	[176]
EUBA variants	Provide price differentiation between EUBA service variants contained in UBA STD. Differentiation between prices of different options (setting "price gradients") using initial benchmarking is appropriate.	[177]

Common issues

Issue / Input	Response to revised draft determination	Further detail – see paras
WACC		
Risk-free rate / TAMRP	Either: • adopt a long average risk-free rate, consistent with its historically averaged TAMRP; or • if the Commission prefers to estimate the risk-free rate based on prevailing rates, make a compensating adjustment in the TAMRP to reflect the inverse relationship between bond yields and the TAMRP Regardless of approach, update Dr Lally's estimate of the TAMRP to reflect more recent data, and make methodological adjustments to the manner in which different estimates are weighted in the average estimate.	[186] – [218]
Asset beta	An asset beta of at least 0.53 is appropriate, having regard to a longer time series when estimating the asset beta.	[219] – [225]
Leverage	Adopt notional leverage of 50%, to more closely reflect Chorus' actual leverage, in line with international regulatory precedent. The Commission's assumed rating isn't consistent with other HEO assumptions – it cannot be financed on the basis the Commission has assumed.	[226] – [228]
Other parameters	Credit rating: A credit rating of BBB- is more appropriate. Debt swap costs: Assess the costs of entering into swap contracts at between 10 and 13 basis points. Debt issuance costs: At least 0.35% per annum should be used.	[229] – [232]

Issue / Input	Response to revised draft determination	Further detail – see paras
	Term: 10 years, consistent with the debt raising practices of a wide sample of international telecommunications firms, including those in the Commission's comparator group.	
Allowance for asymmetries	Address estimation error in setting the WACC through selection of a higher percentile than the mid-point of the WACC, consistent with: • CEG's implementation of the Dobbs model; and • Oxera's analysis of the case for a WACC uplift (as reviewed by CEG and Sapere). Refinement of the Oxera analysis indicates the WACC percentile demonstrates a higher percentile of around the 75th percentile is appropriate.	[233] – [269]
Other common issues		
Demand	Use the best available forecast of the HEO's or Chorus' demand. Demand served by non-Chorus Local Fibre Companies (**LFCs**) or hybrid fibre-coaxial (**HFC**) should be excluded.	[270] – [275]
Price trends	Adopt a weighted PPI series tailored to the cost of trenching, in preference to the indices utilised by NZIER, which include a number of activities unlikely to be representative of trenching costs.	[276] – [278]
Asset lives	Recognise uncertainty in asset lives when calculating the revenue required to compensate Chorus for assets under ORC by calculating an average annuity across a range of asset lives.	[279] – [280]
Constant price	Adopt a constant price.	[281]
Commencement of final price	The final price should be substituted for the initial price from the date of the initial price determination or, at the latest, 1 December 2014. The Commission's TSLRIC model should be calibrated to calculate the final price as at the date it becomes operative, with a longer regulatory period allowed for as a result. Payment of any additional differences between the final and initial price should be implemented as a lump sum repayment rather than clawback. Chorus will offer a repayment scheme based on the creditworthiness of the RSP. The repayment scheme will be at a fixed rate of interest and the repayment term will be agreed with each RSP.	[282] – [330]
Regulatory period	The regulatory period needs to be calibrated to recognise the substitution of the final price.	[327] – [330]

Non-recurring charges

Issue / Input	Response to revised draft determination	Further detail – see paras
MEA	Determine activities for non-recurring charges by reference to the activities on the actual copper network.	[338]
Outsourcing	Assume an HEO in New Zealand would outsource its network provisioning and fault operations, as it would achieve lower costs running a competitive tender between service companies with specialist skills.	[338]
Overall approach to NRC	Start with service company charges, adjust for overheads and implement a mechanism to reflect changes in underlying cost inputs. Benchmarking is not appropriate in an final pricing review, as cost-based prices for non-recurring charges, consistent with TSLRIC are required and: • Comparing task duration is complex and uncertain; • There is no evidence tasks from benchmarked countries are comparable to New Zealand; and • A number of New Zealand specific factors impacts average task times for a number of non-recurring charges.	[340] – [378]
Efficiency adjustment	Service company charges reflect efficient costs, as they have been set through a competitive tender process. An efficiency adjustment that reduces the rates by on average 30% is unrealistic and there is no evidence an HEO operating in New Zealand could achieve this level of efficiency.	[362] – [367]
Structure of NRCs	The structure of the non-recurring charges in the STDs should not be changed – there is no practical benefit plus there are costly implications for Chorus and RSP operational systems and processes.	[338]

INTRODUCTION

The structure of our submission

1 This submission sets out our response to the following papers published by the Commission on 2 July 2015, together with their supporting analysis:

1.1 further draft pricing review determination for Chorus' unbundled copper local loop services; and

1.2 further draft pricing review determination for Chorus' unbundled bitstream access service.

2 Our submission is structured under the following headings:

2.1 **Part One** responds to the aspects of the Commission's revised draft determination for the UCLL and SLU services that are specific to those services;

2.2 **Part Two** responds to the aspects of the Commission's revised draft determination for the UBA services that are specific to that service;

2.3 **Part Three** responds to issues concerning the Commission's approach to the calculation of an annualised TSLRIC and selection of a TSLRIC based price that are common for the UCLL, SLU and UBA services.

2.4 **Part Four** responds to the Commission's proposed approach to replacement of the initial price; and

2.5 **Part Five** responds to submissions on transaction charges.

3 We set out below a summary of our position under each of these headings.

Part One: UCLL and SLU services

4 Our primary concern in relation to the UCLL and SLU services is that the Commission continues to materially under-estimate the capital costs of deploying a national network in New Zealand conditions in order to provide the UCLL and SLU services.

Trenching costs

5 The best available evidence of trenching rates in New Zealand today is Chorus' extensive database and analysis of UFB/RBI costs. However, the Commission has ignored these costs and assumes an average trenching rate that, at $38 per metre is approximately half the average trenching rate Chorus has calculated based on Years 3 and 4 of UFB and RBI deployment of **[CI:]** nationally or **[CI:]** if the cost of laterals is excluded.

6 The Commission is in an almost unique position of undertaking a TSLRIC modelling exercise while a national deployment of a new telecommunications network is

underway. The Commission has direct, market based evidence of deployment costs which it can use. In contrast, the Commission relies on Beca's report and limited assumptions regarding deployment costs. This is unnecessary.

7 Our data contains detailed costs associated with 132 exchange areas nationwide. Contrary to the Commission's concern, rates associated with Auckland and Wellington have been appropriately ring-fenced in estimating the national average. In contrast, the consultant study relied on by the Commission remains limited and reliant on a small number of supplier quotations. Our internal experts have carefully reviewed the rate information provided to the Commission and conclude that many of the key rates are simply not achievable in the market in New Zealand.

8 Aside from the issues with the Beca rates, the Commission's implementation of Beca's trenching rates also contains numerous omissions and oversights. In particular the Commission's model:

8.1 applies a methodology that adopts the lowest cost trenching rate of an area, despite advice to the Commission that this will not always be possible;

8.2 assumes that mole ploughing chain digging are permitted without assessing if these techniques will be prohibited either because they will disturb other utility services or council rules preclude them;

8.3 assumes a number of drill hole or trench sizes which would not physically accommodate the ducts within those holes;

8.4 excludes reinstatement costs for rural areas despite urbanised roads in rural areas likely being paved so reinstatement will be required; and

8.5 needs a correction to the harmonic weighting calculation to derive the distribution of duct sizes;

8.6 omits costs of arborists, aerial cables, overheads, handling fees and hauling fees for copper and fibre cabling and installation costs on the basis that it lacks information concerning these costs, despite this information having been provided by Chorus in our responses to the Commission's s 98 notices; and

8.7 omits laterals.

9 These issues must be addressed if the Commission's model is to be capable of producing a credible estimate of the costs of network deployment in New Zealand conditions.

Aerial deployment

10 We agree with the Commission's modification to its approach to aerial deployment in its revised draft determination: that is to assume the HEO would have to obtain

access to existing electricity lines business network to deploy distribution cables aerially.

11 Our remaining concerns are, first, that the Commission overstates the proportion of existing aerial infrastructure that may support telecommunications distribution network. The Commission assumes that, nationwide, approximately 96% of the aerial electricity network can be economically reused. In contrast, the evidence presented at the Commission's conference was that Vector Limited believed that only 65% of its network could be economically reused in Auckland. This is consistent with Chorus' experience in UFB deployment, and more consistent with the Commission's previous assumption that 36% of the distribution network will be deployed aerially.

12 In addition, the Commission materially understates the cost of securing access at $25 per pole, **[CI:]**. It is not realistic or appropriate given the TSLRIC exercise to extrapolate the lowest cost data point in one region and assume that it can be achieved nationally. Different lines companies charge different rates in the various regions around the country and Chorus' estimate of a national weighted average for pole rental is **[CI:]**. The result is that the Commission's model underestimates the true costs of obtaining pole access by around **[CI:]**.

Fixed Wireless Access

13 The Commission continues to include Fixed Wireless Access (**FWA**) in its model despite the technology not being capable of providing the core functionality of the national UCLL service. The result of this inclusion is that the Commission's model does not estimate the full TSLRIC of providing the regulated service to all end-user premises to which Chorus may be required to provide the service.

14 This issue is mitigated, at least in part, by the Commission choosing specific premises to serve using FWA deployment in its revised draft determination. If the Commission is to include FWA in its model, then it should be limited to premises which receive only low-speed data or voice-only services.

15 The Commission's model of FWA contains a number of unrealistic cost assumptions:

15.1 a systematic under-estimation of the number of sites required to serve the end-user premises identified as being served by FWA;

15.2 an assumption of asset sharing that is far greater than the 5% site sharing observed in the market today and which encompasses assets that are not technically capable of being shared;

15.3 omits the costs of the radio network electronics; and

15.4 spectrum costs that do not account for market based opportunity costs of acquiring spectrum.

Capital contributions

16 The Commission continues to remove large portions of capital costs from its model to reflect notional capital contributions it assumes the HEO would receive.

17 This approach is inconsistent with a forward-looking assessment of the costs of providing the total service that Chorus is required to provide. Under s 30S of the Act Chorus cannot seek capital contributions for providing the service to existing end-user premises; but this is what the Commission assumes the HEO could and would do. And, although a backward looking assessment is strictly not relevant, it is also clear that the Commission is excluding far more costs than Chorus or its predecessors ever received in contributions for end-users.

18 In our February submission, we also identified material omissions and oversights in the way in which the Commission was implementing its exclusion of capital costs which have not been corrected or addressed in the revised draft determination. These included:

18.1 flaws in the geospatial data set used by the Commission to derive the TSO areas outside of which costs were excluded. As noted by Chorus, the effect of this was to exclude costs for many, particularly rural, premises which on the Commission's own reasoning ought not to be excluded; and

18.2 a failure to account for contributions as "one off" payments for assets that would require to be funded if replaced.

Part Two: UBA service

19 We continue to agree with the Commission's selection of the MEA for the "*additional costs of the UBA service*", but we believe that this choice is mandated by the structure and purpose of the Act.

20 While a number of technical issues remain with the Commission's UBA additional costs model, our primary concerns are that:

20.1 the model does not fully account for the equipment and costs required to support growth in throughput in the regulatory period; and

20.2 the Commission continues to exclude capital costs on the basis of the Government's Rural Broadband Initiative (**RBI**).

21 On capital contributions, the Commission is removing the costs of DSLAMs and Cabinets required to provide the UBA service and which therefore form part of the TSLRIC costs. The Commission justifies this on the basis that Chorus has received RBI funding, although it now appears to accept that these assets were not acquired using the funding. The Commission reasons that this is appropriate as such DSLAMs were deployed only as a result of the RBI initiative. However, the effect of this exclusion, while continuing to take account of additional demand generated by the RBI initiative, means that the monthly rental charge is lower than if Chorus had not

participated in the RBI initiative. This result cannot be reconciled with s 18(2A) of the Act.

Part Three: Common issues

WACC

22 The Commission's continued use of a short term one-month average of five year New Zealand government bond yields gives disproportionate weight to short term changes in the risk-free rate. Given the volatility of bond yields, the reality is that the WACC estimate is dependent on the timing of the Commission's final decision rather than on the prevailing financial conditions leading into the regulatory control period.

23 A short term – and unduly depressed – risk-free rate will not provide "*better signals for new investment*" in relation to a regulatory period of at least five years. To the contrary, the likelihood is that the Commission's approach to estimating WACC, by substantially understating the true cost of capital, will significantly and negatively impact investment incentives through the regulatory period.

24 The Commission should adopt a long-term average rather than the prevailing rate when estimating the risk free rate for the final determination. This submission is premised on the assumption that the Commission continues to estimate a 7.0% TAMRP which predominantly reflects a long-term historical average of realised excess returns. Alternatively, if the Commission continues to give 100% weight to a prevailing estimate of the risk free rate (proxied by prevailing government bond yields) the Commission should give 100% weight to a prevailing estimate of the TAMRP measured relative to, and in the same market conditions as, the risk free rate estimate. Either of these approaches is capable of achieving an internally consistent estimate of the cost of equity using the capital asset pricing model.

Allowance for asymmetries in WACC estimate

25 The Commission must also account for asymmetric consequences of error in its estimate of WACC, as it has in all other regulatory determinations, by selecting a WACC estimate that is above the central point-estimate.

26 Investment in fixed networks (both copper and fibre) is important in dynamic telecommunication markets. As we have previously noted:

26.1 the nationwide copper network will require maintenance by Chorus, particularly to the extent there are limits or delays to fibre migration while the UFB network is established;

26.2 the existing copper network will also need augmentation/upgrading over time (particularly as 25% of New Zealand is not covered by the UFB footprint). Demand for bandwidth from the existing network has increased significantly following retail offerings such as Netflix;

26.3 there are significant end-user benefits from fibre migration;

26.4 UFB will cover about 75% of New Zealand but its roll out is not without risk despite being contractually committed, at least in part due to the impact regulatory pricing has on Chorus (as illustrated by the initial pricing decisions);

26.5 UFB1 and RBI1 are the first cabs off the rank for new investment but there will likely be more as rural customers demand higher quality services. For example, appropriate regulatory signals are necessary to attract the investment required for UFB2 and RBI2;

26.6 fibre networks will need maintenance and upgrades over time; and

26.7 the investment signals produced by the final price will impact on our ability to bring forward and extend fibre investment and on other LFCs' investment activities.

27 Setting the WACC at the 50th percentile of the range does not provide the necessary investment signals in this context. Future investment is needed by Chorus, other telecommunications providers in the market and by entities in other markets that are, or in future may become, regulated. The signal sent by the Commission in this process will impact on investment incentives in all these areas.

28 The Commission's expert advisors support the proposition in principle that an uplift to the WACC will incentivise Chorus to accelerate investments that will lead to consumer benefits. We agree with the conclusion that "*the set of assumptions one would have to believe in order to conclude that a modest WACC uplift is justified seems quite plausible…*".[3] Indeed, our expert advisors conclude that, once overly conservative assumptions in the Commission's analysis are corrected, the case for a higher WACC percentile is compelling.

Constant price for regulatory period

29 Our preference is for a constant price for the regulatory period. We acknowledge that the general preference expressed at the Commission's Conference by RSPs was for a glide path. But our view is that a single price for the regulatory period has the advantage of simplicity.

Part Four: Substitution of the initial price with the final price

30 Our position remains that the final price determined in accordance with the final pricing principle for the UCLL, SLU and UCLF services should apply from the date of the UCLL initial benchmarking determination, and the final price determined for the UBA service should apply from 1 December 2014.

31 There is no basis for distinguishing the Court of Appeal's 2006 judgment on the implications of a pricing review determination on a s 27 determination, which reflected the submissions made to it by the Commission, from a pricing review

[3] Oxera "Is a WACC uplift appropriate for UCLL and UBA?" (June 2015) at page 37.

application made in relation to an STD. To the contrary, Parliament provided that the same pricing review provisions that the Court of Appeal had previously interpreted as requiring substitution of the final price from the date of the initial determination would apply to STD prices.

32 Applying the final price from the date of the reviewed initial price's application (or at the very least, from 1 December 2014) is also the right approach for the reasons clearly articulated by the Commission in 2006 in order to best promote competition for the long term benefit of end-users having regard to efficiency and investment considerations:

32.1 substitution of the final price for the initial price assures market participants that the efficiently determined TSLRIC price is available for the period of supply, if required to be determined;

32.2 the assurance of substitution of the final price, and therefore that prices will be efficient, will generate efficiencies for the long term benefit of end-users, such as by providing efficient investment and consumption decisions. It is that long term benefit of consumers that is relevant, not short term advantages or disadvantages arising from a price increase or decrease;

32.3 the evidence before the Commission is that RSPs have in fact provisioned for the final price from at least December 2014 (although there is also no evidence that the initial price was factored into retail pricing prior to this);

32.4 in the context of the present services, there was a reasonable expectation and – in the case of the UBA service – statutory target for final prices to be available and apply by 1 December 2014; and

32.5 not providing for an earlier start date will therefore mean that the delay in the statutory process will disadvantage Chorus as the applicant for the pricing review determination by tens of millions of dollars to the advantage of RSPs – directly contrary to the assurance function that the pricing review determination process is intended to provide.

33 Given the evidence that RSPs have responded to the draft determination prices, our view is that payment of the difference between the final price and initial price for the period prior to the final determination should be made by lump sum. Repayment options that are tailored to the circumstances of RSPs will be offered by Chorus to mitigate any issues that may arise, although we anticipate that these are unlikely to be common given the relative size of the payment required compared with RSP revenue.

Part Five: Transaction charges

34 We support the Commission's starting point in setting TSLRIC-based prices for non-recurring transaction charges, which is to adopt Chorus' actual service company charges and overheads associated with each of the transaction charges.

35 Chorus' service company charges reflect the actual cost of providing transaction services on a copper network in New Zealand. The rates are set by competitive tender with third party providers.

36 However, the Commission has reduced charges below Chorus' service company costs on the grounds that an "efficiency" adjustment is required. There is no basis for the conclusion that an efficiency adjustment based on international benchmarking is required. The Commission's own analysis demonstrates that Chorus' service companies are well within the range of international comparators on the "task time" metric adopted by the Commission. To the extent this provides an "independent efficiency test", we pass.

37 Even if a "benchmarked" cost adjustment were appropriate, the Commission's implementation of the adjustment is inconsistent with any reasonable approach. The Commission has:

37.1 compared task times without sufficient consideration as to whether the activities are comparable between jurisdictions, despite statements by TERA that they may not be, and the existence of several New Zealand specific factors which suggest that is the case; and

37.2 picked the lowest task time of any of the countries surveyed for each activity.

38 The Commission's approach is unprecedented; in no previous benchmarking exercise has the Commission ever adopted the lowest point in the benchmark group.

39 The Commission's approach imposes a standard of efficiency which no HEO could possibly obtain, and in fact a standard which no country in the benchmark set obtains. This is inconsistent with the objectives of TSLRIC pricing. It will ensure that Chorus cannot recover its commercially negotiated costs on each activity it is required to undertake.

PART ONE: UCLL AND SLU SERVICES

The service to be modelled

40 Our position on the service to be modelled is unchanged from our earlier submissions:

40.1 the modelled network must be capable of providing the UCLL service to all end-users premises covered by the STD;[4]

40.2 the MEA for providing the UCLL and SLU services should be the lowest cost of either:[5]

(a) a FTTN/copper network; or

(b) a (P2P) FTTH network with the costs of "fibre fixes" to enable the functionalities present in the market today via the UCLL service included,

where the cost is measured from exchange to end-user;

40.3 the modelled network should be capable of delivering the "*full functionality*" of the UCLL STD service. This is required by a proper interpretation of the Act and constitutes an orthodox application of TSRLIC.[6]

40.4 alternatively, if a "*core functionality*" approach to selection of the MEA is adopted:[7]

[4] In this we continue to endorse the approach set out in Commerce Commission "Process and issues paper for determining a TSLRIC price for Chorus' unbundled copper local loop service in accordance with the Final Pricing Principle" (6 December 2013) at [79].

[5] Chorus "Submission in response to draft pricing review determinations for Chorus' unbundled copper local loop and unbundled bitstream access services (2 December 2014)" ("Submission in response to draft determinations for UCLL and UBA") (20 February 2015) at [81] and Appendix A; Chorus "Cross-submission in response to draft pricing review determinations for Chorus' unbundled copper local loop and unbundled bitstream access services (2 December 2014)" ("Cross-submission in response to draft determinations for UCLL and UBA") (20 March 2015) at [75] – [81].

[6] Chorus "Submission in response to the Commerce Commission's Further consultation on issues relating to determining a price for Chorus' UCLL and UBA services under the final pricing principle" (11 April 2014) from [46]; Chorus "Submission in response to the Commerce Commission's Consultation paper outlining its proposed view on the regulatory framework and modelling approach for UBA and UCLL services" (6 August 2014) from [29].

[7] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [81] – [85] and appendix A.

(a) FWA cannot be the MEA because it is not capable of providing the "core functionality" of the UCLL and SLU service, which requires the ability for the service to be unbundled at Layer 1;[8] and

(b) GPON cannot be unbundled to dedicate resources on an end-user basis, therefore a P2P FTTH network should be considered together with a FTTN/copper network to determine the MEA. We agree with the Commission's revised draft reasoning on the exclusion of GPON as a possible technology for the MEA;

40.5 the decision whether an HEO would adopt a single MEA on the basis of a nationwide cost comparison, or would adopt different MEA for each ESA depending on the lowest cost technology in that area, is essentially an empirical question. However if the Commission does model different technologies for each ESA, the additional costs of managing multiple technologies must be accounted for in its model (including higher operating costs).[9] For these reasons, we believe that there would be considerable difficulties if the Commission were to use a mix of FTTH in some exchange areas and FTTN in others;[10] and

40.6 we agree with the Commission that adjustments to the asset valuation based on technological performance or consumer preference are not consistent with the requirement to model a cost-based price and therefore inconsistent with the Act.[11]

41 The Commission's revised draft determination includes new reasoning on both network footprint and the "*core functionality*" issues, which we address below.

Network footprint

42 We agree with the Commission that it must model a national service,[12] and that it is unnecessary to determine what lines are economically viable or economic to serve.[13]

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8 Analysys Mason "Paper on framework and modelling approach" (6 August 2014) from [1.4]; Analysys Mason "Response to submissions on Commission consultation on regulatory framework and modelling approach for UCLL and UBA" (15 August 2014) at [1.2].

9 Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [78] – [84]; Analysys Mason "Draft UCLL and UBA FPP draft determination cross-submission" (20 March 2015) at [2.3.4].

10 We refer to the suggestion at [1034] of the draft UCLL draft determination: Commerce Commission "Further draft pricing review determination for Chorus' unbundled copper local loop service" ("Further draft determination for UCLL") (2 July 2015).

11 Analysys Mason "Report for Chorus: Response to Commission" (12 February 2014) at [1.5.1].

12 Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [953].

13 The Commission's approach to using the available CoreLogic data in modelling the number of address points in the network footprint and included in the modelled demand is appropriate given the technicalities involved and there will be inevitable limitations with any geospatial dataset.

43 The answer to the Commission's question what is *"an appropriate scale for the provision of the UCLL service"*?[14] is provided by the Act and the STD for the service. The network modelled should be capable of providing the UCLL service to all end-user premises to which Chorus may be obliged to provide the service under the terms of the STD. As previously noted, this is a broader obligation than all active connections.[15]

Core functionality

44 Our view is still that an essential element of the "core functionality" of the UCLL service is the layer at which the service is provided.[16] This is supported by the statutory language and structure, the legislative history and international precedent.

45 The Commission's revised draft reasoning appears to accept that we have identified features that the MEA network should be capable of providing "*to some extent*".[17] However, the Commission concludes that our definition is too restrictive, because an efficient replacement would not allow for Layer 1 access across the whole network; and therefore it is not necessary for the HEO to provide this level of functionality nationally.[18]

46 We believe the Commission's reasoning is inconsistent with the Act. The Commission's statutory task is to set a price for *the service* that Chorus is required to provide based on the TSLRIC cost of providing *the service*. While, on the Commission's preferred approach to identifying "core functionality", a degree of abstraction from the full functionality provided by the service is permitted, the Commission cannot optimise away the geographic scope of the regulatory obligations that the HEO is required to perform.[19]

47 Whatever the core functionality of the service is, the HEO must be able to provide it to the end-user premises which Chorus is required to serve. Chorus' core regulatory obligation is to provide a point-to-point service that is unbundleable at Layer 1 to all intact copper connections.

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[14] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [952].

[15] Chorus is required to provide the UCLL service in respect of any end-user premises which has an MFP connected to an ETP at the premises at the time of the request by an RSP: Commerce Commission "Standard terms determination for the designated service Telecom's unbundled copper local loop network" (7 November 2007) at clause 4 and schedule 1, clause 1.2.

[16] See Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at Appendix A, [370].

[17] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1012].

[18] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1012].

[19] That the Commission is purporting to optimise the HEO's regulatory obligations is apparent in the Commission's reasoning that the HEO would have obligations that required it to provide "to a large extent, a point-to-point unbundleable layer 1 service": Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [317].

Optimisation

48 We agree with the Commission's approach to optimisation as being consistent with orthodox TSLRIC, including in particular the:[20]

48.1 use of a scorched node approach;[21] and

48.2 requirement that the MEA be considered for all assets required to deliver the service, and that no re-use of Chorus' existing assets is permitted in a forward-looking TSLRIC exercise.

49 The Commission's implementation of this approach is generally robust. We acknowledge that the Commission has taken account of our previous concerns that the modelling exceeded network deployment guidelines and assumes availability of motorways and private roads. However, we have two remaining concerns.

50 First, the method for optimising exchange areas proposed by the Commission is likely to cause some exchange areas to be set in a way an operator in the real world would not choose as it will not take into account all major geographical constraints, such as waterways, mountains and railways.[22] Using real exchange areas will naturally take these constraints into account.

51 Second, the Commission's model should expressly make allowance for spare capacity in the fibre model, consistent with real world design rules in New Zealand and international regulatory practice. In the model developed by the Danish regulator in 2014, 25% spare capacity in the distribution network is dimensioned, and 30% spare capacity is dimensioned in the feeder network.[23]

52 The Commission says that sufficient spare capacity is provided for in its network by the inevitable over-dimensioning of fibre cables to actual demand. However, this approach is not prudent from an engineering perspective and would not be adopted by any HEO because:

52.1 demand forecasts are statistical in nature and there is a significant likelihood of a forecast based on mean demand growth being exceeded in any given part of the network. Dimensioning the network solely on the basis of mean demand growth would be imprudent given the statistical variability of actual demand growth;

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[20] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [91]; Chorus "Cross-submission in response to draft determinations for UCLL and UBA"(20 March 2015) at [100].

[21] Analysys Mason "Report for Chorus: Response to Commission" (12 February 2014) at [1.8.2].

[22] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [2.2].

[23] TERA Consultants "Specification document" (August 2014) at table 3, available at https://erhvervsstyrelsen.dk/sites/default/files/media/endelig-modeldokumentation.pdf.

52.2 similarly, the existence of spare capacity in the network *on average* is not relevant to a part of the network which in fact has little or no spare capacity. Fibre is not a fungible asset – spare capacity in one part of the network cannot be readily redeployed to where sufficient capacity exists; and

52.3 the cost of adding capacity at a later date is also much greater than the marginal cost of additional capacity at initial build, so where there is a material probability of additional capacity being required, it is more efficient to provide this at initial build.

53 Based on this, an efficient operator would provide spare capacity to account for variability in demand, and the Commission's model should also do so, as it has done on other network elements.

54 Correctly dimensioning for spare capacity will account for cable size modularity by not adding directly to the capacity built, but to the demand determining the capacity required. This means that a 5% demand margin for spare capacity would result in a larger cable only when the difference between demand and cable size was less than 5% - that is, where additional capacity is likely to be needed. It would not result in a 5% increase in capacity over the whole network.

Exclusion of capital costs

55 Our position is still that the TSLRIC of the service must take account of the replacement costs of all assets that an HEO would deploy to provide the service Chorus is required to provide. Accounting for all asset costs ensures that the price set by the Commission, however structured, will recover the forward-looking, total long run incremental cost of providing the service and send the correct build/buy signals. Capital contributions should therefore not be deducted from the modelled TSLRIC.

56 If the Commission does take account of capital contributions, then this can only be done on a forward-looking basis. Although the decision is an essentially arbitrary one, our view is that:

56.1 exclusion of capital contributions outside of TSO areas, although greater than any capital contributions policy ever implemented in New Zealand, is possibly better than any other potential proxies; and

56.2 underground lead-in costs should not be excluded. Here, Chorus' policies in relation to UFB deployment (where it does not seek a contribution) are the best proxy for how a HEO would seek to shift demand onto its newly built network where there are existing end-users premises.

57 Taking account of Chorus and Telecom's historical contribution policies is not consistent with a forward-looking cost exercise. Further, by excluding all capital costs outside TSO areas – let alone underground lead-ins – the Commission has excluded far more costs than Chorus or its predecessors ever received from end-users.

58 In the following sections, we explain why capital contributions cannot be taken into account in the TSLRIC exercise. We then discuss our alternative position in relation to a forward-looking and backward-looking approach to both the TSO area exclusions and underground lead-in exclusions.

Exclusion of costs from TSLRIC to account for "capital contributions"

59 It is not open to the Commission to exclude costs required to provide the service on the basis that an HEO would require capital contributions outside the monthly service charge to meet some or all of those costs.[24] We disagree that the Commission has discretion as to where the HEO builds the network because, in summary:

59.1 Chorus has an obligation to maintain all existing connections where the service is currently taken by an RSP and to provide the regulated service in respect of any end-user connected to its copper network under s 30S of the Telecommunications Act;

59.2 excluding costs will result in an underestimate of the forward-looking long run costs of the total service Chorus is required to provide. This will distort build/buy incentives of TSLRIC, by setting a monthly rental price that no new entrant can attain without seeking contributions from end-users;[25]

59.3 the HEO concept cannot be extended to move away from the statutory requirement to ask "what are the TSLRIC costs of providing the service connecting those end-users required to be supplied to?" and then to ask "how would the HEO recover those costs?"; and

59.4 it is also inconsistent with the Commission's stated objective of a predictable application of TSLRIC. There is no objective criterion to analyse – and therefore predict – when an HEO might require a capital contribution independently from the monthly rental price.

60 The Commission notes that Chorus seeks contributions and this is a relevant factor in its assessment.[26] In some cases, Chorus seeks capital contributions but these are for end-user premises that are not subject to the s 30S obligation to supply. In other words, these are not part of the service that the Commission is required to determine the TSLRIC cost of.

[24] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [95] – [105]; Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [104] – [110]; Commerce Commission "Determination for TSO Instrument for Local Residential Service for period between 20 December 2001 and 30 June 2002" (17 December 2003) from [43].

[25] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [123] and table 1.

[26] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1611].

61 The Commission justifies its backwards-looking approach on the basis that the Act demonstrates a general intention that Chorus should not over-recover its *actual* costs.[27] We do not agree:

61.1 as the Commission has emphasised, the TSLRIC exercise is not concerned with Chorus' actual costs.[28] Instead, the hypothetical efficient operator is an "*'efficient entity' (which is not Chorus, but a total substitute for Chorus)*";[29] and

61.2 the intention of the Act is that Chorus should not over-recover *the forward-looking long run costs of providing the service*. Equally, it evidences an intention that Chorus should not under-recover the forward-looking long run costs of providing the service. This is the point of the TSLRIC exercise.

62 The historic costs of network deployment, and historic revenue received by Chorus to fund that deployment are irrelevant in calculating a forward-looking long run incremental total cost of the service. As the Commission correctly says in its discussion of the TSLRIC definition:

62.1 forward-looking costs reflect the costs that a network operator would incur if it built a new network today using assets collectively referred to as the modern equivalent asset.[30] Historic costs are not the same thing;[31]

62.2 the economic theory of long-run costs is that these are costs incurred in a time period where "*all necessary investment must be replaced*".[32] It is inconsistent with this approach to have regard to how past investments were funded – the question TSLRIC requires to be answered is what future investment must be incurred to provide the service; and

62.3 total service costs refer to the total inputs required to supply the total quantity of the service by the network operator.[33] It is inconsistent with this definition to model the costs of only serving a fraction of the total service by removing the capital costs of serving underground lead-ins and remoter geographical areas.

63 The reference to the "*service provider's provision of other telecommunications services*" in the TSLRIC definition does not justify a departure from a forward-looking

[27] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1619].

[28] See, for example Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [116], [170], [189] n140, [522], [1232], [1233], [1276],[1277], [1278], [1312], and [1559].

[29] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [298].

[30] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [100].

[31] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [101].

[32] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [104].

[33] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [106].

approach.[34] Instead, the reference requires the Commission to take account of such services to determine what costs are directly attributable to, or reasonably identifiable as incremental to, the service.[35] This is a forward-looking task concerned with over-recovery of the forward-looking total costs of the service in circumstances where the network is to be used to deliver multiple services, consistent with. the fundamental requirement of TSLRIC.

64 Even if it was appropriate to consider historic investments, the Commission has itself acknowledged that it is difficult to determine with any certainty whether TSLRIC-based prices would result in over-recovery[36] and that there is good reason to think it is unlikely that Chorus will over-recover its costs.[37]

65 In terms of the specific capital contributions Chorus (or its predecessor, charged), the historical record is sparse. The Commission had relied on a single undated engineering pamphlet (with the date inferred from metadata) to infer that Telecom in 1999, at least, required customers to provide an open trench to support underground lead-ins.[38] Yet the Commission's exclusion of costs from its TSLRIC estimate applies to far greater costs than ever recovered by Chorus or its predecessors.

Use of TSO areas as a proxy for where capital contributions would be received

Selection of TSO areas as a proxy

66 Another problem with excluding the costs of the service from the model on the basis that those costs would be defrayed by an HEO receiving notional capital contributions, is that the identification of those costs is inevitably arbitrary.[39] However, the use of TSO areas as a boundary for when an HEO would not seek a contribution may be better than any other possible proxies because it is a known area which can be derived from data that the Commission has received in previous determinations.

67 However, adopting the TSO area as a boundary for where capital contributions will be received will mean that the Commission removes materially more cost from the model than Chorus or its predecessors have received in the past from end-users.

68 There is no evidence that Chorus or its predecessors recovered 100 per cent of the costs of distribution and lead-in network required to serve customers outside of TSO areas. Chorus records are incomplete, but records that have been located indicate that, at most, a partial contribution was sought in some cases for extension of the network outside the existing PSTN area.[40] The Commission's proposal to exclude all

[34] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1619].

[35] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [108].

[36] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [200.2].

[37] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [200.1].

[38] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at n911.

[40] For example, in 1990 Telecom disclosed charges for installation of new connections involving an extension of service beyond the Telecom PSTN area provided that Telecom would incur the first $2000 of the costs of the

capital costs outside of TSO areas therefore excludes far more costs than Chorus or its predecessors have historically recovered.

Implementation of the TSO areas as a proxy

69 In our previous submission we suggested that if capital costs of network outside the TSO areas are removed to reflect notional capital contributions an HEO would receive, the Commission should:

69.1 review the polygons used to define the boundary of TSO areas for accuracy. Currently, areas of network known to exist as at December 2001 are being excluded;[41] and

69.2 implement the capital contribution as a one-off payment rather than assuming that the HEO will receive further contributions to fund replacement assets. Any capital contribution should be spread smoothly over the service lifetime, and not just the first asset lifetime.[42]

70 We acknowledge that the Commission now includes the costs of routes required to connect TSO areas to exchanges.

71 However, the Commission has not:

71.1 corrected the geospatial data relied upon to draw the TSO boundary areas, despite our submissions including new data; or

71.2 implemented the capital contribution as a one-off payment.

72 No reason has been given for either of these decisions in the Commission's revised draft determination. The Commission should correct the geospatial coding in its data and implement the capital contribution in a way that at least acknowledges that the HEO must fund replacement assets (i.e., a one-off payment).

73 While a number of parties were critical of the geospatial data provided by Chorus because it was incomplete and included non-residential connections that existed in December 2001, those criticisms miss the fundamental point. The data-set provided by Chorus provides the precise modern and more accurate geo coordinates for unique connection IDs in the December 2001 data-set and is therefore the best available data.

extension and 70% of the remainder of the costs: Disclosure under the Telecommunications (Disclosure) Regulations 1990 at clause 3; Supplement to the New Zealand Gazette "Telecommunications (Disclosure) Regulations 1990" (30 October 1990, Issue 188) at [1.2.2].

[41] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [106] – [115] and Appendix B.

[42] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at Appendix B; Analysys Mason "UCLL and UBA FPP draft determination submission" (20 February 2015) at [2.2].

74 The Network Strategies criticisms of Chorus' TSO data set do not undermine its status as the most complete geospatial data the Commission has access to. Those criticisms included that:

74.1 Chorus has provided an incomplete data set[43] - Chorus has acknowledged limitations in its data, although a significant number of addresses have been provided, but the same is true of the Commission's data set;

74.2 Chorus' data set does not represent TSO connections[44] - while it may be true that some non-residential connections may be included in the data set, their inclusion is unlikely to materially alter the TSO polygons. The gaps within the Commission's data set are most apparent in rural areas which are predominantly residential connections; and

74.3 Chorus has included inactive connections and MAR within TSO areas[45] - all these connections existed in December 2001. Broadband availability and the type of technology used for the connection are irrelevant.

75 For these reasons, our view is still that the Commission should correct the geospatial data on which it has based the definition of the TSO areas.

End-user contributions for lead-ins and subdivisions

76 The Commission should include the cost of lead-ins and new sub-divisions in its TSLRIC calculation. This is consistent with Chorus' current practice:[46]

76.1 Chorus does not seek any contribution for new ordinary residential connection to our UFB network. There is no basis for an assumption than an HEO would require a capital contribution to connect end-users to its fibre network; and

76.2 Chorus' capital contribution policy for new copper connections was introduced in response to the initial benchmarking determination. We confirm that, if an efficient final monthly rental price is set, and backdating confirmed, we will reverse relevant payments received under our capital contribution policy.

77 Chorus' approach to UFB connections is consistent with a new entrant seeking to encourage migration to the network and serve as much demand as possible. End-users at existing premises are likely to be less willing to provide an open trench than end-users with new premises (where such trenches may be able to be provided in

[43] Network Strategies "Review of issues on geospatial modelling" (1 April 2015) at [2.1].

[44] Network Strategies "Review of issues on geospatial modelling" (1 April 2015) at [2.3].

[45] Network Strategies "Review of issues on geospatial modelling" (1 April 2015) at [2.3] and [2.4].

[46] Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [125] – [127].

association with other civil works). Given this, Chorus' contribution policy is therefore a more relevant proxy for the strategy an HEO would adopt on a forward-looking basis rather than Chorus' historic and current copper network policies which are primarily applicable to new premises.

78 Even if it was open to the Commission to look at past practices, excluding capital costs outside TSO areas as well as the capital costs of subdivisions built since 2001 and underground lead-ins will remove materially more cost from the model than Chorus or its predecessors have received in the past.

79 There is no evidence that Chorus or its predecessors, recovered 100 percent of the costs of underground lead-ins or post-2001 residential subdivisions. Chorus records are incomplete, but records as it has been able to find indicate that prior to 2014, a contribution covering only part – often less than 50 - of labour and material costs was sought. For example:

79.1 between 2002 and 2014, Chorus charged between $40.44 and $48.44 for installation of a copper service lead-in less than 65 m in length. This did not include the cost of trenching within the end-user property boundary, which was met separately by the end-user. The fixed cost charged to Chorus for installation of a lead-in by Service Companies in 2004 was in the range of **[CI:]**; and

79.2 prior to 21 January 2002, Telecom provided trenching for lead-ins within the end-user premises boundaries, and as at 2000 did not charge for materials associated with the access (cables, pipes, terminations or ETP). Additional materials and labour was charged at $44.00 per hour.[47]

Network build costs

80 The Commission should consider the best available evidence to determine the forward-looking TSLRIC price of delivering the service in New Zealand today. Our UFB and RBI data is the best evidence of current costs of a nationwide build which reflects New Zealand conditions.[48]

81 As the Commission notes, there are particular features of the New Zealand economic, geographic and geological environment which are unique to New Zealand and which directly inform service costs.[49] Our cost data takes account of New Zealand geography, the type of drilling or trenching that is reasonably feasible, what pole

[47] Telecom New Zealand Ltd "List of Charges: Telephone services" (31 July 2000) at [2.2].

[48] Considering Chorus' UFB and RBI costs is not the same as disregarding the past decisions of an incumbent. Rather, Chorus' costs can (and should) be examined to consider what the best evidence is of what an HEO would face carrying out a national deployment today. We have been cognisant that the initial build phase of a project may reflect a period of learning and we have therefore used our build data from years 3 and 4 of our UFB and RBI projects to calculate a national average.

[49] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1806].

sharing arrangements are feasible, and the labour and overhead costs struck in competitive tender processes.

82 Despite this being the best available evidence of the cost of building a network in New Zealand today, neither the Commission nor its expert advisers appear to have taken account of the information.

83 The Commission's cost modelling is complex. However Analysys Mason has advised that comparing like-for-like rates (i.e. the cost of trenching, reinstatement, drilling/thrusting, installation of the first duct (but not duct material costs), traffic management and costs of arborists) the Commission's model assumes an average trenching cost of $38 per metre, which is around half what Chorus calculates can be achieved. As Analysys Mason states, the Commission is grossly underestimating the cost of trenching in New Zealand:

> the unit trench costs resulting from Beca's analysis are grossly underestimating actual project digging costs in New Zealand. Our analysis of Chorus' own project costs (covering their significant UFB and RBI related deployments in recent years across a mix of urban and rural projects), resulting from competitive procurement processes, indicate significantly higher costs per meter than those estimated.

84 The Commission appears to dismiss the use of Chorus' cost information because of a misunderstanding that the costs are unduly influenced by Auckland and Wellington costs. Chorus' information is based on **[RI:]** of network deployment across New Zealand between 2013 and 2014 with a degree of optimisation applied. Auckland and Wellington account for around 40% of New Zealand's population, so these costs have been captured. However, the higher costs in those regions have not unduly affected the nationally averaged trenching cost outside these areas because Auckland and Wellington costs were ring-fenced to those regions.

85 While the Commission has indicated it has taken account of many of the matters we raised in our earlier submission, such as reinstatement and traffic management costs into account,[50] its base trenching rate has dropped by around 20% from its December draft determination (from $46 to $38 per metre).[51] The reason for the drop in rate is not immediately apparent, however based on the modelling, it seems that the drop is due to:

[50] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1570].

[51] The Commission has referred to a trenching rate of $85 per metre in its revised draft determination. However this rate includes other costs, such as the costs of ducts and manholes, and was used for the purposes of comparing New Zealand rates to international benchmarks. Because of the different modelling approaches, taking just the trenching, traffic management, arborist and reinstatement costs allows a "like-for-like" comparison between the Commission and Chorus' data. The rates we have used in this submission have been calculated to enable a direct comparison. Refer to Analysys Mason "UCLL and UBA FPP further draft submission" at section 3 as to how the comparison was made.

85.1 the introduction of mole ploughing as a trenching method, which TERA assumes is significantly cheaper than methods like chain digging and directional drilling;

85.2 the use of chain digging in urban areas, despite Beca's advice that chain digging cannot be used in urban areas; and

85.3 removing some double-counting of ducts.

86 Aside from the understatement of digging costs, Analysys Mason notes a number of other reasons why the Commission's costs are significantly lower than Chorus' costs, including:

86.1 the Commission appears not to have included the cost of laterals (i.e. the cost of taking the network from the duct running down the street to the property boundary);

86.2 some drill hole/trench dimensions are not physically possible; and

86.3 the harmonic weighting calculation is not being applied correctly.

87 We believe that Commission should adopt the real world costs an HEO would face for a national deployment that Chorus has provided. Analysys Mason has explained how these costs could be factored into the Commission's model. However, if the Commission continues to rely on its existing approach, the modelling issues noted by Analysys Mason with the current modelling should be addressed.

88 Finally, the Commission should also ensure its estimates of the costs of aerial deployment reflect New Zealand conditions and are based on a realistic assessment of costs.

Best available evidence of trenching rates

The Chorus trenching cost data

89 As the Commission has acknowledged, trenching costs are an important component of the overall network costs.[52] It is therefore important that the estimate of an HEO's trenching costs accurately represents the actual costs of rolling out a nationwide network in New Zealand today. Chorus' UFB and RBI trenching rates are the best available evidence of the civil works costs that an HEO would incur in a nationwide FTTH deployment and the various local Council requirements.[53]

[52] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1555].

[53] Chorus provided regional UFB and project-level RBI trenching rates data to the Commission in our s98 notice responses in May and June 2014, and that data was also utilised to derive a blended average trench unit cost by CSA in the Analysys Mason model provided to the Commission in December 2014.

90 Our UFB and RBI trenching cost data reflects current New Zealand market conditions, as well as geographical and geological issues. [54] Our comprehensive data set is based on more than **[RI:]** of deployment in areas across New Zealand covering hundreds of projects. Our analysis takes account of New Zealand population density and spread, including the spread and make-up of cities, towns and rural regions.

91 Our UFB and RBI civil works contracts are awarded through competitive tender processes, and we have developed significant expertise in managing our contractors and the deployment process to drive lower costs.[55] The average trenching costs in the Analysys Mason model were derived from analysis of our years 3 and 4 of the UFB and RBI programmes[56] and are therefore optimised.

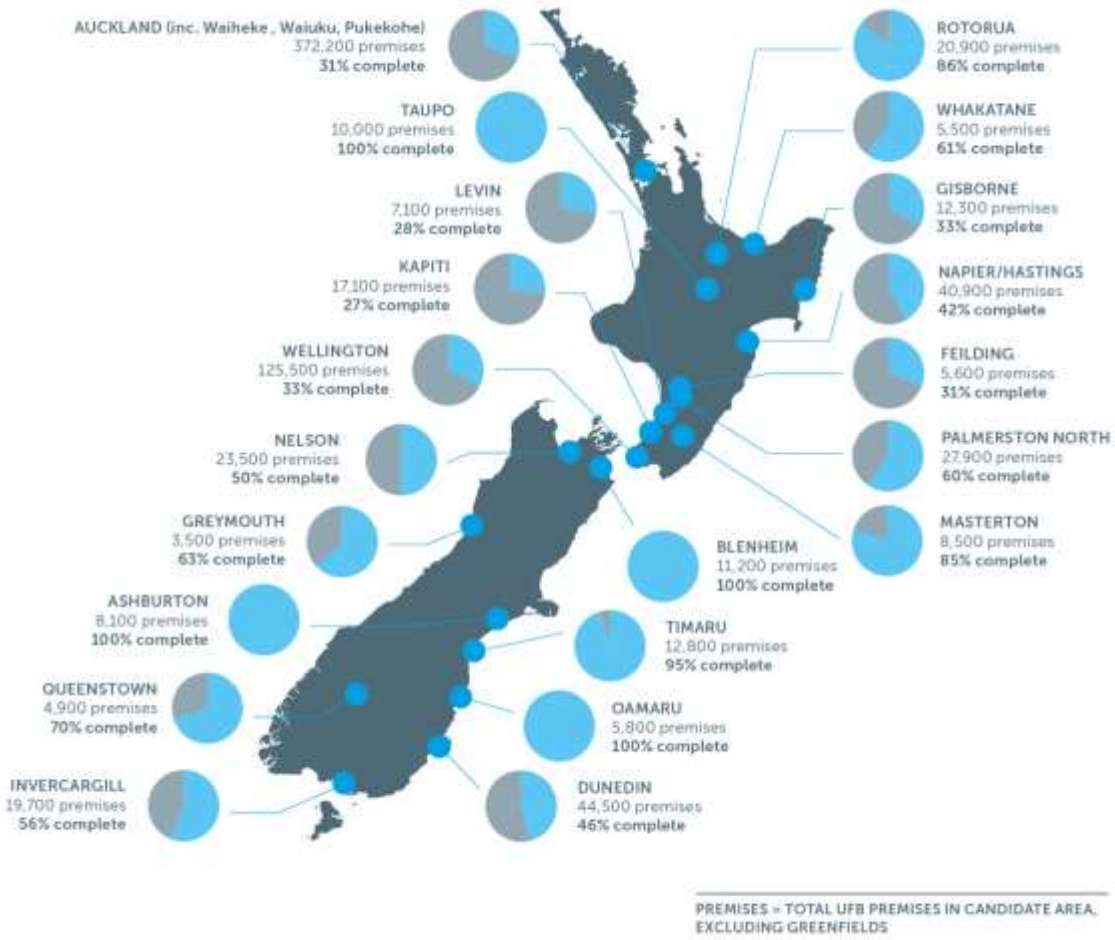
92 As can be seen in the map at Figure 1 below, a significant part of the UFB build is complete, meaning that Chorus has current cost information from across the country.

[54] Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [148] – [151].

[55] Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [149].

[56] The RBI trenching cost data we provided to the Commission under s98 on 14 May 2015 and in the Analysys Mason hybrid model was derived from all projects associated with our RBI works programme up until the end of 2014.

Figure 1: Chorus' UFB roll-out areas around New Zealand



93 As Analysys Mason explains, the data from the UFB and RBI programmes provides a:[57]

> significant body of real world, New Zealand telecoms-specific information, In particular, the data from the UFB digging projects can offer the Commission significantly improved data as to how trench costs build up in urban areas, including indirect costs such as arborist activities, consents and traffic management.

94 The Commission appears to dismiss consideration of Chorus' national average trenching rate due to a concern it is unduly influenced by the high cost Auckland and Wellington areas.[58] However, it is important that the Auckland and Wellington regions are appropriately accounted for in any cost estimate for national deployment by an HEO. Together Auckland and Wellington account for about 40% of New Zealand's population, and an HEO would incur a substantial proportion of its deployment costs in those areas. Our UFB costs include detailed information as to the cost drivers for civil works for trenching in these cities.

95 We also recognised that Auckland and Wellington are high cost areas and therefore ring-fenced the costs for those cities so they were only accounted for in the national average for those specific areas and were not included in the cost extrapolation for the remainder of the country. More specifically:[59]

95.1 the UFB trenching project data collected was aggregated by exchange service area (**ESA**) (and totalled 376 ESAs in all, after small projects of less than 50m were excluded);

95.2 of those 376 ESAs, 132 areas had sufficient project data to derive robust average costs per metre. Those 132 ESAs included the seven ESAs in the Auckland/Wellington CBD areas; and

95.3 values were then extrapolated for the remaining 646 ESAs using the 125 data points excluding the seven Auckland/Wellington CBD ESAs. This recognised that the Auckland and Wellington costs were likely to be unique to these areas and avoided artificially high rates for the other ESAs.

The Beca analysis

96 In comparison to the evidence set out in Chorus' UFB and RBI data, the Commission's consultant's (Beca) trenching rates and estimates are not based on actual evidence of

[57] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [3.1].

[58] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1563].

[59] Chorus "Commission's follow up questions following FPP conference" (14 May 2015); Analysys Mason "Draft UCLL and UBA FPP draft determination cross-submission" (20 March 2015) at [A.3.1]; Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [414], [415] and [417].

the recent costs of a nationwide network deployment. Instead, the trenching rate relied on by the Commission is based on a limited number of indicative quotations from contractors in a limited number of geographic areas, as well as some data held by Beca in its internal databases.

97 Important limitations appear to have been placed on Beca's analysis. For example, Beca has not been asked to:

97.1 comment on the reasonableness of Chorus' actual market based trenching cost data, or the way in which this was aggregated in the Analysys Mason hybrid model;[60]

97.2 obtain information from any utility company likely to be affected by the UBA and UCLL determinations;[61] or

97.3 comment on specific concerns with how the Beca corridor cost rates have been used by TERA in its modelling.[62]

98 The Commission's consultant's analysis therefore does not provide the best evidence of the trenching costs an HEO would incur. As Analysys Mason explains "*the unit trench costs resulting from Beca's analysis are grossly underestimating actual project digging costs in New Zealand.*"[63]

99 Beca's estimates for basic trenching/drilling and reinstatement costs for all types of deployment are much lower than those presently achieved in the New Zealand civil contracting market. In particular, we note:

99.1 our average per-metre civil cost for directional drilling, achieved in about **[CI:]** metres of competitively-tendered years 3 and 4 UFB work, is **[CI:]**, excluding overheads, laterals, reinstatement, traffic management and arborist costs. Our comparable RBI drilling and thrusting average per-metre rates for a further **[CI:]** metres of competitively-tendered work is **[CI:].** These averages are approximately **[CI:]** times Beca's estimated base rate for directional drilling, which we calculate to be $31. We comment further on Beca's approach to drilling costs below and the significant discrepancies between its estimated rates and the marketplace evidence of current actual drilling costs held by Chorus; and

[60] Beca "FPP corridor cost analysis response to submissions" (17 April 2015) at [2.2]; Beca "FPP corridor cost analysis – report 3, new rates and general recommendations" (5 June 2015) at [1].

[61] Beca "FPP corridor cost analysis response to submissions" (17 April 2015) at [2.2].

[62] Beca "FPP corridor cost analysis – report 3, new rates and general recommendations" (5 June 2015) at [15], [16]; Beca "FPP corridor cost analysis response to submissions" (17 April 2015) at [3].

[63] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [3.1].

99.2 our average per metre civil cost for open trenching, achieved in about **[CI:]** metres of competitively tendered years 3 and 4 UFB work, is **[CI:]**, excluding overheads, laterals, reinstatement, traffic management and arborist costs. This is approximately **[CI:]** times higher than Beca's estimated base rate for open trenching, which we calculate to be $35.

100 Directional drilling comparisons also illustrate that Beca's estimates appear to depart significantly from marketplace costs actually incurred in a modern day network deployment. Beca's drilling costs appear to be based on an estimated $900 per metre^3 cost figure.[64] In our experience, civil works contractors do not quote for directional drilling or thrusting work on a cubic metre basis. However, Chorus' competitively-tendered UFB and RBI directional drilling rates, for more than **[CI:]** converted to cubic metres using the direct drilling rates set out above are over **[CI:]** times $900 per cubic metre (although, again, our civil contractors do not quote drilling work on a cubic metre basis).

101 We do not agree with Beca that some submitters are characterising its corridor costs estimates as too low, and some as too high, so that is evidence the cost estimates themselves are robust.[65] Many submitters have very limited (if any) experience in network deployment. The issue is what the best available evidence is – and here, that evidence (Chorus' actual cost data) shows Beca's estimates are materially understated.

102 There are other limitations on Beca's approach, including:

102.1 the realities that underground service congestion, road type, and soil/rock types in urban areas can require various trenching methods, each with different associated costs. Beca acknowledges more detailed analysis may be necessary. Chorus' data would assist with capturing the cost impacts of different geographical and network features found in New Zealand, and is based on the mix of clutter types, underlying rock types and road types present in each ESA;[66]

102.2 BECA's use of LRNZ GIS data which does not include lithologies in urban areas – again, differences in underlying rock types are important cost drivers in urban areas.[67] Chorus' experience in the UFB deployment shows that the

[64] We cannot comment on the merits of any base drilling rate estimates used by Beca to derive its $900/m^3 figure because these were not included in its corridor cost worksheets.

[65] Beca "FPP Corridor Cost Analysis Response to Submissions" (17 April 2015) at [2.1].

[66] Analysys Mason "Draft UCLL and UBA FPP draft determination cross-submission" (20 March 2015) at Annex A.

[67] The Commission *excluded* the identification of basalt and other non-rippable rocks from the Beca teams' working brief: Beca "FPP Corridor Cost Analysis Response to Submissions" (17 April 2015) at [4.2.3].

presence of such rocks (particularly in the Auckland region) is significant to deployment costs.[68] Chorus' data enables this granular analysis; and

102.3 as Analysys Mason has identified, Chorus' UFB and RBI data includes detailed build-ups on the costs associated with trenching and deployment in urban areas, including unavoidable ancillary costs such as traffic management, consent and planning, and arborists (each of which Beca has estimated).[69] Again, the Commission should take proper account of Chorus' UFB and RBI trenching cost information which would offer it significantly improved data on these indirect cost components.

103 Using Chorus' data overcomes the limitations in the Beca estimation approach and will ensure the Commission's determination of deployment costs is robust.[70]

Model implementation issues with Beca cost estimates

104 Analysys Mason has also identified issues with how the TERA model assesses underground deployment costs and implements Beca's rates.[71] If the Commission continues to rely on the Beca estimates rather than the detailed and recent Chorus' actual trenching cost data, the following modelling implementation issues and omitted cost categories must be addressed.

Trenching costs

105 Analysys Mason has identified that the methodological choice is for the cheapest trenching method in an area to always be applied.[72] However, this is not achievable in practice. Analysys Mason proposes that instead of taking the cheapest trenching cost in any area, the Commission should take 75% of the cheapest trenching cost plus 25% of the open trenching cost. Analysys Mason also proposes that the mole ploughing and chain digging option be removed from the urban section of the trenching inputs.[73]

106 This is consistent with Chorus' experience - that it is not always possible to use the cheapest method in a real world deployment, for example because:

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[68] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [421]; Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [28].

[69] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [3.1].

[70] Chorus provided regional cost data for UFB years 3 and 4 and project-level RBI trenching costs data to the Commission in our s98 notice responses in May 2014, and project-level cost data for all UFB years 3 and 4 civil works in July 2015.

[71] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [3.2].

[72] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [3.2]. Although, due to an error in the formula, the second cheapest is used in some parts of the trenching input sheet.

[73] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [3.2].

106.1 some trenching methods cannot be used near buildings, roads, or existing underground services (such as electricity, gas, storm water and sewage), in certain geotechnical conditions (e.g. near unstable roads) or where there is underground congestion. Such congestion may only become apparent once trenching has commenced in a particular street and require the unplanned use of open trenching;[74]

106.2 other trenching methods are not appropriate or may be more costly in certain rock or soil types (for example, directional drilling is not appropriate for non-cohesive soils,[75] and there may be a need to pre-rip before mole ploughing in certain types of terrain); and

106.3 local councils or road owners may impose restrictions on the use of certain technologies or set rules which render the trenching method more costly: for example, road corridor managers, such as NZTA, commonly prohibit mole plough machines from going onto the sealed surface of a road to avoid damage, which may limit the streets on which such a technology can be used.

107 The Commission's model appears to assume that chain digging is always a permitted and suitable method in urban areas. However, as Beca's advice makes clear,[76] both chain digging and mole ploughing cannot be used where other underground services are present. In fact, some regional councils and local authorities do not permit the use of particular trenching methods, such as mole ploughing or chain digging, even in rural areas because of reinstatement, edge-of-road or geotechnical difficulties.[77] These techniques should therefore be excluded in rural areas where other underground services are present, or where council rules prohibit such trenching types.

108 As Analysys Mason also comment, there should be no instances of either mole ploughing or chain digging in the urban trenching worksheets.[78]

109 Analysys Mason has also identified a number of other issues with TERA's application of Beca's trenching cost rates. plus suggested solutions, including:

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74 Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [426].

75 Beca "FPP corridor cost analysis – report 3, new rates and general recommendations" (5 June 2015) at [7.2].

76 Beca "FPP corridor cost analysis – report 3, new rates and general recommendations" (5 June 2015) at [4.2] ("*[chain digging] is not suitable in urban environments [and] cannot be used cost effectively where existing underground services are present*") and at 5.2 ("*[mole ploughing] is not suitable in urban environments [and] cannot be used cost effectively where existing underground services are present*").

77 For example, the Invercargill District Council recently refused Chorus' contractors consent to mole plough after a site visit, due to the position of the water table.

78 Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at 3.2.

109.1 TERA has assumed a number of drill hole or trench sizes which would not physically accommodate the ducts within those holes (or for which the accommodation would mean there is no spare space around the duct, and thereby risk damage during installation).[79] Our engineering experts agree with Analysys Mason's assessment of drill hole sizing and the risk of damage during deployment if TERA's assumptions were used. The diameter sizes should be increased as stated in Analysys Mason's report;[80]

109.2 reinstatement costs should be included on the worksheet for TERA's definition of rural areas to reflect urbanised roads in rural areas are likely to be paved so reinstatement will be required;[81] and

109.3 TERA have not applied a correction to its harmonic weighting calculation to derive the distribution of duct sizes.[82] The model appears to use an exponential harmonic weighting, which should be corrected.[83]

110 Beca's assumption that trenching in urban areas is an "*immaterial*" contributor to an HEO's overall trenching and ducting costs,[84] is also without foundation. Beca appears to recognise this when it states that adopting a "*cheapest method*" approach to inner city trenching may result in an underestimation but this was speculative on its part.[85] Our data establishes the Commission's approach results in an under-estimation. From our UFB experience it is demonstrable that such areas are much more costly than rural, for the reasons discussed above. The importance of accurately analysing the HEO's urban trenching costs further underlines the need for the Commission to ensure it takes account of the best available trenching cost evidence to ensure it accurately assesses the HEO's build costs.

Omitted costs

111 TERA has signalled it was not provided with information for a number of cost categories, and appears to have excluded these costs from its model. We have reviewed the cost categories which TERA has identified and comment as follows:

[79] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [3.3].

[80] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [3.3].

[81] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [3.2].

[82] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [3.4].

[83] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [3.4].

[84] Beca "FPP corridor cost analysis response to submissions" (17 April 2015) at [4.2.1].

[85] Beca "FPP Corridor /cost Analysis Response to Submissions April 2015" (17 April 2015) p 4.

Cost type	Provided by Chorus?	Suggested change to Commission model
Arborists[86]	Yes, arborist costs were included in our s98 response to the 17 April 2014 notice at question Q6.14.1(j), our cover letter dated 20 May 2014, and in our response to the 27 August 2014 question 8. Detailed breakdowns of arborist costs related to actual digging projects was included in the Analysys Mason cross-submission in March 2015.	New line item for arborist costs (both for underground and aerial should be added to Commission model.
Aerial cables[87]	Yes, in our s98 response to the 17 April 2014 notice questions 6.12 and 6.14.	Commission model should incorporate the aerial cable types and associated unit costs provided by Chorus.
Overheads, handling fees and hauling fees for copper and fibre cabling[88]	Yes, overheads and hauling costs were in our s98 response to the 17 April notice at questions 6.12 and 6.14, and in our response to the 27 August 2014 notice at question 8. Our response to question 3.9 of the 7 August notice shows **[CI:** **]**.	Hauling costs and overheads are inevitably incurred in deployment, and appear to have been omitted from the Commission's build cost model**.** Commission model should be adjusted to include hauling costs and overhead.

[86] TERA Consultants "Implemented modelling changes" (June 2015) at page 9 ("No data has been provided for arborist costs.").

[87] TERA Consultants "Analysis of industry comments following the December 2014 draft determinations" (June 2015) at page 7 ("Chorus did not provide the list of aerial cables.").

[88] TERA Consultants "Analysis of industry comments following the December 2014 draft determinations" (June 2015) at page 7 ("Chorus did not provide "overheads", "handling fees", "hauling fees" or any markups.").

Installation costs for copper and fibre cabling[89]	Yes, in our s98 response to the 17 April notice question 6.14.1 , and in our response to the 27 August 2014 notice at question 8.	Installation costs are inevitably incurred in aerial and underground deployment and appear to have omitted from the Commission's build cost model. Commission model should be adjusted to include installation costs based on Chorus' costs.

Laterals

112 The Commission does not include laterals in its model (either in its trenching rate or separately). Laterals must be included as part of the modelled network. As explained in the Analysys Mason's report, laterals connect the road network trench to the boundary of the property.[90] Laterals do not form part of the lead-in.

Modelling algorithm issues

113 Analysys Mason's investigations have identified that corrections are required to the implementation of the Commission's model, including addressing the Commission's model as it is not accurately:

113.1 calculating lead-in assets on rights of way;[91] and

113.2 mapping buildings to road segments, which is leading to a material underestimation of network asset counts. [92]

114 The required corrections are provided in the Analysys Mason report provided with this submission.[93]

Aerial deployment costs

115 We agree with the Commission's assumption that an HEO would only look to deploy its distribution assets aerially in regions with existing aerial infrastructure (i.e. EDB poles). However, the Commission must take the best available evidence to ensure

[89] TERA Consultants "Analysis of industry comments following the December 2014 draft determinations" (June 2015) at page 7 ("Chorus did not provide any installation cost although it was requested in the data request.").

[90] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [2.1].

[91] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [2.3].

[92] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [2.4].

[93] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [2.3], [2.4] and [2.5].

the costs of deployment reflect the real world costs of obtaining access to the existing infrastructure.

Proportion of aerial deployment

116 To estimate the proportion of the network able to be deployed aerially, the Commission adopts a notional 2% deduction from the proportion of New Zealand served by existing EDB infrastructure, to reach its 47% estimate. A deduction is appropriate, but the 2% figure significantly under-estimates the number of customers which cannot be served via aerial distribution where EDB poles are available. Reasons why aerial deployment may not be feasible include:

116.1 EDB poles being poorly situated, or too congested for a telecommunications firm to use;[94] and

116.2 other services (e.g. water) being underground and so consent cannot be obtained to deploy an aerial lead-in, even if EDB poles are present.

Either consideration may lead an operator to elect to deploy underground in some or all parts of an area where EDB poles are present.

117 As we have previously submitted, our experience from seeking to access EDB poles for the UFB deployment is that a significant proportion of existing poles cannot be economically used for aerial fibre distribution even if replaced due to aerial service congestion, electricity network requirements, poor pole location, progressive undergrounding initiatives, or various other factors.

118 At the Commission's Conference, Network Strategies advised that Vector considered it was economical to reuse only 65% of its existing poles for aerial fibre distribution if it was selected as a UFB partner.[95] Assuming a linear relationship between poles and premises passed, Vector's assessment is much closer to our publicly-disclosed targets for UFB deployment in Auckland of approximately 20% and the Commission's position in its initial draft determination, which adopted a national proportion of aerial distribution deployment of 36%.

119 There are also likely to be consenting issues associated with deploying new aerial infrastructure even in areas where EDB poles are already present, because such deployment will involve, at minimum:

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[94] In our February 2015 submission we detailed, and gave examples of, the types of poles which may be difficult or impossible for the HEO to utilise: Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) see the matrix and images in *Figure E1* on page 132.

[95] Commerce Commission "UCLL and UBA services final pricing principle conference" (transcript, 15-17 April 2015), see Suella Hansen (Network Strategies) comment at page 70 ("*I went to see Vector, for example, and asked about the extent of poles that could be reused in their network, and they knew exactly because it was part of their UFB conversation. They said they were planning to reuse 65% of their existing poles and the marginal investment required would be minimal if not zero for the use of those 65% of poles in their network...*").

119.1 additional aerial road crossings; and

119.2 new telecommunication poles, where existing EDB poles are not correctly situated;

each of which would require resource consent in regions where those are not permitted activities. Our previous submissions and the expert reports from Incite[96] describe the consenting requirements the HEO would face in New Zealand.[97] In our view, the Commission should only model aerial distribution where the HEO could reasonably expect to obtain resource consents to build new aerial infrastructure. In particular, an HEO is likely to adopt a lower proportion of aerial deployment in urban areas to reflect the greater consenting constraints in those areas compared with rural areas.

120 The Commission must also ensure that its assessment of aerial costs delivers an accurate forward-looking estimate of the HEO's costs in undertaking an aerial deployment in New Zealand.

Pole rental and access costs

121 The $25 annual rental cost per pole assumed by Commission[98] is materially below what Chorus pays nationally for pole access. Each electricity lines company sets their own pole access charges and an HEO would be obliged to pay those commercial rates if it wished to access the poles. It is not realistic to assume the lowest rental cost levied by any one of the electricity lines companies can be achieved nationwide. The Commission should adopt a weighted average of national market pole rental rate, which Chorus has calculated as **[CI**: **]**.

122 Chorus has previously provided its pole rental agreements to the Commission.[99] The terms achieved by Chorus with lines companies for access to their distribution poles is recent real world evidence of what an HEO would expect to pay. For example:

122.1 Chorus contracts with **[CI:** **]** to access its poles. This company owns more than **[CI:** **]** poles and there is no evidence it would permit the HEO to access those poles for $25; and

[96] Incite's February advice was not directed at a scenario in which the HEO's network is built *in addition* to existing aerial networks, rather, Incite's opinion assumed that in the model Chorus' network is assumed not to exist: Incite "FPP RMA report" (10 February 2015) at page 13; Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1140] ("Incite's advice appears to be based on the incorrect premises that the HEO's network is built in addition to the existing aerial networks.").

[97] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [486] to [489]; Incite "FPP RMA report" (10 February 2015) at page 13.

[98] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1160].

[99] In our s 98 response dated 20 May 2014 at question 6.12(d) and 6.14.1(a). As we describe at n99 below, since May 2014 we have entered into a number of other distribution pole access agreements which are further market evidence of rental charges imposed by EDBs.

122.2 Chorus pays between **[CI:]** Again, these rates are what we would expect an HEO to pay for distribution pole access in the applicable areas.

123 Against this market evidence of costs the HEO would experience, it is not appropriate for the Commission to assume the HEO could achieve a national pole rental cost of $25. Relying on such a figure materially under-estimates the costs the HEO would incur in aerial deployment. Rather, the HEO is likely to incur distribution pole rental costs in line with those negotiated under Chorus' present arrangements.

124 Chorus has calculated that the national weighted[100] average annual pole rental fee it pays to lines companies is **[CI:]**.[101] Our methodology for calculating this figure is set out in **Appendix A**.

125 The Commission's $25 per pole rental excludes all of the upfront and make-ready costs to be incurred by the HEO (such as access application costs) and these costs should be included in the Commission's model. For example, under our current pole rental arrangements, the charges payable by us, in addition to the weighted average of **[CI:]**, include:

125.1 **[CI:]**; and

125.2 **[CI:]**

126 The Commission's assumption that only 2% of premises could not be served aerially in areas where EDB poles are present but cannot be economically used for aerial deployment means that the HEO would also incur a relatively greater proportion of pole make-ready and upfront costs than Chorus presently does.

Aerial consenting costs

127 The Commission has acknowledged it has incomplete data on aerial consenting costs and sought submissions on the likely level of nationwide consenting costs. In our view, an appropriate cost indication for aerial deployment consenting costs would be in the order of **[CI:]**, with a further **[CI:]** annually for

[100] Chorus' average national rental cost has been weighted according to the Commission's estimates of the average number of customers served by overhead in each EDB area: Commerce Commission "Further draft determination for UCLL" (2 July 2015) at table 10, page 213.

[101] We provided a tranche of pole rental agreements to the Commission in response to its s98 request on 20 May 2014. Since then, Chorus has executed distribution pole access agreements with a number of other EDBs, the rate for each of which is included in the weighted average above. We have also executed distribution pole access agreements with EDBs with whom we previously only had access (ie lead-in pole) rental arrangements.

monitoring and compliance of those consents. Further evidence and explanation for these amounts is set out in **Appendix B**.

128 In reaching these estimates, we have had the benefit of actual consenting cost information for our UFB aerial deployments in Auckland (33 consents), Wellington Region (13 consents), and Gisborne (1 consent), as well as several areas in which certificates of compliance were successfully sought. In addition, we have also had regard to:

128.1 consenting cost information from other areas of New Zealand where we are deploying UFB;

128.2 expert advice from Incite on whether aerial deployment is a discretionary or permitted activity under each of the 74 district and regional plans presently in force;[102] and

128.3 the Ministry for the Environment and Local Government NZ survey of each council's charges for processing different types of consents from non-notified to (publicly) notified.

Fixed wireless deployment

Inclusion of FWA as a MEA technology

129 FWA should not be a component of an MEA for the UCLL service as FWA does not:[103]

129.1 meet the full functionality of the regulated UCLL service; or, in any event;

129.2 provide the core functionality of the regulated service (which must include the ability to be unbundled at Layer 1).[104]

130 The purpose of the designation of the UCLL service is to allow RSPs to differentiate wholesale Layer 2 and retail bitstream services using their own equipment. The technology used by the RSP differentiates the quality and facilitates greater competition. This cannot be achieved with FWA, which is a strictly Layer 2 service.

Extent of FWA deployment if FWA is included in the MEA

131 If the Commission continues to include FWA as part of UCLL MEA, then Chorus considers that it is appropriate to limit provision of services via FWA to end-users who currently receive:

131.1 only low-speed data; or

[102] Incite "FPP RMA report" (10 February 2015) at page 6 - 7.

[103] Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [82] – [85].

[104] Analysys Mason "Draft UCLL and UBA FPP draft determination cross-submission" (20 March 2015) at [2.3].

131.2 voice only service.

132 The number of end-users (approximately 40,833), and criteria for identifying the categories of end-user, is in line with Chorus' experience, which is that around 2.5% of customers in the network have no or low speed broadband.

The Commission's FWA model

133 We agree with the Commission's acceptance, in principle, that it should allow throughput growth at the normal rate of 50% per annum for 5 years. We provide more detailed comments in relation to throughput and its implementation in the model in Part 2 of this submission.

134 However, there are some areas where Analysys Mason has identified that the Commission's FWA model does not provide a realistic or appropriate estimate of the costs of FWA deployment.

Site sharing

134.1 The assumed site sharing with mobile operators should not apply to all the costs. Specifically, costs relating to the antenna, feeders, combiners, electronics and resilient power supplies should be excluded from the costs of FWA sites as these would not be shared in practice by mobile operators.

134.2 The assumed site sharing with two mobile operators is unrealistic. In practice, outside of RBI areas, there is limited evidence of site sharing in the New Zealand mobile market to date, and within RBI areas sharing is limited. Specifically:

(a) Spark has recently announced some co-location on a limited number of Vodafone's RBI sites (approximately 85 as at 2 June 2015[105], with a further 40 proposed to follow). However, together, Vodafone, Spark and 2Degress have currently in excess of 3500 sites between them, of which shared sites account for less than 5% of sites nationwide[106]; and

(b) 2Degrees' views in relation to co-location in RBI areas have been reported as that: [107]

[105] National Business Review "Spark promises faster wireless rural broadband soon; 2degrees says it's priced out" (2 June 2015) available at http://www.nbr.co.nz/article/spark-promises-faster-wireless-rural-broadband-soon-2degrees-says-it%E2%80%99s-priced-out-ck-173572.

[106] Based on data sourced from MBIE's online radio spectrum management cellular carrier licence database available at www.rsm.govt.nz.

[107] National Business Review "Spark promises faster wireless rural broadband soon; 2degrees says it's priced out" (2 June 2015) available at http://www.nbr.co.nz/article/spark-promises-faster-wireless-rural-broadband-soon-2degrees-says-it%E2%80%99s-priced-out-ck-173572.

> it has only co-located on a handful of the Vodafone-constructed towers [in RBI areas]. The company says it is too expensive at $175,000 per tower, and has called for a specific change as the government prepares to dole out a further $150 million for the rural rollout.

Coverage assumptions

134.3 Analysys Mason has identified that the FWA network modelled by the Commission:

(a) does not have sufficient coverage; and

(b) will not serve 100% of premises.

134.4 This leads to a conservative underestimation of the costs of deploying FWA to the premises which the Commission assumes it will service. The costs of FWA deployment in RBI areas are likely to be lower than would be experienced at the fringes of the network when the greater difficulties likely to be faced in establishing sufficient coverage to serve all voice and low speed data customer premises in those areas are accounted for.

Spectrum costs

134.5 Spectrum costs should reflect the full opportunity cost. The opportunity cost of the spectrum is best estimated by the amounts paid in recent auctions than the reserve on a future auction.

134.6 Chorus and Analysys Mason have previously submitted on this point, and the Commission has provided no compelling justification for reducing spectrum cost below the costs that an HEO would have to pay to acquire it in the market. This is significant given that customers are wide spread nationally under the Commission's revised approach to FWA deployment, and so the HEO could not reuse spectrum already in use by mobile operators.

135 Analysys Mason also notes the following modelling errors in relation to FWA which the Commission should address:[108]

135.1 base station electronics costs should be included;

135.2 FWA backhaul assets are deployed even in the FTTN/copper model, and they should not be; and

135.3 the scaling of FWA fibre assets is incorrect.

[108] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [7.9] and [7.10].

136 Analysys Mason has proposed a number of suggested changes to TERA's approach in their report, which is provided with this submission.[109]

Operating expenses

Correct starting point

137 We agree with the Commission's approach to use our operating costs as a starting point for the HEO.[110] Use of actual operator accounts is in line with an orthodox TRSLIC approach, a point on which there appears to be substantial agreement between all parties.[111]

Efficiency adjustments

Efficiency adjustment for fibre network

138 We remain of the view that the most recent available industry evidence suggests that the opex savings reduction following a shift from legacy copper assets to fibre assets is likely to be in the order of 15% to 30%.[112] Even reduced to 40%, the Commission's proposed efficiency adjustment for fibre is too high and is not supported by the evidence.

LFI adjustment

139 The Commission has accepted that benchmarking of Chorus' line fault index (**LFI**) rate against its estimate of the likely fault rate on a new build copper network will result in double-counting of cost savings expected in network maintenance costs. That is because the fibre efficiency adjustment considers costs of a fibre network relative to those vertically integrated operators' existing legacy assets, not against a notional new build copper network.[113]

140 However, the Commission has increased the LFI adjustment based on eircom's actual performance against its target in Ireland. As the Commission notes, the failure by Ireland to meet its LFI target is the result of exceptional storm events. Analysys Mason is critical of this approach and demonstrates that the existence of the exceptional event has created the highest rolling average since early 2009. As Analysys Mason suggests, the effects of exceptional events should be disregarded: otherwise, the effect is to set modelled long term maintenance costs in New Zealand

[109] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [7.11].

[110] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [166] – [169].

[111] Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [197] – [199].

[112] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [176] – [179]; Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [200] – [201]; Fibre to the Home Council "Telcos saving serious money by upgrading to FTTH, survey finds" (press, release, 2 April 2013); TERA "Modification and development of the LRAIC model for fixed networks 2012-2014 in Denmark: MEA Assessment" (May 2013) at page 23.

[113] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [171] – [175].

lower on the basis of a single short period of exceptional higher costs in another country.[114]

Aerial deployment opex adjustment

141 We agree with the Commission's revised view that it should adjust opex to reflect the significantly greater proportion of aerial deployment in the HEO network compared with Chorus' FTTN network (47% compared with approximately 2%, respectively).[115] However, Analysys Mason believes that the Commission has underestimated the effect of this.[116] We believe that Analysys Mason's estimate, based on publicly accessible information, should be adopted.

142 TERA have calculated the required adjustment for aerial opex using a benchmark from an undisclosed country.[117] This is not an appropriate approach because it lacks transparency, and no information has been provided by TERA to enable parties to test if the observed country is comparable to New Zealand. It is therefore not possible to engage with the benchmark used by the Commission.[118]

143 Analysis Mason have analysed publicly available ARMIS data, including the three largest US telecommunications operators, and identified that a move from a 5% to a 47% aerial network would be expected to lead to a 27% increase in the annual maintenance cost based on the change in the blended average maintenance cost.[119] This is materially higher than the adjustment proposed by TERA based on a single confidential data point.

Other comments

144 While many of the detailed issues identified by Analysys Mason have been addressed in the model, a number of issues have not been. These are set out in the Analysys Mason report provided with this submission.[120] In addition, Analysys Mason has

[114] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [5.1].

[115] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [183] – [190]; Powerco "Asset Management Plan 2013" (March 2013) at [9.5]; Chorus "Submission on Commission's framework and modelling approach" (6 August 2014) at [146].

[116] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [5.2].

[117] See description in TERA Consultants "Analysis of industry comments following the December 2014 draft determinations" (June 2015) at page 10.

[118] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [5.2].

[119] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [5.2].

[120] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [8].

identified a further error in the approach to certain non-labour costs, which should be corrected.[121]

Calculation of the TSLRIC-based price for UCLL and SLU, and the price for the UCLF

145 Our view is still that the Commission's aggregation approach to setting prices for the UCLL and SLU services is a practical response to the Commission's MEA choice as it is difficult to calculate a SLU price using an FTTH MEA.[122]

146 Similarly, based on the Commission's approach to aggregation, it is unnecessary to resolve the interpretation of the UCLF initial pricing principle. However, it may be necessary to revisit this issue in the event that the Commission departs from its aggregation approach in the future.[123]

[121] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [5.3].

[122] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [191] – [192].

[123] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [193] – [194].

PART TWO: UBA SERVICE

The service to be modelled

147 We agree with the Commission's selection of the MEA for the "*additional costs of the UBA service*". The TSLRIC costs of the bitstream service should be determined with reference to the MEA to deliver a service over Chorus' existing FTTN/Copper network.

148 We continue to believe that this choice is mandated by the structure and purpose of the Act. Our reasons for this view have been set out in some detail in our previous submissions,[124] and are, we understand, consistent with the Commission's own external advice,[125] and the advice received from Chapman Tripp.[126]

149 The Commission has identified that it is no longer of the view that it is restricted to the existing copper network as the underlying access network.[127] However the Commission gives no reasons for this change of view, and does not address any of the detailed analysis that the parties have provided.

150 If the Commission's revised view is correct, then we consider that the Commission's explanation for why it is selecting a MEA for the additional costs of the UBA service over Chorus' existing FTTN/Copper network (in terms of which choice would best promote s 18) is compelling.[128] No other approach will enable RSPs to make efficient build/buy choices as to whether to unbundle – a choice that must be made on the basis of the costs of providing the service over Chorus' network. The Commission's approach therefore ensures appropriate relativity between the Layer 1 and Layer 2 designated services, as required by the Act.

Optimisation

Throughput

151 We agree that the Commission's revised model should explicitly take account of the expected growth in throughput in the regulatory period.[129] Chorus should not be expected to invest in equipment which is not dimensioned in the Commission's modelling decisions concerning the UBA service in the regulatory period. We also agree with the Commission's forecast of throughput growth – 50% per annum in the

[124] Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [212] – [219].

[125] James Every-Palmer "FPP determination: Issues re service description and the modern equivalent asset" (12 March 2014) at [28] and [29].

[126] Jack Hodder QC "Unbundled copper local loop and unbundled bitstream access services pricing review determination: Legal framework" (11 April 2014) at [23] and [24].

[127] Commerce Commission "Further draft pricing review determination for Chorus' unbundled bitstream access service" ("**Further draft determination for UBA"**) (2 July 2015) at [752] and [758].

[128] Commerce Commission "Further draft determination for UBA" (2 July 2015) at [770] – [778].

[129] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [196] – [206] and Appendix G; Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [220] – [221].

regulatory period. However, the way in which the Commission proposes to implement its throughput assumption should be reviewed.

Current throughput

152 The Commission assumes average throughput per end-user of will increase by 50% per annum from the start of the regulatory period.

153 As the Commission now proposes to commence the regulatory period as at 1 December 2015, the Commission should adopt an average throughput per end-user of **[RI:]** as at December 2015, rising to **[RI:]** by December 2020. If, as we believe, an earlier start date for the application of the final price is required, the throughput of that earlier date should be selected as the start point; the throughput at the end of the regulatory period (on our approach) should be unaffected.

154 In our February submission on the December draft determination, we stated that we expected average throughput demand per end-user of approximately **[RI:]** at the beginning of the regulatory period in April 2015 to grow significantly in the first five years. Chorus projected that demand would rise to **[RI:]** by April 2020.

155 We note that throughput for the end of the regulatory period is based on an assumption of 50% growth. There has been extraordinary growth in throughput observed in the market in the first half of 2015, apparently due to the launch of several High Definition video streaming services in New Zealand. Average throughput per end-user increased 50% in the four months to March alone. As at December 2014, average throughput per end-user on the Chorus network was **[RI:]**, and, as at July 2015, the Chorus network was experiencing average throughput per end-user of **[RI:]**.

156 Figure 2 shows growth in average throughput per end-user from December 2011, against the projected growth of 50% per annum.

[RI:

]

157 At this stage, we conservatively assume that growth will return to the historic trend. If this does not occur, a s 30R review may become necessary.

Implementation of throughput assumption

158 Analysys Mason has reviewed the update to the Commission's model to account for throughput growth. They advise that the following additional steps should be taken to fully account for growth in throughput:[130]

158.1 the number of subrack chassis should be dimensioned to hold the required number of SFP ports. At present the chassis do not support the number of ports required to support throughput growth to 2020; and

158.2 the number of RSP ports at the first data switch do not provide sufficient capacity for the aggregated traffic from the DSLAM in 2020.

Exclusion of capital costs

159 As explained in Part One of these submissions, our view remains that capital costs required to deliver the service cannot be removed from TSLRIC on the basis of assumed capital contributions.[131]

160 In particular, no account should be taken of the funding received by Chorus and Vodafone through the Crown's RBI initiative.[132] That is because:

160.1 RBI funding was provided to support deployment in areas where fibre deployment to the node was uneconomic. Such funding cannot be assumed to be necessary for the HEO, given that the relevant hypothetical is of deployment of bitstream electronics by an HEO over the existing FTTN/Copper network;

160.2 RBI funding is funded from the Telecommunications Development Levy, to which Chorus (and any HEO) would contribute, meaning that an element of funding is circular;

160.3 taking account of RBI subsidies previously received by Chorus and Vodafone for network deployment other than that used to provide the UCLL service is also inherently backwards looking. In the case of Vodafone funding, it is also perverse. Vodafone would receive the benefit of both the funding of its

[130] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [4.2].

[131] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [216].

[132] Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [118] – [122].

own network and a downward adjustment to the TSLRIC costs of the UCLL and UBA service which it acquires to recognise that funding; and

160.4 the RBI initiative did not, in any event, fund DSLAMs. Once base infrastructure was deployed, an economic case for deployment of DSL technology existed based on the then monthly charges – i.e., DSLAM deployment could be funded adequately through the rental price. DSLAMs were therefore not included in the definition of grantable assets on which RBI funds could be expended.[133]

161 Even if the Commission could adopt a backwards looking approach to capital contributions (which, for the reasons given in Part One of these submissions, we do not think it can), this would not support excluding DSLAM and cabinet costs. The Commission has not demonstrated that the RBI funding, in combination with a price determined without consideration of that funding, would result in over-recovery.

162 The Commission has accepted that "*much of the RBI subsidy*" was applied to upgrading an existing Layer 1 network to support broadband. Such upgrades do not exist in the world of an HEO supplying a UBA service using Chorus' existing FTTN/Copper network and so any contributions received by Chorus in relation to the Layer 1 network are irrelevant for the purposes of considering the UBA price increment.

163 The same argument applies also to cabinets deployed to support broadband. For the Commission's HEO, with access to Chorus' existing FTTN/Copper network, passive cabinets would already exist. Any contributions towards these costs are therefore irrelevant.

164 Put another way, the RBI funding has been applied only to those elements of the network which do not form part of the "additional costs of the UBA service over the existing FTTN/Copper network. The only costs incurred by the HEO would be those costs which Chorus has funded to meet its commitments under the RBI initiative. The assumption for the investment by Chorus was that such investments would be economic: that is, Chorus would recover the costs of its investment in DSLAMs and cabinet upgrades through the UBA monthly rental price.

165 The Commission expresses concern that Chorus' participation in RBI should not result in an increase in the cost of the UBA service for RSPs or end-users.[134] However, the Commission has not undertaken any analysis to demonstrate this will be the case. An increase in cost will depend on the interaction between the additional demand created by the RBI initiative (i.e., the additional number of active lines) and the

[133] Rural Broadband Agreement (20 April 2011) at Schedule 2; Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [218] – [221].

[134] Commerce Commission "Further draft determination for UBA" (2 July 2015) at [1033].

incremental cost of serving those customers from rural cabinets rather than exchanges.

166 In fact, by excluding DSLAM costs, but still including the demand of those customers, the Commission will effectively reduce the costs of providing the service not only for end-users in RBI areas *but for all other end-users in New Zealand*. Put another way, by excluding costs of network used to support RBI demand while continuing to take account of additional demand generated by the RBI initiative, the monthly rental charge is lower than if Chorus had not participated in the RBI initiative. The Commission's reasoning – taking into account demand created by participation in Government broadband initiatives but not the costs of serving that demand – disincentivises participation in such an initiative.

167 That outcome is not reconcilable with either the definition of TSLRIC or with s 18. Such an approach will invariably chill incentives to invest and innovate in future Government initiatives – including the UFB2 and rural broadband initiatives currently under way.

Network build costs

168 Analysys Mason has identified a number of errors in relation to the unit costs and modelling in the Commission's model.[135] These should be corrected in the final determination.

Unit costs

169 The issues identified by Analysys Mason include that indirect costs for active electronics (such as the cost of designing, testing and commissioning the assets) have not been included.[136] These are real costs that are incurred by Chorus, and would be incurred by any HEO.

170 The Commission's model also omits a number of direct unit costs (for switch racks and IOM switch cargoes) and incorrect selections of technology, such as selecting an earlier generation of switch fabric module.

171 The Commission also takes 2014 cost data provided by Chorus and reduces these costs by one year of price trends on the mistaken assumption that the data provided is 2013 cost data. No reduction by one year of price trends is necessary.[137]

Modelling issues

172 The modelling issues identified by Analysys Mason include that:

[135] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [4].

[136] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [4.1.2].

[137] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [4.1.4].

172.1 the Commission does not update the model to include additional spare capacity, despite the apparent agreement that it was appropriate to do so in response to a submission by WIK;[138]

172.2 there is an error in the RSP gradient formula; and[139]

172.3 the costs used to calculate the handover connection do not include all the assets required to be provided by Chorus, including the OFDF and the fibre cables form the FDS to the OFDF.[140]

173 These issues should be corrected to ensure that the Commission's model correctly estimates the TSLRIC additional costs of providing the UBA service.

Cost allocation

Cost allocation between bitstream services and other services

174 We agree with the Commission's approach to cost allocation for network costs based on capacity, rather adopting than Shapley-Shubik approach. [141] We are also comfortable with the approach taken in the case of areas in which the Commission has identified that data is not available to allocate cost based on capacity, that is:

174.1 between active cabinets and the parent exchange; and

174.2 between exchanges and FDS exchanges.

175 The proposed allocations, although in the case of the cabinet to parent exchange link different from that proposed in our previous submission, more appropriately reflect that UBA is the key traffic driver of peak hour traffic on the network. Accordingly, a high allocation of costs to the UBA service is appropriate.[142]

Cost allocation between bitstream services

176 We continue to agree with the Commission's preferred approach to address cost allocation between the regulated UBA service and any commercial service that

[138] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [4.3].

[139] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [4.4].

[140] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [4.4].

[141] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [223]; Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [234].

[142] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [224] – [226]; Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [235] – [242] and *Figures 9 and 10*.

subsequently develops a material demand by initiating a s 30R review. That is because, in summary:[143]

176.1 there is no commercial service with material demand presently in the market; and

176.2 given the uncertainty in the take-up of any commercial services, and the uncertainty associated with cost allocation with services, it is doubtful whether a robust price change mechanism could be developed at this stage.

EUBA variants

177 We agree that the Commission should continue to provide pricing differentiation between the EUBA service variants contained in the UBA STD[144] in the way proposed.[145]

[143] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [227] – [229].

[144] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [230].

[145] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [231]; Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [243] – [244]; Analysys Mason "Draft UCLL and UBA FPP draft determination cross-submission" (20 March 2015) at [3.12].

PART THREE: COMMON ISSUES ON UCLL AND UBA DRAFT DETERMINATION

Asset valuation

178 The Commission is required to set a forward-looking TSLRIC price for UCLL and UBA. We agree with the Commission that an Optimised Replacement Cost (**ORC**) asset valuation enables a forward-looking TSLRIC price to be set and thereby meets the statutory framework for the Commission's exercise. In particular ORC:

178.1 enables a forward-looking, efficient price to be set which is not influenced by the incumbent's past decisions;

178.2 is consistent with the Commission's HEO concept whereby Chorus is replaced and the HEO is not constrained by Chorus' historic network design and related commercial and investment decisions;

178.3 generates the right build/buy incentives to ensure efficient cost recovery; [146]

178.4 promotes efficiencies, consistent with the s 18 purpose of the Act;[147]

178.5 provides predictable application of orthodox TSLRIC which encourages investment; [148]

178.6 is consistent with past decisions of the Commission[149] and regulatory precedent in other jurisdictions applying TSLRIC; [150] and

178.7 is consistent with the Court of Appeal's characterisation of the TSLRIC model.[151]

179 We also support the Commission's rejection of the suggestion that it value re-useable assets at historic costs. Such an approach would be a departure from an orthodox and forward-looking TSLRIC model.[152] The Commission also correctly recognises that the annualised cost of an ORC valuation when a tilted annuity approach is applied equals ODRC (or DORC).[153]

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[146] CEG "Non-replicable assets and forward looking cost" (August 2014) at [8].

[147] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1203.3] and [1234].

[148] Analysys Mason "Paper in support of UCLL cross-submissions" (26 February 2014) at [1.8].

[149] Commerce Commission "Application of a TSLRIC Pricing Methodology – Discussion Paper" (2 July 2002) at page 44; Commerce Commission "Implementation of TSLRIC Pricing Methodology for Access Determinations under the Telecommunications Act 2001" (20 February 2004) at [142].

[150] Commerce Commission "Implementation of TSLRIC Pricing Methodology for Access Determinations under the Telecommunications Act 2001" (20 February 2004) at [138].

[151] *Chorus v Commerce Commission* [2014] NZCA 440 at [30].

[152] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [90].

[153] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [1267.1] and [1283].

180 Finally, the Commission's treatment of the relevance of the Supreme Court's judgment in *Vodafone New Zealand Ltd v Telecom New Zealand Ltd*[154] is correct. For the reasons explained in previous submissions and at the Commission's conference, there are fundamental differences in the statutory context being considered by the Supreme Court and the current statutory task the Commission is required to undertake.[155] This means, as expressly recorded by the plurality of the Supreme Court, that the *Vodafone* judgment has no value as a precedent in the current context.[156]

WACC - Overview

181 The objective of estimating the WACC is to promote efficient investment and consumption decisions. This will promote s 18 objectives. We have previously explained how we believe the Commission should set the WACC parameters to enable NPV neutrality, including the appropriate WACC percentile.[157]

182 Since December 2014, the Commission's estimate of the regulatory WACC has reduced significantly. These changes are driven by the Commission's approach to the use of short term/prevailing estimates of one parameter: the risk-free rate. The Commission's proxy for the risk-free rate is the prevailing yield on New Zealand government bonds. This leaves the Commission's estimate highly sensitive to changes affecting the market for New Zealand government bonds (and the market for government bonds globally). The decline in the value of government bond yields is unlikely to be representative of an HEO's expected WACC over the course of the regulatory period. This highlights the inherent volatility embedded in the Commission's approach to certain key WACC parameters, and creates an outcome whereby a 12 month delay in the Commission's decision-making process can have a significant impact on the regulated prices for the five year regulatory period.

183 There are some significant, changes that the Commission should make to its draft decisions on particular WACC parameters to bring the WACC calculation within sustainable bounds for future investment and innovation.

184 The Commission should also apply s 18 to select a WACC estimate that reflects acknowledged asymmetries in the costs of over- and under-estimating the WACC. The Commission's selection of the 50th percentile of the estimated WACC to determine the TSLRIC price for UCLL/UBA puts future investment and innovation in telecommunication services at risk. It also does not recognise uncertainty in the

[154] *Vodafone New Zealand Ltd v Telecom New Zealand Ltd* [2011] NZSC 138, [2012] 3 NZLR 153 (SC).

[155] These differences include both the statutory text (including the final pricing principle) and the purpose statement. The differences between the exercises mean that the Supreme Court's concern with "*artificially revaluing old assets*" simply does not arise in the present context: *Vodafone New Zealand Ltd v Telecom New Zealand Ltd* [2011] NZSC 138, [2012] 3 NZLR 153 (SC) at [70].

[156] *Vodafone New Zealand Ltd v Telecom New Zealand Ltd* [2011] NZSC 138, [2012] 3 NZLR 153 (SC) at [64].

[157] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [235] and [236].

estimation of the true WACC, which in all other settings to date has been a reason for the Commission to adopt a higher percentile.[158]

WACC – Parameters

185 Chorus has undertaken an exercise to test the consistency of the HEO's revenue, cost and capital structure assumptions. It has prepared an integrated set of financial statements based on the assumptions contained within the Commission's July draft determination. In short, the Commission's key assumptions are not internally consistent. The leverage and financial metrics derived from the financial statements do not align with the BBB+ long term credit rating the Commission has assumed. In the simplest possible terms, in Chorus' view, the HEO isn't financeable on the basis the Commission has assumed.

Risk-free rate

186 The Commission should adopt a long term average rather than the prevailing rate when estimating the risk-free rate for the final determination. This submission is premised on the assumption that the Commission continues to estimate a 7.0% TAMRP which predominantly reflects a long-term historical average of realised excess returns. Alternatively, if the Commission continues to give 100% weight to a prevailing estimate of the risk-free rate (proxied by prevailing government bond yields) the Commission should give 100% weight to a prevailing estimate of the TAMRP measured relative to, and in the same market conditions as, the risk-free rate estimate. Either of these approaches is capable of achieving an internally consistent estimate of the cost of equity using the capital asset pricing model (**CAPM**).

187 The Commission's continued use of a one-month (prevailing) average of five year New Zealand government bond yields gives disproportionate weight to short term changes in the risk-free rate. In addition, taking a prevailing estimate of the risk-free rate and historical average of the TAMRP is internally inconsistent. Because the proposed approach does not recognise the potential for the prevailing TAMRP to also vary through time and, in particular, to be higher than the historical average when the risk-free rate is lower than the historical average.

188 The Commission has updated its risk-free rate observation as of 1 April 2015 (using data for the month of March 2015) and is proposing to update the estimate again as of 1 September 2015, using August 2015 data. Since the Commission's December 2014 draft determination, bond yields have declined sharply due to international financial conditions. This emphasises the difficulties with the current approach. The proposed methodology means that Chorus' return on capital is influenced more by the timetable for regulatory decision-making rather than the financial conditions that the HEO would encounter. It also makes unreasonable assumptions about the manner in which Chorus (or the HEO) would choose to structure its debt capital.

[158] Ian M Dobbs "Welfare effects of UCLL and UBA uplift: Comments on the application of the Dobbs 2011 model" (29 May 2015) at pages 12 to 13.

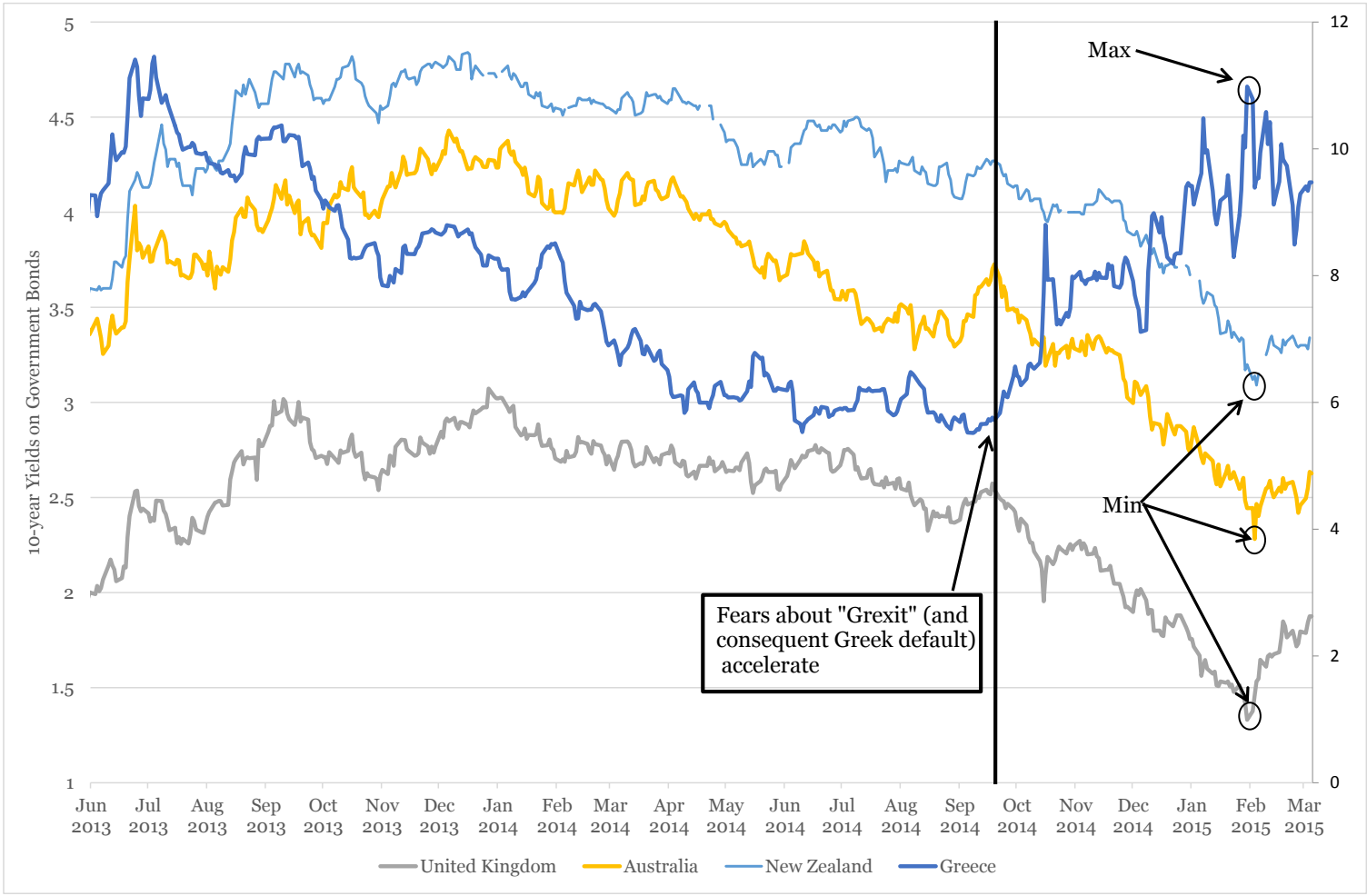
189 Overall, the approach to estimating the risk-free rate based on a prevailing one month average is difficult to reconcile with the Commission's proposition that the Commission's WACC estimate is a mid-point estimate (i.e. the central point within the range of values). The Commission's current approach to the risk-free rate simply produces a point estimate for the entire regulatory period, which may effectively represent the lowest value within the range of possible point estimates (i.e. a sequence of one-month average estimates).

Impact of short term changes

190 In response to the Commission's December 2014 draft determination, CEG noted that extraordinary developments in international financial markets had led to unprecedentedly low New Zealand Government bond yields. At that time (March 2015) international markets were reacting strongly to the imminent possibility of a Greek sovereign debt default.

191 In their March 2015 report, CEG noted that the fall in risk-free rates globally was directly linked to the ongoing European sovereign debt crisis and, in particular, fears about Greek exit from the Eurozone. Figure 3 below, reproduced from CEG's earlier report, demonstrates the effect of the Greek crisis on New Zealand government bond yields.

Figure 3: yields on New Zealand (and other low risk sovereign) debt vs yields on Greek government debt



192 The Commission does not agree that current bond yields are at unprecedented levels, pointing out that the risk-free rate as of 1 April 2015 (3.26%) was higher than the lowest rate over the five year period from September 2009 (2.78%, on 1 July 2012).

193 However, since CEG's last report (and since the Commission's 1 April estimate), the international financial situation has worsened. Macroeconomic instability, including uncertainty over Greece's future in the Eurozone, remains high. The updated CEG analysis (July 2015) notes that the Greek crisis has reached new heights, with Greek bond yields peaking on 8 July 2015. Figure 4 below shows that UK, Australian and New Zealand bond yields all had a local minimum on or around that same day.

Figure 4: yields on New Zealand (and other low risk sovereign debt vs yields on Greek government debt (updated)

194 The Reserve Bank has recognised this unique combination of circumstances in its most recent monetary policy statement where it announced a cut in the Official Cash Rate (**OCR**).[159] The market is already anticipating further cuts in the OCR between now and 1 September 2015, when the Commission is proposing to update its estimate of the risk-free rate.

195 An additional factor affecting current bond yields is the unprecedented level of quantitative easing that major economy central banks have carried out since the global financial crisis in 2007/2008. This has effectively injected trillions of dollars of additional liquidity into global markets.

196 Table 1 below highlights the impact of the current lowering in bond yields on the effective regulatory WACC:

Table 1: Impact of Lowering Bond Yields on Effective WACC

Calculation Date	Risk-Free Rate	Effective WACC	Change in NPV 5yr EBITDA from July Draft
1-Dec-14	3.80%	6.42%	56.90
1-Jun-15	3.64%	6.31%	40.00
1-Feb-15	3.47%	6.18%	22.20
1-Mar-15	3.23%	6.01%	(3.10)
1-Apr-15	3.22%	6.00%	(4.10)
1-May-15	3.15%	5.95%	(11.50)
1-Jun-15	3.26%	6.03%	-
1-Jul-15	3.25%	6.03%	(1.00)
10-Jul-15	3.00%	5.85%	(27.30)

197 At this point, it appears likely that the August 2015 data – on which the Commission's updated estimate will be based – will decline even further. However, it cannot be presumed that the prevailing market cost of equity will fall by the same amount. This is especially given the evidence from CEG, and the International Monetary Fund (**IMF**), is that falling government bond yields have not been associated with falling required returns in equity markets to date.[160] The relative stability of the market cost of in the face of volatility in the risk-free rate shows up in an inverse relationship between the TAMRP and the risk-free rate; noting that the TAMRP is simply the difference between the other two variables (after adjustment for tax).

[159] See Reserve Bank of New Zealand "Official cash rate reduced to 3.0 percent" (23 July 2015) available at http://www.rbnz.govt.nz/news/2015/ocr-23-july-2015.html.

[160] CEG "Response to the further draft determination" (August 2015) at Figure 16.

198 To be clear, the issue is not the decline in bond yields but rather that the Commission's chosen approach gives undue weight to short term changes in yields, which may go up or down significantly, while giving practically no weight to prevailing estimates of the TAMRP. It is equally possible that in future regulatory cycles conditions in international financial markets lead to an historically high risk-free rate (based on the Commission's use of one-month data to estimate the rate) but that the cost of equity will not be at historically high levels. In neither case is it sensible to allow such short term volatilities to dictate the risk-free rate calculation for an entire regulatory period where potentially offsetting short term volatilities in the TAMRP are little or no weight.

Impact of timetabling

199 Setting the risk-free rate by reference to the short term average of the month of data available immediately prior to the regulatory period means that the return on capital for the regulatory period is disproportionately influenced by the regulatory decision-making timetable. The Commission states that using current interest rates leads to "*a WACC estimate that more closely reflects changes in financial markets and therefore, provides better signals for new investment*".[161] However, given the volatility of bond yields and the lack of any weight given to prevailing estimates of the TAMRP, the reality is that the WACC estimate is dependent on the timing of the Commission's final decision rather than on the balance of prevailing financial conditions leading into the regulatory control period.

200 The allowed return on capital should not depend to such a large extent on timing considerations that have no particular relevance to the capital risk faced by a potential investor in telecommunications. A short term – and unduly depressed – risk-free rate is unlikely to provide "*better signals for new investment*" in relation to a regulatory control period that will last for five years. To the contrary, the likelihood is that the Commission's approach to estimating WACC, by substantially understating the true cost of capital, will significantly (negatively) impact investment incentives through the regulatory period.

201 For example, had the Commission issued a final decision in December 2014 as originally intended, the effective WACC would be 44 basis points higher than the Commission's most recent estimate. Conversely, were the Commission to issue a final decision based on data from tomorrow, the WACC estimate would be a further 20 basis points.

Assumptions regarding HEO's approach to debt

202 The Commission's proposal to set the risk-free rate by reference to current interest rates rather than taking a long term average implies that Chorus (or the HEO) is expected to hold a $2.2 billion interest rate risk position against the five year New Zealand Government bond. That assumption is unrealistic.

[161] Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews: Further draft decision" (2 July 2015) at [65].

203 The Commission's view is that its proposed approach reduces the degree of volatility which affects daily data but delivers an up-to-date estimate of the risk-free rate. However, taking an average from any one month which then dictates the following four to five years of revenue does not remove volatility. Rather, it exposes the HEO to the volatility of interest rates of a single month for the whole regulatory period.

204 The risk of short-term volatility having undue influence on long term returns is highlighted in the case of Chorus. As Table 1 shows, for every basis point change in the WACC due to the change in the risk-free rate there is an approximate $1.5 million change in the NPV of Chorus' EBITDA calculated over the five year regulatory period. Even in the weeks since the Commission has estimated the WACC at 6.032%, the change from a further drop in the risk-free rate has resulted in a 3% drop in the WACC to 5.85%, and a $27.3 m reduction in the NPV of Chorus' EBITDA.

205 An unregulated company would not be exposed to such a distortion. The impact of such an extreme oscillation in the interest rate jeopardises investors' ability to earn a normal return, and therefore disincentives investment.

Proposed solutions

206 The Commission has invited submissions on whether the Commission should use a long term average, rather than the prevailing rate based on a one-month average estimate, when estimating the risk-free rate.

207 We agree with the use of a long term average when estimating the risk-free rate as it would be consistent with the Commission's approach to estimating other WACC parameters, including TAMRP, asset beta and leverage. Alternatively, CEG proposes that the Commission adjust its approach to estimating the prevailing TAMRP in the CAPM model in order to be internally consistent with the use of a prevailing risk-free rate.

- *Long term average risk-free rate*

208 In our February 2015 submission, we proposed that the risk-free rate should be calculated by reference to averaging periods significantly longer than the one-month average for Government five-year bond yields currently utilised by the Commission.[162]

209 We agree with the Commission's proposal that a long term average estimate of the risk-free rate is preferable to the current prevailing estimate. Long term averages provide more stability compared to short term averages. Adopting a long term average for the risk-free rate would prevent the risk of determining the lowest (or the highest) possible value within the range of short term estimates over the regulatory period.

[162] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [244] and [245].

210 In the context of its review of Part 4 input methodologies, the Commission has acknowledged that its current approach to estimating the risk-free rate should be revisited due to potentially arbitrary and short term timing issues.[163] In that context, the Commission has acknowledged that the disproportionate impact on cost of capital from changes in externally observed WACC parameter values may create perverse incentives based around the timing of regulatory decision-making.

211 While the particular context is the decision by EDBs whether or not (and if so, when) to apply for a CPP, the same underlying issue is at stake for UCLL and UBA pricing. [164] A supplier's return on capital should not depend on the timing of regulatory processes.

212 The Commission's proposal to adopt a long term average addresses the distortions generated when bond yields are highly volatile. A long term average would also eliminate the effect of the timing of regulatory processes, and ensure that the WACC estimate is driven by the financial conditions faced by suppliers rather than by issues affecting the timely making of regulatory decisions, including legitimate prioritisation given limited resources.

- *Consistent estimates of the risk-free rate and the TAMRP in the CAPM*

213 Adopting a long term average risk-free rate and a long term average TAMRP results in an internally consistent application of the CAPM. Alternatively, should the Commission continue to give some weight to the prevailing risk-free rate, the Commission should give the same weight to a prevailing estimate the TAMRP. That is, the Commission can achieve internal consistency by choosing to:

213.1 estimate both the risk-free rate and the TAMRP over a longer term, resulting in a relatively higher risk-free rate and a lower TAMRP; or

213.2 estimate both the risk-free rate and the TAMRP using prevailing estimates, resulting in a relatively lower risk-free rate and higher TAMRP than if historical averages were used.

214 This approach is described in CEG's August 2015 report.[165] CEG explains that it is common for the prevailing TAMRP to move in the opposite direction to the prevailing risk-free rate. Moreover, CEG presents evidence, including analysis by the IMF, that this has occurred in the period of falling yields on government bonds post the global financial crisis. Consequently, if low weight is given to a prevailing estimate of the TAMRP while high weight is given to the prevailing risk-free rate then the cost of

[163] See Commerce Commission "Input Methodologies Review: invitation to contribute to problem definition" (16 June 2015) at pages 43 – 47.

[164] See Commerce Commission "Input Methodologies Review: invitation to contribute to problem definition" (16 June 2015) at pages 43 – 47.

[165] CEG "Response to the further draft determination" (August 2015) at [9].

equity will tend to be underestimated when prevailing risk-free rates are low (as they are now).

215 For these reasons, CEG points out that regulators invariably recognise the interrelationship between these two parameters in their calculations of WACC. While either of the proposed solutions outlined above would accord with international regulatory precedent, the Commission's current approach of pairing a prevailing estimate of the risk-free rate with a historical average TAMRP places it as nearly alone amongst regulators in declining to recognise this feature of the CAPM.

216 CEG's recommended approach is to give 100% weight to the prevailing estimate of the risk-free rate and the TAMRP. CEG has recalculated the DGM and concludes that using the five year government bond rate over the period 1 to 27 July 2015 as a proxy for the risk-free rate results in a tax-adjusted risk-free rate of 2.9% and TAMRP of 9.1%. This gives an overall estimate of the market cost of equity of 11.2%.[166]

217 As an alternative, CEG suggests that the Commission adopt the approach of the Belgian regulator BIPT.[167] BIPT ensures consistency between its approach to estimating the risk-free rate and the market risk premium by calculating the extent to which the market risk premium is based on historical average data, and ensuring that the estimate of the risk-free rate is weighted towards historical averages to the same degree. A full implementation of the BIPT approach is set out in CEG's report.

- *Updating Commission TAMRP estimate in light of more recent data*

218 Even if Commission does not accept the proposals described above, some updating of Dr Lally's TAMRP estimate is required to reflect changes in the risk-free rate, new survey data, DGM TAMRP and 2014 equity market data since Dr Lally carried out his analysis. Dr Lally estimated the TAMRP as the median of five separate measures. CEG has applied Dr Lally's 2014 methodology to 2015 data (including the updated risk-free rate data, the full year of 2014 market return data and the 2015 survey from Fernandez et al rather than the 2013 survey relied upon by Lally). Making no other changes to the approach, the median TAMRP estimate rises 0.5% to 7.4%.[168]

Asset beta

219 We acknowledge that the Commission's revised approach to its calculation of the asset beta, based on an updated data set and using data from a combination of the two most recent consecutive five year periods, goes a significant way towards addressing the errors that CEG has previously identified with the Commission's approach.[169] However, in our view, important issues remain:

[166] CEG "Response to the further draft determination" (August 2015) at [37].

[167] CEG "Response to the further draft determination" (August 2015) at [38].

[168] CEG "Response to the further draft determination" (August 2015) at [157] – [171].

[169] In response to the Commission's estimate of asset beta in its December 2014 draft decision, Chorus submitted that the Commission had erred by not:

219.1 the Commission's approach still places undue weight on a time period that includes the recent financial crises (which is unlikely to be representative of long term trends) and therefore cannot be said to be representative of the betas that similarly situated telecommunications companies would expect over the regulatory period;[170] and

219.2 if the Commission includes information from the time period covering the financial crises, it should also include data from earlier time periods, in order to obtain the most representative picture of comparator asset betas. That would be consistent with the approach the Commission adopted in relation to its input methodologies.[171]

220 The objective of the exercise is to estimate a forward-looking asset beta that is reflective of the investors perceived forward looking beta over the course of the regulatory period. The Commission estimates the beta by examining historical asset beta values. However, if the assumption is that historical values are a reasonable predictor of future values, then there is no reason to truncate the data series and prefer two consecutive five year periods over a longer (e.g. twenty year) period. In particular, there is no reason to expect that two consecutive five year periods are better predictors of future asset beta levels than the comprehensive longer data set.

221 In contrast, taking a long run average:

221.1 is more resilient to market shocks, and therefore more likely to accurately predict future values;

221.2 is consistent with the approach applied by the Commission in the context of input methodologies; and

221.3 results in an estimate that is also consistent with the most recent estimates of short term beta.

222 We acknowledge that the data set from older periods is not as extensive as more recent periods. However, there is no reason to reject the informational value of the data points that are available from those older periods.

223 CEG proposes that the Commission have regard to a longer time series and a larger sample of comparators when estimating the asset beta. This produces an estimate

- updating its data set to take account of more recent asset beta data; and
- adopting a longer term average estimate of asset beta in order to avoid giving disproportionate weight to the effects of the global financial and European sovereign debt crises.

[170] CEG "WACC parameters in the UCLL and UBA draft decision" (February 2015) at [23] and [45].

[171] Commerce Commission "Input methodologies (electricity distribution and gas pipeline services): reasons paper" (December 2010) at pages 518 - 519.

above 0.59.[172] Restricting the analysis to Oxera's sample but continuing to use a long run historical average suggests the best estimate is 0.53.

224 These estimates are consistent with relevant international precedents. The table below shows that the Commission's proposed asset beta of 0.45 is towards the lower end of the range of asset betas adopted by other jurisdictions from mid-2012 onwards. These comparisons suggest that an asset beta of 0.49 is more appropriate.

Table 2: International Asset Beta Determinations

Country	Asset beta	Date of decision
Finland	0.58	May-15
Belgium	0.60	Feb-15
Ireland	0.55	Dec-14
Denmark	0.50	Dec-14
Spain	0.51	Dec-14
UK (Openreach)	0.50	Apr-14
Italy	0.43	Dec-13
Sweden	0.44	Dec-13
Norway	0.45	Dec-13
France	0.48	Jan-13
Australia	0.42	Mar-15
Netherlands	0.39	Jul-12
AVERAGE	**0.49**	

225 Separately, even assuming the Commission does not adjust Oxera's estimation in the manner proposed above, the asset beta should nonetheless be adjusted upwards. In relation to the Commission's discussion of the leverage anomaly and debt beta,[173] CEG explains that the Commission's assumption of a zero debt beta gives rise to a bias in its estimates that understates the resulting asset beta. CEG proposes correcting for this bias, which would raise the average monthly 5 year asset beta over the 2009 and 2015 samples to 0.485. Again, this is consistent with the asset beta value proposed above.

[172] CEG "Response to the further draft determination" (August 2015) at [50] – [52], [192] – [213].

[173] Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews" (2 July 2015) at [203] – [218].

Leverage

226 Alternatively, if the Commission does not correct for the bias associated with using a zero debt beta and adopting the sample mean leverage, we propose that leverage of 50% is appropriate.[174]

227 The approach taken by ACCC and Ofcom, as well as most of the European regulators, has been to set the benchmark gearing based on the gearing of the regulated businesses. In particular, the approach to leverage used by Ofcom is preferable to the Commission's current approach.[175] Ofcom applies a (notional) optimal leverage in circumstances where BT's actual leverage is lower than the optimal level. But Ofcom acknowledges that a notional leverage approach is not appropriate where the regulated business' observed leverage is above the optimal level.

228 We have also proposed several refinements to the Oxera comparator set, which suggested again that leverage of 50% is more appropriate than the notional leverage selected by the Commission.

Other WACC parameters

Credit rating

229 Our view is still that the appropriate credit rating for use in estimating the cost of debt is BBB-. This is based on the CEG comparator group, and taking account of the practice of regulators such as ACCC and Ofcom.[176]

Debt swap costs

230 Estimates of the cost of debt should include an allowance for the costs of implementing an efficient debt management strategy. The Commission has accepted this, and allowed for the direct costs of entering into two swap contracts. However, the Commission has underestimated that cost. A reasonable estimate of the direct cost of entering into swap contracts is between 10 and 13 basis points if the debt can be raised domestically, and more if the debt is raised overseas.[177]

Debt issuance costs

231 Debt issuance costs of at least 0.35% per annum should be used. The Commission's allowance of 0.25% per annum is too low.[178]

Term for cost of debt

232 The appropriate benchmark term for calculating the cost of debt is ten years. This is consistent with the debt raising practice of a wide sample of international telecommunications firms, including those that appear in the Commission's preferred

[174] See Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [581].

[175] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [584].

[176] Chorus "Submission in response to draft determinations for UCLL and UBA" (20 February 2015) at [609].

[177] CEG "WACC parameters in the UCLL and UBA draft decision" (February 2015) at [118].

[178] CEG "WACC parameters in the UCLL and UBA draft decision" (February 2015) at [76].

benchmark sample.[179] To the extent that this means the Commission needs to source its cost of debt estimate from debt issued in foreign currency (which tends to include more longer term debt) then the Commission should do this. The Commission should not artificially restrict its analysis to short term New Zealand issued debt when the HEO would not restrict its funding to this source.

WACC – Estimate selection

233 The Commission should select a point estimate of the regulatory cost of capital at a level that provides NPV neutrality, taking into account the asymmetric costs of errors in uncertain parameters in the WACC estimate. Based on CEG's assessment, even the Oxera analysis indicates an optimal point estimate for the WACC around the 65th and 75th percentile.[180]

234 It is conventional to recognise that estimating the WACC is inherently uncertain and there are asymmetric negative consequences if the WACC estimate is set too low.[181] The concept of a WACC "uplift", that is, selecting a point estimate above the mid-point WACC within the plausible range produced by parameter uncertainty, is designed to address this asymmetry to ensure the best possible prospect of NPV neutrality.

235 As we have previously submitted, investment in fixed networks (both copper and fibre) is important in dynamic telecommunication markets. Section 18(2A) specifically recognises that investment in innovative products, and the risks faced by investors, should be taken into account by the Commission.

236 As Sapere notes, the telecommunication market is dynamic and characterised by large, intermittent investment. It is critical that the Commission takes a time consistent approach to recognising incentives to invest as efficient network investment will only occur if investors expect full recovery of, and return on, capital. It is therefore inappropriate to adopt a different WACC percentile simply because investment is at a particular stage of an investment cycle, otherwise it can lead to substantial welfare losses over time.[182]

237 In any event, as we have previously noted:[183]

[179] CEG "WACC parameters in the UCLL and UBA draft decision" (February 2015) at [110].

[180] CEG "Response to the further draft determination" (August 2015) at [62] and [259].

[181] Sapere "Economic comment on UCLL and UBA pricing issues" (10 August 2015) at [132] to [134]; Ian M Dobbs "Welfare effects of UCLL and UBA uplift: Comments on the application of the Dobbs 2011 model" (29 May 2015) at pages 12 to 13.

[182] Sapere "Economic comment on UCLL and UBA pricing issues" (10 August 2015) at [13] to [14], [92] to [96], [129] to [130].

[183] Chorus "Submission in response to the Commerce Commission's proposed analytical framework for considering an uplift to the TSLRIC Price and/or WACC" (2 April 2015) at [15].

237.1 the nationwide copper network will require potentially significant maintenance by Chorus, particularly to the extent there are limits or delays to fibre migration while the UFB network is established;

237.2 the existing copper network will also need augmentation/upgrading over time (particularly as 25% of New Zealand is not covered by the UFB footprint). Demand for bandwidth from the existing network has increased significantly following retail offerings such as Netflix;

237.3 there are significant end-user benefits from fibre migration;

237.4 UFB will cover about 75% of New Zealand but its roll out is not without risk despite being contractually committed, at least in part due to the impact regulatory pricing has on Chorus (as illustrated by the initial pricing decisions);

237.5 UFB1 and RBI1 are the first cabs off the rank for new investment but there will likely be more as rural customers demand higher quality services. For example, appropriate regulatory signals are necessary to attract the investment required for UFB2 and RBI2;

237.6 fibre networks will need maintenance and upgrades over time; and

237.7 the investment signals produced by the final price will impact on our ability to bring forward and extend fibre investment and on other LFCs' investment activities.

238 We believe that setting the WACC at the 50th percentile does not provide the necessary investment signals. Future investment is needed by Chorus, other telecommunications providers in the market and by entities in other markets that are, or in future may become, regulated. The signal sent by the Commission in this process will impact on investment incentives in all these areas.

239 Applying an uplift to account for asymmetric costs and asymmetric risks facilitates and is consistent with the Commission best promoting s 18 of the Act. As the Commission has noted, s 18 supports regulatory predictability as an objective, which in turn entails ensuring that there are incentives to invest for the long term benefit of consumers. The potential for under-compensation due to estimation errors in the WACC estimate and TSLRIC parameters runs counter to this objective.

Total welfare standard

240 Our view remains that s 18 requires the Commission to apply a total welfare standard when assessing the case for an uplift. A total welfare standard best secures the long term benefit of end-users by ensuring that providers of services are appropriately incentivised to invest and innovate. The long-term benefit of end-users is served by promoting economic efficiency in all its forms, which requires a total welfare

standard.[184] This is of particular importance in the telecommunications context where the pace of innovation is rapid and the benefits that accrue to consumers – both individually and in the form of enhanced economic growth – are substantial.

241 The Sapere report highlights that the causal link between promoting competition within a total welfare standard and the long term benefits to consumers is well accepted in economic literature. The Deputy Chair of the Commission has previously put it in the following terms: "*consumers gain when producers, spurred by the prospect of earning profits, enter markets, undertake investments and innovate to produce the goods and services consumers want*".[185]

242 Sapere explains that a total welfare standard is appropriate regardless of whether the market in question is one that is governed solely by competition, or whether it is regulated. Even in regulated markets, efficiency gains that are not of immediate benefit to consumers should nevertheless be considered because in the long run innovation and efficiency gains by producers will benefit consumers.[186] In order to consider the incentives for investors to invest and the risks they face (as required by s 18(2A), the Commission necessarily must consider producer surplus as it is the expected producer surplus that provides incentives to invest and reward for risk.

243 Total welfare is the standard accepted amongst economists as best incentivising investment and innovation to the long term benefit of end-users. In its revised draft decision the Commission has essentially acknowledged the importance of having regard to a total welfare standard in order to capture the value of dynamic efficiency. As the Commission notes:[187]

> there are limitations to the extent to which any theoretical representation or analytical model of *static* consumer surplus can adequately take into account all the relevant efficiency and distributional benefits to consumers over the long term.

244 We agree. However, we disagree that the differences between the total welfare and consumer welfare estimates in the quantitative models are due to factors other than a transfer of wealth from consumers to producers and that a consumer welfare standard is therefore appropriate. Both Oxera and Professor Dobbs acknowledge that

[184] Any alternative standard would be inconsistent with the Commission's role as an economic regulator and would have the Commission imposing its own distributional preferences at the expense of overall economic efficiency.

[185] Sapere, citing "Goals of Antitrust Policy and the Commerce Act" in Berry and Evans (eds) *Competition Law at the Turn of the Century: a New Zealand perspective* at page 78.

[186] As Sapere notes: the principal rationale for preventing transfers from consumers to producers would be to capture comparatively small allocative efficiency gains in the form of a demand response to lower prices. But as the dynamic efficiency gains associated with appropriately incentivising investment are of greater importance, any allocative efficiency gains associated with preventing transfers to producers would rapidly be outweighed by the loss of potential dynamic efficiency gains. Section 18 does not require the Commission to transfer economic rents from producers to consumers where the long-term costs of this would exceed the short term gains.

[187] Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews: further draft decision" (2 July 2015) at [239.2].

there is a clear link between the transfer to Chorus in the form of the WACC uplift and incentives to accelerate investment in new services. Accordingly, even on the Commission's standard, producer surplus is relevant in this case.

The importance of investment incentives

245 Notwithstanding Oxera's and Professor Dobbs' in-principle support for a WACC uplift, the Commission has declined to apply a WACC uplift principally because:

245.1 under TSLRIC pricing, new investment undertaken by Chorus does not affect the regulated price caps (as opposed to the building blocks approach under Part 4 of the Commerce Act, in which capex is rolled into the RAB). The Commission therefore concludes that an uplift in WACC is unlikely to affect Chorus' incentives to invest;

245.2 the Commission does not accept there is a need for new investment in the copper access network given the move to fibre; and

245.3 the Commission believes the evidence supporting a WACC uplift in the Oxera and Dobbs models is weak.

246 In this section we discuss the first two of these concerns. We then comment on the Oxera analysis and show why that analysis in fact supports a WACC uplift.

Investment and TSLRIC pricing

247 The fact that the Commission is applying a TSLRIC pricing principle rather than a RAB-based building blocks approach should not undermine the central importance of investment incentives emphasised in s 18(2A) of the Act.

248 As CEG explains in its report, if, by not accounting for uncertainty in the WACC estimate, the Commission sets a price below the long run measures of efficient cost that it is feasible for the regulated firm to recover, incentives to invest will be eroded in the long run.[188] In particular, if the method of setting prices consistently prevents recovery of efficiently incurred costs, over time existing investors will have the value of their sunk investments eroded. Knowledge of this means that new investors are unlikely to be attracted to the sector.

249 Oxera's analytical framework also demonstrates that a WACC uplift plausibly incentivises accelerated investment, notwithstanding new capex would not be rolled into the RAB. Neither Oxera nor Dobbs/CEG relies on the ability to recover capex through a RAB as part of the reasoning supporting their conclusion that a WACC uplift is warranted.

[188] CEG "Response to the further draft determination" (August 2015) at [273].

Incentives to invest and anticipated new investment

250 The Commission's view is that there is no need for further investment in the copper network given the migration to fibre and RBI. However, this argument:

250.1 ignores the signal that a regulatory commitment in the form of a WACC uplift sends to investors more generally;

250.2 ignores time consistency and is an example of "regulatory opportunism" whereby the pricing method changes once the supplier has committed its investment;

250.3 does not recognise that historically Chorus has introduced new technologies and services on average every four to five years, and would expect to continue doing so in relation to UFB. Furthermore, Chorus anticipates continuing to invest in the quality of its copper based services to areas where UFB will not reach; and

250.4 ignores the potential for new discretionary (i.e. uncommitted) investment beyond Chorus' NIPA commitments.

251 MBIE emphasises the importance of continuing investment incentives in the telecommunications regulatory model. In its Briefing for the Incoming Minister for the Communications Portfolio, MBIE said: [189]

> Ongoing private sector investment will be required and the settings have to be right to encourage investment and innovation. Private sector participants need to be clear about whether, when, and why government is likely to intervene in the sector, and confident that the regulatory systems are stable and supportive of investment.

252 More generally, Sapere emphasises the importance of demonstrating time consistency in regulatory decision-making in relation to telecommunications.[190] Like other utility services, telecommunications require large sunk investments, which expose investors to the risk of opportunistic decision-making by governments or regulators. It is particularly important in this sector that the Commission demonstrate to investors its commitment to a time consistent regulatory framework. Time consistency is, in this sense, a component of regulatory predictability.

253 Sapere explains that the Commission's decision not to apply an uplift to WACC on the basis that it does not see a present need for further investment will be perceived as demonstrating time inconsistency.[191] Justifying its decision in part on our current

[189] Ministry of Business, Innovation & Employment "Communication portfolio – briefing for the incoming Minister" available at http://www.mbie.govt.nz/about-us/publications/BIMs/2014-bims/communications.pdf at page 7.

[190] Sapere "Economic comment on UCLL and UBA pricing issues" (10 August 2015) at [77] to [96].

[191] Sapere "Economic comment on UCLL and UBA pricing issues" (10 August 2015) at [13] to [14], [92] to [96], [129] to [130].

position in its investment cycle implies that the Commission's regulatory decision-making framework would have been different if we faced a large and immediate investment programme. Sapere's (and our) concern is that, from the perspective of investors, this could be viewed as "opportunistic", a perception that investors would factor into future investment decisions.[192]

Expert support for an uplift to WACC

254 Both Oxera and Professor Dobbs support the proposition in principle that an uplift to the WACC will incentivise Chorus to accelerate investments that will lead to consumer benefits. Having applied what it acknowledges to be conservative assumptions regarding both the direct costs to consumers of a WACC uplift and benefits to consumers from accelerated investment, Oxera concludes that "*the set of assumptions one would have to believe in order to conclude that a modest WACC uplift is justified seems quite plausible*…".[193]

255 Both CEG[194] and Sapere[195] consider that the Oxera model for consideration of the choice of point estimate in the present context, while indicative rather than determinative, nevertheless provides a useful starting point for consideration of the appropriate WACC percentile at which the point estimate should be made. However, as CEG explains in its review of the Oxera analysis, a number of corrections are needed to overcome implausible or inappropriate assumptions on which the Oxera model is based and to otherwise improve its utility.

256 We believe once these inappropriate assumptions in the Oxera analysis are corrected, the case for a WACC uplift is compelling. CEG conclude that, even based on the Oxera framework, an optimal WACC percentile is higher, around the 75th percentile.

Assumptions in Oxera analysis

257 CEG have identified a number of assumptions in the Oxera analysis which can be properly regarded as conservative.[196]

258 First, when estimating the costs of a WACC uplift, Oxera has assumed that the asset base of any new service would effectively double Chorus' overall asset base. However, as Oxera acknowledges, "*an assumption of doubling the asset base is likely to overstate the costs*" as "*a new technology of this size would be likely to displace some of the existing asset base*". CEG explains in its review of Oxera's report that doubling the asset base should not be regarded as a conservative assumption, but rather as an error in understanding the form of regulation that in effect depreciates

[192] Sapere "Economic comment on UCLL and UBA pricing issues" (10 August 2015) at [8], [24], [78] and [82].

[193] Oxera "Is a WACC uplift appropriate for UCLL and UBA?" (June 2015) at page 3.

[194] CEG "Response to the further draft determination" (August 2015) at [52] to [62].

[195] Sapere "Economic comment on UCLL and UBA pricing issues" (10 August 2015) at [139].

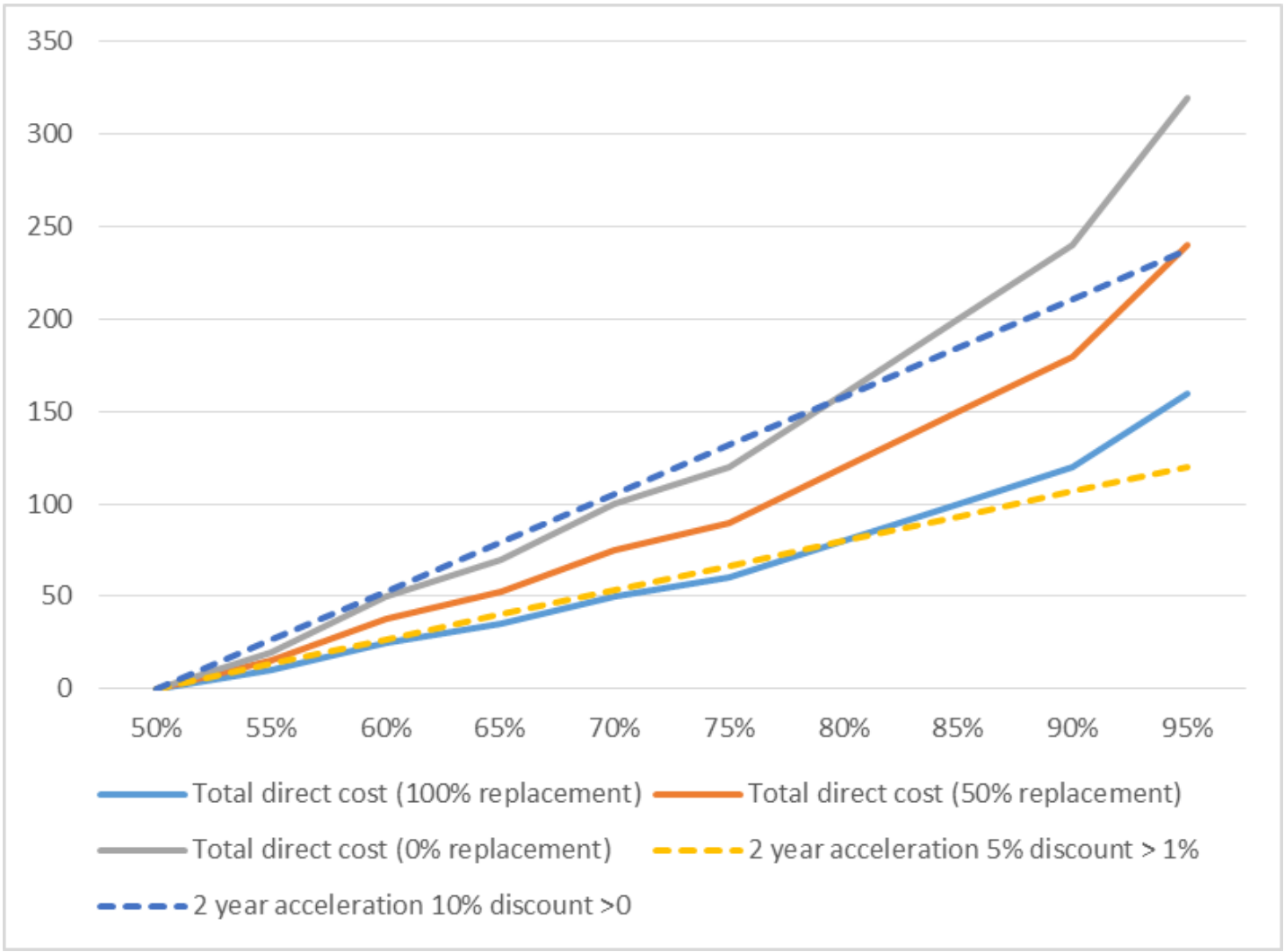
[196] CEG "Response to the further draft determination" (August 2015) at [214] to [259].

the existing asset to reflect the migration of customers from copper services to fibre services.[197]

259 CEG demonstrates that the effect of more realistic assumptions regarding the increase in the asset base strengthens the conclusion that an uplift to WACC is warranted. Figure 5 below shows the cost curve assuming new assets will replace 100%, 50% and 0% of the old asset base, together with the benefit curve estimated by Oxera.

[197] CEG "Response to the further draft determination" (August 2015) at [221].

Figure 5: Oxera cost curves with revised asset base assumptions



260 Second, Oxera has assumed that the probability of new investment being accelerated increases in a linear fashion in proportion to the increase in the WACC percentile that is adopted. Again Oxera has acknowledged this is an oversimplification, stating that "*it seems more likely that the increase in the incentive to bring investment forward is bigger for modest values of the uplift than implied by the linear projection*".[198] CEG has modelled a more realistic functional form for the link between the amount of WACC uplift and the probability of acceleration in each of the scenarios established.[199]

261 Third, Oxera has assumed that at the 50th percentile of the estimated WACC range, the probability of the true WACC being above the allowed WACC is 0%.[200] Professor Vogelsang has criticised Oxera's analysis on the basis that the probability of the true WACC being above the 50th percentile of the range is 50%, as opposed to the 0% probability assumed by Oxera.[201]

262 However, as CEG explains, both Oxera's and Professor Vogelsang's analysis focuses solely on the incentive (or lack thereof) to *accelerate* investment by applying an uplift to WACC.[202] They both ignore the probability of a *delay* in investment as a result of the risk that the true WACC is less than the allowed WACC. An appropriate comparison of the costs and benefits of applying an uplift to WACC must take into account both the increase in the probability of accelerated investment and the reduction in the probability of delayed investment.

263 CEG has produced a unified framework that models the costs and benefits associated with both of these effects. In this unified framework, at the midpoint WACC the full benefits of the new investment are received in year 5 (which is achieving 95% penetration of the new investment – the status quo in the model). However, the framework models:

263.1 the increased benefit from bringing forward those benefits by 2 years, i.e., achieving 95% penetration earlier. The likelihood of this occurring is based on the probability of the allowed WACC exceeds the true WACC by more than 1%; and

263.2 the reduced benefit from not achieving high penetration in year 5, i.e., achieving only 50% penetration. The likelihood of this occurring is based on the probability the allowed WACC is less than the true WACC by 1%.

[198] Oxera "Is a WACC uplift appropriate for UCLL and UBA?" (June 2015) at page 37.

[199] CEG "Response to the further draft determination" (August 2015) at [233] to [244].

[200] Oxera "Is a WACC uplift appropriate for UCLL and UBA?" (June 2015) at page 34.

[201] Professor Vogelsang "Review of Oxera's report, is a WACC uplift appropriate for UCLL and UBA?" (29 June 2015) at [13].

[202] CEG "Response to the further draft determination" (August 2015) at [245] to [247].

264 CEG utilise Oxera's conservative assumptions and data sources to otherwise populate its framework. Based on CEG's review of the Oxera framework, the optimal percentile is higher (between the 65th and 75th percentile of the range).[203]

265 In addition, the Commission has discounted the cost of network outages to consumers relative to electricity and gas pipelines on the basis that telecommunications do not represent as critical a service to consumers.[204] We disagree that telecommunication outages can be dismissed. Outages can be very disruptive for customers and can cause sizable economic impact. CEG explained in its February 2015 report that network outages can cause significant disruption to customers and economic activity.[205] The economic cost arises not only from outages affecting business premises but also, because so many New Zealanders work remotely, from outages that affect homes. These have recently been estimated to be as much as 50 euros per household per day in Ireland, though estimates are lower for local exchange outages.[206]

266 In our earlier submission we referred to:

266.1 an outage on the Telstra network in Victoria, which was calculated by the Victorian Government to have directly cost AUD18 million to the region, as well as flow-on costs of AUD23 million, with 89 job losses in the region;[207] and

266.2 several instances of network outages in New Zealand, which had significant costs and were widely reported in the press.[208]

267 Network outages also impose externalities on other users of telecommunication services, as both the originator and the potential recipient of a communication are disrupted when either experiences an outage. This is particularly relevant given the

[203] CEG "Response to the further draft determination" (August 2015) at [62] and [259].

[204] Commerce Commission "Cost of capital for the UCLL and UBA pricing reviews: further draft decision" (2 July 2015) at [255].

[205] CEG "Uplift asymmetries in the TSLRIC price" (February 2015) at [39].

[206] CEG "Uplift asymmetries in the TSLRIC price" (February 2015) at [39].

[207] Chorus "Submission for Chorus in response to draft pricing review determinations for Chorus' unbundled copper local loop and unbundled bitstream access services (2 December 2014) and Process and Issues Update Paper for the UCLL and UBA Pricing Review Determinations (19 December 2014)" (20 February 2015) at [662].

[208] Chorus "Submission for Chorus in response to draft pricing review determinations for Chorus' unbundled copper local loop and unbundled bitstream access services (2 December 2014) and Process and Issues Update Paper for the UCLL and UBA Pricing Review Determinations (19 December 2014)" (20 February 2015) at footnote 252. More recently, an outage on the Chorus network in December 2014, affecting approximately 15,000 customers for up to 12 hours (overnight, from 8.30pm) was considered sufficiently disruptive to be reported in the national press. See New Zealand Herald "Aucklanders' internet down for 12 hours" (10 December 2014) available at http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11371823.

role of Chorus as the provider of the ubiquitous national network, which is recognised as benefiting not just Chorus' customers but also customers of competing networks.

268 Spark appears to agrees with our view that telecommunications network outages impose significant costs on consumers, stating: [209]

> access to an affordable, reliable and fast internet connection is becoming as vital to businesses and residents as utilities like power and water.

269 Whatever the value of reduced network outages, it is greater than zero. Reducing the likelihood of outages by investing in network maintenance and upgrades is a benefit that would accrue to consumers were the Commission to adopt a WACC uplift.

Relevant demand for UCLL/UBA

270 The Commission should use the best available forecast of demand of the regulated entity over the regulatory period. The starting demand should be Chorus' current demand, and the modelled demand should change in each year of the regulatory period based on the forecast change in Chorus' demand. Demand that will be served by other competing networks – such as non-Chorus LFCs and HFC – should be excluded from the forecast.

271 The Commission is proposing to include in its demand forecast demand for services provided over competing networks, particularly other LFCs, and now also HFC. The Commission's view is that including LFC and HFC demand is consistent with achieving its TSLRIC objectives and the s 18 purpose. We do not believe that including LFC and HFC demand is consistent with either.

272 The definition of TSLRIC in the Act refers to the forward-looking costs over the long run associated with providing the service, including a reasonable allocation for forward-looking common costs.[210] By including in the model demand not actually served by Chorus, the Commission will undercompensate for the forward-looking costs of providing the service. The inclusion of LFC and HFC demand is therefore inconsistent with TSLRIC as it is defined in the Act.

273 The approach is also inconsistent with the s 18 purpose. The emphasis in that s on the long term benefit of end-users highlights the importance of not undercompensating Chorus with a view to achieving a short term transfer to consumers. By assuming that LFC and HFC demand is served, the Commission demands an unattainable level of efficiency and breaches the NPV = 0 principle. It does not allow recovery of efficient forward-looking costs from the demand actually

[209] Scoop "Regions to benefit from greater rural connectivity options" (27 July 2015) available at http://www.scoop.co.nz/stories/BU1507/S00829/regions-to-benefit-from-greater-rural-connectivity-options.htm.

[210] Telecommunications Act 2011, Schedule 1, at cl 1.

served. This reduces the incentives to invest and significantly increases the risk to investors associated with making any investment.

274 The Commission's response is that "*increasing prices in a competitive market as a response to declining demand is illogical*".[211] However, it is artificial to ignore the fact that the TSLRIC of the service will not be recovered if the Commission assumes that the demand denominator includes the proportion of demand that will be served by competitors. Given the present state of competing networks, excluding non-Chorus LFC and HFC demand is a reasonable proxy for expected market conditions in the regulatory period.

275 Including the demand served by competing networks is inconsistent with international regulatory precedent. As the Commission has noted in its draft determination, the European Commission's recommendation on costing methodologies[212] supports excluding HFC demand. The European Commission's view is that "*only traffic volume moving to other infrastructures (for example cable, mobile), which are not included in the cost model, will entail a rise in unit costs*".[213] As Analysys Mason notes in its report, there are only two other countries of which they are aware in which demand on HFC networks is included in the cost model (Denmark and Norway). In both those cases the HFC demand is restricted to that served by the HFC network of the incumbent operator.

Depreciation

Price trends for trenching costs

276 A range of 1.99% to 2.77% is preferable for the estimate of price trends for trenching, in line with the analysis carried out by CEG. CEG has explored a number of alternatives for estimating price trends for trenching costs, and concludes that a range of 1.99% to 2.77% is more consistent with the available sources of information than the 3.3% estimated by NZIER.[214]

277 NZIER's estimate relied on the Producer Price Index series (PPI series) Heavy and Engineering Civil Construction and two predictive series: (i) general inflation in operating costs captured in PPI All Industries and (ii) labour costs captured by the LCI Construction. CEG explains that while no index perfectly captures all the costs associated with trenching, the indices relied upon by NZIER include a number of activities unlikely to be representative of trenching costs (e.g. aerodrome runway construction and mine site construction). CEG also notes that NZIER's approach does not appear to have regard to the historical information of the series on which it relies, and that this appears inconsistent with the view of the Commission. The Commission

[211] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [969].

[212] European Commission "Impact assessment accompanying the document: Commission recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment" (11 September 2013) at page 44.

[213] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [968].

[214] CEG "Response to the further draft determination" (August 2015) at Table 17.

considers that "*a combination of both past and future trends provides the most robust indication of forward-looking trends for our TSLRIC model*".[215]

278 CEG proposes that the Commission construct a weighted PPI series tailored to the costs of trenching, and suggests five alternative weighted PPI series suitable for this purpose. The long term price trends estimated by CEG on the weighted PPI series are in the range of 1.99% to 2.77%, with the lower end of the range representing CEG's preferred estimate.[216] These estimates are preferable to the estimate produced by NZIER.

Asset lives

279 We agree with the Commission's decision to use Chorus' forecast asset lives as the appropriate starting point.[217] However, in terms of considering whether to account for asymmetries in the WACC percentile consideration, it is not correct that asset lives as set out in Chorus' financial accounts take account of asset stranding in the same sense as a regulator would take account of the asymmetric risk of regulatory or technological stranding.

280 As we have previously explained, the financial statements and guidelines accountants must work to are different to the task required of the Commission in considering the extent to which asset lives of the HEO should be impaired given the risk of potential technological stranding.[218]

Constant price for regulatory period

281 Our preference is for a constant price for the regulatory period. We acknowledge that the general preference expressed at the Commission's Conference by RSPs was for a glide path. But our view is that a single price for the regulatory period has the advantage of simplicity.

[215] CEG "Response to the further draft determination" (August 2015) at [289].

[216] CEG "Response to the further draft determination" (August 2015) at [337].

[217] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [375].

[218] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [282].

PART FOUR: FINAL PRICE REPLACES THE INITIAL PRICE

Overview

282 A final pricing review process is essentially a self-review by the Commission of its initial, benchmark exercise. It must use a different prescribed methodology (TSLRIC cost modelling) to take a detailed fresh examination of the efficient price to provide the regulated service in New Zealand.

283 In both draft final pricing review determinations released, the Commission has established that the initial benchmarked monthly prices, as proxies for the costs in New Zealand, were wrong. In order to give effect to s 18, the initial, inefficient prices should now be corrected.

284 This should not be unexpected in the market. There is regulatory and Court precedent for such a situation following a review. Further, on 13 August 2013, six RSPs, including the three that account for the majority of the retail market, wrote to the Minister saying that the aggregate copper price should be comparable to the entry level fibre price – at that time, $37.50. Knowing that the entry level fibre price cap tracks to $42.50 by 2020, the RSPs said $37.50 should be frozen and the price reviews withdrawn. These three RSPs (as well as others) also applied for a review of the Commission's initial price for UCLL and UBA.

285 It is our view that the more accurate final prices should be substituted for the inefficient initial prices and doing so meets the purpose in s 18 of the Act. This means the final price for the UCLL and SLU should apply both to those services and the services to which the UCLL price flows through from the date of the UCLL initial benchmarked price determination (that is, 1 December 2012),[219] and the final price determined for the additional costs of the UBA services should apply from 1 December 2014.[220] As we said in our March submissions, the UCLL price flows through tot UCFLS and some UBA services, and this flow through should be accounted for in the operation of the UCLL price from 1 December 2012.[221]

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[219] Chorus "Submission in response to the Commerce Commission's Draft Pricing Review Determinations for Chorus' UBA and UCLL services" (2 December 2014) at [319]. As we said in our March cross-submission, the final UCLL price will also flow through to the services which expressly adopt or incorporate as a component the UCLL price: the UCLF and UBA services (for the UBA service, this will be the case for services taken prior to 1 December 2014 for Naked UBA and from 1 December 2014 in respect of all UBA services). The final UCLL price will apply to those services from the date it is effective: Chorus "Cross-Submission in response to the Commerce Commission's Draft Pricing Review Determinations for Chorus' UBA and UCLL Services (2 December 2014)" at [343.1].

[220] Chorus "Submission in response to the Commerce Commission's Draft Pricing Review Determinations for Chorus' UBA and UCLL services" (2 December 2014) at [320] – [323]; Chorus "Cross-submission in response to the Commerce Commission's Draft Pricing Review Determinations for Chorus' UBA and UCLL services (2 December 2014)" (20 March 2015) at [341] – [345].

[221] The final UCLL price will also flow through to the services which expressly adopt or incorporate as a component the UCLL price: the UCLF and UBA services (for the UBA service, this will be the case for services taken prior to 1 December 2014 for Naked UBA and from 1 December 2014 in respect of all UBA services). The final UCLL price will apply to those services from the date it is effective: Chorus "Cross-Submission in

286 We note that the Commission applied an earlier operative date (or "backdated") in relation to UCLF service transaction charges in 2014. At that time, the Commission considered it appropriate to adopt an earlier start date where the failure to update the initial price of certain transaction charges at an earlier time resulted from a Commission error.

Requirements of the Act

287 Applying the final price from the date of the initial price determination is the correct approach as a matter of law and economics:

287.1 the Court of Appeal has held that as a matter of statutory interpretation a price review determination relates back to the date of the initial determination.[222] The Court's findings were consistent with submissions made to it by the Commission reflecting the fact that "…*the scheme and purpose of the Act contemplate that [a] review will operate in respect of the period covered by the initial determination*";[223]

287.2 there is no basis for distinguishing the Court of Appeal's judgment (which related to a pricing review of a determination made pursuant to s 27 of the Act) from a pricing review application made pursuant to s 30M (a standard terms determination (STD)). To the contrary, in 2006 Parliament consciously provided that the same price review provisions would apply to a review of an STD. This is evident from the express wording of s 42 of the Act which refers to determinations made under both s 27 and s 30M;

287.3 consistently, the High Court and the Court of Appeal have also recently stated that the initial benchmarking process requires the Commission to "…*estimate the likely FPP price*" and that is a "*preliminary estimate, based on benchmarking, of the price that may, if necessary, ultimately be determined for the FPP*".[224] That is, the legislative framework makes it clear the initial price is one which is contingent on a price review determination being carried out using a more sophisticated methodology resulting in a price that is more efficient than the initial price produced by a basic methodology;

287.4 for this reason, and applying a "purposive approach" to interpreting the Act requires, as the Court of Appeal in 2006 held, that the interim and final price merges when the final price is delivered, thereby taking effect from the same date as the initial determination. This is the substitutionary nature of the

response to the Commerce Commission's Draft Pricing Review Determinations for Chorus' UBA and UCLL Services (2 December 2014)" at [343.1].

[222] *Telecom New* Zealand *Ltd* v *Commerce Commission* & *Anor* CA75/05, 25 May 2006 at [44].

[223] Commerce Commission "Submissions of the first respondent" in *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 (1 February 2006) at [27.4].

[224] *Chorus v Commerce Commission & Ors* [2014] NZHC 690 at [125] and *Chorus v Commerce Commission & Ors* [2014] NZCA 440 at [34].

final price review process "… *which the Act has established in order to serve the s 18 purpose*";[225]

287.5 it is also consistent with the fact that s 52 provides only that the final determination must specify the expiry date of the determination and not a commencement date. If the final pricing review determination was only to take effect from the date of the determination (and not earlier), then the legislature could easily have provided for this. In the absence of this specific direction in the Act, it would be incorrect to regard a second phase price review determination as only having prospective effect;

287.6 the Commission is not required or permitted to carry out some "balancing act" to determine the most suitable operative date for the review determination. Nowhere is this provided for in the legislation and to do so would be inconsistent with s 18. As the Court of Appeal stated *"[w]e consider that the s 18 purpose is better served by substituting the revised price for the initial price ab initio rather than only after a period of relatively less efficient pricing".*[226] If this was not the case, then for the period of the initial benchmarked price, either the wholesaler (in this case Chorus) will have received an inefficiently inadequate price for the service (undermining both incentives to invest and the quality of actual investments made) or retail service providers will have paid an inefficiently excessive price for the service; both produce outcomes which are detrimental to the long term benefit of end-users;

287.7 the review process is designed to implement the purpose statement and any decision by the Commission not to substitute the review determination for the initial determination would instead be to contradict or undermine the s 18 purpose;

287.8 it is also wrong for the Commission to proceed on the basis that any decision to backdate the review determination must demonstrably promote competition. Rather, the whole purpose and object of the review process is to substitute prices based on a more sophisticated methodology for what are otherwise inefficient prices. If this was not the case, then the Commission would be proceeding on the basis that the s 18 purpose was met for the period over which Chorus was receiving inefficiently low prices for the supply of its services. That cannot sensibly be the case;

287.9 as consistently raised during this process, the risk of an adjustment to the prices determined under the initial pricing principle is well known to all parties. The parties are sophisticated commercial parties used to making

[225] *Telecom New Zealand Ltd* v *Commerce Commission & Anor* CA75/05, 25 May 2006 at [44].

[226] *Telecom New Zealand Ltd* v *Commerce Commission & Anor* CA75/05, 25 May 2006 at [44].

decisions against a backdrop of a range of commercial and regulatory risks factored into their decision making process. This is evident from the fact that some parties have already passed on price increases to consumers based on the Commission's earlier draft determination;

287.10 applying any other interpretation to that set out above would be wrong in law. It will result in significant and unfair disadvantage to Chorus as the wholesaler while endorsing provision on an inefficient price to RSPs;

287.11 the assurance process the Commission is carrying out in a price review is undermined in terms of process and market incentives if there is inconsistency through time in its approach. Affected parties need confidence that the final price will be adopted if the initial price is determined to be inadequate;[227] and

287.12 a time consistent approach is needed given the signal it sends to investment; otherwise it will lead to results contrary to the long term benefit of end-users.[228]

288 Given the importance of ensuring the efficient price is substituted to give proper effect to the review process and the signal this sends to the market, we elaborate on some of the points below and also refer to our previous submissions.

Court of Appeal 2006 judgment

289 The essential conclusion of the Court of Appeal in *Telecom v Commerce Commission* was accurately summarised by the Court of Appeal in *Chorus v Commerce Commission* as follows:[229]

> This Court held in *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 at [44] that as a matter of statutory interpretation a price review determination relates back to the date of the initial determination.

290 The reasoning for that conclusion is summarised in paragraph [44] of the Court of Appeal's 2006 judgment:

> [44] In our view Harrison J was right to uphold the contention by the Commission and TelstraClear that a price review determination relates back to the date of the initial determination. That is consistent with the substitutionary nature of reviewing or appellate decisions which vary an original decision. The alternative view implies a potential for negativing the efficacy of the review process which the Act has established in order to serve the s 18 purpose. Moreover, the obvious function of the price determination regime is to fix the price for a period of time relevant to the

[227] Sapere "Economic Comment on UCLL and UBA Pricing Issues" (August 2015) at [103] – [105].

[228] Sapere "Economic Comment on UCLL and UBA Pricing Issues" (August 2015) at [106].

[229] *Chorus v Commerce Commission & Ors* [2014] NZCA 440 at n46.

> application, not to fix the price for part of that time and another price for another part. We consider that the s 18 purpose is better served by substituting the revised price for the initial price ab initio rather than only after a period of relatively less efficient pricing. None of the arguments advanced on behalf of Telecom has persuaded us to the contrary.

291 As the Commission majority note, this paragraph does contain a reference to the "potential" that, in the context of a determination under s 27 of the Act which had an expiry date, the pricing review might not be able to be completed in time to have application prior to the expiry of the s 27 determination.[230]

292 However, all other reasons given in paragraph [44], and elaborated upon in the judgment, are independent of the expiry date issue and just as s 42 is applicable to both s 27 and s 30M determinations, the Court's views are equally applicable in the present context.[231] These include:

292.1 that replacement is consistent with the substitutionary nature of reviewing or appellate court decisions which vary an original decision;

292.2 the obvious function of a price determination regime is to fix the price for a period of time relevant to the application that is reviewing the initial decision; and

292.3 the purpose of s 18 is best served by substituting the reviewed price for the initial price *ab initio*.

293 The Court's analysis of s 18 is of central importance, and is set out in paragraph [41] of the judgment:

> [41] Telecom submitted that the s 18 purpose was not promoted by backdating. The consequence of the sequential nature of s 27 and s 51 determinations would be that any backdating over the "initial" period will merely transfer wealth between the provider and the user of a service. We find the argument unpersuasive. If the reviewed price is lower than the initial price the end users will have paid an inefficiently excessive price for the service. But if it is higher the end-users would have paid an inefficiently inadequate price for the service. Absent the possibility of

[230] While the Court emphasised that the initial determination had an expiry date, it also found that the Commission has the jurisdiction to determine a different expiry date for the review determination and that the greater efficiency of the review price may be achieved by an adjustment to the time period. This is clearly not a factor relevant to an application for a pricing review in relation to price terms in an STD, which has no expiry date.

[231] We note that the fact that the Court of Appeal did not place determinative weight on the expiry issue is unsurprising. That is because the Court went on to hold that the expiry date for the pricing review determination could extend beyond the date of the underlying section 27 determination if it were rational to do so: at [47]. The risk of futility could therefore never have been a complete answer to Telecom's arguments. Instead, the Court was required to consider the textual, structure and purposive indications of the pricing review provisions to determine the intended effect of the pricing review provisions of Part 2 of the Act.

> the consequences being passed on to the end-users in some way, the potential for inefficiencies in relation to end-users is unavoidable on either the Telecom position or the respondent's position. What can be achieved, however, is the establishment of the most efficient price as between the access provider and the access seeker.

294 No part of the Court consideration of s 18 is dependent on the expiry issue. Rather, the focus on the Court of Appeal was concerned to satisfy the statutory purpose of the review to substitute the initial, inefficient price with the final price. It expressly rejected the argument that this merely related to a wealth transfer between the wholesaler and RSPs. The Court of Appeal also considered, and expressly rejected, the proposition that a different outcome might be appropriate if the final price was higher, rather than lower, than the initial price. [232]

295 The Court of Appeal also expressly rejected the argument that it would be inappropriate to require market participants to act on an assumption that the initial price may ultimately be altered.[233] The Court said that market participants could be expected to prudently plan for contingencies, just as other market uncertainties were taken into account.

Commission's submissions to the Court of Appeal

296 We note that the Commission has now published its 2006 submission on its website. While the Court's judgment must ultimately stand on its own, it is appropriate to record that the Court's judgment represents an almost complete adoption of the factual and economic propositions advanced by the Commission in that case.

297 The Commission submitted that:

297.1 "*the scheme and purpose of the Act contemplate that the review will operate in respect of the period covered by the initial determination*" (subject only to an express exception where the pricing review arises under s 21);[234]

297.2 the "*ability to relate to the same period is intrinsic to the notion of a review*", and consistent with the statutory scheme,[235] and the scheme of Part 2 of the Act means that the aims of that Part "*will be substantially frustrated if the efficient price determined on review does not apply to the period in respect of which the original application was made*";[236]

[232] *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 at [41].

[233] *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 at [35].

[234] Commerce Commission "Submissions of the first respondent" in *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 (1 February 2006) at [27.4].

[235] Commerce Commission "Submissions of the first respondent" in *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 (1 February 2006) at [33].

[236] Commerce Commission "Submissions of the first respondent" in *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 (1 February 2006) at [38].

297.3 there can be no suggestion "*that unfairness results from any application of a review determination to a period before the determination is made",* given that the initial pricing determination *"can only sensibly be seen as an interim finding"*;[237]

297.4 if reviews did not have operative effect from the initial determination date "*the party that is likely to benefit from a higher (or lower) price will be disadvantaged in circumstances where the Commission is unable to expedite the pricing review process for any of a range of legitimate reasons*";[238]

297.5 a "*windfall from the non-application of a reviewed price is a situation that would clearly offend against the purposes of this part of the Act, as set out in s18*". The Commission expressly noted that this was the case whether the initial price was too high, or too low;[239] and

297.6 in articulating the benefit of substitution in terms of s 18, "*the existence of a price review that is an effective proxy for efficient and competitive pricing will influence more competitive behaviour and fulfil the s18 purpose of this part of the Act. Access seekers will be incentivised to compete, or compete more vigorously, if they know they will ultimately get the service at an efficient price …*".[240]

Legislative history

298 There is no relevant distinction between the application of this principle to TSLRIC STD prices and the TSLRIC determination prices considered by the Court of Appeal. The amendments that introduced the STD/s 30M determinations additional to s 27 determinations, use the same identical pricing review provision as both:

298.1 involve applications made under s 42, determined in accordance with s 51, and to which identical provisions apply;

298.2 have initial prices determined in accordance with an initial pricing principle;

298.3 have a statutory timeline for applying to have the initial prices reviewed using the prescribed final pricing methodology; and

298.4 have final prices determined in accordance with that final pricing principle.

[237] Commerce Commission "Submissions of the first respondent" in *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 (1 February 2006) at [59].

[238] Commerce Commission "Submissions of the first respondent" in *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 (1 February 2006) at [62].

[239] Commerce Commission "Submissions of the first respondent" in *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 (1 February 2006) at [63].

[240] Commerce Commission "Submissions of the first respondent" in *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 (1 February 2006) at [80].

299 Parliament did not intend to create any distinction between STDs and s 27 determinations in relation to the application of the pricing review determinations. The amendments made to Part 2 of the Act to introduce subpart 2A and STDs occurred after the Court of Appeal judgment.[241] The same pricing review provisions as already applicable to s 27 determinations were applied to STDs. Parliament must therefore have taken account of the established precedent.

300 If Parliament had intended that the final price should not substitute the initial price, it could have chosen to take a different approach. It did not. This is particularly so given the Commission's own view in 2006 was that:[242]

> the notion of a 'review' acting prospectively only is so antithetical to the meaning of that word that it would reasonably be expected that Parliament, if it has intended such an unusual result, would have expressly stated that the 'review' was only prospective.

301 The Commission majority places some weight on the absence of express statutory wording requiring substitution, noting that the UBA implementation wording (requiring the Commission to make "reasonable endeavours") falls short of this.[243] However, as noted by the Commission in 2006, the word "review" in the concept of an application for a pricing review has that meaning.

302 The Act encourages timely processes:[244]

302.1 s 47 requires the Commission to produce a draft determination "as soon as reasonably practical"; and

302.2 the Act contemplates no more than 30 days for submissions on a draft determination.

303 It is relevant that the time taken to make the current pricing review determinations is more extensive than envisaged by the Act. This is in part due to the Commission's decision to take a multi-step consultation approach to its draft decision to ensure an efficient price is determined. But this does not mean the operative date for the efficient price to take effect needs to be affected by the delay.

304 To the contrary, as the Court of Appeal has made clear, the s 18 purpose is served by having the efficient price replace the interim price. Similarly, Sapere note that a lag in any application of the final price will erode investment incentives as it will leave

[241] Subpart 2A was inserted from 22 December 2006 by the Telecommunications Amendment Act (No 2) 2006. The judgment in *Telecom New Zealand Ltd v Commerce Commission* was delivered on 25 May 2006.

[242] Commerce Commission "Submissions of the first respondent" in *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 (1 February 2006) at [38].

[243] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [893].

[244] In addition, section 78 of the Telecommunications (TSO, Broadband and Other Matters) Amendment Act 2011 required the Commission to use reasonable endeavours to complete its UBA pricing review by 1 December 2014.

investors unsure as to the extent to which they can rely on the review process if the initial price is inadequate.[245]

305 As the Commission previously submitted to the Court of Appeal:[246]

> The party advantaged by the determinations should not be deprived of the benefits by virtue of delays beyond its control, including the pressure of legitimate commitments on the Commission.

The economic rationale for substitution of the final price

306 Sapere has provided an independent economic report to assist the Commission's consideration.

307 Sapere concludes that there is an important economic rationale for ensuring that the final price operates for the full period to which the initial price applied.[247] That rationale is consistent with the Court of Appeal and the Commission's submissions to the Court. Sapere's reasoning, which is consistent with the approach of the Commission and Court of Appeal in 2006 (as well as with Commissioner Duignan's draft views), can be summarised as follows:

307.1 the purpose of the final pricing review is to set the price in an efficient manner. The purpose of the dual pricing regime is, in economic terms, best viewed as providing assurance that prices will reflect the TSLRIC pricing method if need be rather than "less accurate benchmarking";[248] and

307.2 for this assurance function to be credible and effective, it needs to apply from the same point in time as the relevant initial price applies. Otherwise, the intended assurance function is eroded, as the affected parties will not be able to be confident that the relevant services will always be priced using the TSLRIC method (if needed).[249]

308 This view is consistent with s 18 of the Act as it signals that the regime will act in a time consistent manner to give effect to the assurance function of the review.

309 As Sapere observes, the proper relationship between the initial price and the final price must be considered. Consistent with the Court of Appeal's view that the final price substitutes for the initial price to provide an efficient price, Sapere explains that a final pricing process provides all affected parties with assurance prices will be set

[245] Sapere "Economic Comment on UCLL and UBA Pricing Issues" (August 2015) at [105]. The basis for distinguishing between a failure to update an initial price at the time the Commission intended and failure to complete a final pricing review determination at the time the Commission intended, and Parliament requested it target, is not obvious. Both arise from circumstances outside of the parties' control.

[246] Commerce Commission "Submissions of the first respondent" in *Telecom New Zealand Ltd v Commerce Commission* CA75/05, 25 May 2006 (1 February 2006) at [38].

[247] Sapere "Economic Comment on UCLL and UBA Pricing Issues" (August 2015) at [98] – [109],

[248] Sapere "Economic Comment on UCLL and UBA Pricing Issues" (August 2015) at [102] – [103].

[249] Sapere "Economic Comment on UCLL and UBA Pricing Issues" (August 2015) at [104] – [105].

through a more sophisticated and thorough TSLIRC process. Asking what the right start date is in these circumstances establishes the appropriate default position rather than asking if backdating should be applied, which inevitably suggests backdating is a default to something else.

310 Sapere reject that "backdating" will have no effect on investment.[250] Investors need confidence (or reassurance) that an efficient price will apply to give effect to s 18 objectives.[251] Otherwise, there is a long term cost to end-users. Decisions on such matters cannot depend on whether commencement of the final price leads to an increase or decrease in an efficient price or the point a party is at in its investment cycle to consider particular investment effects. As Sapere state:[252]

> [This] line of reasoning appears to be a version of a regulatory "end-game," where the regulator holds the view its approach to pricing will have no effect on future investment and therefore it can act in a time inconsistent (or opportunistic) manner at no cost to the long term benefit of end-users.

311 CEG agree. Investors will be sensitive and responsive to "*regulatory opportunism*".[253]

Final price anticipated

312 We agree with Sapere that, consistent with the assurance function, reasonable RSPs will derive an understanding of appropriate retail prices in the period prior to the final pricing determination by reference to the potential for the final determination to alter the initial price.

313 The affected parties to both the UCLL and UBA determinations have been on notice since the various parties applied for an final price review. From the outset, Chorus has been open about both its expectation that the final price for the UCLL service would rise from the initial price and its view that backdating should occur. RSPs were aware of (and participated in) the Court of Appeal decision and other precedent supporting backdating. RSPs were also well-informed by market commentaries about the likelihood that the initial price was inefficiently low.

314 In the particular circumstances of this final pricing process, there are strong indications that RSPs have already anticipated the potential changes from the final pricing review process in their UCLL and UBA pricing. There is no significant statistical indication of a general decrease in POTS or broadband retail services in response to either the initial UCLL price determined in December 2012 or the anticipated operation from 1 December 2014 of the initial UBA price determined in

[250] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [886].

[251] This is not about the Commission binding its successors, but recognising time consistency is important to investment and what the default assumption is in terms of the assurance function the final review plays in substituting the initial price.

[252] Sapere "Economic Comment on UCLL and UBA Pricing Issues" (August 2015) at [114].

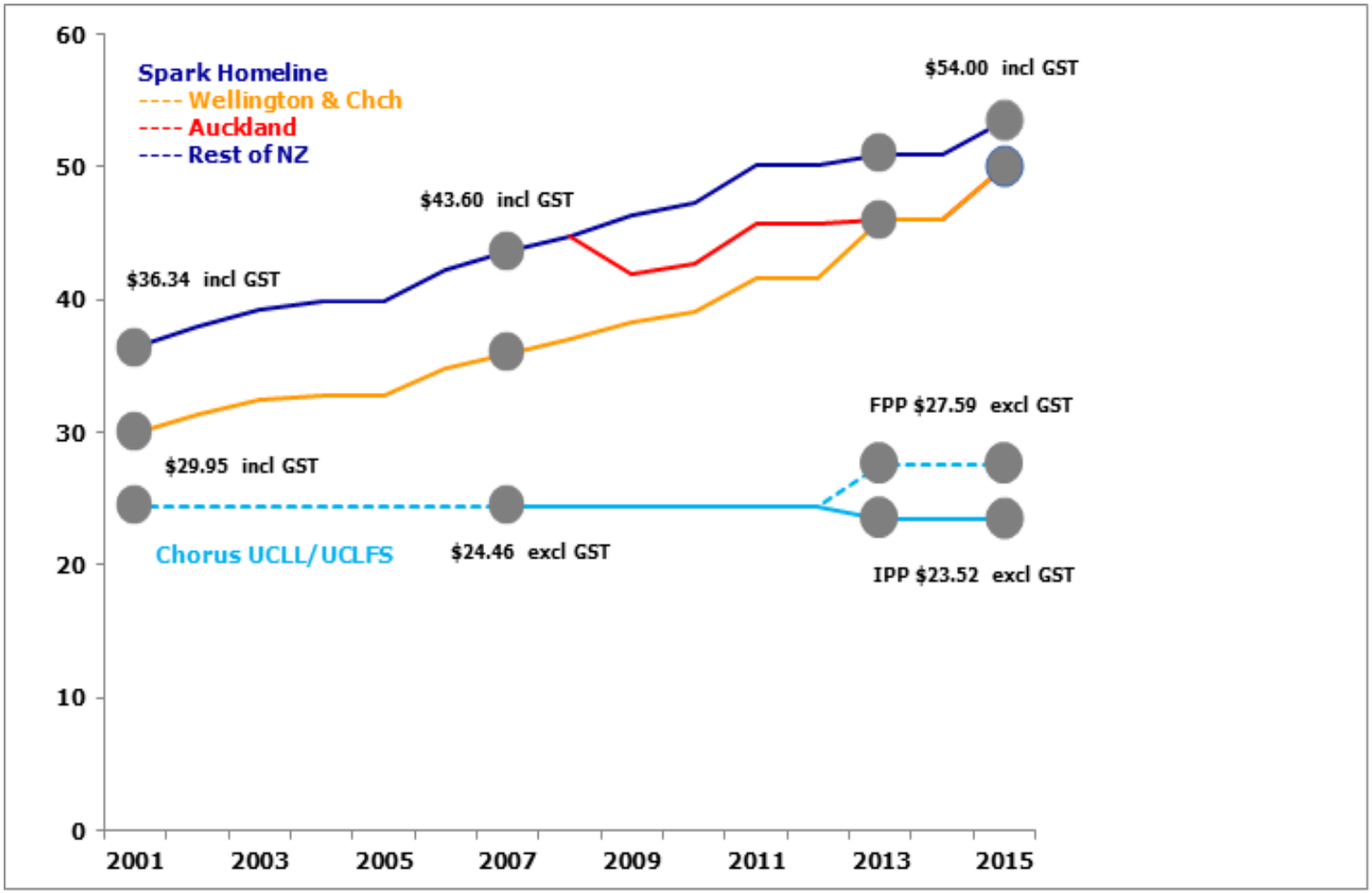
[253] CEG "Response to the further draft determination" (August 2015) at Section 6; Sapere "Economic Comment on UCLL and UBA Pricing Issues" (August 2015) at [115].

December 2013.[254] In contrast, there are strong indications – including express statements by RSPs - that broadband retail prices increased in response to the draft final pricing contained in the Commission's draft determination of December 2014.

315 As shown in Figure 6, below, Spark's retail prices for fixed line telephony services increased or stayed consistent between 2012 and 2014.

[254] Prior to December 2012, retail broadband prices had decreased from levels observed in 2011: Commerce Commission, "Price trends in retail fixed-line broadband services, 2011 to 2014, and the impact of wholesale price trends" (June 2015) at p13. It is difficult to come to definitive conclusions over what has driven these decreases, but it is highly unlikely that any decrease in broadband prices prior to December 2012 anticipated an uncertain decrease in effective UBA prices nearly two years in the future when the initial UBA price became operative.

Figure 6: Spark retail prices for fixed line telephony services 2001 - 2015



316 Similarly, as shown in Figure 7, below, entry level retail prices for broadband services for the three major RSPS remained constant from December 2012 to December 2014 and then increased in apparent response to the UBA draft determination.[255]

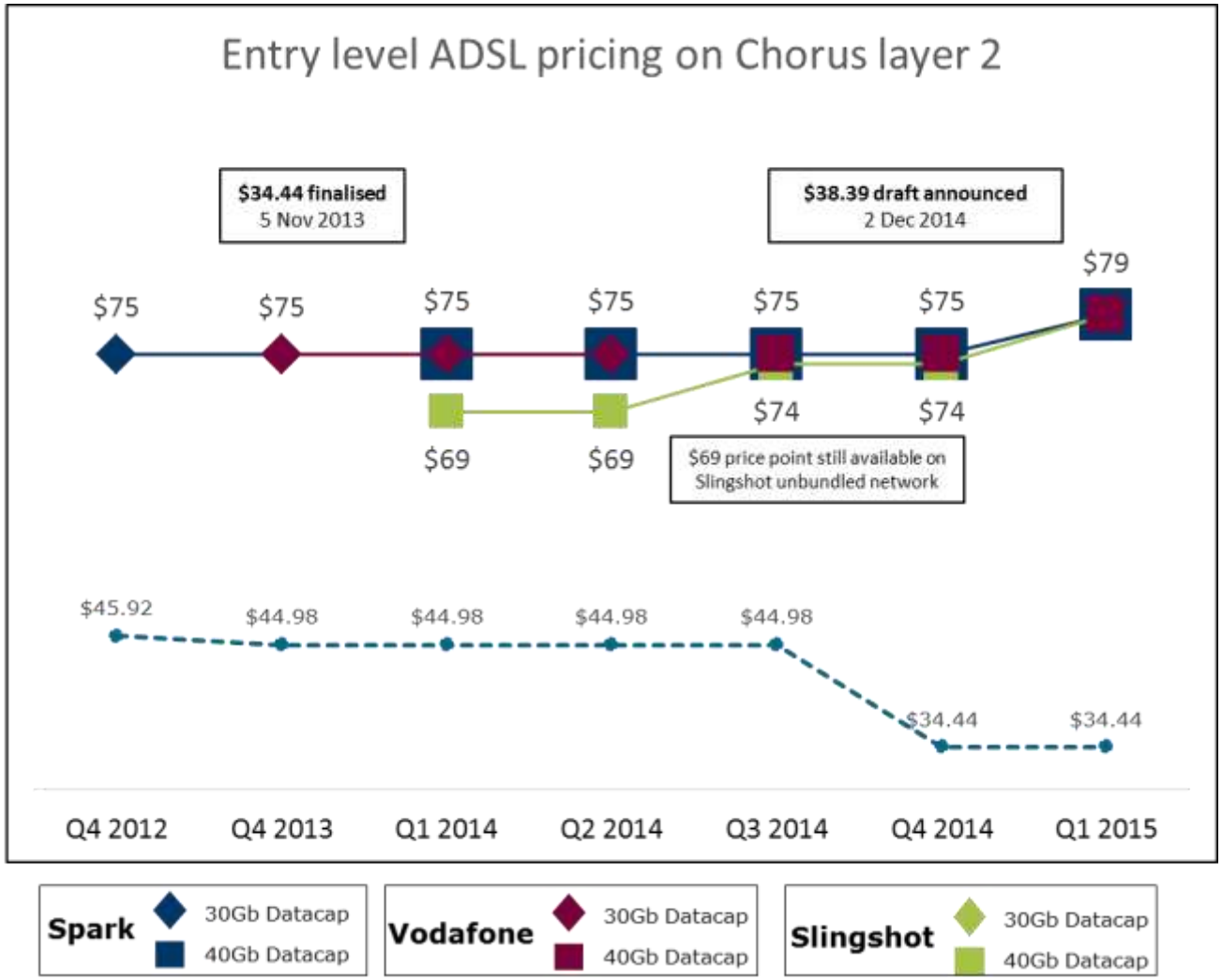
317 In contrast, there is evidence that the draft determination prices were expressly taken into account by RSPs at least from December 2014.[256] Since December 2014, RSPs raised retail prices for broadband services. RSPs were explicit at the Commission's conference that account had been taken of the draft determination pricing.[257] Major RSPs have acted consistently with the operation of the assurance function provided by the final pricing review process.

[255] While additional value has been provided by some RSPs through increasing datacaps in this period, this has also being the case for fibre-based broadband services where the wholesale access price remains stable. This suggests that such increases a driven by international and domestic backhaul pricing, not access pricing

[256] See for example New Zealand Herald "Internet companies set to hike prices next month" (7 January 2015) available at http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11382722; See also Stuff "Spark 'urgently' reviews customer prices" (2 December 2014) available at http://www.stuff.co.nz/business/industries/63734256/spark-urgently-reviews-customer-prices.

[257] Commerce Commission "UCLL and UBA services final pricing principle conference" (transcript, 15-17 April 2015), see Graham Walmsley (CallPlus) at pages 246, 247, 249; Tom Thursby and Chris Abbott (Vodafone) at pages 247, 248; John Wesley-Smith at page 247 (Spark).

Figure 7: Major RSP entry level ADSL pricing Q4 2012 to Q1 2015



Initial determination period

318 The date of the UCLL initial price determination (i.e. 1 December 2012) is the date from which the UCLL and SLU prices should be substituted.[258] As discussed above, this will also flow through to the services which expressly incorporate the UCLL price as a component.

319 While Chorus understands that, in relation to the period prior to 1 December 2014, the Commission has identified the UBA price freeze as a reason not to apply backdating from 1 December 2012 we do not consider the distinction holds for the UCLL/SLU determination.

320 We refer the Commission to our earlier submissions on this topic:

320.1 the Act requires the Commission to substitute the efficient price determined as part of the thorough final price process as this best gives effect to s 18;

320.2 if the prices in the draft determination are confirmed to apply only from 1 December 2014, a shortfall between the initial price and the efficient final price will be imposed on Chorus for a period of nearly two years;[259] and

320.3 that shortfall is not mandated by the Act - the UCLL price was not frozen by the transitional provisions of the Telecommunication (TSO, Broadband and Other Matters) Amendment Act 2011 and the Commission has previously amended the UCLL price in this period.

321 Irrespective of the date at which the final price starts, the price flow through of the backdated UCLL price should include the services which expressly adopt or incorporate UCLL as a component of the service's price. This includes the UCLF and UBA services (for the UBA service, this will be the case for services taken prior to1 December 2014 for Naked UBA, and from 1 December 2014 in respect of all services).[260]

Mechanics to implement the final prices

322 Once the operative start date is confirmed, a separate question arises as to the implementation of the final price (or price profile). Sapere's report offers views to assist the Commission.

323 We prefer a lump sum payment as it enables parties to work through these commercially as wash ups appropriate to individual RSPs because:

[258] Chorus "Submission in response to the Commerce Commission's Draft Pricing Review Determinations for Chorus' UBA and UCLL services" (2 December 2014) at [319].

[259] Chorus "Submission in response to the draft determinations for UCLL and UBA" (20 February 2015) at [329] – [334].

[260] See generally Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [343] – [344].

323.1 it is administratively convenient;

323.2 RSPs appear to have passed on the price increase to end-users already, such that they have (or have had the opportunity to) provision against lump sum payment already;

323.3 it incentivises efficient provisioning and consumption decisions by parties to the review application prior to the determination of the final price, as otherwise the effects of inefficient planning will simply be passed onto end-users; and

323.4 it ensures that RSPs pay, and Chorus receives, the difference between the initial and final prices based on volumes of the services taken in the period in which the initial price was operative, rather than having to attribute these sums to future volumes, which may not be consistent as between RSPs or end-users.

324 Any negative impact on the cash-flows of RSPs caused by liability for lump sum payments can be mitigated by appropriate repayment schemes which Chorus has confirmed it will offer.[261] Alternatively, the Commission can set terms on which payment can occur that will mitigate impact on RSPs.

325 We note that the Commission has indicated that it would consider a mixed approach of lump sum payment (for the price increment up to $4, being approximately the difference between the initial benchmarked price and the December 2014 draft determination price) and claw back (for any further price increment above $4).[262] However, there are also some technical issues:

325.1 first, the Commission uses the same discount rate for both the clawback and mixed payment approaches. The use of cost of debt for the discount rate is potentially appropriate when payment is relatively certain. However, for the clawback approach, the likelihood of receiving payments depends on the quantity demand, and therefore there is risk associated with the payments. The WACC is a more appropriate discount rate for the clawback model; and

325.2 second, the quantities used for smoothing the payments are based on the hypothetical demand of the HEO. This means that Chorus will not receive the amount required to compensate it for the difference between the initial

[261] Chorus "Submission in response to the Commerce Commission's Draft Pricing Review Determinations for Chorus' UBA and UCLL services" (2 December 2014) at [347] – [350]; Chorus "Cross-submission in response to the Commerce Commission's Draft Pricing Review Determinations for Chorus' UBA and UCLL services (2 December 2014)" (20 March 2015) at [346] – [347].

[262] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [921].

and final prices, because it cannot receive the proportion which has been attributed to LFC and HFC demand.[263]

326 These issues confirm our view that this approach is unnecessarily complex. If the Commission's objective is to protect RSPs who might otherwise exit the market if required to pay a lump sum, this can be done through appropriate debt repayment terms, rather than altering the forward looking price for the regulated service.

Date for calculation of parameters

327 Should the final price become operative from the date of the initial price determination as we believe it should then the Commission should also:

327.1 calibrate its TSLRIC model, inclusive of relevant WACC parameters such as the risk-free rate, to the date from which the final price determination will apply; and

327.2 select a regulatory period that achieves the same effect as its proposed five year regulatory period from December 2015 in the revised draft determination. For the reasons given in Part 3, this is the minimum period of pricing stability that Chorus and other industry parties require.

328 For example, if the Commission substitutes the final price from the date of the initial price determinations, then to achieve consistency with the proposed timeframe in its revised draft determination, this would require an eight year regulatory period for the UCLL service and a six year regulatory period for the UBA service.

329 In contrast, if the Commission makes the final price operative only from 1 December 2014 for both the UCLL and UBA services (contrary to Chorus' position on the proper interpretation of the Act), then the Commission should use at least a six year regulatory period, to ensure that its decision is consistent with the proposed timeframe in its revised draft determination (that is, a five year regulatory period commencing in December 2015).

330 Alternatively, if the Commission makes the pricing operative from 1 December 2014 and adopts its preferred draft approach of implementing a special pricing year for the period between 1 December 2014, corrections are required to the model proposed in the revised draft determination. In particular, the Commission has proposed to apply a special price for a one-year period that uses a one-year risk-free rate in the WACC to reflect the term of this period. However, the Commission continues to apply the same TAMRP of 7.0%. In essence, the Commission is assuming that because it has retrospectively determined an initial one year regulatory period exists that this implies investors require lower compensation for providing services in that period. This is unrealistic. The TAMRP relative to a one year risk-free rate will be higher than it is relative to a longer term risk-free rate – offsetting the impact of choosing a

[263] The effect of this is to compound the error in taking into account LFC and HFC demand in setting the monthly rental charge, with which we also disagree.

shorter term risk-free rate. This illustrates the difficulty in using a short-term estimate of the risk-free rate without taking account of the impact on an internally consistent estimate of the TAMRP.

PART FIVE: TRANSACTION CHARGES

Overview

331 The Commission is required to determine TSLRIC prices for UCLL, UBA and SLU transaction (non-recurring) charges. The final pricing principle is designed to set prices that are efficient, but achievable by an HEO in the New Zealand market.

332 We support the Commission's starting point, which is to adopt Chorus' actual service company charges and overheads associated with each of the transaction charges. This starting point takes account of Chorus service company costs which provide the best available evidence of the cost of undertaking transactions in New Zealand today, including taking account of the real world conditions within which Chorus and the service companies operate.

333 The Commission appears to assume (without reason) that Chorus' costs are inefficient. However, the rates are set by competitive tender with third party providers. As we explain below, there is no evidence that our negotiated rates are anything but efficient. **[CI:**

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334 Rather than relying on the real world cost evidence, the Commission has adopted a benchmarking methodology that results in an overall 30% reduction in forecast transaction charges.[264] The methodology is both inconsistent with the Commission's view of the limitations of benchmarking and the Commission's previous approach to benchmarking.

335 Transaction charges account for approximately $40 million in annualised revenue. For the key transaction charges the Commission has proposed a reduction of 30% or around $12 million annually.[265] An outcome where Chorus will be unable to recover the full amount of the competitively determined costs cannot be correct. Setting charges below market rates creates adverse incentives for Chorus as the provider of the relevant services, and RSPs as consumers of the service.

336 If Chorus is unable to recover its costs, there is a real risk that its ability to offer its current levels of service quality will be adversely affected.

337 Our response to the Commission's modelling approach is set out below. More detailed analysis in relation to individual transaction charges is set out in **Appendix C**.

[264] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [7].

[265] Chorus NZX announcement "Commerce Commission releases latest draft FPP determination: (2 July 2015).

Approach to setting non-recurring charges

338 We support many of the first order decisions made in relation to non-recurring charges:

338.1 *non-recurring charges should be assessed based on the forward-looking cost of undertaking the activities on Chorus' actual copper network*. Not all tasks performed in the copper network have a fibre equivalent, meaning that assessing fibre will not provide a meaningful estimate of the costs required to perform the functions and activities to which the non-recurring charges relate. In addition, comparable tasks may differ significantly, including the complexity and time to complete the activity. In order for the existing charge structure to be meaningful, the activities must be costed on a copper network;

338.2 *an HEO in New Zealand would outsource its network provisioning and fault operations*.[266] Outsourcing enables rates to be set through a competitive tender process, with tension between competing service providers ensuring the resulting costs are efficient;[267]

338.3 *the structure of the non-recurring charges in the STD should not be changed.* Merging charges would have costly operational consequences for Chorus, with few practical benefits.[268] Retaining separate charges provides the Commission with flexibility in the future if certain services become more or less costly over time, while other charges remain constant;[269] and

338.4 *a top-down approach is sensible for the determination of most non-recurring charges*.[270] A top-down approach is simple and practical, particularly given the assumption that an HEO will outsource. A bottom-up approach would be complex and time-consuming, with no assurance of greater accuracy.[271]

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[266] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [592]; and Commerce Commission "Further draft determination for UBA" (2 July 2015) at [471].

[267] Chorus "Submission in response to the Commerce Commission's consultation paper 'Consultation on setting prices for service transaction charges for UBA and UCLL services' (25 September 2014)" ("Submission in response to Commerce Commission's consultation paper: transaction charges") (9 October 2014) at [32].

[268] Chorus "Submission in response to the Commerce Commission's consultation paper: transaction charges" (9 October 2014) at [51].

[269] Chorus "Submission in response to the Commerce Commission's consultation paper: transaction charges" (9 October 2014) at [54].

[270] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [590]; and Commerce Commission "Further draft determination for UBA" (2 July 2015) at [469].

[271] Chorus "Submission in response to the Commerce Commission's consultation paper: transaction charges" (9 October 2014) at [35] and [41]; Chorus "Cross-submission in response to the Commerce Commission's consultation paper 'Consultation on setting prices for service transaction charges for UBA and UCLL services' (25 September 2014)" ("Cross-submission in response to the Commerce Commission's consultation paper: transaction charges") (16 October 2014) at [35] and [40].

339 However, we have a number of concerns with the way in which these principles have been implemented, which are set out below.

Approach to non-recurring charges based upon service company codes

340 Service company costs are the best evidence of the costs an HEO would incur in undertaking the activities, absent evidence that demonstrates the costs to be inefficient. The rates we have negotiated with service companies are competitive and are the best evidence of the market price an HEO would be able to achieve. The Commission's efficiency adjustments are not evidence based and are unrealistic.

341 The Commission's justification for its proposed adjustment contains a number of methodological and evidential issues. We provide further detail on each of these points below.

Service company costs

342 Chorus' negotiated rates are demonstrably efficient. They are the result of a competitive tender process, which we have previously described.[272] Chorus is incentivised to ensure these costs remain efficient, because it consumes the same service company inputs and so has incentives to ensure they are priced at the lowest achievable cost. [273] For example, Chorus bore the cost of new UBA connections for three years post demerger as it were unable to charge RSPs specifically for that service.

343 The Commission has acknowledged that Chorus is incentivised to minimise costs and that Chorus determined its current non-recurring charge costs with reference to a competitive tender process in each of the company service areas (**CSAs**) in which it operates.[274]

344 The Commission states that because "a *top down approach that only uses Chorus' costs, even those arrived at through competitive tendering, does not provide an independent efficiency test*",[275] it must apply an efficiency adjustment, relying on international benchmarks of task times.

345 There is no basis for the Commission to assume that benchmarking against international data will deliver a more accurate picture of the HEO's forward-looking costs than New Zealand costs determined in a competitive market.[276] The

[272] Chorus "Submission in response to the Commerce Commission's consultation paper: transaction charges" (9 October 2014) at [32] ; Chorus "Cross-submission in response to the Commerce Commission's consultation paper: transaction charges" (16 October 2014) at [35].

[273] Chorus "Submission in response to the Commerce Commission's consultation paper: transaction charges" (9 October 2014) at [36]; Chorus "Cross-submission in response to the Commerce Commission's consultation paper: transaction charges" (16 October 2014) at [35].

[274] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [596]; Commerce Commission "Further draft determination for UBA" (2 July 2015) at [475].

[275] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [589].

[276] Chorus "Cross-submission in response to draft determinations for UCLL and UBA" (20 March 2015) at [151].

Commission has correctly acknowledged, in relation to the monthly rental charge, that benchmarking has a limited role to play in the pricing review process, because TSLRIC modelling should reflect New Zealand costs.[277] It has also indicated that simplistic comparisons of international wholesale broadband prices do not tell the true story.[278] We agree.

346 The best evidence available to the Commission of the cost of transaction charges in New Zealand is rates negotiated between Chorus and its service companies. A benchmarking exercise based on data from overseas jurisdictions does not assist the Commission to determine the cost of providing services in New Zealand.

347 However, if the relevance and robustness of the Commission's analysis of task times is accepted (which we do not, for reasons discussed below) the comparison demonstrates the task times estimated by Chorus' service companies are generally within the lowest section of the benchmark range. **[CI:**

].To the extent this provides an "*independent efficiency test*", Chorus passes. The benchmarks do not provide evidence that Chorus' prices are inefficient or that an HEO operating in New Zealand conditions could achieve a lower price.[279] There is accordingly no basis to apply an efficiency adjustment.

Benchmarking based on average task times

348 We also have a number of concerns about the Commission's approach to benchmarking, which has been to make adjustments on the basis of only one cost component of the non-recurring charges: task times.

Comparability of task times across jurisdictions

349 Task time is not a reliable cross-jurisdiction cost component. TERA has conceded this point, and **[CI:**

] Comparing task times is intrinsically risky.

350 TERA has noted that comparing time required to complete a given task is complex as every country has specific processes that do not always cover the same scope of elementary tasks.[280] On that basis, its statement that task-time as a benchmark subject matter "*excludes all indicators that might be specific to each country and therefore subject to significant variations*" does not appear to be consistent. We do not think that TERA's effort to "*extract as much comparable information as possible*

[277] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [14].

[278] Commerce Commission "Commission releases further draft decisions on prices of copper lines and broadband service for consultation" (media release, 2 July 2015).

[279] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [6.1] and [6.2].

[280] TERA Consultants "TSLRIC price review determination for the UCLL and UBA services non-recurring charges: methodology document" (April 2015) at [1.2.1.1] and page 15.

from the available data, in order to restrict the comparisons between similar tasks only" truly mitigates the risk that the Commission is not comparing equivalent activities.

351 Analysys Mason agrees that comparing task duration is intrinsically risky. An example of the risks identified by Analysys Mason is the trade-off between task duration and labour costs: benchmarked countries may use more experienced (and therefore expensive) labour, which might drive down task times but not overall cost.[281] Others might adopt labourers of a similar experience level to Chorus.

352 There are a number of New Zealand specific factors that may drive higher average task times for certain non-recurring charges than other countries.[282] These include:

352.1 service companies operating in New Zealand are required to adhere to lengthy and specific compliance standards, including:

(a) health and safety obligations. These can significantly increase task times: for example, working at height requires the use of additional equipment such as scaffolding or bucket lifts, as well as a number of safety checks, which increases set up and labour time.[283] These obligations are set to become even more onerous in the future as new health and safety legislation is implemented over the next couple of years;

(b) local authority compliance guides. These can differ from district plan to district plan;

(c) standards of workmanship and quality. Some of these are generic and others are imposed by the STD;[284] and

(d) third party commercial requirements. These are imposed wherever Chorus uses third party assets, such as lines company poles and RSP equipment.

[281] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [6.2].

[282] See also Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [6.1].

[283] See for example Health and Safety in Employment Act 1992, s 10; "Overhead line design – Detailed procedures" (NZS7000: 2010); New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP 34:2011).

[284] See for example Commerce Commission "Standard terms determination for Telecom's unbundled bitstream access service" at schedule 3 (UBA service level terms), appendix 1, item 5; Commerce Commission "Standard terms determination for Telecom's unbundled copper local loop network service" at schedule 3 (UCLL service level terms), appendix 1, item 4.

352.2 work undertaken by service companies where an end-user premises or an exchange is fed by aerial distribution takes longer than equivalent tasks where the premises or exchange is by underground cables;

352.3 network infrastructure. For example, Spark offers the UCLFS product "Centrex", a phone line offering voicemail services with sophisticated electronics and programming. Provisioning and maintenance tasks in these cases take more time because of the sophisticated network infrastructure; and

352.4 the way that ownership of network components is divided up can lead to an increase in task times. For example, where Chorus' tasks requires interface with RSP equipment, Chorus is unable to test the RSP's equipment, which means an additional truck roll may be required if a fault is found.

353 As a consequence, international task times cannot be meaningfully compared with those in New Zealand. Accordingly, simply increasing the sample size to include multiple international service companies does not provide a more accurate assessment of task time efficiency in New Zealand.[285] Analysys Mason agrees that TERA's assumption that the processes are comparable with the benchmarked countries is not a robust approach.

354 This issue is compounded because the Commission has compared singular benchmarked 'elementary activities' against Chorus' service company codes. These are not comparable: Chorus' codes organise numerous outcome-based tasks within one code. While task outcomes are broadly comparable, individual activities may vary significantly in terms of average task time. The average completion rate for each code reflects an average across the individual tasks comprising that code. For example, service company code **[RI:]** is used for over **[CI:]** UBA STD activities, and a number of UCLL and SLU activities.

355 It is unlikely that benchmarked 'elementary' activities reflect the complexity of the average task time calculations of Chorus' service company codes. In addition, as Chorus noted to the Commission in its response to the Commission's s 98 notice, the cost component breakdowns provided to the Commission are estimates, gathered for the purpose of informally benchmarking service company proposals rather than for the purpose of obtaining actual data about task completion rates.

356 Evidence that task times are not reliably comparable and, specifically, are likely not comparable to the complex mix of activities covered by Chorus codes can be found in the benchmark data. **[CI:**

356.1

[285] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [600].

356.2

356.3

356.4

356.5 **].**

357 **[CI:**

]. This alone suggests that task times are not capable of simple comparison between countries, and therefore cannot be used as the basis of an efficiency adjustment.

358 The wide range across observed benchmarks cannot be solely attributable to countries for which travel time is incorporated into task times:

358.1 **[CI:**

358.2

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359 Accordingly, there is no basis for TERA or the Commission to conclude that the benchmarked activities are comparable to Chorus' codes or to adopt the lowest observed benchmark in the range.

Service company activities not based on task time

360 Certain service company codes are particularly unsuitable for benchmarking on the basis of task time. For example, no fault found and cancellation codes are employed not only to compensate service companies for time taken, but to encourage RSPs to diagnose service complaints and end-user related errors, as a preventive measure before the fault is referred to Chorus.

361 The Commission accepted that reasoning in its STD determination,[286] and appears to have accepted it again in its draft determination.[287] For these codes, the charge is incurred irrespective of the amount of time taken to determine that there is no fault or the time taken by the service company before an order is cancelled. Task times

[286] Commerce Commission "Standard terms determination for the designated service Telecom's unbundled bitstream access - decision 611" (12 December 2007) at [326]-[328].

[287] Commerce Commission "Further draft determination for UBA" (2 July 2015) at [657].

vary considerably and are not a relevant consideration in the make-up of these charges.

Benchmarked task time

362 If, contrary to our position, the Commission decides to make an efficiency adjustment based on task times for non-recurring charges, the Commission must at least adopt an orthodox and consistent approach to benchmarking, and select a price point at, or above, the mid-point.[288]

363 The Commission's proposal to choose the lowest observation for every parameter is not an orthodox or recognised approach to benchmarking. Both Network Strategies and WIK stated at the Commission's conference in April that it would be inappropriate for the Commission to take the lowest number of a given parameter.[289] The current approach biases the adjustment towards under-recovery. Analysys Mason agrees.[290]

364 An approach that adopts the lowest benchmarks is particularly problematic given:

364.1 the Commission has already acknowledged in this process that benchmarking has little relevance for determining the costs an HEO would incur in New Zealand;

364.2 TERA has observed that comparisons of task time are complex and prone to error;

364.3 for reasons already discussed, it is doubtful that the benchmarks are directly comparable to the elementary activities undertaken by Chorus in respect of each code; and

364.4 the benchmark data produces a broad range of average task time, providing real evidence that not all service companies can, in fact, attain the task times adopted by the lowest observed benchmark.

365 TERA has indicated that its approach to benchmarking is 'conservative' on the grounds it has benchmarked jurisdictions that include travel in the task time. The Commission's approach cannot be conservative, because it has adopted the lowest observed benchmark, and so the existence of higher task times in the range has no impact upon the calculated charge.

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[288] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [6.2].

[289] Commerce Commission "UCLL and UBA services final pricing principle conference" (transcript, 15-17 April 2015) see Karl-Heinz Neumann (WIK) at pages 383-384 ("*When you have the choice to have different information from different sources on a certain parameter, then you don't take the lowest number of a parameter in the sense that it is generating the lowest cost, but you take something in the middle or even a little bit higher than that*.") see also Suella Hanson (Network Strategies) at pages 383-384.

[290] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [6.2].

366 Two countries drive the lowest rates adopted by the Commission, and there is no evidence the countries' task times are realistic in the New Zealand context. It is also not clear – particularly in the case of the anonymous country - whether they are actual task times or whether they are set by the regulator (which may itself have applied an efficiency adjustment). In many cases, the task times assumed for these countries appear to be clear outliers.

367 Indeed, the Commission's proposed approach to benchmarking is unprecedented. Even assuming comparability could be assured, an HEO's service companies would not be regarded as efficient unless they achieved the lowest task time in the benchmark range considered by TERA.[291] The Commission's reasoning would mean that a country would only be regarded as efficient if it could achieve the lowest task time for every activity; yet no country in the benchmark set achieves this.

Determination of weighted average national service company charge

368 The Commission should determine the national cost of each service code with reference to a percentile above the mid-point. It is difficult to forecast the locations of non-recurring charges, as volumes fluctuate day-to-day and year-on-year. As service companies charge different rates across each CSA (reflecting the real world conditions in those areas), determining a single service company code to be used for national pricing is risky. Using the **[RI:]** mitigates this risk.

369 TERA has taken Chorus' 2014 rates and determined the 'unique national cost of each service code' by reference to the weighted average of the cost of each CSA (that is, each CSA has been weighted by its number of active lines).[292] It has used these national prices, broken down by average timeframes to determine an hourly rate, and then reconstructed the charge using the benchmarked task times.

370 TERA has conceded that its approach is susceptible to error if volumes of services allocated to each CSA change, but considers that the weighted average is more consistent with TSLRIC. It has proposed to reassess the weighted average cost should changes to the CSA mix be observed.[293]

371 TERA's approach does not sufficiently mitigate Chorus' (or an HEO's) risk. The location of active lines does not predict:

371.1 the location or movement of end-users in the future (and so the location of network provisioning operations); or

[291] See also Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [6.2].

[292] TERA Consultants "TSLRIC price review determination for the UCLL and UBA services non-recurring charges: methodology document" (April 2015) at [2.1].

[293] TERA Consultants "TSLRIC price review determination for the UCLL and UBA services non-recurring charges: methodology document" (April 2015) at [2.1].

371.2 the location of faults, which cluster unpredictably and often following particular events such as flooding, storms, humidity and/or earthquakes (rather than being driven by line density).

372 This regulatory period in particular is likely to result in significant volatility for us as a result of the UFB build, and the migration away from copper as fibre becomes available. The geographic movement of active lines in the first regulatory period is likely to be greater than a periodic review of the weighted average can account for.

Service company overheads

373 Analysys Mason agrees it is appropriate for Chorus to be able to pass on the cost of service company overheads.[294]

374 We are obliged to compensate service companies for overheads that covers indirect costs such as field managers, dispatch centres, logistics, administrative staff, IT systems, and corporate office rental, etc. These reflect the real world costs of providing network provisioning and fault operations services in New Zealand.[295]

Use of LFC as a cross-check

375 The Commission has, as a final step, undertaken a cross-check against the costs of a New Zealand LFC deploying a fibre network. The Commission has identified non-recurring tasks that it considers to be comparable between copper and fibre.[296]

376 While an LFC's costs can be useful for the purposes of a reasonableness check, this will be so in only limited circumstances as:

376.1 a number of fibre and/or LFC transaction activities are not comparable to Chorus';

376.2 fibre activities are not always comparable to copper activities, as the Commission has already noted;[297]

376.3 Enable and Northpower Fibre have limited geographical coverage, and are deploying in urban areas only. They are, therefore, comparable only to the costs of certain CSAs; and

[294] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [6.5]; Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [595.4]; and Commerce Commission "Further draft determination for UBA" (2 July 2015) at [474.4].

[295] Chorus "Submission in response to the Commerce Commission's consultation paper: transaction charges" (9 October 2014) at [39] and [40].

[296] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [609]-[615]; and Commerce Commission "Further draft determination for UBA" (2 July 2015) at [488]-[494].

[297] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [614].

376.4 in addition, smaller providers do not provide system functionality designed to cope with the scale of activity required by a national provider.

377 However, we do think that the LFC cross-check provides some evidence that the Commission's benchmarking exercise has reduced Chorus' costs below an efficient level. Analysys Mason supports this view, noting that the revised adjustment costs are well below the costs of the LFC while using the same providers.[298]

378 The Commission has also not implemented TERA's recommendation that the adjusted charges for codes **[CI:]** and **[RI:]** be set at the level of the LFC, on the basis that they appear to have been reduced too much. If the Commission continues to adopt its approach to benchmarking (which we believe to be inappropriate), it should increase the level of these charges where there is evidence that the benchmarking adjustments have been too aggressive.

Approach to charges based on Chorus internal time only

379 For non-recurring activities requiring Chorus internal work only, TERA has extracted data from the international benchmarking set and, through this indexation, adopted a particular value of time for these activities. It has then derived an hourly rate to create an overall charge.

380 For the reasons already set out above, the Commission's efficiency adjustment in respect of Chorus internal tasks times is:

380.1 inappropriate in the context of a TSLRIC exercise; and

380.2 inconsistent with accepted approaches to benchmarking. Our concerns in relation to the efficiency adjustment are equally applicable to Chorus' internal tasks. For example, the adopted task time for activities requiring "remote management work only" has been substantially reduced, despite falling well within the range of the observed benchmarks, with the lowest observed benchmark being **[CI:]**.

381 Finally, some of the charges assumed by TERA to be carried out directly by Chorus do in fact map to service company codes. The charges are:

381.1 special manual prequalification investigation order (UCLL and SLU service components 3.3; UBA service component 3.2). (For more information, see Appendix C);

381.2 manual line testing (UCLL and SLU service components 3.4). (For more information, see Appendix C);

[298] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [6.6].

381.3 abortive end-user site visit (UCLL and SLU service component 3.8; UBA service component 3.4). (For more information, see Appendix C); and

381.4 cancellation charge (post truck roll) (UBA service component 3.14). (For more information, see Appendix C).

382 These costs should be included in the relevant non-recurring charges. Failing to pass on the costs of these service company charges creates incentives for RSPs to behave inefficiently, as they do not bear the cost of requesting unnecessary services.

383 The impact of distorted pricing on RSP behaviour has been observed in the past in relation to UBA connection charges, during the period that Chorus was unable to directly charge for new connections. RSPs acquiring new customers from other RSPs frequently ordered a second line to be installed rather than awaiting the relinquishment of the existing line, because there was no cost differentiation between the two practices (both were free). Following the introduction of connection charges on 1 December 2014, RSPs are undertaking customer churn more efficiently: waiting for a customer line to be relinquished rather than simply ordering a second line, because this requires a remote connection only and no truck roll.

384 We consider that similar incentives are likely to apply where transaction charges are set below their actual cost. For example, in the case of a cancellation (post truck roll), an RSP might elect to send a technician truck out rather than investigate whether the fault is related to its network or the end-user's equipment.

Approach to charges determined on an 'hourly rate' or POA basis

385 The Commission has set certain charges on the basis of a POA or hourly rate pricing mechanism.[299]

386 We discuss certain of these charges in **Appendix C.**

CPI or labour costs

387 We note our understanding that the Commission's amendment of individual transaction charge prices does not impact the provisions of the STDs which set the annual ancillary charges review mechanism.[300] Analysys Mason also agrees it is appropriate to continue applying an annual adjustment linked to changes in the Labour Cost Index.[301]

[299] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [620]-[625]; Commerce Commission "Further draft determination for UBA" (2 July 2015) at [499]-[504].

[300] Commerce Commission "Standard terms determination for Chorus' unbundled copper local loop network service" at schedule 2 (UCLL price list), clause 3.1-3.3; Commerce Commission "Standard terms determination for Chorus' unbundled bitstream access service" at schedule 2 (UBA price list), clause 3.1-3.3.

[301] Analysys Mason "Report for Chorus: UCLL and UBA FPP further draft determination submission" (11 August 2015) at [6.4.1].

Appendices

APPENDIX A: METHODOLOGY FOR CALCULATING WEIGHTED AVERAGE POLE RENTAL CHARGE

388 The Commission has detailed information on commercial charges levied by electricity lines businesses on telecommunications operators throughout the country. Chorus has:

388.1 supplied details of existing pole rental agreements to the Commission in response to the 17 April 2014 s 98 notice on 20 May 2014;

388.2 renegotiated some agreements, resulting in a change in rental price; and

388.3 commercially negotiated additional new agreements with line companies.

389 For the reasons given in this submission, the Commission should calculate the weighted average price an HEO would pay to lines companies to secure access to electricity poles based on these, commercially negotiated, agreements. The calculation of the weighted average is set out in the following table:

[CI:

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390 The above methodology for pole rental only applies for access to poles used for aerial distribution network. There are different rates to access poles for service lead-ins.

391 We have used customers served as a proxy for the number of poles an HEO would rent for aerial distribution in each area. This is more appropriate than using Chorus actual poles rented in each area, as Chorus' actual poles rented will vary from the HEO's use of poles in the Commission's model due to a number of factors, including optimisation and excluding non-TSO areas as well as post-2001 subdivisions.

392 We are happy to discuss the provision of information on our renegotiated pole rental agreements, as well as newly negotiated pole rental agreements with the Commission.

APPENDIX B: CONSENTING COSTS FOR NATIONWIDE AERIAL DEPLOYMENT

393 Taking the Commission's assumption that there will be 47% aerial distribution deployment by an HEO, we calculate that the costs associated with consenting will amount to **[CI:]** for a nationwide network. This figure contrasts with **[CI:]** which was largely based on information provided by Chorus on its estimated consenting costs within the Auckland region. It was not intended that this figure be applied to consenting costs for the entire country. These consenting costs were also based on overlaying lines on an existing network.

394 We base our estimate as to the nationwide rate by considering:

394.1 the types of consents that would be required by the various consenting authorities around New Zealand, reflecting that some Councils are likely to require notification under the Resource Management Act 1991 (**RMA**) and some will not;

394.2 the costs of the consenting application fees, including external consulting fees, legal fees and costs associated with mana whenua consultation; and

394.3 ongoing compliance and maintenance costs which must be sustained in order for an operator to lawfully implement the relevant consents.

395 The cost estimate is conservative as it does not include any appeals from a Council hearing process. It also does not include consideration of the indirect costs that may be incurred as a result of delays associated with the consenting costs, such as costs associated with delaying employment of labour or acquiring materials.

Council requirements

396 We have considered the costs an HEO is likely to encounter associated with obtaining consents under the RMA for new poles and lines (road crossings) and consideration of issues under the Heritage New Zealand Pohuere Taonga Act 2014.

397 We have also reviewed the district plan rules for all local authorities to determine:

397.1 which consenting authorities would be unlikely to require the HEO to apply for consent (in other words, where aerial deployment would be treated as a permitted activity under the relevant district plan). These authorities would require resource consent but on a non-notified basis.

397.2 which consenting authorities would require notification (in other words, where aerial deployment would not be treated as permitted activity under the relevant district plan). Seeking consent on a notified basis can be complex.

398 We were also able to draw on our experience with aerial consenting in Auckland, Wellington (incorporating Wellington City, Porirua, Hutt City and Kapiti Coast) and Gisborne. Our consent applications specifically excluded the placement of new poles or the creation of new aerial envelopes, and therefore only required consideration of the environmental effects over and above that of the existing network (as opposed to assessing a new overhead network). Consequently, the visual effects were considered to be minor and the applications proceeded on a non-notified basis.

399 We have not taken into account easement costs in our calculation as we have assumed the HEO will follow existing road corridors.

400 We have assumed that applications made by the HEO would be for global consents (that is, a district wide consent application) as this would be the most efficient way to seek consent by an HEO as it would cover extensive areas with multiple zones and overlays. Therefore it is anticipated that these consents, both notified and non-notified, would require both planning and specialist (landscape, arboriculture, archaeological) input.

401 In order to work out the charges associated with consent processing fees we considered both the costs from our own aerial programmes and the information available taken from the Ministry for the Environment (**MfE**) Publication Resource Management Act: Two Yearly Survey of Local Authorities 2012/2013[302] of 78 Councils throughout New Zealand. Tables 2.10 and 2.11 from the MfE survey reflect council charges for processing different types of consents from non-notified to (publicly) notified:

Table 2.10 Unitary authority average charges to applicants for resource consent application processing by notification type, 2012/13

Notification type	Average minimum charge	Average median charge	Average maximum charge	Total charges	Number of local authorities providing data
Notified	2,389	7,687	57,237	2,552,194	5
Limited notified	1,786	6,051	31,473	2,149,392	5
Non-notified	216	1,055	47,563	31,677,944	6
All				36,379,530	6

[302] Ministry for the Environment "Resource Management Act survey of local authorities" (April 2014, Publication reference ME1136) at pages 41 and 42.

Table 2.11 Territorial authority average charges to applicants for consent application processing by consent type and notification type, 2012/13

Notification type	Average minimum charge	Average median charge	Average maximum charge	Total charges	Number of local authorities providing data
Notified	8,963	13,600	69143	4,013,204	38
Limited notified	2,385	4,996	14,326	1,764,372	49
Non-notified	285	1,308	40,506	28,180,504	60
All				33,958,080	61

402 Applying a $6000 processing fee estimate for non-notified consents as we have done in Table 1 below is consistent with the range in the MfE Tables 2.10 and 2.11.

403 We have assumed $30,000 for Council processing fees for a notified consent. This would include planner and specialist assessment, reporting and participation at the hearing (including associated hearing costs for commissioners and administration). This is slightly above the median set out in tables 2.10 and 2.11 but reflects the scale of the consents (including potential number of submitters) and the need for specialist input would result in a higher cost. It also takes into account that some areas would be cheaper to consent and others likely to well exceed this amount. Averaged out over the areas where notification would be the likely outcome $30,000 the best reflection of potential costs.

404 We have assumed a $50,000 application cost for notified consents to properly account for the cost following lodgement, including attendance at a hearing and specialist input, including landscape planners, arborists, heritage specialists, archaeologists and cultural advisors. We also consider it sensible to include $1.5 million to the final consenting amount to take into account legal fees likely to be incurred as a result of obtaining consents. This includes time required for legal reviews and attendance at council hearings and is based on Chorus' experiences with obtaining its aerial consents and other related matters. We have not included the cost of any appeal from a council hearing.

405 We have not included the costs associated with internal employee time on the basis this has already been captured in opex.

406 In the event that the HEO chose to have all its applications considered by the Environmental Protection Authority (**EPA**) as a proposal of national significance, we anticipate that the processing fees would be similar. We have reached that conclusion by considering the preparation of applications being similar to if they were

lodged in individual council areas and reviewing the total charges of applications processed by the EPA as set out in the MfE RMA 2012/2013 Survey:

Table 6.4 Total charges, by proposal processed to a decision, July 2011 to June 2013

Proposal	Total Charged ($)
Department of Corrections Wiri Men's Prison (One change to a notice of requirement)	$1,286,112.00
NZTA Transmission Gully Plan Change (one plan change)	$1,700,000.00
New Zealand King Salmon (nine resource consents and two plan change requests)	$2,588,607.00
NZTA MacKays to Peka Peka Expressway (one notice of requirement and 29 resource consents)	$2,093,620.00
NZTA Transmission Gully Proposal (eight notices of requirement and 22 resource consents)	$1,633,424.00
Turitea Wind Farm	$2,038,310.85

407 The costs reflected in the MfE/RMA survey are just for the costs of the Council or EPA for processing the application, including paying for Council or Independent Commissioner time. The costs the applicant incurs to prepare their application, including expert consultant fees, are not included in the MfE/RMA survey.

408 The costs associated with having an application processed by the EPA as a proposal of national significance would be substantial due to the significant legal input required.

409 On the basis of considering the above we calculate the cost of consents associated with aerial deployment as follows:

Table B1 – Estimated consenting costs for nationwide aerial deployment

	Description	Count	Activity	Actual costs for UFB to date (averaged)[1]	National Estimate[2]
	Resource consent required – complex. Notification likely outcome.	44	Application preparation – consultants costs per consent area[3]	**[CI:]**	$50,000
			Application processing – Council costs per consent	**[CI:]** **[CI:]**	$30,000 (notified)
			Total cost per area	**[CI:]**	$80,000
			Total cost x 44 Additional consents (x10)	-	**$4,320,000[4]**
	Resource consent required – limited parts of District. Non-notification likely outcome[5]	6	Application preparation – consultants costs per consent	**[CI:]**	$30,000
			Application processing – Council costs per consent	**[CI:]**	$6000
			Total cost per area	**[CI:]**	$36,000
			Total cost x 6	-	**$216,000**
	Permitted – no resource consent required. Assumed confirmation	24	Application preparation – consultants costs per application (CoC)	**[CI:]**	3672

[1] Chorus consents actual average – based on consenting costs for Auckland (33 consents), Wellington Region (13 consents), Gisborne (1 consent). All consents were processed without notification (public hearing). Certificates of Compliance: Waiheke Island, Papakura, Franklin, Gore, Hastings, Napier

[2] Increased amount due new poles, aerial envelopes and increased visual impact

[3] For the Chorus UFB aerial consenting programme larger towns were split into multiple consent areas. It is anticipated that a similar approach could be followed for the HEO – therefore more than 43 applications could be lodged. An additional 10 consents has been added to reflect this.

[4] Cost to Council decision. Note that decision could be appealed to the Environment Court (if a Council decision). Resolution of appeal would incur further costs and result in uncertainty (risk of consent not being granted).

[5] Similar costs to Chorus actual consents applied.

	through certificate of compliance.		Application processing – Council costs per application (CoC)	**[CI:]**	$2500
			Total cost per area	**[CI:]**	$6199
			Total cost x 24	-	**$148,776**
			Total		**$4,684,776**
			Total with legal costs ($1.5m)		**$6,184,776**

Compliance and monitoring costs

Meeting the conditions of the consent

410 In order to lawfully implement any consent, costs are incurred to meet the conditions of the consent. We have considered our experience with global consents and the need for specialist input, including consultant arborists and heritage advisors that would be required as a build is carried out. It is anticipated that these costs would be in the order of **[CI:]** each year of the build.

411 For example, in Auckland we are experiencing a cost of **[CI:]** in relation to arborist costs in order to comply with the conditions of our consent for our current UFB build. Auckland is highly regulated and therefore the monitoring and compliance costs are not necessarily representative of those that would be experienced in other council areas. However, each consent would incur some level of compliance and monitoring charges and therefore a figure of **[CI:]** annually for the duration of a nation-wide build is an accurate representation of an amount that should be taken into consideration.

Compliance and monitoring

412 We (and an HEO) are required to meet ongoing compliance and monitoring conditions of a consent. We estimate that these would amount to **[CI:]** each year.

413 Compliance and monitoring costs relate primarily to the on-going requirement for specialist input and supervision at the time of build and include costs associated with:

- arboriculture input;
- heritage specialists;
- archaeological input;
- iwi engagement and consultation; and
- council monitoring and compliance fees.

APPENDIX C: CHORUS' RESPONSE IN RELATION TO SPECIFIC NON-RECURRING CHARGES

UCLL

3.3 Special manual pre-qualification investigation order

414 The Commission has set an hourly rate of $58.24 for this code, on the assumption that the tasks involved are carried out solely by Chorus internal staff.

415 A 'special manual pre-qualification order' is a request by an RSP for Chorus to send a technician to travel to an exchange or an end-user's premises and provide information about that address. Examples of information that an RSP might request include the number of SLU or MPF currently in operation or that could be connected with jumpering, and theoretical estimated line attenuation. Chorus outsources this task to service company technicians, and is charged service company code **[CI:]**, which covers activities relating to site investigations. Chorus should be able to recover the cost of this service company code.

416 Accordingly, the cost of a special manual-prequalification investigation order should be modelled on the basis of:

> The national average price for service company code **[CI:]**.

This charge should additionally include all other cost components, Chorus overheads and service company overheads.

3.4 Manual line testing

417 The Commission has set an hourly rate of $61.16 for this code (on the assumption this is Chorus internal work).

418 Manual line testing takes place when an RSP asks Chorus to send a technician to travel to an exchange or end-user premise and test the electrical characteristics of the copper wire at that site. Chorus outsources this task to service company technicians, and is charged service company code **[CI:]**, which covers activities relating to site investigations. Chorus should be able to recover the cost of this service company code.

419 Accordingly, the cost associated with manual line testing should be modelled on the basis of:

> The national average price for service company code **[CI:]**.

This charge should additionally include all other cost components, including Chorus overheads and service company overheads.

3.6 No fault found

420 The Commission has set the draft price for UCLL 3.6 (no fault found) at $81.40.[303] The price for the equivalent UBA charge has been set at $76.30. Both charges are based on the same modelling by TERA (see modelling of "non-recurring activities mapped to a service code".[304]) We think that, even if benchmarking is adopted (contrary to our primary submission), the modelled price should be $81.40 for both services for the reasons that we discuss at [362] above.

421 We note that this transaction charge is particularly unsuitable for benchmarking on the basis of task time. This code is incurred irrespective of the amount of time taken to determine there is no fault or the time taken by the service company before an order is cancelled. Task time is not a relevant consideration in the make-up of this charge.

3.8 Abortive end-user site visit

422 An abortive end-user site visit occurs when a service company attends an end-user's premises for the purpose of carrying out network provisioning or fault management tasks, but is unable to complete the visit (for example, because the occupants are not at home at the time agreed by both parties).

423 TERA has rightly identified that Chorus incurs a cost equivalent to remote management work, and so has set a charge of $17.64 for this service based on six minutes of Chorus time for the remote management work, and some travel costs. However, it has not included the cost that Chorus bears for the truck roll.

424 If, following an abortive site visit, service companies cannot re-establish contact with end-users and return to complete the job, Chorus is charged by service companies for an abortive end-user site visit.

425 These costs should be included in the relevant non-recurring charges. Failing to pass on the costs of these service company charges creates incentives for RSPs and end-users to behave inefficiently. End-users should be incentivised to honour appointments with service companies.

- *Maintenance tasks*

426 For fault management (or 'maintenance') tasks, the service company code for an abortive end-user site visit is **[CI:]**.

427 For maintenance tasks, we propose that the cost of a cancellation (post truck roll) be modelled on the basis of:

The national average price for service company code **[CI:]**.

[303] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [699].

[304] TERA Consultants "TSLRIC price review determination for the UCLL and UBA services non-recurring charges: methodology document" (April 2015) at [2.3.1.3].

This charge should additionally include all other cost components, including Chorus overheads and service company overheads. Our reasoning is explained further at [362] above.

428 It is not appropriate to apply an efficiency adjustment to this code on the basis of task time as it is a flat fee irrespective of the time taken by service companies.

- *Provisioning tasks*

429 For network provisioning tasks, Chorus is charged by the service company as if the activity had been completed.

430 We propose that the cost of a cancellation (post truck roll) in the case of network provisioning tasks be:

The STD price for the requested (but cancelled) transaction charge.

431 We also note that the draft price for UCLL 3.8 is set at $17.64, based on TERA's modelling (see "Cancellation charge (post-truck roll) / abortive end-user visit").[305] The equivalent UBA charge 3.4 is based on the same modelling exercise, yet the charge is set to $16.53.[306] We maintain our view above that the service company charges should be incorporated into this cost. However, irrespective, we note that the price for both services should be the same.

3.14 Additional copies of invoices

432 The Commission has set a charge of $0.00 for providing additional copies of invoices, on the basis that an HEO would implement modern OSS and BSS systems including full B2B integration of accounting systems.

433 Chorus is able to provide copies of electronic invoices to RSPs at relatively low cost. However, where RSPs request physical copies of invoices, Chorus is required to provide a service while incurring significant administrative cost. Physical invoices may be several reams in length, particularly where RSPs also request "e-bill" data (data underlying the invoice).

434 We propose a staggered charge, of $0.00 for RSPs requesting additional copies of electronic invoices, and a separate charge reflecting the administrative cost to Chorus in providing additional physical copies of invoices. We suggest a cost based on an hourly rate to reflect that the cost largely corresponds to the length of the invoice.

435 Adopting a charge where a physical copy of an invoice is requested will incentivise RSPs to request invoices electronically, which is a more efficient process for both parties.

[305] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [705].

[306] Commerce Commission "Further draft determination for UBA" (2 July 2015) at [663].

Consistency between UBA and UCLL STD transaction charges

436 Three charges in the UBA STD have no equivalent in the UCLL STD. For consistency, it would be appropriate for an equivalent charge to be added to the UCLL STD and for Chorus to be able to pass the cost of these charge on to RSPs.

437 The charges are:

437.1 the cost of a remote connection for UCLL. The equivalent charge in the UBA STD is 1.1 "New Connection – no site visit required (remote connection)";

437.2 the cost of a cancellation (pre truck roll) for UCLL activities. The equivalent charge in the UBA STD is 3.13 "Cancellation charge (pre truck roll)"; and

437.3 the cost of a cancellation (post truck roll) for UCLL activities. The equivalent charge in the UBA STD is 3.14 "Cancellation charge (post truck roll)".

438 Introducing these charges provides incentives upon RSPs to order truck rolls efficiently. We have already discussed how distorted pricing encourages inefficient behaviour (see above).

SLU

3.8 Abortive end-user site visit

439 Refer to UCLL charge 3.8, above. If, following an abortive site visit, service companies cannot re-establish contact with end-users and return to complete the job, Chorus is charged by service companies for an abortive end-user site visit. These costs should be included in the relevant non-recurring charges.

3.10 Additional copies of invoices

440 Refer to UCLL charge 3.14, above. We propose a staggered charge, of $0.00 for RSPs requesting additional copies of electronic invoices, and a separate charge reflecting the administrative cost to Chorus in providing additional physical copies of invoices. We suggest a cost based on an hourly rate to reflect that the cost largely corresponds to the length of the invoice. Adopting a charge where a physical copy of an invoice is requested will incentivise RSPs to request invoices electronically, which is a more efficient process for both parties.

UBA

1.34 Transfer of EUBA service from an access seeker to an EUBA service with another access seeker (DSLAM port change)

441 The Commission has indicated that the draft price set by the Commission for UBA core charge 1.34 is "442.17".[307] We believe that, on the Commission's current

[307] Commerce Commission "Further draft determination for UBA" (2 July 2015) at [559].

approach, the price should be "$45.00" as is specified for other equivalent charges in the draft determination and in the summary table of UBA core charges.[308]

1.38 Multiple order for single end-user support

442 Under the current STD, Chorus was not able to recover the costs associated with this service. In its draft determination, the Commission has imposed a charge on a POA basis. We agree that it is consistent with TSLRIC to allow Chorus to recover the cost of these services. We agree that POA pricing is appropriate in the circumstances of the charge, which is bespoke and irregular.

1.48 Remapping design charge

443 Under the current STD, this charge was set at a fixed price of $1,989.29. In its draft determination, the Commission has elected to set the price of this charge at 'POA', on the basis that the Commission considers the activity to be bespoke and therefore more appropriate as a POA charge. Our preference is for this to remain as a fixed price.

444 **[CI:**

]. Chorus is able to provide a cost breakdown if this would be of assistance.

3.3 No fault found

445 Refer to UCLL charge 3.6, above. The Commission has set the draft price for UCLL 3.6 (no fault found) at $81.40.[309] The price for the equivalent UBA charge has been set at $76.30. We believe that, on the Commission's approach, the modelled price should be $81.40 for both services.

3.8 Abortive end-user site visit

446 Refer to UCLL charge 3.8, above. If, following an abortive site visit, service companies cannot re-establish contact with end-users and return to complete the job, Chorus is charged by service companies for an abortive end-user site visit. These costs should be included in the relevant non-recurring charges.

3.10 Additional copies of invoices

447 Refer to UCLL charge 3.14, above. We propose a staggered charge, of $0.00 for RSPs requesting additional copies of electronic invoices, and a separate charge reflecting the administrative cost to Chorus in providing additional physical copies of invoices. We suggest an hourly rate to reflect that the cost largely corresponds to the length of the invoice. Adopting a charge where a physical copy of an invoice is requested will incentivise RSPs to request invoices electronically, which is a more efficient process for both parties.

[308] Commerce Commission "Further draft determination for UBA" (2 July 2015) at page 120.

[309] Commerce Commission "Further draft determination for UCLL" (2 July 2015) at [699].

3.14 Cancellation charge (post truck roll)

448 A cancellation charge (post truck roll) is incurred when an end-user cancels a network provisioning or fault management request after a service company technician has picked up the request (to be contrasted with charge 3.13, where a cancellation is made before the truck roll has taken place). Once the truck has rolled, Chorus incur an external service company cost.

449 TERA has rightly identified that Chorus incurs a cost equivalent to remote management work, and so has set a charge of $17.64 for this service based on 6 minutes of Chorus time for the remote management work, and some travel costs. However, it has not included the cost that Chorus bears for the truck roll.

450 These costs should be included in the relevant non-recurring charges. Failing to pass on the costs of these service company charges creates incentives for RSPs and end-users to behave inefficiently. For example, in the case of a cancellation (post truck roll), an RSP may send a Chorus truck out rather than being incentivised to investigate whether the fault is related to its network or the end-user's equipment.

Maintenance tasks

451 For fault management (or 'maintenance') tasks, the service company code for a cancelled truck roll is **[CI:]**. Chorus is charged a flat fee for the truck roll, regardless of how far the work proceeded prior to cancellation).

452 For maintenance tasks, we propose that the cost of a cancellation (post truck roll) be modelled on the basis of:

> The national average price for service company code **[CI:]**.

This charge should additionally include all other cost components, including Chorus overheads and service company overheads. Our reasoning is explained further at [362] above.

453 It is not appropriate to apply an efficiency adjustment to this code on the basis of task time as it is a flat fee irrespective of the time taken by service companies or how far the work proceeded prior to cancellation.

Provisioning tasks

454 For network provisioning tasks, Chorus is charged by the service company as if the activity had been completed.

455 We propose that the cost of a cancellation (post truck roll) in the case of network provisioning tasks be:

> The STD price for the requested (but cancelled) transaction charge.

Price on application

456 The Commission has asked for views on charges for which it has proposed a POA but TERA have recommended a fixed price, including the additional billing information and bulk transfer charges.

457 Chorus has a general preference for fixed charges based on the feedback we have received. POA requires us to obtain a minimum of two quotes which can take time and creates uncertainty. A fixed price provides RSPs with cost certainty.

458 We note though that we are required under the STDs to annually review all charges which are POA and provide a fixed price where this is practicable.[310] This may provide an appropriate way to address these specific matters if sufficient volume data allows a fixed price to be set.

[310] Refer clause 3.1.3 of Appendix 1, Schedule 2 of the UBA STD and clause 3.1.3, Schedule 2 of the UCLL STD.