



Process and issues paper for determining a TSLRIC UCLL price

Cross Submission | Commerce Commission

28 February 2014

Contents

Executive Summary	1
Introduction	3
The Commission is not constrained by the Act to one plausible interpretation of cost	3
Chorus' proposed approach	3
The Act is not prescriptive in defining forward looking costs	3
Chorus' proposed approach does not assist the process	5
Defining the MEA service	6
Chorus' cost model	10
The proposal lacks internal coherence and will deliver perverse outcomes	10
Revaluation gains (without merit) are not permissible windfalls for access providers	10
The proposed hybrid model will be difficult to apply and lacks transparency	11
Chorus' proposed approach will be contentious and ultimately delay finalising the FPP	12
Other matters raised in submissions	14
Proposition that UCLL prices will rise on declining demand if copper network is modelled	14
Estimating WACC	15
Dealing with common costs – must be consistent with the TSLRIC definition	15
Data visibility and transparency	16

Executive Summary

The Commission is tasked with determining a price that it believes is in accordance with the FPP. The Act provides the Commission little guidance on how to derive these costs other than requiring a forward looking approach. This leaves the Commission discretion, exercising its judgment to identify costs that best meet the FPP objectives. That is the purpose of this process. In doing this, it is open to the Commission to consider and take a broader approach to defining the service being modelled and the MEA used to value the service.

The narrow approach taken by Chorus to the pricing review, while undoubtedly an effective way to maximising a UCLL cost calculation, in reality provides little assistance for considering how to apply the FPP. In the process of setting an efficient price, the Commission is required to make a number of decisions to set a price which it considers is best in accordance with the FPP. However, Chorus' prescriptive approach achieves none of the standard regulatory modelling objectives and is accordingly unhelpful for resolving the issues highlighted by the Commission in the paper.

MEA is a tool for to determine efficient forward looking of the real world UCLL service

The Commission is not constrained under the Act to a single implausible MEA interpretation. Although the legal definition of TSLRIC requires the Commission to ascertain the incremental cost of UCLL and add a reasonable allocation of common costs, it does not tell the Commission how to value the assets that make up those costs other than requiring an efficient forward-looking approach.

The MEA is a feature of forward looking valuation methodologies informed by economists and developed by regulatory authorities and cost modellers. It is not a legal concept within the Act. In other words, the MEA is an economic valuation tool - a thought experiment – used to determine efficient forward-looking costs of the real world UCLL service. The MEA used properly as a valuation tool within the TSLRIC definition from the Act will estimate efficient forward looking costs that provide efficient long run signals for operator's investment decisions and the benefit of consumers. A considerable amount of expert judgment and expertise will be required to determine which MEA serves that purpose in New Zealand. It is therefore wrong to say that the Act requires a particular MEA.

The functionality expressed in the service description of the Act should not constrain the question of MEA design. The Commission can adopt the costs arising from the choice of MEA it considers provides the best fit with the forward-looking requirement – as long as it can be confident that sensible adjustments can be made to that MEA to reflect any material differences in functionality.

The Act provides scope for the Commission to exercise its expert judgement – that is the purpose of this process. Chorus' narrow approach, while advancing a set of model parameters that would undoubtedly maximise UCLL revenue for itself, provides no assistance for the current process.

The Chorus cost model

Chorus' proposed, unadjusted top down approach simply embeds inefficiencies and results in windfall revaluation gains. The Courts have made it clear that it is not consistent with the purpose of

the advancing competition and competitive outcomes to gift windfall revaluation gains to the Access Provider when they have done nothing to merit such gains.

Frontier have reviewed the proposed model, noting that the model approach maximises the upside costs to be recovered in prices without any clear justification, and will not achieve standard regulatory modelling objectives. Frontier is also not aware of the approach proposed by Chorus being implemented in practice in any other jurisdiction.

In practice, applying the Chorus model will be contentious and unlikely to provide a robust estimate of efficient costs. The parties will require access to detailed Chorus information and a myriad of adjustments will be required for the parties to have confidence in the model. The incentives are clear in such models. When you look at previous accounting separation and TSO costing processes, both were protracted and contentious processes, and inevitably resulted in the Commission developing its own bottom up model to assess the robustness of the information provided.

Chorus' proposed approach will likely delay completing the pricing review. Accordingly, we support the process proposed by the commission in the issues paper.

Introduction

1. Telecom welcomes the opportunity to provide this cross-submission on parties' UCLL final pricing principle (**FPP**) issues and process paper (**issues paper**) submissions.
2. The key issues are Chorus' proposals that:
 - a. The Commission take a narrow approach to defining costs, estimating the cost of the current copper network required to deliver the full technical functionality of the UCLL service; and
 - b. It develop the economic model for the purposes of setting the regulated price. Chorus would develop a top down model using the current asset inventory (inflated for replacement cost).
3. We address these issues in this submission, plus make some comments on other issues raised by the parties.

The Commission is not constrained by the Act to one plausible interpretation of cost

Chorus' proposed approach

4. Chorus argues that, as a matter of law, the existing copper network must be used as the modern equivalent asset (**MEA**). The functionality and technical characteristics of the existing UCLL service is the legal starting point. The Commission does not have an open choice as to the technology to model, it must select a technology that meets all the functionality of the service being costed, and commercially proven and in use.
5. Accordingly, the appropriate network to model is the copper network as it is current and can deliver the full functionality of the UCLL STD service. This analysis is largely circular as a number of the claimed service characteristics are a function of current technologies and services, and therefore the copper network is the only technology that could support this service definition.
6. The implications of Chorus' approach are that the forward looking model should be based on Chorus' existing network configuration, and Chorus' actual asset counts adopted as an equivalent of the forward looking asset count.

The Act is not prescriptive in defining forward looking costs

7. The Chorus approach, however, fails to properly consider the role of the MEA under the FPP.
8. The Commission is required to determine a price for the actual UCLL service using TSLRIC. While the statutory definition of TSLRIC requires the Commission to ascertain the incremental cost of UCLL and add a reasonable allocation of common costs, it does not tell the Commission how to value the assets that make up those costs (other than requiring a forward-looking long run approach).

9. The Commission has some guidance in determining TSLRIC costs: the relevant costs are long run forward looking, efficient, and support the efficient regulatory objectives set out in the issues paper. That said, the definition leaves much to implication. For example: How are forward-looking costs to be determined? What type of costs are to be included - operating costs, cost of capital? What are directly attributable or reasonably incremental facilities and functions? How must other services be taken into account?
10. In our view, these are the types of matters on which Parliament intended the Commission to exercise its judgment. Given TSLRIC is an economic term, Parliament would expect "the gaps" such as those identified above to be filled in a way consistent with economic practice. The Act recognises that judgment is required. For example, sections 49 and 52 provide that the draft and final determinations must include a price which, **in the opinion of the Commission**, is determined in accordance with the FPP. This wording demonstrates Parliament's understanding that the application of the FPP is not an exact science, by expressly providing that the Commission may exercise discretion when deciding whether a price has been determined in accordance with the FPP.
11. Accordingly, the purpose of the current process is for the Commission to exercise its judgment, delivering a final determination that includes a price which, in the opinion of the Commission, is determined in accordance with the FPP. This is a TSLRIC based price that provides efficient pricing signals.
12. We believe the MEA is an important tool for the Commission in estimating an FPP price – it helps identify optimal, modern assets used to deliver the service and against which the efficient costs can be determined. However, MEA is not mentioned anywhere in the Act. The MEA is an economic valuation tool – a thought experiment – used to determine efficient forward looking costs of the real world UCLL service. A considerable amount of expert judgment and expertise will be required to determine what MEA best serves that purpose. It is therefore wrong to say that the Act requires a particular MEA.¹ It is a matter of judgment for the Commission as to what might constitute an MEA under TSLRIC, and whether its MEA model achieves an efficient cost.
13. It follows that there is nothing in the Act that requires the MEA to replicate all the functionality and facilities of the existing network – especially if that is not efficient. We acknowledge that the UCLL designated service is the service to which the price will apply. That's the starting point for determining what to cost up. The next step is to identify how a modern, efficient operator

¹ By way of analogy, land must be valued for entities subject to regulation under Part 4 of the Commerce Act. Part 4 does not direct a methodology, but the Commission has determined that MVAU must be used. Among other things MVAU requires a "thought experiment" to ascertain how that land would be used in an alternative use. Once determined, that alternative use model is valued to ascertain the value of the actual land. However no one has sought to argue that the value is invalid because the alternative use is different than the current use - it is accepted as an economic valuation tool to determine the regulatory value of the land in its existing use.

would provide that service, which assets it would use today to provide the core functionality of the service, and how It would deploy them in an efficient manner.

14. The efficient costs are determined by the Commission with reference to TSLRIC policy objectives. For example, the FPP objectives are to provide efficient pricing signals and, to achieve this, means defining the service to be modelled by reference to the realistic options available to network operators, access seekers and customers. In practice, overseas regulators have approached this by considering the model technologies in light of some core service characteristics and networks actually being deployed. This reflects the realistic options for providers, access seekers and consumer for which the efficient FPP price signals are important. In other words, this seeks to identify efficient costs within the wider market context by capturing products which are reasonable substitutes but do not necessarily have identical features. The BEREC² recommended approach illustrates the wider perspective that reflects a wider market analysis:

Generally, the MEA is defined as the technology choice made by a new entrant delivering a given service at lower costs than is currently the case with existing technology. Whether fibre is the MEA for copper depends on whether the value of fibre assets replacing copper assets results in lower costs... As fibre allows new services (or higher speeds) to also be delivered, then if fibre assets cost more than the copper assets they displace, this additional value needs to be abated.

15. The Commission has discretion to determine how the MEA best enables it to determine the TSLRIC price. In particular, in exercising that judgment, a granular view of functionality should not constraint the question of MEA design – the tail should not wag the dog. Even if the MEA does not directly provide functionality in the way prescribed in the current UCLL service description, sensible adjustments can be made to that MEA to reflect any material differences in functionality required to deliver the UCLL service.
16. We therefore disagree with Chorus’ submission that the issues paper contains a “conceptual misdirection”. The better approach is to recognise that TSLRIC was developed as a methodology to determine the efficient costs of providing a service that would produce a price at a “competitive level”. That’s a fundamental tenet of cost-based regulatory pricing. The costs of providing the UCLL service is a matter for Chorus. But the price at which Chorus would sell the UCLL service at in a competitive market would be relative to an efficient cost-based price of a rational competitor. Setting a price with reference to recovery of the efficient cost provides the regulatory / economic incentive for Chorus to optimise its operation to ultimately deliver that service efficiently. That is consistent with section 18 of the Act.

Chorus’ proposed approach does not assist the process

17. The Commission is tasked with setting a price in accordance with the FPP and, the framework in the Act, leaves it with the discretion to exercise its judgment. That is the purpose of this

² http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/132-berec-response-to-the-commissions-questi_0.pdf at Page 22

process. However, the Chorus approach is not helpful in addressing the key questions addressed in this process.

18. This is because Chorus defines the service to be modelled by reference to technical network characteristics rather than a consumer/market perspective. There is circularity. The implication is that since the modelled service is defined by technical characteristics of the current network, therefore, the current network is the only MEA option.
19. Further, tying the MEA to a historic copper-based technology choice without reference to current technologies and future demand means by definition is backward looking. This is even more apparent in the context of the current deployment of fibre-based technologies. The design and assets deployed in the network are a product of a sequence of past technology options, demand and customer requirements over a long period of time. These historic factors are baked in to the current network design and asset inventory. This means that a cost model closely specified by reference to the technical and design characteristics of the current network will inevitably be backward looking. It would be difficult to apply this approach to identify and assess efficient forward looking costs.
20. The nature of today's market is that forward looking technologies are, by their nature, different to the past network. Modern technologies offer end users realistic alternatives to legacy services, while offering significantly more functionality. For example, telecommunications markets are dynamic. Operators are deploying new technologies and capabilities that, from a market perspective, compete and replace the existing technologies. Provided the services support the desired performance or utility, consumers are likely over time agnostic between the underlying copper or fibre used.
21. Chorus' backward looking approach can't make transparent, or expose, these forward looking options and impacts. Accordingly, Chorus' approach adds nothing to understanding the relative benefits of forward looking TSLRIC objectives. Chorus' proposed approach can never help understand or reflect the efficient pricing signals relevant for telecommunications markets.

Defining the MEA service

22. As set out in our submission, and the Frontier report, functionality should not constrain the question of MEA design. There is more than one possible choice of MEA available to the Commission and the Commission should adopt the MEA it considers provides the best fit with the forward-looking requirement. Where there are performance differences, sensible adjustments can be made to that MEA to reflect any material differences in functionality.
23. Further, the service can and should be defined in the context of today's customer requirements, the technology options available to operators and what's occurring in today's market. As noted above, any forward looking view should also take account of future usage over time, current demographics, and likely future changes over time, and current and likely future equipment costs as they change over time. As noted above, this means a service that provides similar performance or utility, but not requiring identical technical performance or technologies. This is the outcome which best reflects the forward looking standard.

24. In other words, in contrast to the Chorus proposal, the service to be costed should be based on the currently most efficient technology choice deployed to deliver the core functionality demanded by end-users consistent with the UCLL service description.
- a. It should be derived from a network engineering model focused on an efficient view of the real world network architecture, but not replicating all aspects of that architecture. Additionally the dimensions of the service and hence the choice of efficient equipment for service delivery should be based on a forecast of the likely trajectory of usage over time.
 - b. The selection of efficient equipment within the technology choice should also focus on the lowest current cost, and take into account the best available information on forward looking views of local demographic conditions, the likely changes in technology and equipment costs, and end-user preferences for the relevant services which would be supported by the service being modelled. Finally, appropriate depreciation should be applied.
25. We support the approach taken by the Commission in the issues paper. The Commission should consider technologies that provide realistically comparable service performance to the regulated service consistent with a view of the elements of the service actually valued by end-users and relevant to other services which are and would be supported by the service in the future. This would be consistent with the forward looking wording of the TSLRIC definition. Parliament can't have expected the process to be limited to a narrow definition of "service" when this cuts across the concept of forward looking.
26. As discussed above, the MEA is an economic valuation tool – a thought experiment – to determine efficient forward looking costs over the long run of the real world UCLL service. This means defining the real world service that reflects today's market characteristics and technical options. In other words,
- a. Whether the technology can support the necessary service performance;
 - b. What operators are investing in currently by way of network assets to deliver similar services;
 - c. The features of the service which are currently, and are currently expected to be, valued most highly by end users.
27. It is not a difficult thought experiment for the Commission to identify the forward looking services and technologies. Operators are already deploying fibre to the home. Business and residential customers are voting with their wallets, demanding ever increasing volumes of data and increasingly relying on separate applications for services that were embedded in legacy technologies. We believe end-user preferences are clear. These services are not technically identical, but they are sufficiently comparable that they provide consumers a realistic alternative and, in the case of telecommunications technologies, more.

28. When we look overseas, regulators have taken a similar approach to the one we propose, and have identified these modern network technologies as being fibre and fixed wireless access networks. These networks provide a better perspective of the forward looking characteristics for cost modelling. The European Commission, and every regulator we are aware of who applies a forward looking standard, recommends identifying the modern equivalent asset being deployed today that can deliver the same service performance and the efficient costs of that technology.

A focus on technical aspects of the service

29. Chorus proposes a narrower approach, focusing on the technical aspects of the UCLL service. For example, Chorus suggest that the service support the same customer premises equipment and provision of a DC power path. However, such requirements have not featured in recent overseas regulatory processes.
30. Analysys Mason refer to 2005 advice provided to Ofcom in connection with Ofcom's 2005 consultation on *Valuing copper access*³ to support requiring use of the same CPE and provision of a DC power path as MEA criteria⁴. However, this dated report reflects the concerns and views of that time. In its most recent analysis of MEA in 2012⁵, Ofcom concerns relate to the deployment of NGA networks and not refer to these concerns regarding the suitability of fibre.
31. The European Commission's recent consultation on *Costing methodologies for key wholesale access prices in electronic communications*, despite gathering in excess of fifty responses from stakeholders, contained no references to CPE interoperability or provision of a DC power path as a required attribute for an MEA. We believe a similar – market - approach is appropriate in New Zealand. Estimating forward looking costs is about setting a price, not defining the scope of the currently service. In fact, choosing fibre as the most appropriate MEA for the FPP process in the New Zealand context would not result in customers requiring new CPE or losing connectivity. The choice of the MEA merely informs the calculation of an efficient cost to provide equivalent functionality since this is the efficient cost which workable competition would drive the market to.

The TSO

32. Chorus propose to base the modelled service on the service characteristics of the TSO, adding additional requirements to selecting the modelled network.
33. We believe the TSO can be largely ignored when defining the MEA. Forward-looking common costs are expressly defined as excluding any costs incurred by the service provider in relation to

³ <http://stakeholders.ofcom.org.uk/binaries/consultations/copper/summary/copper2.pdf> at page 38

⁴ Analysys Mason *Response to Commission* at page 14

⁵ <http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-markets/summary/condoc.pdf> at page 33

a TSO instrument. The Act makes specific provision for the establishment and funding of TSO services – providing a specific demarcation between TSO and regulated access services.

34. When you look at the scheme of the Act, this makes sense:

- a. The Act is built around the competitive market standard – and this purpose should be applied to FPP pricing;
- b. The TSOs are an agreed instrument when there isn't a commercial (or market) driver for doing something, i.e. it's a transparent process for dealing with exceptions to the market standard; and
- c. The Act provides a transparent mechanism for TSO funding if can demonstrate a net cost (rather than building cost in to regulated services in a less transparent way).

35. In any case, it's unclear whether Chorus faces additional technical obligations set out in its submission. The TSO service is limited to connected residential customer premises as at December 2001, does not expressly require line powering, and supports a limited range of residential services (for example, it specifically excludes eftpos and interactive television services). If there are specific obligations, and these are not supported by the competitive market standard, there is a mechanism, under the Act that enables Chorus to apply for a TSO calculation to compensate such TSO costs.

36. Further, the TSO Deeds are in any negotiated agreements, which can be amended by agreement. Government has already commenced its review of the TSO and will separately determine the efficient approach to achieving its coverage policy relevant to the new world.

Adjusting for relative functionality

37. Further, when we look overseas, regulators have looked to adjust for relative network performance. These networks provide a better perspective of the forward looking characteristics for cost modelling. Analysys Mason's report for Chorus outlines a number of ways in which a fibre network could be considered inferior to Chorus' existing copper network and would require additional costs (e.g. battery backup, new CPE) to achieve current, or backward looking feature parity. However, elsewhere in the world, regulators⁶ and academics⁷ have been more concerned with their ability to quantify the extent to which fibre is superior to copper (and how to use "abatment" calculations).

38. This apparent paradox is understandable as copper and fibre networks are not absolutely identical. As discussed elsewhere in this submission, there is no essential reason for the

⁶ http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/132-berec-response-to-the-commissions-questi_0.pdf at page 22

⁷ For example How to price the unbundled local loop in the transition from copper to fiber access networks, Neumann, Karl-Heinz and Vogelsang, Ingo. Telecommunications Policy, Vol 37 at page 893, November 2013 available at <http://www.econstor.eu/bitstream/10419/88516/1/77409124X.pdf>

selection of the MEA why they should be identical, nor should the Commission be over focused on backward compatibility. There can be no argument that each has inherent abilities that the other cannot match. However, this does not mean they are not equivalent (able to offer the same primary services) for the purposes of the type of FPP process that the Commission has in mind. As noted in above, the choice of the MEA is a search for the forward looking efficient asset in the context of New Zealand, and the dynamics of the New Zealand telecommunications market. We believe, as set out in our submission that the Commission can, and should, consider adopting a fibre and fixed wireless MEA.

Chorus' cost model

The proposal lacks internal coherence and will deliver perverse outcomes

39. The proposed approach – applying replacement costs to the existing asset inventory and depreciating this inflated value over a shortened asset life – maximises revaluation gains to Chorus. However, it provides none of the welfare enhancing benefits of a TSLRIC pricing methodology. The proposed model establishes the replacement costs of the legacy copper network and this provides none of the efficient price signals for Chorus, access seekers or consumers that sit at the heart of a forward looking pricing methodology.
40. The Frontier Report sets out in detail a range of concerns with the approach being put forward by Chorus and Analysys Mason. Importantly, they note an inconsistency between the proposal that the approach should estimate the cost of a hypothetical new entrant on the one hand, and the costs of Chorus current legacy network on the other. This inconsistency means that the proposed model would retain any inefficiencies presently included in the current Chorus network. Frontier comment that this approach is unlikely to be consistent with any reasonable interpretation of a network reflecting the efficient forward looking long run incremental cost standard.
41. The Chorus/Analysys Mason approach, Frontier explains, gives the potential for Chorus to recover the full current replacement costs of its pre-existing sunk copper network over future declining demand for copper services. It is also a matter of concern that Analysys Mason's proposal is not clear on the implementation of both depreciation and valuation methodologies. These are crucial elements of a forward looking cost model with a material impact on pricing. As a result of these and other concerns, Frontier point to a range of inefficient economic outcomes which would arise if these proposals were adopted which would be inconsistent with the purpose of the Act. Frontier continue to recommend that the Commission take care to adopt a coherent package of modelling choices as suggested in their earlier report. We think too that the interdependencies between the different model choices mean that it is important to ensure that the Commission selects a design approach to the model that best achieves the purpose of the TSLRIC pricing model.

Revaluation gains (without merit) are not permissible windfalls for access providers

42. Further, Chorus proposes to apply replacement costs to the existing asset inventory. This approach is backward looking (reflects the past services, design and technologies, not the future

ones) and embeds inefficiencies. As noted by Frontier, proposed depreciation on top of asset revaluation, maximises the revaluation gains for Chorus. The gain does not reflect any Chorus investment, nor anticipated future investment. Chorus is minimising investment in the copper network and has entered in to commercial arrangements with the Crown to this effect. There's no TSLRIC or s18 justification for these gains.

43. The approach – which results in revaluation gains – is unlikely to be acceptable in the New Zealand context. The Commission considered revaluation gains in the Part IV methodologies process. Essentially, the approach was endorsed by the Courts. In *Wellington International Airport Limited and others V Commerce Commission [2013]* the Court said:

[383] [...] in the absence of a regulatory constraint a regulated supplier could increase its allowed revenue simply by revaluing its assets, without any increase in investment or efficiency. Higher profits resulting from such a revaluation would be a windfall gain rather than a reward for superior performance, which is contrary to the long term benefit of consumers, and to the objective in s 52A(1)(d) of limiting a supplier's ability to extract excessive profits.

44. It added at 569:

[569] [...] the Commission became concerned with a possible implication of the ODV approach [to valuation of the RAB]. That concern related to revaluation gains resulting from ODV valuations at a particular time not having been taken into income for pricing purposes and thus enabling a regulated supplier to increase its revenue simply by revaluing its assets, without any increase in investment or efficiency. Some regulated suppliers shared those concerns, albeit by reference to the prospect of revaluation losses. We think the Commission, and those regulated suppliers, were right to hold those concerns.

The proposed hybrid model will be difficult to apply and lacks transparency

45. Chorus have proposed a “hybrid” model to calculate the cost of the service. The model, which relies extensively on Chorus network data and limited optimization, is essentially a top down model.
46. Regulators in other jurisdictions show a strong preference in current regulatory practice for bottom-up models where possible. As noted in submissions, bottom up models are seen as better estimating efficient costs, more transparent and avoiding information asymmetries and more flexible. The European Commission's recent (September 2013) recommendation⁸ on access costing methodologies, following an extensive consultation, displays a clear preference for bottom-up models:

⁸ European Commission, 'Recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment', September 2013.

Source: http://ec.europa.eu/smart-regulation/impact/ia_carried_out/docs/ia_2013/c_2013_5761_en.pdf

For the purposes of setting copper and NGA wholesale access prices where cost orientation is imposed as a remedy, [...] NRAs should adopt a bottom-up long-run incremental costs-plus (BULRIC+) costing methodology.

47. Table 1 of Frontier's earlier report shows that, where a forward looking model is applied, regulators typically adopt a bottom up modelling approach. Likewise, the Commission has set out the reasons for its preference for bottom up modelling in earlier TSLRIC and TSO processes.

Chorus' proposed approach will be contentious and ultimately delay finalising the FPP

48. While a properly adjusted top down and bottom up models should provide similar costs, in practice such adjustments are difficult to make and differences remain. For example, as set out in our submission, the access provider's model (top down) suggested an annual rental per copper pair of DKK 2,310 while the access seekers' model produced a charge of DKK 237 – a difference of almost 1000%.
49. There has been similar differences when estimating New Zealand costs. At the time net TSO costs were estimated, Telecom prepared a model for TSO net cost calculation.⁹ While a different cost calculation to this process, being net cost, it illustrates the differences and difficulty associated with adjusting such models. Telecom submitted a modelled net cost estimate of \$226.5M (for 6mths), and this reduced over time to \$85M as assumptions tested by the Commission. Nonetheless, fundamental problems remained and the Commission developed its own cost model.
50. Even with known adjustments, the difficulties with the hybrid model means that the Commission couldn't rely on the model as an estimate of efficient costs [440]. These disadvantages meant that the Commission developed its own bottom up model to estimate TSO costs. This estimated the net cost to be \$38.84M over the same period.
51. The Commission also considered accounting separation reports from 2009 – 2011. This further highlights the range of valuations and difficulties associated with estimating replacement asset values. The Commission noted that the net replacement current cost asset valuation of \$8.7 billion, applied by Telecom, was more than twice the historic cost book value for the same fixed assets of \$4.2 billion. Most of this difference relates to passive network elements. This uplift was significantly higher than comparison telecommunications companies such as BT where the equivalent uplift is approximately 10%. Considerable time was spent seeking to reconcile the differences, including the Commission building its own bottom up model. In the end, the unresolved discrepancy meant that the regulatory financial statements were unreliable for regulatory purposes.¹⁰

⁹ <http://www.comcom.govt.nz/regulated-industries/telecommunications/telecommunications-archive/telecommunications-service-obligation-archive/2001-2002tsodetermination/>

¹⁰ See <http://www.comcom.govt.nz/dmsdocument/9332>. <http://www.comcom.govt.nz/regulated-industries/telecommunications/telecommunications-archive/accounting-separation/summary-and-analysis-of-telecom-s-regulatory-financial-statements/>

52. Unless adjustments are made to Chorus's proposal to reflect the optimisation, scale and modern equivalent assets which would be deployed in a forward looking efficient network, we think it likely, there would be a material difference in costs between a New Zealand top-down model of the type proposed by Chorus and their advisors and from a bottom-up model produced for the Commission by its advisors with some top-down data used for validation.
53. The incentives are clear in these situations. Chorus and advisors are unlikely to have an incentive to provide a model to the regulator with dimensions, units and unit costs, or even an MEA, which represents the best possible model for the UCLL service consistent with the long term benefit of end users of telecommunications services in New Zealand.

Availability of dependable information

54. Further, a key difficulty for making adjustments in top-down models is the lack of dependable information which the Commission and stakeholders could be comfortable relying upon. This is made more difficult in the New Zealand is the lack of publicly available and well tested data sources. For example, in the UK, ULL and WLR price setting relies heavily on the material in and summarised by BT's Regulatory Financial Statements¹¹. BT has applied large and complex software, database-driven accounting systems and staff to preparing regulatory statements. While the Commission has access to some accounting separation data, these reports were last prepared in [2010] and it concluded they could not be relied on as an accurate reflection of cost.
55. We believe that, to meet the efficiency requirements of the Act, any top-down model would need to use detailed financial and network information which can be analysed, tested and verified, make a range of transparent adjustments to ensure consistency with the level of efficiency expected of a forward looking long run incremental cost model, based on a range of transparent testable, and realistic assumptions. To do this, in the context of an asset inventory approach, is likely to require extensive investigation, modelling and consultation. Further, parties will require access to detailed Chorus data and there is a real risk that the information asymmetries may undermine the ability of both the Commission and other parties to participate in the process.
56. In practice, even if Chorus were to prepare its hybrid model, the likely difficulties with the approach as illustrated by past TSO and accounting separation, the Commission will inevitably need to build its own bottom up model.
57. We believe that Chorus' propose approach will result in a long and contentious process, and unlikely to result in an estimate of efficient costs. Accordingly, we support the Commission's

¹¹ In brief, BT has a regulatory obligation to prepare and publish the Regulatory Financial Statements and a range of associated documents and they are subject to a level of regulatory scrutiny. Details for the 2013 statements can be found at; <http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/index.htm>

proposed approach to develop a bottom up cost model, supported by expert international advisors, set out in the issues paper.

58. Irrespective of the Commission's final decision on who builds the model, and on the selection of parameters for the model discussed in the Issues Paper much of the data required to build or validate a model will require to be provided by Chorus
59. As set out in our submission, we believe that an efficient bottom-up model will provide the Commission and other stakeholders with the most appropriate measure of a TSLRIC price within the meaning of the Act.

Other matters raised in submissions

Proposition that UCLL prices will rise on declining demand if copper network is modelled

60. The Chorus proposals for dealing with falling demand for copper will, it appears, lead to a higher price for an obsolescent product. This is contrary to the expected behavior of a competitive market. In a competitive market containing newly obsolescent, prices decline and firms take urgent and decisive action to control the costs of production. In addition, firms choose to diversify and/or upgrade to new, state-of-art products. In fact, this process can indeed be seen in New Zealand where Chorus is currently cutting investment and proactive maintenance activities on its copper network and is instead focussing its capital expenditure on their fibre rollout¹².
61. In Analysys Mason's comments to the Commission, they suggest that reducing demand need not lead to an inflationary effect in pricing. Their suggestion that the use of economic depreciation or adjusted tilted annuity provides a solution to this is not convincing. As noted in the accompanying report from Frontier Economics, important aspects of their approach to these matters remains unclear. In fact, their solution simply revolves around the transformation of any future unit price rises (caused by falling demand) into NPV-neutral constant annual amounts, not solving the root issue of unit price rises.
62. This issue has been dealt with extensively in Europe already. The solution to unit price rises, equally applicable in the New Zealand setting, was given by BEREC in its 2013 response to the European Commission¹³:

Also, it appears that the [European] Commission has not taken into account the issue of allocating civil engineering costs on both copper and fibre when both cables lie in the same duct potentially meaning

¹² Chorus Half Year Result Presentation, Slide 33, Source: <http://www.chorus.co.nz/file/42686/189806.pdf>

¹³ BEREC (2013), Commission draft Recommendation on non-discrimination and costing methodologies, Source: http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/1244-berec-opinion-on-commission-draft-recomm_0.pdf

the costs may not rise as copper volumes fall if those costs are partially recovered from fibre lines (cost sharing effect).

63. A large proportion of the assets in Chorus's copper network are the passive civil infrastructure of ducts, trenches and poles. As well as serving retail copper services, this civil infrastructure can serve Chorus's business networks and, importantly, its new UFB network. It is important that the overall values of these civil assets are causally allocated across product. Crucially, as demand shifts from copper to fibre, so too should the allocation of the cost of the shared assets shift from copper to fibre. In areas of New Zealand that are not covered by the UFB programme, it is logical reduce the asset base as demand falls as in these (assumedly currently uneconomic) areas, it is likely any new fibre network (deployed by either Chorus, or a third party) would utilise Chorus's existing infrastructure to reduce deployment costs.

64. Another solution to this issue can be seen in Analysys Mason's comments (quoted in paragraph 204 of Chorus's submission) which can be seen to agree with the principal of keeping demand constant -

*the unit cost of the UCLL service needs to be based on the future level of demand for UCLL (**and other services sharing the same network assets**)*

65. The loss of demand for UCLL is matched by the rise in demand for other services that share the same network assets (i.e. fibre) and as such there is no net decrease required to be modelled.

66. We think there is no reason to think that there are any special circumstances to think that different principles to those expressed by BEREC to the European Commission should apply here.

Estimating WACC

67. Chorus provide responses to Questions 39 to 42 of the Issues paper in relation to the estimation of WACC. We have set out our preliminary position in our responses to these questions in our submission, and these issues are also discussed by Frontier Economics in the accompanying report. We record that we do not agree with Chorus in relation to the selection of comparator firms to be used to estimate the asset beta for the UCLL service, and that we have concerns over aspects of their response on the cost of debt and the cost of equity. We note that there will be further consultation in relation to WACC issues in relation to the Input Methodologies, and expect that aspects of these issues will be dealt with in that more specialized consultation. We also anticipate that these matters will be addressed again in relation to both the UCLL and UBA FPP processes. Accordingly, we comment no further on these in this cross-submission.

Dealing with common costs – must be consistent with the TSLRIC definition

68. Analysys Mason have set out in some detail their proposed approach to the allocation of common costs. It appears to us that in many respects, the proposed approach has strong similarities to the forecasting model Analysys Mason prepared for Ofcom in respect of the UK

wholesale prices for the LLU and WLR services in the UK¹⁴. We note that this model is currently being consulted upon in the UK setting. While there is some merit to aspects of the proposed approach, we do not believe that it is appropriate for use in the New Zealand setting.

69. We believe this approach is unlikely to provide a common cost outcome consistent with the definition of TSLRIC in the Act in that it is inherently backward looking (like much of the rest of the proposed Chorus modelling approach) in the selection of the increment to be allocated, the determination of the unit cost to be applied, and the process of estimating the usage factor on which attribution is based.

- a. The information used in the UK forecasting model is based on BT's Regulatory Financial Statements – there is no reliable analogue to this information in the New Zealand context which has been subject to scrutiny and review. In particular, the unit costs of incremental network elements, and the relative usage factors and attribution to the service require significant analytical work, and, if the Commission and RSPs are to have confidence in the model results, detailed external review, scrutiny and verification;
- b. The method described by Analysys Mason implicitly treats common costs as capable of causal allocation based on historic information. As we read it, the proposal is that each increment is separately treated and its costs are allocated on the basis of backward looking usage factors in a manner most similar to a current cost fully distributed cost model rather than a forward looking long run incremental cost approach – while the small proportion of other costs are allocated by the equiproportional mark-up method, (EPMU)¹⁵.

Data visibility and transparency

70. We are concerned, given the lack of dependable publicly available information that Chorus's proposal to produce its own model raises serious issues of potential lack of transparency. Transparency and scrutiny are critical tools for promoting model results that provide long term benefits to end users

71. The practice of 'redacting' or 'disguising' data in cost models for reasons of commercial confidentiality has caused significant obstacles to the scrutiny of cost models in other countries. Telecom accepts that industry stakeholders such as Chorus, Telecom and others should not be required unnecessarily to publicise their commercially confidential data. It is appropriate for the Commission to restrict access to stakeholders in order to preserve a level of confidentiality, but

¹⁴ <http://stakeholders.ofcom.org.uk/consultations/fixed-access-market-llu-wlr-charge-controls/>

¹⁵ The use of EPMU, while appropriate in many circumstances, should be considered carefully wherever used. In many instances, it is considered that this approach may give rise to efficiency distortions where the demand elasticities of different services delivered using common elements can be reliably estimated and are materially dissimilar. This problem is exacerbated in situations where a part of a regulated firm's product portfolio is provided in workably competitive markets and is unregulated.

this should not be at the cost of limiting stakeholders' ability to participate realistically in consultation processes.

72. The supposed benefits of keeping certain data confidential (for example, the cost per km of trench given differing terrain types) should be compared with the strong disadvantages of preventing industry stakeholders to comment on it. Such comments can only be efficiently provided if stakeholders can see how the data was compiled, and how the data item is used, in other words, how it flows through the model. It is impossible in practice to provide comments on a redacted or disguised model, even if the formulae are working.
73. The model which the above-quoted communication provider complains about was a 'hybrid' model originated by BT. It was not exactly the same type of model as Chorus is now proposing, but it used similar data sources and was designed with the same end in mind. After several years of struggling with the 'disguised' and 'redacted' model, UK communications providers were eventually allowed to send their consultants into a kind of virtual data room to inspect the whole model. The consultants were subject to a confidentiality agreement which prevented them from transmitting numerical data from the models to their clients. After a few more years of this (rather cumbersome) arrangement Ofcom decided to stop using the model, and created a different one which was more amenable to being shared with industry stakeholders. The new model still requires some disguising and redacting, which remains an issue for UK stakeholders¹⁶.
74. However we think the UK process illustrates the types of obstacles on the road ahead for the Commission, unless it:
 - a. Instructs modelers (whether employed by the Commission or by Chorus) to design their models to be scrutinised with meaningful numbers in place
 - b. Instructs operators supplying data into the model to organise the necessary modifications to their confidentiality agreements with technology suppliers to allow those suppliers' documentation (especially contract bills of quantity, and discounts) to be inspected
 - c. Organises industry working group structures suitable for the full sharing of input data, along with the technical and/or statistical studies used to prepare those input data.
75. New Zealand does have an advantage over the UK with regard to confidential data. In the UK, BT competes with other stakeholders in the above-mentioned proceeding, making it understandable that BT would seek to protect all of the data in its cost model, irrespective of its importance/materiality. Chorus, on the other hand, does not compete against Telecom, Vodafone and other providers, thanks to structural separation. This means that (to take an example) Chorus can and should allow stakeholders to inspect:

¹⁶ For the avoidance of doubt, Telecom is not advocating that the Commission adopt a model of the type now used in the UK (it is a top down model based primarily on accounting data which we think is unlikely to meet the requirements of the New Zealand TSLRIC definition).

- a. Original data on the cost per metre of trench and pole routes (of all the types and terrains considered in the normal course of business), along with supporting documentation
- b. Original data on the corresponding asset count, along with supporting databases/maps and similar.