
**Report for Telecom New Zealand**

# Comments on UBA service benchmarking review

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# Contents

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# 1 Executive summary

This document has been prepared for Telecom New Zealand. It contains comments on a number of issues raised in the Commerce Commissions recent draft determination on "Unbundled Bitstream Access Service Price Review", specifically:

- the core benchmark set and how to use the prices in that set to represent New Zealand
- the benchmarking used to set prices for "enhanced" products
- the benchmarking used for initial charges.

Our conclusions are as follows:

- Belgium should be included in the benchmark set. Additionally we propose some small amendments to the calculation of the benchmark costs for Sweden and Denmark. The resulting benchmark average unit cost for Belgium, Sweden and Denmark of a "naked DSL" product excluding the costs of fully unbundled local loop is NZD 9.12/month and the median value is NZD 9.47/month.

- There is useful data available for the access-related component in Hungary, which can also be included in the benchmark set if we use an estimate of the transport costs taken from countries where the transport costs are separately calculated by the regulator (specifically, Belgium and Denmark).

- Including Hungary in this way usefully widens the benchmark set. Even if the Commission considers that Hungary is not appropriate to use as a comparable, it provides a useful cross-check on the benchmark price. The resulting average unit cost for Hungary, Belgium, Sweden and Denmark of a "naked DSL" product excluding the costs of fully unbundled local loop is NZD 9.29/month. The median value is NZD 9.52/month.

- The data point that the Commission relies on for setting its IPP rates for the enhanced UBA products (with guaranteed high quality streams) is unfortunately not valid. Alternative possible methods include benchmarking based on current prices or price ratios, the use of non-TSLRIC prices of enhanced products, or a combination of the two.

- We believe that initial charges are likely to vary between jurisdictions due to differing local labour costs and conditions. Benchmarking initial charges against a small number of other jurisdictions has a real risk of either under-recovery or over-recovery. Some of these services are subcontracted by Chorus. Under these circumstances, the Commission may wish to cross-check the accuracy of the benchmark price against the actual market price for the service in New Zealand with a reasonable mark-up for management/ supervisory/ procurement overhead expenditure by Chorus.

# 2 The core benchmark set

In this section, we will show:

- We believe that the differences between the Belgian wholesale broadband product and the UBA product in New Zealand are not that large and that it would be appropriate to add Belgium to the core benchmark set.
- We believe that the way in which the Commission chooses to use the price list in Sweden and Denmark (based on the lowest speed product) is inappropriate given the way in which those prices have been set. A much better approach, which is not biased towards over- or under-recovery of costs, is to use the weighted average price over the actual demand in those countries.

## 2.1 Belgium

We believe that the NZCC should include Belgium in the benchmark set.

In Belgium, there is an (Ethernet) switch in the LEX site (the local voice switch site is called a LEX in Belgacom jargon; a concentrator is an "LDC"), used for aggregation, but it is not the point of interconnection. The offer (BROBA) is a regional interconnect offer with interconnect at a minimum of 5 points to get national coverage (2 points are available in each of 5 regions, allowing resilience if needed). The Belgacom documentation for the BROBA product[1], in English, is quite clear on these points.

As a result the offer does not have lower transport costs to the point of interconnection, but maybe slightly higher ones (the traffic is being taken "further in to the network" before it is handed over).

It is a regional interconnect offer; it is not strictly speaking the "first data switch". However, it is in our view a similar service to that offered in New Zealand ("directly comparable to UBA at the handover point" in the Commission's words). The restriction in relation to "first data switch" applies to the NZ UBA product; it does not in our opinion indicate that a service in another country with a local aggregation switch which also has regional points of interconnect is not directly comparable to UBA. There is no need "to adjust for the differences in the New Zealand and Belgium services". As a result we believe it is appropriate to include it in the core benchmark set.

This is further supported by the fact that the price in Belgium is not that different from the other benchmarks, being made up of a number of components as follows:

[1] http://www.belgacomwholesale.be/wholesale/gallery/content/documents/broba/BROBA_ADSL_SDSL_BIPT_03042012.zip, ADSL Annex 6 contains the price information.

*Figure 2.1: Prices of BROBA ADSL/ADSL2+/ReADSL Without voice [Source: Analysys Mason, 2013]*

| Component | Price per user per month (EUR) | Price per user per month (NZD) |
|---|---|---|
| LLU (BRUO) loop per user per month | 8.7 | |
| active part | 3.7 | |
| Transport rental Ethernet | 0.63 | |
| VLAN per Mbit/s per month (price varies with priority: lowest priority is cost oriented) | 1.96/Mbit/s /Month<br>A 130 kbit/s per subscriber busy hour throughput gives EUR 0.25/month | |
| **Total (excluding BRUO)** | **4.58** | **8.32** |

The Commission concentrates on the fact that the guaranteed level of throughput in the UBA product is 32kbit/s. We think that the benchmarking should use the level actually provisioned in the network, as it is this that drives costs. Above we are using an average of 130kbit/s as an estimate of the throughput actually provisioned, based on benchmarks of European networks. 32kbit/s is low for modern-day DSL usage patterns, but it is also with a hefty 99.9% guarantee (ie to meet this may require more than 32kbit/s to be provisioned on average). We do not have access to good primary data on the capacity provisioned in the DSL network in New Zealand but believe that the international IP traffic provisioning is approximately 80kbit/s per subscriber. This represents a subset of the total carried, because this will exclude traffic that stays within NZ, which may for example be P2P traffic or services supported by CDN. Accordingly an 80kbit/s per subscriber dimensioning for international traffic is not inconsistent with a 130kbit/s dimensioning within the DSL network.

## 2.2 Sweden and Denmark

### 2.2.1 Use of lowest speed product

In those countries (Sweden and Denmark) where the regulated prices are peak speed dependent, the Commerce Commission has chosen to select the lowest peak speed option as its comparator.

This is not the optimal approach due to a little-appreciated fact about the cost models in those countries: in both Sweden and Denmark, the DSL cost models use a hypothesised logarithmic relationship between price and speed to allocate costs between different speed wholesale products[2]. In other words, a spreadsheet calculation is used to work out the parameters in a hypothesised logarithmic price/speed function such that the product of the modelled prices of the products actually

[2] Strictly speaking, the Swedish model can work in a different way also, but in setting prices PTS uses the hypothesised speed/price relationship as described here.

purchased and the volumes of those products is equal to the total costs.[3] An example of the calculation spreadsheet for Denmark using this logarithmic relationship is published here[4].

If this fact is not taken into account in the UBA benchmarking for use in New Zealand (where the wholesale product is not differentiated in price by the peak line speed) then the benchmark will be incorrect and there will be a real risk of over or under-recovery of costs. Specifically:

- Using the price of the lowest speed product would under-recover costs (unless all customers in Denmark or Sweden were on the lowest speed product, which they are not). This can be demonstrated by looking at whether the lowest speed product cost in Denmark times the total volume of users in Denmark would cover total costs in Denmark: it would not.

- Using the price of the actual capability of the line would similarly over-recover (some customers in Denmark and Sweden buy speeds that are below the capability of the line).

Accordingly we believe that the correct approach to adopt in relation to these countries is to benchmark against the average cost per line in Sweden and Denmark respectively by using the weighted average of the modelled unit costs (i.e. sum over speeds S of (volume at speed S*modelled unit cost at speed S)/total volume). This method does not lead to a benchmark which is biased towards over- or under-recovery.

This is similar to the option rejected at section 4.4.5 of the WIK report[5]. However this option is not onerous because the Swedish and Danish models are public and include the required speed distribution statistics.

3 Another way of expressing this is that the inter-speed common costs are being marked-up over the incremental costs in a non-linear way. Whilst this is not Ramsey pricing, it may have a similar effect by achieving higher allocative efficiency than a linear mark-up regime such as EPMU.

4 http://www.erhvervsstyrelsen.dk/file/233041/bilag_bsa_pris_udmontning_2010_xls.xls is the 2010 version of the calculation.

5 "Comments to the bitstream price benchmarking cost methodology", WIK-Consult 20 October 2012.

### 2.2.2 Calculation

For Denmark the cost is made of the following components:[6]

*Figure 2.2: Danish WBA cost components [Source: DBA, NZCC, 2012]*

| Component | Price |
|---|---|
| Core+Access | 918 DKK/year (weighted average across all speeds, clothed) (550 access, 368 core) |
| Surcharge for naked DSL | 398 DKK/year |
| Naked WBA cost | 1316 DKK/year |
| Full loop rental | 797 DKK/year |
| Naked WBA cost less full loop rental | 519 DKK/year |
| DKK/NZD (Commission 2012 rates) | 4.52[7] |
| Naked WBA charge less full loop rental | 9.57 NZD/mo |

This calculation uses the values from the revised decision for 2012 using model Fv4.1 published at http://www.erhvervsstyrelsen.dk/file/308201/offentligmodel.zip (published December 2012).

The calculation in Sweden should be as follows (based on cost model 9.1 here[8]):

*Figure 2.3: Swedish WBA cost components [Source: PTS model v9.1, NZCC, 2012]*

| Component | Price |
|---|---|
| Core+Access | 157.49 SEK/month (weighted average across all speeds, using prices from v9.1 and speed distribution from model v9.1) |
| Less "economic space" of 6% (appropriate for "naked DSL" product) | 148.03 SEK/month |
| Full loop rental | 97 SEK/month |
| Naked WBA charge less full loop rental | 51.03 SEK/month |
| SEK/NZD (Commission 2012 rates) | 5.39[9] |
| Naked WBA charge less full loop rental | 9.47 NZD/month |

## 2.3 Hungary

As identified by the Commission, there is a "back of DSLAM" wholesale access product available in Hungary, whose price has been set on a cost basis. This handover point is not comparable to New Zealand. However, given that the DSLAM-related and transport-related costs have been separated out

6 The price decision gives the two combined; the model shows them separately.

7 Our own calculation using the Commission's methodology and sources indicates 4.55 but the difference is small.

8 http://www.pts.se/upload/Ovrigt/Tele/Prisreglering/2013/12-6520-kostnadsresultat-hybridmodell-9_1.pdf and http://www.pts.se/upload/Ovrigt/Tele/Prisreglering/2013/12-6520-hybridmodel-9_1.zip.

9 By our calculation using the Commission's own methodology and sources this value should be 5.41 SEK/NZD but we have used the Commission's own value for comparability. The difference is small.

in some of the benchmark countries, we believe that it can provide some additional useful data to inform the Commission if combined with cost-based prices for transport in other countries.

Due to geographically distinct access network operators, there are several SMP operators in Hungary offering this product. The Hungarian back of DSLAM products we have found from SMP operators include:

- UPC[10] naked local WBA is priced at 2378 Forint per line per month; full loop is priced at 1768 Forint/month. The difference (DSL access only) is 610 Forint/month, equivalent (average to 30 June 2012 rates using the same method as the Commission, 113.53 HUF/NZD) to 5.37 NZD/month.

- Magyar Telekom[11] equivalent numbers are 2455 HUF/mo, less 1792 HUF/mo (full loop unbundling)[12]. The difference (DSL access only) is 663 HUF/month, NZD 5.84/month.

- There should also be a product from Invitel, but we have been unable to find the pricing annex of the Invitel RUO online.

An average of the Magyar Telekom and UPC figures is NZD5.61/month. This can be compared to the Danish and Belgian figures.

- The Belgian price for "active part" is EUR3.7 which is equivalent to NZD 6.72 – similar to but larger than the Hungarian NZD 5.61.

- The Danish model also has an explicit access related (ie DSLAM) element to the costs. The Danish model's access result (DKK550 access plus DKK398 naked supplement less DKK797 cost of LLU equals DKK151/year, NZD 2.78 per user per month) , which is low compared to the Hungarian value.

Hungary therefore lies within (albeit towards to higher end of) the range of the existing benchmark data points for DSLAM-related costs.

To use this value as part of an overall regional access benchmark, we have constructed a synthetic value for the core network charges for a hypothetical cost-oriented regional bitstream offer in Hungary from the core network charges where these have been provided separately by the regulators with compliant cost models (ie Denmark and Belgium). We find core costs are DKK 368/year – NZD 6.78/month in Denmark and EUR0.88/month for 130kbit/s – NZD 1.60/month in Belgium. The average if these two is NZD 4.19/month. Added to the Hungarian access related cost this gives a total of NZD 9.80/month as an estimate for a cost-oriented regional interconnect cost in Hungary.

10 http://nmhh.hu/dokumentum/155371/upcruo_referencia_ajanlat.

11 http://www.telekom.hu/szolgaltatasok/nagykereskedelem/belfoldi_vezetekes/szelessavu_hozzaferes/helyi_hurok_atengedes, file MARUO_7_Melleklet - Dijak (2012.02.23)_ff.doc.

12 We are ignoring some "frame" costs which appear to be charged in both LLU and local WBA cases, as they cancel out.

It is true that including this Hungarian data point in this way gives more weight to the core network costs in Belgium and Denmark (those countries where these costs are given explicitly). However, the significant gain is that it allows us to add an additional data point to the benchmark (which is itself an average over two providers), adding robustness to the overall calculation.

## 2.4 Conclusion

The result of the calculations above is that there are 3 definite and 4 possible benchmarks:

- Denmark NZD 9.57/month
- Sweden NZD 9.47/month
- Belgium NZD 8.32/month
- Hungary estimate (based on local wholesale access plus average of core charges from Denmark and Belgium): NZD 9.80/month

The resulting benchmark average unit cost for Belgium, Sweden and Denmark of a "naked DSL" product excluding the costs of fully unbundled local loop is NZD 9.12/month and the median value is NZD 9.47/month. The resulting average unit cost for Hungary, Belgium, Sweden and Denmark of a "naked DSL" product excluding the costs of fully unbundled local loop is NZD 9.29/month. The median value is NZD 9.52/month.

Even if the Commission considers that Hungary is not appropriate to use as a comparable, it provides a useful cross-check on the benchmark price.

Four benchmark countries is not a large number, though the Commission has in the past proposed using as few as one to set an initial price (e.g. in relation to EUBA). However, we believe that for the purposes of IPP in this case data from four countries is sufficient, and some comfort may be gained from the fact that although there are only four data points, the spread of these values is relatively low.

# 3 Enhanced products

We believe that the enhanced product pricing based on the supposed price differences for different variants of the Swedish Bitstream Pro service is not sustainable as a benchmarking method for several reasons:

- The method uses incremental costs starting from a service that is different to the benchmarked one (Bitstream Pro vs Bitstream Consumer). We do not see this as a sound approach in principle: if you want to do this, surely you have to start from Bitstream Pro as the basic price ?
- Latest Swedish cost model results (as here[13]) have the same price for the STD, MIX and VOIP variants of Bitstream Pro, which removes the key data point from the NZCC calculation.

In addition, the process by which the Bitstream Pro prices are created is much less transparent than the basic bitstream prices. What is clear from the hybrid model documentation[14] (in Swedish) and the earlier model consultation (May 2011)[15] (also in Swedish) are:

- that TeliaSonera has been asked by PTS to cost Bitstream Pro within the model but has failed to do so,
- that the speed/price relationship for Bitstream Pro is adjusted outside the model
- and that the adjustment takes into account a higher capacity utilisation for Bitstream Pro and makes the same adjustment for both the STD and VOIP profiles. This means that it is not surprising that the VOIP profile is the same price as the STD profile.

We understand that it is not public how the adjustments have been calculated.

In these circumstances we feel that the benchmark may have to be based on different data. Possible alternative approaches include:

- Base future prices on past NZ prices and/or their ratios to other prices set by IPP (e.g. as in section 4.5.4 in the WIK document mentioned above)
- Use a wider benchmark set (albeit with prices which are not set by cost models meeting the Commission's requirements for IPP). This might be an option as there are enhanced products available in some other countries such as UK and Netherlands.

13 http://www.pts.se/upload/Ovrigt/Tele/Prisreglering/2013/12-6520-kostnadsresultat-hybridmodell-9_1.pdf.

14 http://www.pts.se/upload/Ovrigt/Tele/Prisreglering/Modellokumentation%20Hybridmodell%20v.9.0.pdf (see at the end of section 3.2).

15 See http://www.pts.se/upload/Ovrigt/Tele/Bransch/Kalkylarbete%20fasta%20n%C3%A4tet/revidering%202011/10-420-pts-konsultationssvar.pdf in particular section 5.13.

# 4 Initial charges

## 4.1 Context

The Commission has used benchmarking to find IPP values for certain initial charges.

We believe that benchmarking these charges against other jurisdictions, especially when the benchmark is based on only a few countries, has a risk of either under-recovery or over-recovery by Chorus due to differing labour costs and conditions.

As we understand it, some of these services (notably installation work on outside plant) are subcontracted by Chorus who also perform a range of management and supervisory services and manage procurement. Our concern that benchmarking these elements of the charges has a real risk of either under-recovery or over-recovery by Chorus arises from issues of comparability. This, for instance, could be because the benchmark does not adequately reflect NZ labour costs and conditions and the benchmark is either lower or higher than the actual NZ price paid). Under these circumstances, and given that we expect and believe that the suppliers were selected via a process involving competition, the Commission may wish to cross-check the accuracy of the benchmark price by using a price based on the actual market price for the service in New Zealand with a reasonable mark-up for management/supervisory/procurement overhead expenditure by Chorus.

Below we comment on the specific benchmarks used.

## 4.2 Specific benchmarks

Broadly speaking, the data from Denmark and Sweden can be enhanced by adding data from Belgium where there is a fairly extensive range of initial charges. There is no significant detail to the initial charges for the local bitstream offers in Hungary, which means that they are not a useful source of benchmarks.

There are a number of difficulties faced by the Commission:

- None of the countries offers options with modem included.
- Few prices directly reflect the "with port change" / "without port change" distinction used in New Zealand. If necessary the "port change" element could be calculated via a ratio or using the data in Sweden which does have "change of port".

In their spreadsheet, the Commission has used a calculation for benchmarking "change of plan" ("Any UBA service to any other UBA service change plan"). It appears (see Current Core Charges cell F5) that the Commission has taken the ratio of the current "change plan" price to a "change operator" price, benchmarked "change operator", and reset the "change plan" price maintaining this ratio. This is unnecessarily complex when a direct benchmark of "change of plan" is available.

However, this approach is not the best available for another reason: the benchmark the Commission uses for "change operator" (Transfer of Basic UBA Service from an Access Seeker to a Basic UBA Service with another Access Seeker) is actually a benchmark of "transfer between services with no port change" ('Core Charges Price'!$C$26, which is incidentally mislabelled). This is an inferior benchmark of "change operator" because there are "change operator" services available and the values used by the Commission for "transfer between services with no port change" are not a direct benchmark – the values given are for arguably similar services, but they are not "change operator".

It would be better to use the available direct benchmarks of "change plan" and "change operator".

### 4.2.1 Modem

The past figure for the additional charge with a modem is maintained by the Commission.

Given the lack of suitable benchmarks, the value used might be better based on actual costs faced by Chorus (i.e. Chorus actual expenditures).

In any case, the value (NZD38) is reasonable for a low end device.

### 4.2.2 Install charge

For installation, in addition to whether there is a visit to the end user, Belgian and Swedish prices depend on whether network modifications are needed; this aspect is particularly complex in Belgium as in the Belgacom network there are no distribution points (small flexibility points close to the end user location) and the cables are directly spliced into the distribution network and this is expensive ("small network adaptions", EUR441.66). If we exclude cases where network adaptions are needed, then the relevant benchmarks are:

*Figure 4.1: Naked DSL wholesale bitstream activation charge [Source: Belgacom Wholesale, PTS, DBA, Analysys Mason, 2013]*

| Country | Belgium | Sweden | Denmark |
|---|---|---|---|
| Naked DSL wholesale, no visit | EUR 40.98[16] | SEK 383[17] | DKK 424[18] |
| Naked DSL wholesale, with visit | EUR 99.62 | | DKK 805 (includes establishing end to end path if needed) |

16 http://www.belgacomwholesale.be/wholesale/gallery/content/documents/broba/BROBA_ADSL_SDSL_BIPT_03042012.zip, ADSL Annex 6 contains the price information.

17 http://www.pts.se/upload/Ovrigt/Tele/Prisreglering/2013/12-6520-kostnadsresultat-hybridmodell-9_1.pdf

18 http://www.erhvervsstyrelsen.dk/file/261882/bilag_5_afgorelse_fastsaettelse_maksimale_netadgangspriser_lraic_2012_fastnet.pdf

The Swedish benchmark for operator assisted install is not directly the same because it includes network changes, so we have excluded it here.

In NZD, at the Commission's PPP rates, these are:

*Figure 4.2: Naked DSL wholesale bitstream activation charge in NZD [[Source: Belgacom Wholesale, PTS, DBA, Analysys Mason, 2013]]*

| Country | Belgium NZD | Sweden NZD | Denmark NZD | Average NZD |
|---|---|---|---|---|
| Naked DSL wholesale, no visit | 71.89 | 65.47 | 82.97 | 73.45 |
| Naked DSL wholesale, with visit | 174.77 | | 157.53 | 166.15 |

Adding Belgium has not moved the result much but does give additional robustness.

### 4.2.3 Change of speed (plan)

*Change of plan with no port change*

There are benchmark prices for changes of speed in Belgium (EUR3.21) and Denmark (DKK 35) (they don't specify whether there is a port change). There does not appear to be a directly analogous price for consumer offers in Sweden.

For Sweden, one may do as the Commission have, and pick as a benchmark a service which appears also to be an arguably similar intervention (using software to reconfigure a service) - e.g. VoIP access in Sweden (SEK 63) or the service chosen by the Commission, shared to full access (SEK95). However, for business offers, change of speed on Bitstream Pro in Sweden is very expensive (SEK 520). Perhaps manual processes are invoked for this product (volumes for the Bitstream Pro service are, according to the cost model, ~ nil). It seems preferable to exclude Sweden for this product.

*Figure 4.3: Change of plan (with no port change) charge [Source: Belgacom Wholesale, PTS, DBA, Analysys Mason, 2013]*

| Country | Belgium | Sweden | Denmark |
|---|---|---|---|
| Change of plan (with no port change): | EUR3.21 | | DKK 35 |

In NZD, at the Commission's PPP rates these are:

*Figure 4.4: Change of plan (with no port change) charge in NZD [Source: Belgacom Wholesale, PTS, DBA, Analysys Mason, 2013]*

| Country | Belgium NZD | Sweden NZD | Denmark NZD | Average NZD |
|---|---|---|---|---|
| Change of speed | 5.63 | | 6.85 | 6.24 |

*Change of service (with port change)*

The benchmarks selected by the Commission look reasonable albeit they are not exactly the product sought. There is no directly analogous product we have identified in Belgium.

*Figure 4.5: Change of plan (with port change) charge [Source: Belgacom Wholesale, PTS, DBA, Analysys Mason, 2013]*

| Country | Belgium | Sweden | Denmark |
|---|---|---|---|
| Change of service (with port change): | | SEK 383 (Change of port/operator in Telenod) | DKK 426 (ATM to Ethernet) |

In NZD, and the Commission's PPP rates, this is:

*Figure 4.6: Change of plan (with port change) charge in NZD [Source: Belgacom Wholesale, PTS, DBA, Analysys Mason, 2013]*

| Country | Belgium NZD | Sweden NZD | Denmark NZD | Average NZD |
|---|---|---|---|---|
| Change of service (with port change): | | 65.47 | 83.37 | 74.42 |

### 4.2.4 Transfer of operator

Transfer of operator does not appear to be available in Denmark. "Consumer – change of operator" is SEK95 in Sweden. In Belgium the fee depends on whether on ADSL2+ or ADSL; on ADSL it is EUR24.11, on ADSL2+ change of owner is EUR38.02. Neither of these is specific as to whether there is a port change.

*Figure 4.7: Change of operator charge [Source: Belgacom Wholesale, PTS, DBA, Analysys Mason, 2013]*

| Country | Belgium | Sweden | Denmark |
|---|---|---|---|
| Transfer of operator | ADSL2+, EUR38.02<br>ADSL, EUR24.11 | SEK 95 | No product |

In NZD, and the Commission's PPP rates, this is:

*Figure 4.8: Change of operator charge NZD [Source: Belgacom Wholesale, PTS, DBA, Analysys Mason, 2013]*

| Country | Belgium<br>NZD | Sweden<br>NZD | Denmark<br>NZD | Average<br>NZD |
|---|---|---|---|---|
| Transfer of operator | 66.70 (ADSL 2+)<br>42.30 (ADSL) | 16.24 | | 41.47 (ADSL2+)<br>29.27 (ADSL) |

## 4.3 Conclusion

Adding Belgian data adds robustness to the initial charges.

- It allows us to use benchmarks for the "change of speed / no port change" service and allows us to reject the use of Swedish numbers taken from a different service.
- It adds an additional data point for the "change operator" product although this is substantially more expensive and leads to a wide range of benchmarks for this product in particular. This may be a service for which the Commission may wish to cross-check the accuracy of the benchmark price by using a price based on the actual market price for the service in New Zealand with a reasonable mark-up for management/supervisory/procurement overhead expenditure by Chorus.