Review of the wholesale broadband access markets

Update on the impact of fibre roll-out and further consultation on the proposed charge control

Consultation

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Section 1

Summary

1.1 In July 2013, Ofcom published a consultation in relation to the wholesale broadband access (WBA) market (the 2013 WBA Consultation[1]), inviting responses to the consultation by 25 September 2013. We set out specific charge control proposals, including the nature, form and duration of the proposed charge controls for WBA products within the geographic market (Market A) where we proposed BT had significant market power (SMP).

1.2 The purpose of this consultation is to seek stakeholders' views on revised and new proposals on the charge control, which have come about following the publication of BT's latest Regulatory Financial Statements (2013 RFS)[2] and have resulted in a significant change to the range of X that we consulted upon in our 2013 WBA Consultation.

1.3 In our 2013 WBA Consultation we proposed an anchor pricing approach. Under anchor pricing, the price of existing services is 'anchored' by the legacy technology, even if the services are actually provided over new technology. Anchor pricing ensures that consumers will not be made worse off as a result of BT changing the technology that it uses to provide the regulated service, while maintaining the incentive to invest in the new technology where that is efficient. Using an anchor pricing approach, we model the cost of efficiently supplying services based on the existing network as though the existing technology (i.e. IPstream) is going to continue to serve all copper customers.[3] Thus, in line with this approach we exclude the cost of the new 21CN technology BT is investing in. We also exclude any stranded asset costs which occur due to Market B customers migrating from the legacy technology onto newer 21CN technology services.

1.4 We do not repeat in this document the description or reasoning relating to the full set of 2013 WBA Consultation proposals. Instead we focus on those areas in which we have revised our proposals or introduced new proposals.

1.5 In forming the proposals set out in this consultation, we have taken account of relevant stakeholder responses to the 2013 WBA Consultation. Where stakeholder responses to the 2013 WBA Consultation raised issues that are not the subject of this consultation these responses will be considered in our final statement on the WBA market review.

1.6 Based on the policy proposals and financial modelling explained in the 2013 WBA Consultation and adjusted as set out in this consultation, Table 1.1 below sets out the revised proposals for the WBA charge control for the period 2013/14 to 2016/17.

[1] Ofcom, Review of the wholesale broadband access markets, Consultation on market definition, market power determinations and remedies, 11 July 2013, http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/

[2] BT Group plc, Regulatory financial statements 2013. http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/index.htm.

[3] We do account for the fact that some customers will migrate onto the fibre network, since the rollout of fibre in these areas is largely an decision taken by government rather than an investment decision by BT (see paragraphs 4.28)

Table 1.1: Summary of the charge control proposals[4]

Basket	Services within scope	Main control	Sub-caps
IPstream Connect	IPstream Connect Max and Max Premium (up to 8Mbit/s) End User Access – Connection	CPI + X, where X is between -15.2% to -8.7%	
	IPstream Connect Max and Max Premium (up to 8Mbit/s) End User Access – Rental		CPI +(X + 6)
	IPstream Connect Max and Max Premium (up to 8Mbit/s) End User Access - IPstream Connect EU bandwidth charge per month		
	IPstream Connect Contracted Bandwidth per Mbit/s per node rental		CPI +(X + 3)
	IPstream Connect End User Re-grade		CPI +(X + 6)
	IPstream Connect End User Migration[5]		CPI +(X + 6)
	IPstream Connect ADSL Cancellation		CPI +(X + 6)
	IPstream Connect Communication Provider (CP) Handover		
	IPstream Connect 20C Interconnect Links 1Gbit/s and 10Gbit/s		
Cease	End User Cease Services: i.e. any service required to disconnect an end user in Market A from any wholesale broadband access product provided in Market A	Cease charge set to £0	

1.7 We are therefore consulting on a revised range of X of -8.7% to -15.2% with a central case of -12.3% (medium volume and an efficiency target of 5%).

1.8 In summary Table 1.1 above takes account of the following proposals. In particular, we propose to:

- **use 2012/13 as the base year for cost modelling purposes but to exclude all BT's new allocation methodologies set out in its 2013 RFS.** In our 2013 WBA Consultation we used 2011/12 as the base year and BT's 2012 RFS[6] methodologies;
- **make some adjustments to the costs of SG&A Broadband and ATM Network Interface, Switching and Transmission, as set out in the October 2013 RFS Report.** In our 2013 WBA Consultation we did not make such adjustments. The need for these adjustments has come to light following our consideration of BT's cost data;
- **update our one-off non recurring cost adjustments.** We made a similar proposal in our 2013 WBA Consultation. This proposed adjustment uses the 2012/13 data, rather than 2011/12 data;

[4] This table refers to the services as currently being named in Section 44: Wholesale Broadband Services, Part 8: BT IPstream Connect of BT Wholesale's website (https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Part_8_BT_IPstream_Connect/index.htm). The description of services included in the charge control is in the 2013 WBA Consultation, Annex 6.
[5] IPstream Connect End User Migration is also known as IPstream Connect End User Transfer.
[6] BT Group plc, Regulatory Financial Statements, 2012. https://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2012/index.htm.

- **update our market size adjustment**. In our 2013 WBA Consultation we adjusted the RFS data to reflect the different coverage of Market A compared with Market 1. Here we propose not to make an adjustment based on the 2012/13 data;

- **accept BT's 2013 RFS DSLAM cost allocation data.** We made a similar adjustment in our 2013 WBA Consultation. This proposed adjustment uses the updated 2012/13 data, rather than 2011/12 data;

- **make a similar hypothetical ongoing network (HON) adjustment to that which we made in the 2013 WBA Consultation, but we have proposed new asset lives.** We made a HON adjustment in our 2013 WBA Consultation. This proposed HON adjustment uses the updated 2012/13 data but also proposes different asset lives for the purposes of the adjustment;

- **only include costs relevant to the 20CN technology we are modelling.** The data from BT that we used in our 2013 WBA Consultation included 21CN-related costs; we are now proposing to exclude them;

- **make changes to the compliance formulae to reflect relevant Equivalence of Input (EOI) charges.** In our 2013 WBA Consultation only certain charges were included. We have extended the compliance formulae to include the relevant EOI charges;

- **include a carry-over provision within the legal instrument.** This is a new proposal which we did not consider in our 2013 WBA Consultation;

- **change the definition of cease charges that are to be set to £0.** In our 2013 WBA Consultation we proposed cease charges for only IPstream Connect Max and Max Premium should be set to £0. Here we propose to extend this proposal to cover all cease charges in Market A;

- **retain our 2013 WBA Consultation proposals in relation to migration and connection charges.** In our 2013 WBA Consultation we proposed to control migration charges from IPstream Connect to IPstream Connect and other products (for example to WBC) within Market A. In addition, we proposed only to control BT's connection charges for IPstream Connect Max and Max Premium within Market A. We continue to believe these proposals are appropriate;

- **amend a pricing error identified in the charge control model.** Our 2013 WBA Consultation included a price error, which we have corrected in this consultation; and

- **review further data from BT on efficiency improvements.** In the 2013 WBA Consultation, we proposed a "low" efficiency assumption of 3.5% per annum and a "moderate" efficiency assumption of 5% per annum. Our base case assumption assumed efficiency gains of 5%. Given the need to reassess the proposed efficiency target, following further evidence from stakeholders, we propose in this consultation to model both the low efficiency assumption and the moderate efficiency assumption to derive our X value range.

1.9 We also explain in this consultation why we do not consider it appropriate to change our proposals in the 2013 WBA Consultation in relation to market definition, SMP or remedies following the receipt of new information on fibre roll-out and take-up.

1.10 However, we will continue to monitor the roll-out of fibre by BT and the take-up of fibre services by Communications providers (CPs)[7] and end-users over the course of the market review period, with a view to reconsidering our approach if necessary before the end of the market review period.

Next steps

1.11 Stakeholders are invited to provide their views on the proposals set out in this consultation. The consultation period runs for six weeks, to 10 March 2014. Please see Annex 1 for details on how to respond and Annex 4 for the specific questions we are consulting on. We plan to publish our Statement in spring 2014.

[7] CP: A person who provides an Electronic Communications Network or provides an Electronic Communications Service.

Section 2

Introduction

Scope of this consultation

2.1 The purpose of this consultation is to seek stakeholders' views on revised and new proposals on the charge control design, certain cost allocations and modelling.

2.2 We also explain how we have taken into account new information provided by stakeholders on fibre roll-out and take-up.

2.3 In this section we summarise the background to this consultation and the legal and regulatory framework within which we are making these proposals. We also note the model and associated documents disclosed alongside this consultation and explain our approach to Impact Assessment and Equality Impact Assessment.

Background

2.4 We started this market review by publishing the 2012 WBA Call for Inputs[8] on 9 November 2012 to gather stakeholders' views on the key issues.

2.5 This was followed by the 2013 WBA Consultation, which we published on 11 July 2013. In this document we identified the product market that we proposed to adopt for the WBA market and we also proposed three distinct geographic markets, to reflect the geographical differences in competition and supply conditions:

- Market A: exchange areas where there were no more than two Principal Operators (POs)[9] present or forecast to be present, which accounted for 9.6% of UK premises.
- Market B: exchange areas where there were three or more POs present or forecast to be present, which accounted for 89.7% of UK premises.
- The Hull Area: 0.7% of UK premises.

2.6 We analysed the conditions of competition in the three markets we had identified, and our proposed findings on market power were that:

- BT has SMP in the provision of WBA services in Market A.
- No operator has SMP in the provision of WBA services in Market B.
- KCOM has SMP in the provision of WBA services in the Hull Area.

2.7 We proposed to place general access and non-discrimination obligations on BT in Market A to ensure that other CPs have the opportunity to use wholesale products supplied by BT to compete effectively at the retail level. We also proposed to impose obligations requiring BT to publish information that provides transparency of the

[8] Ofcom, Review of the wholesale broadband access markets, Call for Inputs, 9 November 2012, http://stakeholders.ofcom.org.uk/binaries/consultations/review-wholesale-broadband/summary/reviewL.pdf.

[9] We explained what we mean by 'Principal Operator' in Section 4 of the 2013 WBA Consultation.

services it provides in Market A. We proposed that BT should be subject to an accounting separation obligation to provide transparency as to the services it provides to external CPs and to its own retail divisions, and a cost accounting obligation to provide transparent cost data.

2.8 In the Hull Area, we proposed broadly to continue with the same set of regulatory obligations as we imposed in 2010 – i.e. general access, non-discrimination and transparency remedies.

2.9 We also proposed that BT's services in Market A should be subject to a price control in order to ensure that BT does not set excessive prices for wholesale broadband services which would ultimately be passed on to consumers.

2.10 We proposed to impose a CPI-X charge control on the up to 8Mbit/s services (i.e. IPstream Connect Max and IPstream Connect Max Premium) in Market A. We proposed a single basket control with sub-caps on certain services within the basket to address our specific competition concerns. We propose to adopt a simpler approach to our charge control model using a simpler set of data, at a higher level of aggregation than in the 2011 WBA Charge Control,[10] based on an anchor pricing approach and modelling end user rental and contracted bandwidth volumes. We took this approach given the particular uncertainties in this market and the relatively small size of the regulated market. We proposed that the value of X should be within a range of -7% to -1%, with a central case of CPI-4%.

The regulatory framework

2.11 The regulatory framework for electronic communications is based on a suite of EU Directives, which have been implemented into national legislation.[11] It imposes a number of obligations on the relevant national regulatory authorities (NRAs), such as Ofcom. One of these obligations is to carry out periodic reviews of certain markets. We set out the market review process and the regulatory framework in our 2013 WBA Consultation.[12]

2.12 Since the publication of our 2013 WBA Consultation, the European Commission has adopted its "*Recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment*" (the "EC Recommendation").[13] The EC Recommendation advocates the adoption of a bottom-up long run incremental costs-plus (BU LRIC+) costing methodology and states that NRAs should implement the recommended costing methodology by 31 December 2016.

[10] Ofcom, WBA Charge Control, Charge Control framework for WBA Market 1 Services, Statement, 20 July 2011. http://stakeholders.ofcom.org.uk/binaries/consultations/823069/statement/statement.pdf.
[11] The harmonised EU regulatory framework for electronic communications was amended in 2009. Those amendments to the Directives were transposed into national legislation and came into effect from 26 May 2011.
[12] See paragraphs 2.53 to 2.61.
[13] Commission Recommendation of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment: https://ec.europa.eu/digital-agenda/en/news/commission-recommendation-consistent-non-discrimination-obligations-and-costing-methodologies

2.13 The EC Recommendation was adopted under Article 19 of the Framework Directive.[14] Ofcom is required, under section 4A of the Communications Act 2003, to take due account of all such Recommendations of the European Commission when carrying out its functions. Where Ofcom decides not to follow such a Recommendation it is required to notify the European Commission of its reasons.

2.14 While preparing this further consultation, we have taken due account of the EC Recommendation. In doing so, in light of the specific characteristics of this market in the UK, we have not adopted a BU LRIC+ costing methodology but have adopted an anchor pricing approach, under which we assume all BT's customers in Market A are supplied via existing ADSL technology. We set out our reasons for doing so in paragraphs 7.108 to 7.118 in our 2013 WBA Consultation. One key factor was the lack of data on which to base a Modern Equivalent Asset cost model for the SMP market. Market A covers less than 10% of the country in what are generally rural exchange areas that are not necessarily contiguous. Our proposal to adopt an anchor pricing approach was designed to minimise regulatory error and therefore uncertainty and provide a clear framework for investment over the next few years. This is analogous to the objective in the EC Recommendation of "*the need to ensure stability without significant fluctuations when setting cost orientated prices*".[15] We have considered whether this position is still appropriate in light of our duty to take due account of the EC Recommendation and consider that it is.

2.15 Our proposals also take due account of the EC Recommendation in that they are consistent with the aims of the Recommendation in that we deal appropriately and consistently with the impact of declining volumes caused by the transition from copper to NGA networks. In particular, we have considered the impact of potential declining volumes due to the rollout of Broadband Delivery UK (BDUK)[16] funded fibre over the period. Further our proposed prices are based on CCA FAC costs, which is a form of LRIC+.

Impact assessment and equality impact assessment

2.16 The analysis presented in this document constitutes an impact assessment as defined in section 7 of the 2003 Act.

2.17 Impact assessments provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making. This is reflected in section 7 of the 2003 Act, which means that generally we have to carry out impact assessments where our proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in Ofcom's activities. However, as a matter of policy Ofcom is committed to carrying out impact assessments in relation to the great majority of our policy decisions. For further information about our approach to impact assessments, see the guidelines, Better policy-making: Ofcom's approach to impact assessment, which are on our website.[17]

[14] Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services, as amended (Framework Directive).
[15] See point 38 of the EC Recommendation.
[16] BDUK: a team within the Department for Culture, Media and Sport that has a role to set up, operate, monitor and act as the national competence centre for the UK-wide broadband state-aid scheme, as this has been approved by the European Commission with the State Aid Decision SA.33671 (2012/N).
[17] http://stakeholders.ofcom.org.uk/binaries/consultations/ia_guidelines/summary/condoc.pdf

2.18 Annex 5 sets out our Equality Impact Assessment for this market review.

Disclosure of data and model

2.19 In light of our statutory duties, in particular our duty to consult, and our framework for disclosure of charge control models, we published a non-confidential version of our charge control model in July 2013. We took account of BT's position on confidentiality of data for the purpose of disclosure of data. We believe that the methodology we followed ensured that stakeholders were able to respond effectively to the consultation.

2.20 In line with the transparency framework principles, we have also published the non-confidential version of the revised charge control model used to determine the range of X values proposed in this consultation.

Structure of this document

2.21 The rest of this document is structured as follows:

- Section 3 – discusses our proposals in relation to new information on fibre roll-out;
- Section 4 – discusses our proposals in relation to cost allocations and charge control modelling;
- Section 5 – discusses our proposals in relation to 21CN costs[18];
- Section 6 – discusses our proposals in relation to other changes we are proposing in this consultation; and
- Section 7 – discusses the impact of our proposals on the calculation of the range of X values.

2.22 There are also annexes, covering the following:

- Annexes 1 to 4 concern the process for responding to this consultation, Ofcom's consultation principles and the consultation questions;
- Annex 5 sets out our Equality Impact Assessment for this consultation;
- Annex 6 provides a list of the sources of evidence for this consultation;
- Annex 7 provides a glossary of terms used in this consultation; and
- Annex 8 includes the draft of the legal notifications of the SMP condition we propose to modify as a result of this consultation.

[18] BT's next generation network upgrade.

Section 3

Fibre roll-out in Market A exchange areas

Introduction

3.1 In this section we set out our proposals in relation to the treatment of new information on fibre roll-out and take-up that we obtained following the publication of the 2013 WBA Consultation.

2013 WBA Consultation

Our proposals

3.2 In the 2013 WBA Consultation we said that although BT was rolling out fibre, on a state-funded and commercially-funded basis, to many rural parts of the UK, we were unable to take account of that roll-out in our market analysis, as we did not know where or when the roll-out would take place. In addition, we did not have any indication of the likely take-up of fibre services by CPs or end-users.[19]

Consultation responses

3.3 EE said in its consultation response that we should take greater account in our market analysis of planned fibre roll-out by BT. It provided information (based on its promotion for superfast broadband) showing the conversion rate of rural customers to fibre is likely to be [✂]%.[20]

3.4 EE told us there was more information available on BT's roll-out proposals and likely take-up by CPs than we had suggested. It said that many proposed Market A exchanges should be moved to Market B, since BT is likely to face strong competition in the supply of WBA services in those (Market A) exchanges as a result of fibre roll-out. It said that where 40% or more of premises within a Market A exchange area are capable of being served by state-funded fibre by 2017, then the exchange should be regarded as prospectively competitive and moved to Market B.

3.5 No other stakeholder said that we should take greater account of fibre roll-out by BT. In particular, BT did not comment on this point.

Provision of further information by CPs

3.6 In October[21] and November 2013[22], in response to information requests, BT provided us with its most up-to-date information on planned and existing fibre roll-out (both state-funded and commercially-funded) in proposed Market A exchange areas. In these information requests we also asked whether the proposed fibre roll-out to Market A exchanges would be served using fibre from Market B exchanges.

3.7 The information provided by BT in October 2013 shows that fibre connected to Market B (i.e. prospectively competitive) exchanges is likely to reach between [✂]

[19] See, for example, paragraph 5.28 of the 2013 WBA Consultation.
[20] This information was based on survey data, with a sample size of around [✂]), and corresponds to the conversion rate when speaking to the broadband bill payer.
[21] BT response to s.135 notice of 9 October 2013.
[22] BT response to s.135 notice of 18 November 2013.

[50 and 70%] of Market A premises by the end of the next market review period, with around two thirds of these being in Market A exchange areas in which BT is currently the only PO. BT's forecasts indicate that much of this roll-out will take place [✂].[23]

3.8 The information provided by BT in November 2013 shows that [✂] [between 200 and 300] Market A exchanges already have at least one fibre-enabled cabinet. [✂] [The majority] of these are served with fibre from Market B exchanges.[24]

3.9 As at October 2013, the fibre-enabled cabinets in Market A together served [✂] premises, representing [✂] [10 to 15%] of all Market A premises and [✂]% [less than 2%] of all UK premises.[25]

3.10 In November and December 2013, in response to information requests, Sky and TalkTalk each provided us with information which included details of their marketing spend on fibre in 2012/13 and the first half of 2013/14, as well as their forecasts for superfast broadband subscribers.[26]

3.11 Sky said that it had spent £ [✂] on marketing fibre in 2012/13, and £ [✂] so far in 2013/14.[27] TalkTalk said that it had spent £ [✂] in total in 2012/13 and the first half of 2013/14 on advertising that included mention of fibre.

3.12 Sky estimated that its share of the total fibre market (>30Mb) would be [✂]% in 2014, increasing to [✂]% by 2017. TalkTalk estimated that its share of FTTC would be [✂]% in 2014, increasing to [✂]% in 2017.

Our assessment of information obtained since the 2013 WBA Consultation

Existing fibre rollout

3.13 The information provided by BT in November 2013 shows that it has already rolled out fibre to cabinets in a small proportion of our proposed Market A exchange areas.[28] There is no longer any uncertainty over this deployment with regard to time and location. It also reduces, to a degree, the uncertainty over the likely uptake of that fibre by other CPs, as we know that the large majority of fibre roll-out to cabinets in Market A areas is served from Market B exchanges, where Sky and TalkTalk (and potentially other CPs) are already present.

Competitive conditions

3.14 In the 2013 WBA Consultation we proposed to define geographic markets by assessing competitive conditions in BT exchange areas. In light of BT's existing and planned fibre roll-out, we have considered whether there is any merit in moving to a cabinet-based unit of analysis to assess the impact of fibre. This would involve assessing the competitive conditions in each individual cabinet, as opposed to at the local exchange level, and then grouping together cabinets (into markets) with sufficiently homogenous competitive conditions. While there are around 5,600 local exchanges in the UK, there are around 90,000 cabinets.

[23] BT response to questions 1, 2 and 3 of s.135 notice of 9 October 2013.
[24] BT response to questions 1 and 2 of s.135 notice of 18 November 2013.
[25] BT response to s.135 notice of 9 October 2013.
[26] Sky and TalkTalk responses to question 1 of s.135 notices of 19 November 2013.
[27] [✂]
[28] BT response to s.135 notice of 18 November 2013.

3.15 Our view is that a cabinet-based analysis is not warranted at present, given that only [✂] [200-300] out of 3,223 exchanges in Market A have one or more fibre-enabled cabinets as of October 2013, many of which have low levels of fibre coverage across the whole exchange area. Moreover, these fibre-enabled cabinets serve only [✂] [10 to 15%] of Market A premises. In addition, moving to a cabinet-based assessment would be resource-intensive and may introduce complexity for CPs and confusion for consumers.

3.16 Existing fibre roll-out is likely to contribute to the variance in competitive conditions across Market A exchanges. However, the strength of the competitive constraint that these fibre services are likely to provide to current copper based WBA services in Market A exchanges is still uncertain at this stage.

3.17 In the 2013 WBA Consultation, we said that competitive conditions for current and next generation access were likely to be the same for a given exchange because the POs present in the exchange would have access to, and the incentive to make use of, the upstream WLA remedies provided over both technologies.[29] Nonetheless, there still remains uncertainty about the competitive constraint provided by fibre.

3.18 A key reason for this uncertainty is that fibre roll-out is relatively recent in the UK and very limited in Market A exchange areas. There is therefore limited data on: (a) the take-up of fibre by end-users; (b) if and when CPs will deploy fibre in small Market A exchanges; and (c) the impact of fibre on competition in Market A exchanges. In contrast, we have several years' data on local loop unbundling (LLU) roll-out.

3.19 With regard to the take up of fibre by end users, we have considered the information provided by EE on copper to fibre conversion rates in Market A areas. We would expect conversion rates to be high in these areas, given that broadband speeds over copper (in contrast with fibre) diminish significantly with distance, and many premises in Market A are located far from the exchange.

3.20 The information provided by EE comes from its analysis of a marketing campaign rather than a reliable consumer survey. Furthermore, the sample size used in the analysis is fairly small, at around [✂] people.

3.21 Data from other sources suggests copper to fibre conversion rates are much lower than EE suggests. In particular, Ofcom's Infrastructure Report states that around 8% of all broadband connections in the UK currently operate at less than 2Mbit/s, but only 3% of premises in the UK with speeds below 2Mbit/s do not have SFBB currently available in their area.[30] In other words, many consumers that currently have sub-2Mbit/s broadband also have fibre available, but have not made the switch. While there may be a number of reasons for why these consumers have not taken up fibre (for example, they may have yet to roll off existing contracts, or may not know that fibre is available in their area), the Infrastructure Report shows it is uncertain that customers in Market A will always switch to fibre if available.

3.22 We note that, at the end of September 2013 BT's fibre services were available to about 17m premises, whereas at the same time take-up stood at about 2m. Further, BT Retail is supplying about 1.7m of these 2m live fibre connections.[31] We expect

[29] See paragraph 4.31 of the 2013 WBA Consultation.
[30] Ofcom, Infrastructure Report, 2013 Update. October 2013: http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/infrastructure-report/IRU_2013.pdf.
[31] All figures from BT's Q2 2013 results: http://www.btplc.com/News/ResultsPDF/q213_release.pdf.

take up of fibre to rise, and BT's fibre share to fall, as a result of further churn to fibre, which will increasingly include new fibre entrant POs. However, we do not have historical data (as we do for copper) to suggest that the impact of the new fibre entrants will be sufficient to cause BT's market share (in an exchange) to fall to levels below those indicative of SMP.

3.23 With regard to the take up of fibre by CPs, we received data from BT in November 2013, which shows that CPs offer fibre services in many – but not all – fibre-enabled exchanges. [32] This could be either due to CPs' specific desire not to enable fibre in some exchanges, or simply the result of a lag between when some exchanges are fibre enabled and when the CPs actually start offering fibre services.

3.24 In terms of the impact on competition in Market A exchanges, considering first the competitive constraint provided by commercially-funded fibre, we note that GEA/VULA[33] is regulated on the basis of a margin squeeze test. In Market B competitive copper prices constrain retail prices for fibre and, given the margin squeeze test, this will then feed through to a constraint on VULA prices. However, in Market A, in the absence of WBA regulation, we cannot rely on copper competition to constrain BT's retail copper price, or its retail fibre prices. It is therefore possible that BT could increase the retail fibre price in Market A, and also the VULA price at the exchanges which serve Market A, while still complying with the margin squeeze test. Competitors paying this higher VULA price are also likely to have to charge higher retail prices for fibre in Market A in order to cover their costs. These higher fibre prices would act as a less effective constraint on copper retail prices or WBA prices.

3.25 The constraint from state-funded fibre is also uncertain, as we do not have clarity as to the pricing terms of all the BDUK contracts between the relevant local authorities and BT.

3.26 In light of the above, we have to take a view as to the best way to balance the risk of regulating where it is not necessary against the risk of leaving some premises unprotected in areas where regulation is in fact appropriate. Whilst in general we have a bias against intervention, we consider that it is appropriate to take a cautious approach in this case to avoid the risk of deregulation of areas in which the competitive constraint from fibre is not effective in constraining BT's SMP. We therefore would not be confident to deregulate parts of Market A on the grounds that fibre had been rolled out in these areas.

3.27 The majority (around [✂]%) of fibre roll-out in Market A is state-funded, and hence investment decisions are unlikely to be affected by the regulation of WBA services in these areas.[34] In these specific circumstances, we consider that the risk of regulatory failure is low, and hence we should be less concerned about over-regulation and more concerned about deregulating too soon. In this case we prioritise the protection of consumers over the risk of over-regulation, and accordingly propose not to revise our approach to market definition at this stage due to fibre roll-out.

3.28 By the beginning of the next WBA market review, the large majority of BDUK-funded fibre roll-out is likely to have been completed. We therefore expect during the course

[32] BT response to question 1 of s.135 notice of 18 November 2013.
[33] Generic Ethernet Access (GEA) is BT's wholesale non-physical product providing CPs with access to higher speed broadband products. Virtual Unbundled Local Access (VULA) provides a connection from the nearest 'local' aggregation point to the customer premise.
[34] BT response to s.135 notice of 18 November 2013.

of that review to gain a much better understanding of the impact on competition of fibre roll-out and take-up.

3.29 The presence of fibre may give rise to an additional competitive constraint in [✂] [the majority] of the [✂] [200-300] Market A exchanges that have at least one fibre-enabled cabinet. This is because the fibre-enabled cabinets in those exchanges are served by fibre from Market B exchanges, which we consider are competitive.[35]

3.30 However, as set out above, the strength of this constraint is insufficiently certain to conclude that BT does not have SMP in any of those exchanges, even if that fibre covers 100% of the exchange area. The purpose of SMP analysis is to determine the suitability of regulation. In this case, the risks of over-regulation are lower than would often be the case.

3.31 Accordingly, we consider that we should maintain our proposals as to remedies set out in the 2013 WBA Consultation in respect of those Market A exchanges where fibre has already been deployed. In exercising our judgment on market definition, SMP and remedies, we are more concerned about the risks of under-regulation than over-regulation.

3.32 If we do not impose regulation on BT in any of the fibre-enabled Market A exchange areas, consumers may be harmed by higher prices if the fibre available in those areas does not prove to be an effective constraint.

3.33 Since the large majority of fibre deployment in Market A will be state-funded, and there is limited further copper rollout in these areas, regulation will have little, if any, effect on incentives to invest in fibre in these areas. As a result, there is a much lower risk that regulation across all Market A exchanges will harm consumers by deterring investment.

Planned fibre roll-out

3.34 The information provided by BT in October 2013 reduces the uncertainty over the location, timing and take-up by CPs of planned fibre roll-out by BT in Market A exchange areas. However, for the reasons explained above, we do not consider it appropriate to change our consultation proposals in light of this information. In addition, we note there still remains some uncertainty over the timing of BT's planned future roll-out. BT has stated that operational issues may result in activation for a small proportion of cabinets being subject to change or short delays to the plan. We do not know how accurate this estimate of the likelihood of delays is. It could be that delays are more significant and the fibre is not enabled until nearer the end of the review period, or even beyond it.[36]

Conclusion

3.35 We expect the uncertainty over the competitive impact of fibre in our proposed Market A exchange areas to diminish over time as fibre roll out progresses, and further evidence emerges on the take up of fibre-based services by both consumers and CPs, as well as the competitive impact on BT in Market A areas. We will continue to monitor the roll-out of fibre by BT and the take-up of fibre services by CPs and end-users over the course of the market review period. Should sufficient evidence emerge suggesting that fibre services are providing a stronger competitive

[35] BT response to s.135 notice of 18 November 2013.
[36] BT response to s.135 notice of 9 October 2013.

constraint on BT in market areas than we have anticipated, we would consider whether it was appropriate to re-open our consideration of this issue at that time or to bring forward the date of the next market review.

Section 4

Reconsideration of base year costs for charge control modelling

Introduction

4.1 At the time of the 2013 WBA Consultation, BT's 2012 Regulatory Financial Statements (2012 RFS)[37] contained the most recent information available and it was therefore reasonable to use this data for the purposes of forecasting costs to 2016/17 (with the exceptions otherwise explained in the 2013 WBA Consultation).

4.2 In our 2013 WBA Consultation, we noted that BT would shortly be publishing its latest RFS, containing information for the year 2012/13 (2013 RFS) [38], and that we would need to consider how best to take this information into account as part of our review. We said:

> *"7.123 BT has provided us with information on changes that it intends to make when it publishes its RFS for 2013 later this summer. We will therefore be able to take this information into account, alongside other information, in our cost estimates, and it may be appropriate to use 2013 RFS cost data for the base year in our final model. If changes in the 2013 RFS reflect changes in accounting methodologies (such as cost allocation rules) rather than changes in the underlying costs, we may need to consider if and how it is appropriate to reflect these changes in our base year costs and whether they justify a move away from the methodologies used in the calculations for this consultation."*

4.3 BT published its 2013 RFS on 31 July 2013. The 2013 RFS contained a number of material changes in allocation methodology when compared to the 2012 RFS and the basis for the 2013 WBA Consultation.

4.4 In this section we set out our proposals in relation to:

- The selection of base year data for cost modelling purposes;
- The additional adjustments needed as a result of updating the base year's costs from 2011/12 to 2012/13; and
- Reconsideration of the adjustments proposed to the 2011/12 RFS data, in light of the responses to the 2013 WBA Consultation, and updating the base year to 2012/13.

4.5 In relation to each proposal we firstly summarize the proposal made in the 2013 WBA Consultation, we then set out the consultation responses received and finally we set out our proposal for this consultation.

[37] BT Group plc, Regulatory Financial Statements, 2012. https://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2012/index.htm.
[38] BT Group plc, Regulatory financial statements 2013. http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/index.htm.

RFS base year data for cost modelling purposes

2013 WBA Consultation

Our proposals

4.6 Our charge control proposals set out in the 2013 WBA Consultation were based on BT's 2012 RFS.

Consultation responses

4.7 Only BT commented on the need to update the cost data. It said that Ofcom should use the most recent audited data available for its cost modelling. It stated that an approach which uses data that has been superseded rather than most recent data available cannot give proper effect to Ofcom's statutory duties, nor will it achieve the benefits which Ofcom seeks to achieve by moving to a new RFS-based cost model.

4.8 TalkTalk noted that the approach and assumptions used by Ofcom should be aligned with those used in the LLU/WLR charge control in relation to cost allocations. EE commented that Ofcom should exercise great care before making any adjustments for restatements, given the high risks of inconsistent / inappropriate cost allocation.

4.9 BT also stated that Ofcom should use the allocation methodology used in the 2013 RFS and in particular to account for DSLAM costs, Core Directors and Specialised Accommodation, as set out below.

- BT claimed that the revised allocation of DSLAM costs would more closely reflect cost causality. BT stated that it has identified part of the DSLAM cost which varies with the number of end-users. In the past DSLAMs were allocated to each market based on the number of DSLAMs geographically within that market. However, BT claimed that power consumption, customer line-cards and customer service costs are more closely related to the number of customers using the DSLAM. For these reasons BT believed that a proportion of the DSLAM cost ([✂]) of capital costs and [✂] of operating costs in 2012/13) should be allocated by reference to the number of IPstream end-users whilst the non-customer related cost should continue to be allocated based on the number of DSLAMs in each market area.

- BT claimed that the costs of 21CN core transmission equipment, including Core Director assets, should be included in legacy technology costs because these assets are now being used to replace the ATM switch network and convey IPstream traffic across BT's core network. BT claimed that the allocation of these costs into the WBA markets would reflect the use IPstream services make of these assets.

- BT stated the revised allocation of accommodation costs align RFS reporting with planning rules and BT's engineering practice for allocating space in BT's exchanges consistent with BT's external LLU pricing. BT explained that the previous allocation methodology looked at a fixed multiple of the footprint of the racks occupying exchange space when allocating space. However, this did not take into account the maximum power density of [✂] per square metre that is allowed in BT's exchanges. BT stated that this meant that more space is occupied by WBA equipment than reflected in the 2011/12 cost allocations. According to BT, this methodology change will improve the cost causality of the

allocation of accommodation costs and more accurately reflect the exchange space actually used.

We propose to use 2012/13 as the base year but to exclude all BT's new allocation methodologies set out in its 2013 RFS

4.10 In charge control reviews we seek to use the best available information to forecast BT's relevant costs over the charge control period. In practice, over the course of several different market reviews, we have used BT's most recently published RFS as a starting position, appropriately scrutinised and adjusted where necessary, as the basis of our assessment of BT's relevant costs. A key reason for this is that the RFS has typically formed a sensible check point for the consistent allocation of costs across different markets and services subject to *ex ante* review as well as to unregulated services. BT has asserted that we should only depart from the use of published RFS data in charge control models where scrutiny of the financial information raises clearly identified concerns with regulatory accounting principles, economic efficiency considerations and/or with other specific aspects relating to Ofcom's duties and responsibilities.

4.11 In the specific context of each charge control review, Ofcom is required to exercise its judgement, based on its experience and expertise to adopt an appropriate, proportionate and timely means to model BT's relevant costs in light of the specific circumstances applying at the time so as to address the competition concerns identified. Our duties require us to achieve an outcome which both furthers the interests of citizens in relation to communications matters and those of consumers in relevant markets, where appropriate by promoting competition. Any charge control remedy must be one that promotes efficiency, sustainable competition and be in the best interests of citizens and consumers as the end-users of those services. As explained in our 2013 WBA Consultation, we have used the CCA FAC cost standard as a means to determine BT's efficient forward-looking costs for the purpose of setting WBA charge controls. BT's RFS are compiled on a CCA FAC basis.

4.12 BT published its 2013 RFS on 31 July 2013. The 2013 RFS contained a number of material changes in allocation methodology when compared to the 2012 RFS and the basis for the 2013 WBA Consultation. As set out in our statement at the front of the 2013 RFS, Ofcom required BT to prepare and publish a further report describing certain changes in the allocation methodologies applied in the 2013 RFS, when compared to the 2012 RFS (the October 2013 RFS Report).[39] BT published this report on 3 October 2013.

4.13 BT has also separately provided Ofcom with a report prepared by Deloitte consisting of a review of the revised cost attribution methodologies used in the 2013 RFS (the Deloitte RFS Report). Having received the October 2013 RFS Report, together with more detailed data requested under our statutory information gathering powers, we have been able to form a clearer view of the aggregate effect of the changes in allocation methodology applied in the 2013 RFS.

4.14 Having regard to our objectives when setting charge controls and our duties set out above, and having reviewed the 2013 RFS alongside the October 2013 RFS Report

[39] BT Group plc, Report requested by Ofcom describing certain changes to the Accounting Documents for the year ended 31 March 2013 and illustrating the resulting differences to the Current Cost Financial Statements had those changes not applied, 3 October 2013, https://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/ReportrequestedbyOfcomfortheyearended31March2013.pdf

and the Deloitte RFS Report, we have given careful consideration to whether it would be appropriate to use the information contained in the 2013 RFS to update the cost model used for the proposed charge control. In other words, we have considered whether the 2013 RFS is the best source of data on which to base our forecast of BT's relevant costs in the WBA market.

4.15 It may be appropriate for BT to alter its cost allocation bases from time to time. However, where those changes are material and have significant implications for charge controls and competition across both regulated and unregulated services, they need to be carefully considered to ensure that they are objectively justified and balanced. The predominant effect of the changes in allocation methodology implemented in the 2013 RFS would be to the benefit of BT in the WLA and WFAEL markets if they were reflected in the charge controls we propose to set in 2014. The effect on WBA Market 1, which forms the base data for this control, is not as pronounced, but would still be to the benefit of BT if the changes in allocation methodology were reflected in the charge control we propose to set for WBA services.

4.16 As noted in the recent December 2013 LLU WLR Charge Control Consultation[40] we have expressed our concern to BT regarding (i) the potential for material over-recovery from other regulated markets (this is at the core of our concerns) and (ii) the other material reallocations between the WLA and WFAEL markets and to those markets from unregulated services.

4.17 The December 2013 LLU WLR Charge Control Consultation considered that it would not be appropriate to use the 2013 RFS as presented by BT for the purpose of the proposed charge controls. Further it states that we do not consider that our duties would be best achieved in the context of the WLR/WLA proposed charge controls by undertaking a detailed evaluation of each allocation change as to do so would lead to a material delay in the implementation of the revised controls, without necessarily producing a better outcome in terms of cost allocation. Further details on these arguments are given in paragraphs 7.92 to 7.98 of the December 2013 LLU WLR Charge Control Consultation.

4.18 The December 2013 LLU WLR Charge Control Consultation therefore consults on the approach of updating the base year information to take account of 2013 RFS costs (where appropriate), but retaining the 2012 RFS allocation methodologies. Should that approach not be feasible (for a currently unanticipated reason) the consultation states that we would need to consider reverting to using the 2012 RFS as the base year data for that charge control.

4.19 If we were to undertake a detailed assessment of BT's cost allocations in this market review, it would take considerable time leading to further delay to the imposition of the charge control. In any event, we consider it appropriate to adopt a consistent approach across the WBA, WLA and WFAEL markets, unless there is a good reason not to. In this regard we agree with both TalkTalk and EE's comments noted in paragraph 4.8 above. Therefore, for this control on WBA markets, in line with the approach set out in the December 2013 LLU WLR Charge Control Consultation we propose to:

[40] Ofcom, *Fixed access market reviews: Openreach quality of service and approach to setting LLU and WLR Charge Controls, Consultation*, 19 December 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-llu-wlr-charge-controls/summary/famr-2013.pdf, paragraph 7.91

- Update the base year information using input cost data (adjusted as proposed in this consultation) from BT's 2013 RFS. This will ensure that we are using the most recent cost information as a starting point from which to base our cost forecasts for this charge control (where this is possible).

- Retain the 2012 RFS allocation methodologies.

4.20 Our starting point will therefore be the 2012/13 results as re-stated within the October 2013 RFS Report. This reports the 2012/13 costs using the 2012 RFS allocation methodologies as set out above. We shall refer to this cost data as the 'restated costs in the October 2013 RFS Report'. The impact of retaining the 2012 RFS allocation methodologies for the WBA charge control is less significant than for the 2014 LLU WLR Charge Control.

Anchor pricing

4.21 In our 2013 WBA Consultation we considered whether we should adopt an anchor pricing or modern equivalent asset (MEA) approach to modelling the costs of serving Market A.

4.22 We explain how the MEA approach sets charges on the basis of what is believed to be the most efficient available technology that performs the same function as the old technology. The MEA approach in this case would consider whether costs should be based a copper access network using ADSL2+, or on fibre. However, we considered that there were some significant challenges in applying such an MEA approach in this market.

- It is somewhat unclear whether a copper access network using ADSL2+ or a fibre network is the most efficient technology in Market A. It is likely that some of the exchanges in Market A may move straight from ADSL to fibre, while others might move from ADSL to ADSL2+.

- There has been relatively little roll-out of ADSL2+ or fibre technology in Market A, so there is little data on which to base costs for any MEA modelling exercise. Unit costs are likely to be higher in Market A than in Market B, since the number of customers at each exchange will be much smaller and the exchanges are more remote than in Market B. Reliably estimating the cost curve based on existing data would therefore be very difficult.

- We would need to consider how, if it all, the costs of the MEA technology should be compared to the existing technology (for example how the greater functionality should be abated).

4.23 Under anchor pricing, the price of existing services is 'anchored' by the legacy technology, even if the services are actually provided over new technology. Consumers should not be made worse off as a result of the SMP operator changing the technology that it uses to provide the service.

4.24 Anchor pricing has good incentive properties. It allows the dominant provider the flexibility to charge more to reflect any enhanced functionality of the new service. In turn, this creates the incentive for the investment required to advance service characteristics which are directly related to customers' willingness to pay for improvements in quality. Thus, the anchor pricing approach will not deter efficient investment in WBC or fibre.

4.25 Under anchor pricing, we model the cost of efficiently supplying services using existing ADSL IPstream technology over the period of the control. We therefore assume in the model that Market A customers will use IPstream services over the control period, even if in reality BT may migrate customers onto either WBC or fibre (21CN) technology.[41] We refer to this as the hypothetical ongoing network (HON) approach. We model volumes to take account of BT's aggregate volume growth of both WBC and IPstream within Market A.

4.26 The volume of IPstream services is expected to decrease over the period of the market review as a result of:

- customers moving to BDUK funded fibre in Market A; and
- customers moving from IPstream services to WBC and fibre in Market B.

4.27 We explain below whether we consider the impact of these volume changes in our charge control model under our anchor pricing approach.

Customers moving to BDUK funded fibre in Market A

4.28 As explained in our 2013 WBA Consultation[42], we consider that it is appropriate to remove the volume that will migrate to BDUK funded fibre from our volume forecasts for IPstream in Market A. BDUK is an external event, very different from a normal commercial decision on whether to invest in new technology by BT. This loss of economies of scale is not directly an effect that BT can take into account, as it is not its commercial decision to roll out the BDUK funded fibre, which offers the migration opportunity to customers. This has the effect of allowing for the unit cost increase in our charge control model.

Customers moving from IPstream services to WBC and fibre in Market B

4.29 A further reason why there is a loss of scale associated with IPstream is that, in Market B, BT is increasingly serving its customers using WBC and fibre rather than IPstream. Unlike the deployment of fibre in Market A, this is a result of BT's own commercial decision. Therefore, arguably, an anchor pricing approach would not allow this to impact on the price of IPstream in Market A. In particular, it is arguable that BT should not be allowed to recover more of the fixed forward looking costs of IPstream from Market A, just because there are fewer IPstream customers in Market B. However, prices in Market B are determined by competition with other LLU providers who may serve their customers only using WBC. Therefore, BT may be unable to set prices in Market B which reflect the forward looking costs of running an IPstream network as well as the costs of running WBC. Our charge control should be set to allow BT to recover efficiently incurred forward looking costs. In order to satisfy this condition, if BT cannot recover the same share of the forward looking fixed costs of IPstream from Market B as it did previously, it is necessary to adjust the shares of these costs recovered in each of markets A and B. For this reason, we have apportioned the forward looking fixed costs of IPstream between Market A and Market B according to measures of IPstream usage, such as the number of end-users, the bandwidth they consume, and/or direct asset volumes used to serve those

[41] We do account for the fact that some customers will migrate onto the fibre network, since the roll-out of fibre in these areas is largely an decision taken by government rather than an investment decision by BT (see paragraph 4.28).
[42] See paragraph 7.114.

customers. Given the reduced volume of IPstream in Market B, this means that a greater proportion of these forward looking fixed costs fall on Market A.

4.30 We do not, however, believe it is appropriate to allow BT to recover costs which were incremental to providing IPstream in Market B from Market A. In particular, we do not believe it appropriate for BT to recover from Market A the costs of any DSLAMs which, due to the migration to WBC in Market B, are no longer in use. These are not part of the efficient forward looking costs of the IPstream network. BT's commercial decision to switch from using IPstream to WBC in Market B should have taken into account the requirement to write off assets associated with the old technology which will no longer be needed and replace them with new technology, as any other provider in Market B would have to do. It would distort BT's investment incentives in Market B if we allowed it to recover these costs from Market A.

4.31 We explain below how we have considered BT's cost components such that we are confident we have only modelled the quantity of assets (and associated costs) that are needed to provide the volume of the service required in Market A (for example we have checked that our cost data does not appear to include any stranded assets from Market B). This quantity of assets would be similar to that identified by a bottom up model of the IPstream assets required to serve the volume of remaining customers.

4.32 The prices that are allowed under the charge control are intended to be sustainable over time, so the value of the assets allowed under the charge control must be consistent with their replacement over time. This implies that we should not use fully, or nearly, depreciated values for NRC, but use an NRC/GRC value which is consistent with the HON. We note that the charges should be sustainable over time, and should not require sharp increases because a set of assets have reached the end of their lives.

Analysis of cost movements from 2011/12 to 2012/13

4.33 BT's reported WBA costs across all markets were relatively static between 2011/12 and 2012/13,[43] but WBA costs in Market 1 increased by about 25%.[44]

4.34 The increase in WBA costs in Market 1 was primarily due to changes in customer numbers across the three WBA markets. In 2012/13 the number of customers using IPstream, the legacy technology, reduced significantly in Market 3, the unregulated area. However, the costs of supplying IPstream (across all markets) did not fall in line with the fall in customer numbers, due to the fixed costs involved in providing IPstream, notably on the ATM network. As a result IPstream services in Market 1, where IPstream will continue to be prevalent in the short to medium term, attracts a greater proportion of overall IPstream network costs.

4.35 We have considered whether BT's allocation methods resulted in costs being attributed to Market 1 that were not relevant to serving Market 1 customers. In particular, we considered whether Market 1 was being allocated costs of some "stranded" assets, for example the costs of any redundant DSLAMs in Market 3 through the allocation process.

[43] BT response to s.135 notice of 18 November 2013.
[44] BT, 2013 Regulatory Financial Statements, http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/index.htm

4.36 We therefore asked BT to provide data on its component costs across the WBA geographic markets (currently Market 1, Market 2 and Market 3), to check that the observed cost increases were reasonable. We restricted our considerations to the three main non-21CN WBA cost component groups: DSLAMs, ATM network components and Selling, General and Admin (SG&A) costs. Together these components account for approximately 90% of the non 21CN WBA cost stack for IPstream services.[45]

4.37 The largest WBA cost component is *DSLAM Capital maintenance*. This title is a little misleading as it covers two separate sub-components. The first covers the capital costs associated with DSLAMs. BT allocates the restated costs in the October 2013 RFS Report for this sub-component across the different WBA geographic markets on the number of DSLAMs not yet fully depreciated. The second sub-component covers the other costs associated with operating and maintaining DSLAMs. BT allocates these restated costs in the October 2013 RFS Report on the number of DSLAMs in each market.

4.38 These allocation methods are consistent with those we used in the 2011 WBA Charge Control; they form a reasonable basis for the input costs for the charge control model. The application of these bases results in the proportion of DSLAM costs allocated to Market 1 rising, due to the decline of IPstream volumes in Market 2 and Market 3 in 2012/13 compared to 2011/12. Our analysis of *DSLAM capital maintenance* costs did however lead us to question and subsequently reduce significantly the 2013 HON adjustment originally submitted by BT. We discuss this further in paragraphs 4.63 to 4.75 below.

4.39 Our analysis of the ATM network and SG&A costs, came to similar conclusion: i.e., that the methods that BT had adopted in its restatement of 2012/13 costs within the October 2013 RFS Report were broadly consistent with those methods used in the 2011 WBA Charge Control. We therefore believe these restated costs form a reasonable basis for the inputs costs for the charge control model.

Adjustments required to input costs as a result of using 2012/13 as the base year

2013 WBA Consultation

Our proposals

4.40 We made several adjustments to the base year costs in our 2013 WBA Consultation.

- **'One-off' non-recurring cost adjustments to base year** – we excluded 'one-off' or non-recurring costs, and conversely added in any costs which were not included in the RFS, but should have been included in order to provide steady state WBA services.

- **Alignment of costs with charge control model design** – we made two adjustments to the 2012 RFS costs to reflect our modelling methodology. Firstly we excluded costs for services that we do not model, such as connections and ancillary services. Secondly we reallocated DSLAM costs between end user rentals and bandwidth to reflect cost drivers more accurately.

[45] See for example BT, 2013 Regulatory Financial Statements, http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/index.htm, page 117

- **Redefined market boundaries** – the 2012 RFS Market 1 data was adjusted to reflect the size of Market A.

- **Hypothetical Ongoing Network (HON) adjustment** - we increased the capital employed and annual depreciation charge for the base year to reflect a hypothetical ongoing network. We did this by increasing the net replacement cost (NRC) to 50% of the gross replacement cost (GRC) to reflect a hypothetical steady state. At the same time we increased some asset lives in order to more closely reflect the economic life of BT's assets.

Consultation responses

'One-off' non-recurring cost adjustments to base year

4.41 BT agreed that one-off (non-recurring) costs should be excluded from the charge control model.

Alignment of costs with charge control model design

4.42 BT believed that re-allocating a proportion of DSLAM costs to bandwidth services was appropriate because it was justified on the basis of cost causality. It was also necessary to ensure costs and revenues were aligned to the services being controlled.

4.43 EE stated that Ofcom should allocate 100% of DSLAM costs to end-user rental costs. EE was concerned that allocating 25% of these costs to bandwidth costs was unwarranted given falling forecast IPstream end user volumes (hence bandwidth usage) in Market A, and would distort prices to the detriment of BT's retail competitors.

The market size adjustment

4.44 Only EE commented on our market size adjustment. EE agreed that the 2012 RFS data should be adjusted to reflect the new boundaries of Market A (paragraph 7.122 of the 2013 WBA Consultation) subject to the further removal of prospectively competitive exchanges.

4.45 EE claimed that there was insufficient information provided for it to be able to comment fully on the cost impact of the change from Market 1 to Market A (paragraph A11.30 to A11.32 of the 2013 WBA Consultation). For example, EE stated the BT-only exchanges assumed in BT's redefined Market 1 section 135 information response referred to at footnote 105 were likely to be smaller on average than the total average size of BT-only and BT+1 exchanges that Ofcom was proposing to include in Market A, but EE said it was not clear whether Ofcom had taken this into consideration when relying upon BT's estimates.

The HON adjustment

4.46 Only BT and EE commented on the HON adjustment.

4.47 BT believed Ofcom's HON adjustments were correct. It stated they are necessary because a number of the assets used in the WBA Market 1 are fully depreciated or nearly fully depreciated. As a result, asset values and depreciation costs are below the level consistent with what would occur in a "steady state" scenario.

4.48 EE commented on Ofcom's concerns expressed at paragraph A11.16 of the 2013 WBA Consultation about asset lives. EE believed that it was reasonable to assume that such a "steady state" network would have significantly longer asset lives than are seen in practice (and than are assumed in BT's accounting treatment). EE said this was because a significant proportion of asset depreciation can be considered as arising from technological obsolescence which drives a need to update individual network elements to introduce new technologies. However, this real world driver of asset lives is essentially assumed away when considering a HON and Ofcom should therefore assume that such a network would be cheaper to run.

4.49 EE added that it was concerned by the apparent lack of any adjustment proposed to the forecast level of fixed and common costs (i.e. costs which are not purely incremental) to reflect the forecast loss of volumes to fibre based services. EE considered that this approach was inconsistent with how an efficient owner of an HON should behave – e.g. EE would expect BT to be able to reduce some labour and equipment costs at an exchange serving materially less customers in the timeframes relevant to a charge control period, and at some point it may become economically rational to close an exchange.

4.50 EE stated that a shrinking IPstream customer base, using a shrinking IPstream infrastructure (due to BT's on-going WBC migration program) should result in static, or reduced, per end user access prices.

We have updated our one-off non recurring cost adjustments and made some further small adjustments to SG&A and ATM Network costs

4.51 As part of our update of the base year's costs from 2011/12 to 2012/13 we have reviewed and updated the adjustments that we made in the 2013 WBA Consultation, taking account of responses we received.

4.52 We propose to exclude "Other CCA adjustments" as we did in the 2013 WBA Consultation.[46] This removes £1.2m Market 1 operating costs.

4.53 Our component cost analysis discussed in paragraph 4.36 above highlighted some data anomalies for two components. BT allocated 2012/13 restated SG&A Broadband and ATM Network Interface, Switching and Transmission costs within the October 2013 RFS Report using forecasts of revenues and volumes rather than actual revenues and volumes. Based on data supplied by BT[47] we have updated both bases to reflect actual revenues and volumes. The SG&A adjustment reduces Market 1 operating costs by £1.5m and MCE by £2m. The ATM adjustments reduce Market 1 operating costs by £1.3m and MCE by £5m.[48]

We have updated our market size adjustment

4.54 In the 2013 WBA Consultation we adjusted the input costs from the RFS to reflect the different coverage of Market A compared with Market 1.[49]

4.55 We have updated our analysis of which exchanges fall within Market A using more recent information on CPs' LLU roll-out plans, updated information from Virgin Media on its cable roll-out as well as better mapping of the premises it serves to exchange

[46] See paragraphs A11.6 to A11.9 of the 2013 WBA Consultation.
[47] BT response to s.135 notice of 18 November 2013.
[48] BT response to s.135 notice of 16 January 2014.
[49] See paragraphs A11.29 to A11.32 of the 2013 WBA Consultation.

areas. The result of these updates is a very small change in the size of Market A in terms of total UK premises, decreasing the coverage, from 9.7% to 9.5% of premises But the mix of customers that use IPstream and WBC in Markets 1 and A is different in 2012/13 to what it was in 2011/12. There were on average 1.8m IPstream customers and 354,000 WBC customers in Market 1 in 12/13. In 2011/12 there were 2.2m IPstream customers and only just over [✂] WBC customers[50]. We have therefore reviewed how we adjusted the base year costs within the charge control model to reflect that market boundaries are different from those within BT's reported RFS.

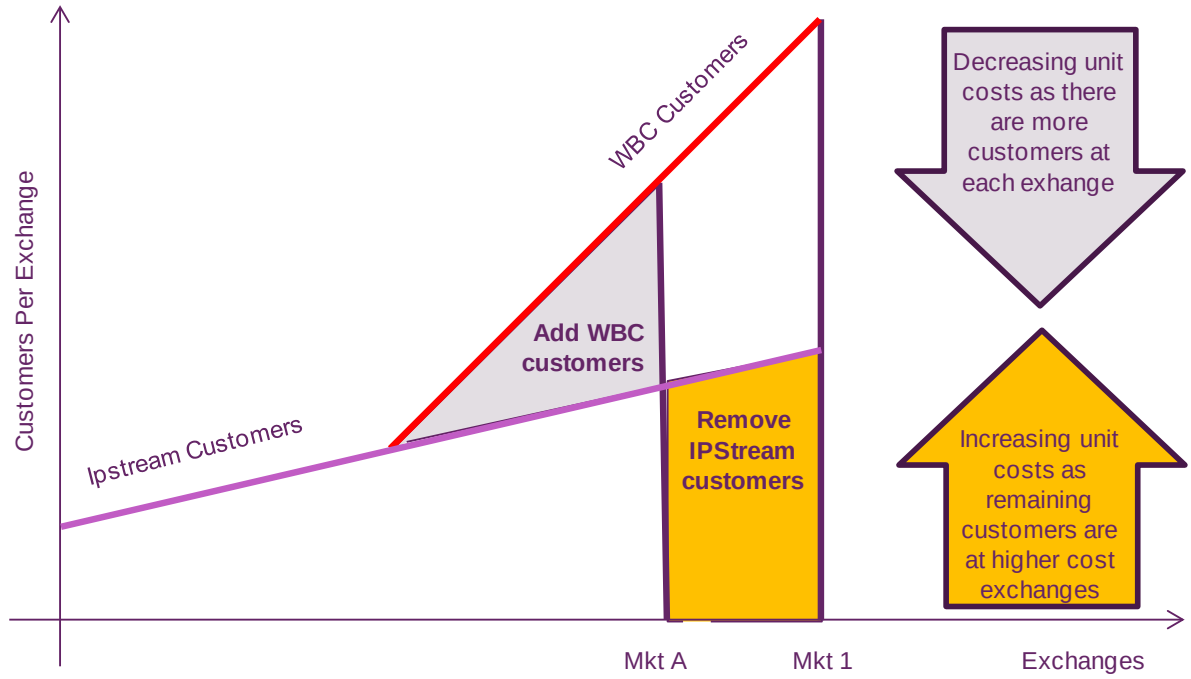
4.56 Under our anchor pricing approach we are modelling the costs of serving all customers within Market A assuming that they are using the anchor products of IPstream. Updating the base year to 2012/13 therefore requires two quite different adjustments (which are also summarised in Figure 4.1 below):

i) Remove all Market 1 IPstream customers served by exchanges that are outside Market A. This adjustment would require the removal of all costs associated with serving IPstream customers at these exchanges. This should remove the cost of all DSLAMs and backhaul connectivity to those exchanges as well as all operational costs. The remaining exchanges will be smaller so this adjustment should lead to higher unit costs. We estimated the effect of this adjustment in the 2013 WBA Consultation.[51]

ii) Assume those customers currently using WBC and Datastream services within Market A exchanges instead use IPstream services. This adjustment adds more IPstream customers to Market A exchanges, and the costs to add are the incremental costs of serving just these additional customers. The extra costs may include the provision of extra DSLAMs and further backhaul capacity as well as some increased operating costs. This adjustment should lead to lower unit costs due to economies of scale. We did not make this adjustment in the 2013 WBA Consultation because there was minimal use of WBC and Datastream services in Market 1 or A in our previous base year, 2011/12.

[50] See for example pages 112-114 of BT's 2013 RFS. WBC customers in 2011/12 from BT's Additional Financial Information Schedule 21 supplied to Ofcom as part of regular regulatory financial reporting requirements.
[51] Paragraphs A11.29 to A11.32.

Figure 4.1: Market size adjustment



4.57 Our base year is now 2012/13. The number of IPstream customers in Market 1 in 2012/13 is similar but slightly lower (by about 3.5%) than the total number of BT WBA customers in Market A at the end of September.[52] In other words, the number of customers in the blue area in Figure 4.1 is similar to, but higher, than those in the orange area. The net result of these two adjustments is to increase the average number of modelled IPstream customers per exchange as well as slightly increasing the total number of customers.

4.58 If volumes were equal then it seems likely that more costs would be removed by the first adjustment than would be added by the second. However there are more customers associated with the second adjustment in paragraph 4.56. It is therefore not clear what the net impact on costs from making both adjustments would be. It is however unlikely to be significant and unlikely to have a major impact on the value of X.

4.59 Our proposal is therefore not to make any adjustment for revised market size in the charge control model. We believe that the level of restated IPstream costs in the October 2013 RFS Report is a good proxy for the costs that would be incurred by all WBA customers within Market A assuming they consume IPstream services. Making a more precise market adjustment is not warranted given the uncertainties about the right CVEs to use and other data concerns, and would be counter to our simplified modelling approach.

[52] The number of IPstream customers in Market 1 is reported in BT's RFS, see for example page 112 of BT's 2013 RFS. The number of customers in Market A has been taken from our market sizing database which has been constructed from data provided by BT in response to s135 information requests. We have undertaken cross checks between the two data sources. IPstream and WBA mid-year volume data reported in the RFS for Market 1 are very close to those in our market size database, but slightly higher, as at the end of September 2012.

We propose to accept BT's 2013 RFS DSLAM cost data

4.60 We continue to believe that it is appropriate for some DSLAM costs to be allocated to bandwidth services for charge control modelling. In the 2011 WBA Charge Control we identified that as bandwidth volumes increase, DSLAM costs also increase to an extent.[53] This is because there is a limit to the backhaul capacity that can be provided from any DSLAM. As bandwidth grows, this limit can trigger the requirement to install extra DSLAMs.

4.61 BT's 2012 RFS[54] allocated all DSLAM component costs to end-user rental services. To allow a percentage of DSLAM costs to change as demand for bandwidth changes, we proposed reallocating some DSLAM component costs from end-user rentals to bandwidth services in our 2013 WBA Consultation. On the basis of data provided by BT we estimated a percentage of DSLAM costs may be driven by changes in contracted bandwidth volumes.

4.62 BT has since published its 2013 RFS. In this it now allocates[55] approximately 8% and 14% of DSLAM costs to internal and external bandwidth services respectively[56]. We propose to adopt this published RFS allocation data within the base year costs in our model.[57] This is consistent with the approach within the 2013 WBA Consultation, which established the principle of allocating some DSLAM costs to bandwidth services. This adjustment has no impact on the total base year costs, only the allocation between the bandwidth service and end-user rental service costs.

We propose to update our HON adjustment

4.63 We propose to make a HON adjustment using the same methodology to that we used in the 2013 WBA Consultation.

4.64 The 2013 WBA Consultation proposed to adopt a HON approach[58]. By that we mean we modelled the costs of serving all Market A WBA customers using DSLAM and ATM/SDH technologies. This was consistent with the approach we adopted in the 2011 WBA Charge Control.[59]

4.65 There are three elements to the HON adjustment, of which we propose to update the first and third, discussed in subsequent paragraphs:

- The Gross Replacement Cost (GRC): this is the costs of replacing the assets utilised in the network. This is discussed below at paragraphs 4.68 to 4.70;

[53] Ofcom, WBA Charge Control, Charge Control framework for WBA Market 1 Services, Statement, 20 July 2011. http://stakeholders.ofcom.org.uk/binaries/consultations/823069/statement/statement.pdf. (2011 WBA Charge Control Statement), paragraph 5.147.
[54] See BT, 2012 RFS, page 114.
[55] BT, 2013 RFS, page 116.
[56] Although this is a change in allocation methodology it was not a change for which restated results were reported within the October 2013 RFS Report.
[57] This will allocate a weighted average of approximately 11% of DSLAM costs to bandwidth services. This compares to the 25% of DSLAM costs we allocated to bandwidth in the 2013 WBA Consultation.
[58] See paragraphs A11.10 to A11.16 of the 2013 WBA Consultation.
[59] Ofcom, WBA Charge Control, Charge Control framework for WBA Market 1 Services, Statement, 20 July 2011. http://stakeholders.ofcom.org.uk/binaries/consultations/823069/statement/statement.pdf.

- NRC:GRC ratio (Net Replacement Cost: GRC): this reflects how much of the asset base has been depreciated. The lower the percentage, the greater the depreciation of the assets (and the longer the assets have been used). BT's assets are heavily depreciated and thus have a low reported NRC:GRC ratio. In the 2013 WBA Consultation we proposed to set the ratio at 50%; i.e. to increase the NRC. We are not proposing to change this proposal in this consultation, particularly as no stakeholders responded on this point to our July 2013 WBA Consultation; and

- Asset lives – this is the length of time we expect the assets to last. This is discussed below at paragraphs 4.71 to 4.75.

4.66 For this consultation we asked BT to provide data based on the 2012/13 restated costs in the October 2013 RFS Report so that we could update the adjustment. This data again showed that the mean capital employed and associated depreciation charge for certain key assets is significantly below that which would be expected in a steady state HON. BT also provided data that adjusted the mean capital employed and annual depreciation charge for these assets in accordance with the HON adjustments that were made in the 2011 WBA Charge Control Statement.[60] This data is summarised in Table 4.2 together with the adjustments that were made in the 2013 WBA Consultation.

Table 4.2: Summary of asset value adjustments

£ million	HON - 2012		HON - 2013			
	BT View		BT View		Ofcom Adjusted	
	Additional Depn Required	NRC/ MCE Uplift	Additional Depn Required	NRC/MCE Uplift	Additional Depn Required	NRC/ MCE Uplift
Construction, Asymmetric Digital Subscriber line(FAR)	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Asynchronous Transfer Mode	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Asynchronous Transfer Mode BT Wholesale	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Construction, Synchronous Digital Hierarchy	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
TOTAL	23	219	33	289	21	289

4.67 We undertook cross-checks on the HON adjustment data BT provided as part of our analysis of how BT allocates costs across different WBA markets (see paragraph 4.36). This analysis led us to request BT to revise the HON adjustment data it had originally submitted. Table 4.2 above shows BT's revised submission and our adjusted view to take account of increased asset lives.

[60] 2011 WBA Charge Control Statement, paragraphs 5.92 to 5.108.

GRC

4.68 The largest element of the adjustment is "Construction, Asymmetric Digital Subscriber Line". This relates to the capital costs of DSLAMs. BT deployed roughly [✂] more DSLAMs in Market 1 in 2012/13 than in 2011/12 primarily to meet increasing bandwidth requirements. This volume increase in DSLAMs explains most, but not all, of the increase in the adjustment for these assets. We are still investigating why the GRC for DSLAMs in Market 1 appears to have increased by more than [✂]. We will ensure that our HON adjustment data is correct for the final Statement but we believe it is unlikely to have a material impact on our final value of X.

4.69 For ATM and SDH assets the increases occur largely because of the change in the mix of the number of customers across WBA markets (see paragraph 4.36) and because it appears that a high proportion of non-DSLAM IPstream network costs are fixed. As the proportion of IPstream customers that are in Market 1/A increases so will the share of assets and those that are attributed to these markets. This leads to Market 1/A attracting a higher share of ATM and SDH assets, higher GRCs and NRCs and hence higher HON adjustments.

4.70 Our analysis leads us to believe that the GRCs and hence the NRCs and associated NRC uplifts in Table 4.2 above are not unreasonable despite, as noted above, still having some outstanding queries on the 2012/13 DSLAM GRC data.

Asset lives

4.71 In the light of consultation responses, in particular EE's comments, we have reviewed the asset lives that support this adjustment. In the 2013 WBA Consultation we adopted the same asset life adjustments detailed in Table 5.5 of the 2011 WBA Charge Control Statement.[61]

4.72 We are modelling a hypothetical ongoing network under an anchor pricing approach. We therefore need to estimate the physical life of the equipment: how long will the assets last before they can no longer be maintained. We are not estimating how long it is before BT might remove these assets because they are no longer required, for example on the grounds that they are to be replaced by newer technology.

4.73 We have analysed additional financial data supplied to us by BT as part of its regular annual RFS submission over the period 2006/07 to 2012/13. BT has supplied schedules showing the capital expenditure profile supporting the Gross Book Values (GBVs) for all of its major class of work (COW) asset categories. This profile also reflects any write-outs of assets that may have taken place, although we understand from BT that this generally only happens as part of a triennial asset verification exercise. The last such exercise took place in 2010/11. The next will take place in 2013/14.

4.74 Our analysis shows that:

- Some DSLAM assets that were installed in [✂] still formed part of the asset base in 2012/13. The same assets also formed part of the asset base in 2010/11, the time of the last triennial asset verification exercise. This suggests that the

[61] Ofcom, *WBA Charge Control, Charge Control framework for WBA Market 1 Services, Statement,* 20 July 2011. http://stakeholders.ofcom.org.uk/binaries/consultations/823069/statement/statement.pdf.

relevant physical asset life for DSLAM components could be at least 13 years and perhaps longer.

- Most ATM assets that were installed in [✂] still formed part of the asset base in 2012/13. The same assets also formed part of the asset base in 2010/11, the time of the last triennial asset verification exercise. Some ATM assets that continued in service beyond the last triennial review were [✂]. This suggests that the relevant physical asset life for ATM assets is at least 13 years and perhaps longer.

- Over half of the SDH assets that were installed in [✂] still formed part of the asset base in 2012/13. The same assets also formed part of the asset base in 2010/11, the time of the last triennial asset verification exercise. Some SDH assets that continued in service beyond the last triennial review were [✂] old. This suggests that the relevant physical asset life for SDH assets is at least 13 years and perhaps longer.

4.75 This analysis provides strong evidence to suggest that we should increase the asset lives of the components used in the HON adjustment. In this consultation we are therefore proposing to increase the lives as shown in Table 4.3 below. There is some evidence that longer asset lives may be appropriate but the assumptions below represent in our judgment a balanced view based on the evidence we have reviewed to date. Table 4.4 below includes the impact of assuming the asset lives set out in Table 4.3 below.

Table 4.3: Asset life assumptions for use in the HON adjustment

Asset	2013 WBA Consultation	This Consultation
DSLAMs	10 years	13 years
ATM	10 years	13 years
SDH	13 years	13 years

Summary of proposals

4.76 We propose the following amendments to our charge control proposals:

- We propose to use 2012/13 as the base year for cost modelling purposes but to exclude all BT's new allocation methodologies set out in its 2013 RFS;

- We propose to make some adjustments to the costs SG&A Broadband and ATM Network Interface, Switching and Transmission as set out in the October 2013 RFS Report;

- We propose to update our one-off non recurring cost adjustments;

- We propose to update our market size adjustment;

- We propose to accept BT's 2013 RFS DSLAM cost allocation data; and

- We propose to make a similar HON adjustment to that which we made in the 2013 WBA Consultation but we have proposed new asset lives.

4.77 The table below summarised all the adjustments that we have made to the costs as reported in the October 2013 RFS Report.

Table 4.4: The effect of the proposed adjustments on operating costs and mean capital employed (MCE)

WBA Charge Control Adjusted base year input costs	Operating costs	MCE
October 2013 RFS Report	242,999	496,465
Proposed 2013 HON adjustment	[✂]	[✂]
Other CCA one-off adjustments in RFS	[✂]	
Correct SG&A allocation	[✂]	[✂]
Correct ATM allocation	[✂]	[✂]
BASE YEAR INPUT COSTS	262,889	778,081

Section 5

21CN costs

Introduction

5.1 BT's 2013 RFS, with the publication of WBC costs, reveal additional information on component costs, including that some 21CN-related costs[62] have been included in the IPstream cost stack. Our 2013 WBA Consultation proposals also included these 21CN-related costs, because our charge control model was based directly on RFS data.[63]

5.2 In this section we set out our proposals on the exclusion of 21CN costs from the charge control model.

5.3 This section is structured as follows: we first summarise the proposal made in the 2013 WBA Consultation; we then set out the consultation responses received, and finally we set out our proposal for this consultation.

2013 WBA Consultation

Our proposals

5.4 Our proposed charge control model is based on an anchor pricing approach in which we assume that all BT's customers would be supplied via existing ADSL technology, as delivered currently via BT's IPstream services. However, our proposed charge control model used the reported 2012 RFS costs for IPstream.

5.5 BT has explained that newer technology component costs (i.e. 21CN cost components) are also allocated to legacy services (including IPstream) on a 'future benefits' cost allocation principle. BT has explained that generally IPstream services do not currently utilise 21CN assets (MSAN and Ethernet).[64] IPstream uses DSLAMs and ATM switching and SDH assets to deliver broadband access.

Consultation responses

5.6 The inclusion of 21CN costs in the charge control model was not an issue that we consulted on in the 2013 WBA Consultation. It has come to light following the publication of the 2013 RFS. However, EE noted that it would be inconsistent with Ofcom's anchor product pricing approach to allocate any costs associated with stranded assets or 21CN transitional costs (in relation to paragraph A11.22 of the 2013 WBA Consultation).

[62] BT's next generation network upgrade.
[63] 21CN costs were not included in the 2011 WBA Charge Control. The cost model estimated how much it would cost to provide WBA services using DSLAMs, ATM switching and SDH technology. It did not model and therefore excluded costs for MSANs and Ethernet backhaul.
[64] Until 2012/13 IPstream bandwidth services have been provided via ATM/SDH assets and not Ethernet. BT has stated that this may change in 2013/14. BT has told us that some Core Director assets that were originally deployed to support 21CN services will be used to replace the ATM switching network.

BT's reported costs

5.7 The October 2013 RFS Report provides a breakdown of the component costs for IPstream and WBC. This is replicated in Table 5.1 below.

5.8 BT has explained that under its 'future benefits' principle it allocates costs relating to new 21CN technology to legacy services such as IPstream on the basis that they might replace these legacy technologies in the future. This is based on the idea that customers who currently use legacy services will benefit from investments in new 21CN technology once they switch to services based on the new technology.

5.9 BT's justification of its 'future benefits' principle is as follows[65]:

> "We would expect 20CN products (for example, IPstream) to migrate to 21CN (for example, WBC) in the future and it is reasonable for these 20CN products, which will eventually use 21CN, to absorb a pro-rata share of the 21CN costs."
>
> "This approach sends the right signal for customers to migrate from 20CN to 21CN. As the 21CN costs are spread across both 20CN and 21CN products, the early adopter of 21CN is not penalised. If legacy products did not incur 21CN costs, early adopters would pick up the cost of initial spare capacity disincentivising migration to 21CN. When migration is fully complete, resulting in a fully loaded 21CN platform, the unit cost would no longer be distorted upwards by capacity earmarked for migrating 20CN volumes and this avoids step changes in the costing of 21CN products."

5.10 The 21CN costs allocated to IPstream account for approximately 30% of the total component cost stack of IPstream (Rentals and Bandwidth) used within our charge control model. The figures in red in Table 5.1 below are the 21CN component costs allocated to External IPstream services. Internal IPstream services have very similar, and in most cases, identical component unit costs.

Table 5.1: A summary of 2012/13 component costs for IPstream and WBC rental and bandwidth services[66]

Fully Allocated Cost (£)	External IPstream Connect End user access Rentals Mkt 1	External IPstream Connect Bandwidth Mkt 1	External WBC end user access- Rentals Mkt 1	External WBC BW - Revenues Mkt 1
Components				
Broadband line testing systems	£1.99	-	£1.96	-
ADSL connections	-	-	-	-
Combi Card Broadband Access	£20.08	-	£20.08	-
ATM customer interface 2Mbit/s	-	£0.01	-	-
ATM customer interface 34Mbit/s	-	£0.08	-	-

[65] BT's response to response to s.135 notice of 16 January 2014.
[66] October 2013 RFS Report, Page 101.

Fully Allocated Cost (£)	External IPstream Connect End user access Rentals Mkt 1	External IPstream Connect Bandwidth Mkt 1	External WBC end user access- Rentals Mkt 1	External WBC BW - Revenues Mkt 1
ATM customer interface > 155Mbit/s	-	£1.07	-	-
ATM network interface	-	£0.47	-	-
ATM network switching	-	£2.75	-	-
Inter ATM transmissions	-	£11.09	-	-
21CN Backhaul Link & Length	-	£4.19	-	£4.19
Core/Metro (broadband)	-	£9.47	-	£9.47
SG&A Broadband (q)	£5.59	£7.89	£5.14	£3.15
Broadband backhaul circuits (excl Virtual Paths) (q)	-	£16.31	-	-
Edge Ethernet ports (q)	-	£0.61	-	£0.61
Core/Metro connectivity (q)	-	-	-	-
DSLAM capital/maintenance (q)	£44.69	£11.11	-	-
EOI Notional Creditors (ap)	(£0.15)	(£0.04)	(£0.11)	(£0.03)
Fully Allocated Costs (£)	**£72.20**	**£65.01**	**£27.07**	**£17.39**

5.11 Table 5.1 above shows the difference between the total unit costs of IPstream and WBC as allocated in its RFS.

5.12 IPstream service costs also include EOI charges[67] for some 21CN services. Table 5.2 below shows a breakdown of the EOI charges reported in both the 2013 RFS and October 2013 RFS Report for end-user rentals and bandwidth services. Figures in red are charges for 21CN services.

Table 5.2: A summary of EOI charges for IPstream Rental and Bandwidth services in 2012/13

	Relevant Charge Control	EOI price	Volume	EOI Charge (P x V)
Rental EOI charges				
SMPF rentals	LLU/WLR	£11.92	1,801,382	£21.5m
DSLAM grooming (Tie Pair Modification)	LLU/WLR	[✂]	[✂]	[✂]
20CN Tie Cables	LLU/WLR	[✂]	[✂]	[✂]
Special Fault Investigations	LLU/WLR	[✂]	[✂]	[✂]
21CN Tie Cables	LLU/WLR	[✂]	[✂]	[✂]
Sub-total Rental EOI charges				£46.3m

[67] See section 6 for an explanation of EOI charges.

	Relevant Charge Control	EOI price	Volume	EOI Charge (P x V)
Bandwidth EOI charges				
Ethernet (21CN backhaul)	BCMR	[✂]	[✂]	[✂]

5.13 Table 5.2 shows that a significant amount ([✂]) of rental EOI charges in 2012/13 were 21CN costs. EOI charges are discussed in more detail in paragraphs 6.3 to 6.12 below.

We have assessed BT's arguments

5.14 We have considered BT's arguments with respect to 21CN costs but, for the reasons set out below, have provisionally concluded that it is not appropriate to accept BT's arguments. In particular, we have considered:

- The extent to which customers in Market A will migrate to 21CN technology. It is not clear that Market A customers will migrate to 21CN technology, as BT suggested.
- Whether the future benefits principle is consistent with our anchor pricing approach. It is not consistent with an anchor pricing approach because it means that customers in Market A may be made worse off as a result of BT's decision to use the new technology. In addition, it does not deny BT the ability to recover costs of 21CN investment where this is more efficient in the long run.
- Whether we should include those aspects of 21CN technology which are being used to deliver IPstream. If we did include 21CN costs, we should adjust our model to exclude corresponding 20CN costs. However, it is not clear that 21CN technology is the most efficient way to deliver IPstream, as it may deliver a higher quality than is necessary for that product. We therefore propose to exclude these 21CN costs.

5.15 For these reasons we do not consider it appropriate to include 21CN costs in our charge control model. We expand on each of the above points below.

Extent to which customers in Market A will migrate to 21CN technology

5.16 BT justifies its allocation of 21CN costs to IPstream services on the basis that customers of 20CN products will eventually benefit from 21CN technology. However, it is not clear to us that all IPstream customers will eventually use 21CN products and in particular, it is not certain that WBC will be rolled out to all of Market A.

5.17 Customers who do not use a service should not be required to contribute towards its costs. This would be contrary to our principles of cost recovery.[68] Specifically, it is

[68] In general, Ofcom's decisions on the recovery of costs are guided by six general principles:
• cost causation – costs should be recovered from those whose actions cause the costs to be incurred at the margin;
• distribution of benefits – costs should be recovered from the beneficiaries, especially where there are externalities;
• effective competition – the mechanism for cost recovery should not undermine or weaken the pressures for effective competition;

counter to the principle of cost causation, which says that costs should be recovered from those whose actions cause the costs to be incurred at the margin. It is also counter to the principle regarding the distribution of benefits, which states that costs should be recovered from the beneficiaries of a service.

Consistency with anchor pricing approach

5.18 The inclusion of 21CN costs is also contrary to the principles underlying our anchor pricing approach. Our reasons for adopting an anchor pricing approach are set out in our 2013 WBA Consultation (paragraphs 7.108-7.118). We explained at paragraphs 4.23 and 4.24 above that under anchor pricing, the price of existing services is 'anchored' by the legacy technology and that it has good incentive properties.

5.19 An anchor pricing approach assumes that all BT's customers in Market A are supplied via existing ADSL technology, as delivered currently via BT's IPstream services. We have proposed a hypothetical on-going network (HON) adjustment. By this we mean we have proposed modelling BT's current network, which is based on DSLAM and ATM/SDH technologies, as though it were to continue to serve the whole of Market A throughout the period of the control. The HON adjustment adds costs to the input costs used in the charge control model. These additional costs represent equipment that BT would need to purchase in order to continue to maintain the 20CN network for the duration of the control period.

5.20 BT may actually deliver the regulated service using WBC. This could be because this is more cost effective for BT, or because consumers are willing to pay more for the extra functionality provided by WBC services. As noted above, consumers would not be made worse off, however, since they would still have the choice of buying the regulated service at the price they would have faced had BT continued to use IPstream to deliver this service.

5.21 Adding the costs of 21CN technology to those 20CN costs actually required to deliver IPstream services means this would no longer be true. This would increase the costs to be recovered from IPstream customers in Market A and so has the potential to make Market A customers worse off. As explained above, if WBC is never rolled out in Market A, customers in Market A would be paying for something they will never receive and so will certainly be worse off. Similarly, even if BT does eventually rollout WBC to Market A, customers may be made worse off if they are required to pay higher prices to cover the costs of 21CN technology, even if they do not value the increased functionality that WBC provides.

5.22 Excluding BT's 21CN costs from our charge control will not deter efficient investment in WBC. This is because if WBC investment is efficient then BT should benefit from either lower costs, or increased revenues (to the extent that consumers are willing to pay more for the increased functionality allowed by WBC services).

• cost minimisation – the mechanism for cost recovery should ensure that there are strong incentives to minimise costs;
• reciprocity – where services are provided reciprocally, charges should also be reciprocal; and
• practicability – the mechanism for cost recovery needs to be practicable and relatively easy to implement.
These principles were endorsed by the Monopolies and Mergers Commission (MMC) in their 1995 report on number portability - Telephone Number Portability: A report on a reference under s13 of the Telecommunications Act 1984 (MMC, 1995)).

Efficient costs of IPstream

5.23 BT has told us that IPstream customers may benefit from some of the 21CN network components even if they do not migrate to WBC. In particular, BT told us that the 'Core Directors' are now being used to deliver IPstream and will shortly replace the current ATM switches.[69]

5.24 We wish to model the forward looking costs of supplying IPstream services. If either 21CN or 20CN technology can, in principle, be used to deliver IPstream, we should model whichever is the more efficient. But this is not necessarily 21CN. It may also be that Core Directors provide additional functionality not needed for the delivery of IPstream.

5.25 However, as explained above, we have modelled costs on the basis of an on-going 20CN network, including a HON adjustment. It would therefore be wrong to add in the costs for the use of 21CN technology, as this would duplicate the functionality already provided by the 20CN assets.

5.26 We should only be including the costs of 21CN assets, and in particular Core Directors, if it was more efficient to do so. That would be if the additional costs were more than offset by removing the costs associated with the assets they were replacing, including reducing the HON adjustment.

5.27 Making the simple adjustment of removing the identified 21CN costs is in keeping with our simple modelling approach adopted for this charge control in the absence of such a cost analysis.[70]

Summary of proposal

5.28 We propose to make an adjustment to the base year input costs used in our charge control model to ensure it only includes costs relevant to the 20CN technology we are modelling with our HON. This means we need to exclude all costs associated with 21CN technology. This involves making two adjustment to the base year input costs:

- The first removes all direct IPstream costs relating to 21CN components that BT has allocated using a future benefits basis to the WBA cost stack.
- The second removes all Openreach charges relating to 21CN components that have been allocated to IPstream services using a future benefits basis.[71]

5.29 The table below summarised all the adjustments that we have made to the costs as reported in the October 2013 RFS Report.

[69] A core director allows the switching of internet protocol traffic carried over the network. In its presentation WBA Consultation, BT meeting with Ofcom, 12 August 2013, BT stated that Core Directors will replace the functionality of ATM / MSIP equipment to switch traffic carried over the BT Core network (see page 18).
[70] 2013 WBA Consultation, Paragraphs 7.104 to 7.107.
[71] We explained in paragraph A12.18 in Annex 18 of the 2013 WBA Consultation that we are seeking to control WBA costs excluding EOI charges. We therefore removed all EOI charges from the model's base year revenues and costs. To implement this second change we have therefore removed all EOI charges from the base costs as we did previously but have excluded all non future benefit related EOI charges from the revenues.

Table 5.3: The effect of the proposed adjustments on Operating costs and mean capital employed (MCE)

WBA Charge Control Adjusted base year input costs	Operating costs	MCE
BASE YEAR INPUT COSTS (from Section 4)	262,889	778,081
Removal of relevant 21CN costs	[✂]	[✂]
Removal of EOI costs	[✂]	[✂]
BASE YEAR INPUT COSTS	164,726	661,112

Section 6

Other changes

Introduction

6.1 This section includes the remaining issues being proposed under this consultation. In this section we set out:

- amendments to the treatment of EOI charges in the compliance formulae;
- proposals in relation to a carry-over provision;
- amended proposals in relation to cease, migration and connection charges;
- the correction of a weight average bandwidth price in the charge control model; and
- the need for further consideration of the operating cost efficiency assumption.

6.2 As in the above sections, in relation to each proposal we firstly summarise the proposal made in the 2013 WBA Consultation; we then set out the consultation responses received, and finally we set out our proposal for this consultation.

EOI charges in the compliance formulae

2013 WBA Consultation

Our proposals

6.3 BT is structured in such a way that its upstream division (Openreach) provides inputs when delivering its WBA services. Some of these Openreach inputs are services that are themselves subject to a charge control. These charge controlled input costs from Openreach are referred to as "EOI charges" in BT's RFS.[72]

6.4 The WBA charge control aims to "control" WBA costs excluding EOI charges. In our model for the 2013 WBA Consultation we therefore removed all EOI charges for our modelled services from both the costs and revenues.[73] We proposed that the treatment of EOI charges should be consistent in both the cost modelling and in the compliance formulae.

6.5 In our 2013 WBA Consultation we noted that BT's reporting of EOI charges is evolving and that we would need to consider how EOI charges should be reflected in the compliance formulae in the relevant legal instrument. We requested stakeholders' views on this point in their responses to the consultation.

[72] For example page 112 of BT's 2013 RFS shows EOI input unit costs for various services in WBA Market 1 in 2012/13.
[73] See paragraph A12.18 in Annex 12 of 2013 WBA Consultation.

Consultation responses

6.6 No respondents commented on how EOI charges should be reflected in the compliance formulae.

We propose changes to the compliance formulae to reflect relevant EOI charges

6.7 As part of our investigation of 21CN costs we asked BT to provide further details on its EOI charges. We summarised the EOI charges for the services we have modelled in Table 5.2. This shows that the extent of EOI charges reported by BT is now much greater than at the time of the 2011 WBA Charge Control Statement. In addition, BT's 2012 RFS and 2013 RFS report EOI charges for various other ancillary services.

6.8 In paragraph 5.28 we proposed that it was not appropriate to include 21CN-related EOI charges in the cost stacks for WBA services. The removal of these charges means there are no EOI charges that we consider should be reflected in the compliance formulae for bandwidth services. However for end-user rentals services Table 5.2 shows that in addition to BT Openreach EOI charges for Single Metallic Path Facility (SMPF) rentals[74] that were included in the 2011 WBA Charge Control BT's RFS now reports EOI charges (not related to 21CN costs) for:

- 20CN Tie cables: these connect BT's DSLAM to the MDF in an exchange. The costs of these are not included in the regulated charges for SMPF. In 2012/13 on average one tie cable was required for [✂] end-user connections in Market 1.

- Tie Cable Modifications: these are required to move connections from one DSLAM to another in the same exchange for capacity management purposes. Table 5.2 shows that in 2012/13 there were just over [✂] tie cable modifications on an average rental base of [✂] end-users.

- Special Fault Investigations that relate to end-user rental services. (There are other special fault investigations related to some ancillary services). In 2012/13 there were around [✂] such investigations.

6.9 As proposed in our 2013 WBA Consultation, the above EOI charges should be excluded from our charge control. They are subject to separate charge controls[75] and therefore should be removed from the costs and revenues covered by this charge control.

6.10 However, this also needs to be reflected in the compliance formulae. The charge control seeks to control revenues net of EOI charges. The compliance formulae published in our 2013 WBA Consultation therefore calculated, for each WBA service, the difference between the average annual price for that service and the average annual EOI charge for any inputs to that service which were subject to a separate charge control. However the formulae also implicitly assumed there was at most one input EOI service charge for each WBA controlled basket service. That is no longer

[74] Shared metallic path facility (SMPF)/shared access is the provision of access to the copper wires from the customer's premises to a BT MDF that allows a competing provider to provide the customer with broadband services, while the dominant provider continues to provide the customer with conventional narrowband communications.

[75] Those charge controls are currently being reviewed as part of our Fixed Access Markets Review.

true as the IPstream end-user rentals product now has four input EOI services with different volumes consumed of each EOI input service.

6.11 In the draft charge control condition in Annex 8 we have therefore proposed an amendment to the compliance formulae so that it is explicit what the calculations should be when there are multiple input or EOI services. This amendment calculates the weighted average EOI charge for a WBA service using prior year volumes. The draft charge control condition also specifies the relevant EOI input services for each charge controlled WBA product.

6.12 We have also considered the EOI charges for the basket services we are proposing to charge control but that are not included within the cost model, for example connections. The other significant EOI charge is for SMPF connections. This is the EOI charge for end-user connection services. We include this EOI charge in the compliance formula (this means for the purposes of compliance it is excluded from the WBA compliance revenue). The remaining charges are relatively small and we are not proposing to include these within the compliance formulae.

Carry-over provisions

2013 WBA Consultation

Our proposals

6.13 We did not consider a carry-over provision in the 2013 WBA Consultation. A similar provision to this has been included or proposed in other recent charge controls proposed on BT including the September 2013 Fixed Narrowband Statement.[76]

Consultation responses

6.14 No respondents commented on this issue.

We propose the inclusion of a carry-over provision within the legal instrument

6.15 Symmetrical carry-over provisions remain appropriate (i.e. symmetrical with respect to whether the control is exceeded or whether BT charges below the cap). However, we propose to modify the carry over provision to remove an interpretation risk that could have allowed greater price increases than intended under the control.

6.16 Although the carry-over provision proposed in our 2013 WBA Consultation would return charges in the relevant period to the compliant level determined by the charge control (in the event that BT charged in excess of the cap in the prior year), it would not allow for recovery of the excess revenue earned by BT from charging in excess of the cap in a prior year. This raises a potential risk that BT could earn excess revenues over the course of the next charge control period and that other CPs (and ultimately consumers) face higher prices than intended under the charge control. We should address this risk.

6.17 We propose to require BT to make repayments to other affected CPs (as soon as is reasonably practicable) in the event that it charges in excess of the cap in any given year.[77] We have included this provision in the draft legal instrument.

[76] See paragraphs 11.70-11.73 of Ofcom, *Review of the fixed narrowband services markets, Statement on the proposed markets, market power determinations and remedies*, 26 September 2013, http://stakeholders.ofcom.org.uk/consultations/nmr-13/statement/

Cease charges

2013 WBA Consultation

Our proposals

6.18 In the 2013 WBA Consultation we proposed that the cease charge should continue to be set to £0, consistent with the 2011 WBA Charge Control. However, under the 2011 WBA Charge Control only IPstream Connect Max and Max Premium cease charges were set to £0. BT currently charges for cessations from other variants of IPstream within Market 1 (for example IPstream Connect Home and IPstream Connect Office cessations are £5.41) and WBC cessations are £5.41 in Market 1.[78] It is therefore necessary to clarify whether these cease charges should be set at zero.

Consultation responses

6.19 Respondents either did not comment (BT, KCOM) or agreed with our proposal (EE, VM, TT) on cease charges, except for [✂].

6.20 [✂] argued that it is unclear where the forgone cost recovery is being taken from and that if it is from anything other than the equivalent connection, then Ofcom should check if this is a case of cross subsidy.

We propose to change the definition of cease charges that are to be set to £0

6.21 We propose to keep cease charges to a minimum for all services offered within Market A, in order to keep down the cost of switching between operators. Cease charges (rather than other switching charges) are more likely to be passed directly on to retail customers than charges which are related to customers joining a CP. We also believe that cease charges for other products offered by BT in Market A should also be set to £0.[79]

6.22 Costs incurred to cease WBA services (regardless of the product being ceased) are generally only data changes to BT's systems. These will require minimal or no marginal activity on the part of BT, although in some cases Openreach may be required to remove some jumpers that support the underlying SMPF service. The costs incurred by BT, other than any charges levied by Openreach, will therefore also be minimal. In addition, any cease costs incurred by BT (other than charges levied by Openreach) may then be recovered through other charges inside the charge control basket.

6.23 We therefore propose to amend the definition of cease charges in the proposed charge control condition as set out in the draft legal instrument in Annex 8 of this

[77] BT could comply with this obligation by, for example, issuing credit notes.
[78] BT IPstream Connect, Price List, https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Part_8_BT_IPstream_Connect/index.htm and BT Wholesale Broadband Connect, Price List https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Part_7_BT_Wholesale_Broadband_Connect__WBC_/index.htm
[79] In the 2013 WBA Consultation we proposed that where IPstream Max and Max Premium are withdrawn in Market A, consumers should not be made worse off by the removal of these products. In this situation we proposed that BT should provide an equivalent (or better) product to IPstream at a price that complies with the charge control (see paragraph 7.64).

consultation. For the avoidance of doubt, we are proposing that cease charges for all WBA products provided in Market A be set to £0. This therefore includes cease charges for all variants of IPstream (including IPstream Connect Home and IPstream Connect Office) and WBC services or any equivalent product offered by BT in Market A.

Migration and connection charges

2013 WBA Consultation

Our proposals

6.24 In the 2013 WBA Consultation we proposed to include migration and connection charges in the control basket and proposed individual sub-caps on the charges of CPI + (X + 6). Migration and connection charges were defined as under the 2011 WBA Charge Control.

6.25 Under the 2011 WBA Charge Control, only migration charges from IPstream Connect to IPstream Connect and other products (for example to WBC) within Market 1 were controlled. Migration charges from WBC services to other products and other migration charges within Market 1 were not controlled by the charge control. In addition, only BT's connection charges for IPstream Connect Max and Max Premium within Market 1 were controlled. Connection charges for WBC services and other connection charges within Market 1 were not controlled by the charge control.

Consultation responses

6.26 TT believed that the approach and assumptions used by Ofcom should be aligned with those used in the LLU/WLR charge control such that migrations and connection should be priced at their LRIC cost.

6.27 [✂] stated that Ofcom should consider how it promotes switching and the wholesale costs of service migration and it argued that the high cost of switching from LLU provides a form of "capture" of such customers by LLU providers.

We propose to retain our 2013 WBA Consultation proposals in relation to migration and connection charges

6.28 We have considered whether all migration and connection charges within Market A should be controlled and subject to the relevant sub-caps (in addition to the charges for migrations from IPstream Connect Max and Max Premium to other products within Market A and for the connection of IPstream Connect Max and Max Premium within Market A).

6.29 BT currently charges £11 for a migration from IPstream Connect Max or Max Premium (or £0 for a bulk migration). It also charges £11 for a migration from WBC services to other services within Market 1 (or £0 for a bulk migration).[80] In addition, BT currently charges £37.29 for a connection to IPstream Connect Max or Max

[80] BT IPstream Connect, Price List, https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Part_8_BT_IPstream_Connect/index.htm and BT Wholesale Broadband Connect, Price List https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Part_7_BT_Wholesale_Broadband_Connect__WBC_/index.htm

Premium.[81] Connections to WBC are £39.79.[82] Reported relevant revenues are relatively small, with net revenues of just over [✂] for both migration charges and connection charges in 2012/13.[83]

6.30 In the 2013 WBA Consultation we proposed that where BT provides services not directly controlled by the charge control in Market A (for example WBC or an equivalent product offered in the situation where IPstream Connect Max and Max Premium have been withdrawn from the market), these services will be subject to the obligation that they are provided on fair and reasonable terms and conditions, including charges. In the July 2013 Consultation we proposed that where IPstream Max and Max Premium are withdrawn in Market A, consumers should not be made worse off by the removal of these products. In this situation we proposed that BT should provide an equivalent (or better) product to IPstream at a price that complies with the charge control (see paragraph 7.64). This principle should also extend to all relevant ancillary charges provided within Market A. The activities required to migrate customers from WBC services are broadly the same as those required to perform migrations from and to IPstream Connect. We therefore believe that the WBC migration charge in Market A should be similar to the IPstream Connect Max and Max premium migration charge.

6.31 An IPstream Connect **migration** involves both a change of records and network re-configuration/re-routing. The IPstream Connect migration charge of £11 has been at this level since 2004 when it was determined by Ofcom as part of a dispute. This cost level was based on Ofcom's assessment of an efficient level of costs for such a migration.[84] In the 2011 WBA Charge Control Statement we imposed an RPI-0% sub cap on this migration charge and noted that given the current level of these charges, an RPI-X control was not needed to bring these charges into line with their costs.[85]

6.32 Of the IPstream Connect Max or Max Premium **connection** charge, 90% of the charge is the EOI charge (a charge from Openreach). We note that this Openreach charge is currently under consideration as part of the 2013 LLU WLR Charge Control Consultation.

6.33 We therefore do not believe that it is proportionate or necessary to perform further detailed analysis in relation to the cost of migrations or connections for this review period. The risk of regulatory failure, namely that the regulatory constraint on migration and connection charges is set at an inappropriate level, is low. As set out above, the current migration charge of £11 and the connection charge of £37.29 are likely to be broadly appropriate in relation to cost. Equally, any adverse effects from

[81] BT IPstream Connect, Price List, https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Part_8_BT_IPstream_Connect/index.htm
[82] BT Wholesale Broadband Connect, Price List, https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Part_7_BT_Wholesale_Broadband_Connect__WBC_/index.htm
[83] Latest provisional compliance report, Email from BT to Ofcom dated 29 November 2013, 11.38, Subject: WBA Compliance Statement update
[84] Paragraph 1.7 and Section 3, Ofcom, *Direction concerning ADSL Broadband Access Migration Services; and a Determination to resolve a dispute between Tiscali, Thus and BT concerning ADSL Broadband Access Migration Services - Final Statement*, 9 August 2004, www.stakeholders.ofcom.org.uk/binaries/consultations/bam/statement/statement.pdf.
[85] See Table 1.1 and paragraph 5.15, Ofcom, *WBA Charge Control – Statement*, 20 July 2011, www.stakeholders.ofcom.org.uk/binaries/consultations/823069/statement/statement.pdf.

errors in setting regulated charges are likely to be small, and smaller than adverse effects from leaving these charges uncontrolled.

Weighted average bandwidth price

2013 WBA Consultation

Our proposals

6.34 In our 2013 WBA Consultation we included in our model a price for bandwidth of £64.05 in July 2013, on the basis of information supplied by BT.

Consultation responses

6.35 BT stated that Ofcom should correct the weighted average bandwidth price over the period 1 April 2013 to 31 March 2014 from £70.61 to £68.55 to take into account the reduction in bandwidth price to £61.30 in July 2013 (Ofcom used £64.05).

We propose to amend a pricing error identified in the charge control model

6.36 Having reviewed BT's Price List, we have corrected this error in the revised model.

Operating cost efficiency improvements

2013 WBA Consultation

Our proposals

6.37 In the 2013 WBA Consultation, we proposed a "low" efficiency assumption of 3.5% per annum and a "moderate" efficiency assumption of 5% per annum. Our base case assumption assumed efficiency gains of 5%.

Consultation responses

6.38 BT, [✂], TT and EE all commented on our efficiency target proposals. These respondents provided differing views on the appropriate target, which will be set out in our statement.

We propose to review further data from BT on efficiency improvements

6.39 Further to BT's response to the 2013 WBA Consultation, BT has submitted further evidence relating to potential efficiency improvements in response to a section 135 request. We are in the process of considering this data together with the responses to the 2013 WBA Consultation.

6.40 Given the need to reassess the proposed efficiency target we therefore propose to model for the purposes of this consultation both the low efficiency assumption of 3.5% and the moderate efficiency assumption of 5% per annum proposed in the 2013 WBA Consultation.[86] For this consultation, we do not have a single base case efficiency assumption.

[86] See paragraph 7.138.

Summary of proposals

6.41 We propose the following amendments to our charge control proposals:

- We propose changes to the compliance formulae to reflect relevant EOI charges;
- We propose the inclusion of a carry-over provision within the legal instrument;
- We propose to change the definition of cease charges that are to be set to £0;
- We propose to retain our 2013 WBA Consultation proposals in relation to migration and connection charges;
- We propose to amend a pricing error identified in the charge control model; and
- We propose to review further data from BT on efficiency improvements.

Section 7

Calculating the value of X

The value of X is between CPI -8.7% and CPI -15.2%

7.1 We have used the revised WBA model to calculate a revised X range. Table 7.1 below summaries the proposed adjustments and the effect on the X range.

7.2 As in the 2013 WBA Consultation, we have not selected a single volume scenario, but have used the same range of plausible assumptions of high to low volumes consulted upon in the 2013 WBA Consultation to generate a range of X for this consultation.

Table 7.1: Summary of proposed adjustments and the effect on the X range

Proposed adjustment	X range
2013 WBA Consultation range	-7.0% to -1.0%
Correcting a pricing error identified in the previous charge control model	-6.3% to +0.1%
Updating the base year to 2012/13* (excluding BT's new 2013 RFS allocation methodologies but including updating the HON adjustment)	-7.4% to -0.8%
Excluding all 21CN costs (including EOI charges)	-15.2% to -9.3%
Allowing for the further review of data on efficiency improvements	-15.2% to -8.7%
Our proposed X range	**-15.2% to -8.7%**

7.3 We are therefore consulting on a revised range of X of -8.7% to -15.2% with a central case of -12.3% (medium volume and an efficiency target of 5%).

7.4 Based on the policy proposals and financial modelling explained in the 2013 WBA Consultation and adjusted as set out in this consultation, Table 7.2 below sets out the revised proposals for the WBA charge control for the period 2013/14 to 2016/17.

Table 7.2: Summary of the charge control proposals[87]

Basket	Services within scope	Main control	Sub-caps
IPstream Connect	IPstream Connect Max and Max Premium (up to 8Mbit/s) End User Access – Connection	CPI + X, where X is between -15.2% to -8.7%	
	IPstream Connect Max and Max Premium (up to 8Mbit/s) End User Access – Rental		CPI +(X + 6)
	IPstream Connect Max and Max Premium (up to 8Mbit/s) End User Access - IPstream Connect EU bandwidth charge per month		
	IPstream Connect Contracted Bandwidth per Mbit/s per node rental		CPI +(X + 3)
	IPstream Connect End User Re-grade		CPI +(X + 6)
	IPstream Connect End User Migration[88]		CPI +(X + 6)
	IPstream Connect ADSL Cancellation		CPI +(X + 6)
	IPstream Connect Communication Provider (CP) Handover		
	IPstream Connect 20C Interconnect Links 1Gbit/s and 10Gbit/s		
Cease	End User Cease Services: i.e. any service required to disconnect an end user in Market A from any wholesale broadband access product provided in Market A	Cease charge set to £0	

[87] This table refers to the services as currently being named in Section 44: Wholesale Broadband Services, Part 8: BT IPstream Connect of BT Wholesale's website (https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Part_8_BT_IPstream_Connect/index.htm). The description of services included in the charge control is in Annex 6.
[88] IPstream Connect End User Migration is also known as IPstream Connect End User Transfer.

Annex 1

Responding to this consultation

How to respond

A1.1 Ofcom invites written views and comments on the issues raised in this document, to be made **by 5pm on 10 March 2014**.

A1.2 Ofcom strongly prefers to receive responses using the online web form at http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 3), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.

A1.3 For larger consultation responses - particularly those with supporting charts, tables or other data - please email WBA2014@ofcom.org.uk attaching your response in Microsoft Word format, together with a consultation response coversheet.

A1.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.

Kate Walters
4th Floor
Competition Group
Riverside House
2A Southwark Bridge Road
London SE1 9HA

Fax: 020 7783 4109

A1.5 Note that we do not need a hard copy in addition to an electronic version. Ofcom will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.

A1.6 It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together at Annex 4. It would also help if you can explain why you hold your views and how Ofcom's proposals would impact on you.

Further information

A1.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Kate Walters (020 7783 4205) or Steven Ball (020 7981 3379).

Confidentiality

A1.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk, ideally on receipt. If you think your response should be kept confidential, can you please specify what part or whether

all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.

A1.9 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.

A1.10 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's approach on intellectual property rights is explained further on its website at http://www.ofcom.org.uk/about/accoun/disclaimer/.

Next steps

A1.11 Following the end of the consultation period, Ofcom intends to publish a statement in spring 2014.

A1.12 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/static/subscribe/select_list.htm

Ofcom's consultation processes

A1.13 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.

A1.14 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.

A1.15 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Graham Howell, Secretary to the Corporation, who is Ofcom's consultation champion:

Graham Howell
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Tel: 020 7981 3601

Email Graham.Howell@ofcom.org.uk

Annex 2

Ofcom's consultation principles

A2.1 Ofcom has published the following seven principles that it will follow for each public written consultation:

Before the consultation

A2.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

During the consultation

A2.3 We will be clear about who we are consulting, why, on what questions and for how long.

A2.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened Plain English Guide for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We will consult for up to 10 weeks depending on the potential impact of our proposals.

A2.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. Ofcom's 'Consultation Champion' will also be the main person to contact with views on the way we run our consultations.

A2.7 If we are not able to follow one of these principles, we will explain why.

After the consultation

A2.8 We think it is important for everyone interested in an issue to see the views of others during a consultation. We would usually publish all the responses we have received on our website. In our statement, we will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

Annex 3

Consultation response cover sheet

A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, www.ofcom.org.uk.

A3.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.

A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.

A3.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at www.ofcom.org.uk/consult/.

A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

Please tick below what part of your response you consider is confidential, giving your reasons why

Nothing ☐

Whole response ☐

Part of the response ☐

Name/contact details/job title ☐

Organisation ☐

If there is no separate annex, which parts?

If you want part of your response, your name or your organisation not to be published, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here. ☐

Name

Signed (if hard copy)

Annex 4

Consultation question

Question 1 - *Do you agree with Ofcom's proposal to use 2012/13 as the base year but to exclude all BT's new allocation methodologies set out in its 2013 RFS?*

Question 2 - *Do you agree with Ofcom's proposal to make adjustments to SG&A Broadband and ATM Network Interface, Switching and Transmission costs presented in the October 2013 RFS Report?*

Question 3 - *Do you agree with Ofcom's proposal to update our one-off non recurring cost adjustments, our market size adjustment and our DSLAM cost adjustment?*

Question 4 - *Do you agree with Ofcom's proposal to update the HON adjustment in line with that made in the 2013 WBA Consultation but to adjust the asset lives?*

Question 5 - *Do you agree with Ofcom's proposal to exclude 21CN costs from the charge control?*

Question 6 - *Do you agree with Ofcom's proposed changes to the compliance formulae to reflect relevant EOI charges?*

Question 7 - *Do you agree with Ofcom's proposal to include a carry-over provision within the legal instrument?*

Question 8- *Do you agree with Ofcom's proposal to change the definition of cease charges that are to be set to £0?*

Question 9 - *Do you agree with Ofcom's proposal in relation to migration and connection charges?*

Question 10 - *Please provide any further relevant evidence you may have in relation to the appropriate efficiency improvement target for BT for WBA markets.*

Question 11 - *Please provide any comments you may have on the proposed range of X values of -15.2% to -8.7%.*

Question 12 – *Do you have any other comments on the issues raised in this consultation?*

Annex 5

Equality impact Assessment

Introduction

A5.1 Ofcom is required by statute to assess the potential impact of all our functions, policies, projects and practices on race, disability and gender equality. We fulfil these obligations by carrying out an Equality Impact Assessment (EIA), which examines whether or not the remedies that we have proposed for the wholesale broadband access markets would have an adverse impact on equality. EIAs also assist us in making sure that we are meeting our principal duty of furthering the interests of citizens and consumers regardless of their background or identity.

A5.2 Unless we otherwise state in this document, it is not apparent to us that the outcome of our review is likely to have any particular impact on race, disability or gender equality. Specifically, we do not envisage the impact of any outcome to be to the detriment of any group of society.

A5.3 Nor are we envisaging any need to carry out separate EIAs in relation to race or gender equality or equality schemes under the Northern Ireland and Disability Equality Schemes. This is because we anticipate that our regulatory intervention will affect all industry stakeholders equally and will not have a differential impact in relation to people of different gender or ethnicity, on consumers in Northern Ireland or on disabled consumers compared to consumers in general. Similarly, we are not envisaging making a distinction between consumers in different parts of the UK or between consumers on low incomes. Again, we believe that our intervention will not have a particular effect on one group of consumers over another.

The aim of our WBA market review

A5.4 The aim of the current WBA market review is to assess the state of competition in the wholesale broadband access market and, if any operator is found to have SMP, to impose regulatory obligations designed to promote competition and to protect consumers. The WBA market concerns the wholesale broadband products that CPs provide for themselves and sell to each other. This market is important for consumers because these services are one of the building blocks of the retail broadband offers that CPs market to consumers.

A5.5 The main stages in developing the proposed regulatory obligations were:

- A programme of extensive research and data collection to inform our analysis;
- Definition of the relevant product and geographic markets;
- Assessment of SMP in the relevant markets; and
- Determination of the appropriate remedies to be imposed on those operators found to have SMP (BT and KCOM).

Equality impact assessment

A5.6 We have considered whether the remedies that we have proposed for the WBA markets would have an adverse impact on promoting equality. In particular we have considered whether the remedies would have a different or adverse effect on UK consumers and citizens with respect to: age, disability, gender reassignment, pregnancy and maternity, race, religion, sex and sexual orientation, and, in Northern Ireland, religious belief and dependents.

A5.7 The intention behind our approach to regulating the WBA markets is to impose a set of regulatory obligations on CPs with SMP requiring them to provide other CPs with wholesale broadband products on regulated terms, which will lead to the promotion of competition at the retail level for the benefit of consumers.

A5.8 We do not have information on whether there is any correlation between the CPs that purchase WBA products and the defined equality groups. However, we do not have any reason to suspect that the benefit of the regulatory remedies that we are proposing would not be the same for all residential and business retail users, nor that there would be a correlation between the affected residential and business end users and any of the above defined equality groups. On that basis we believed that it would be disproportionate to commission relevant research.

A5.9 We also did not find any reason to suspect that there would be potential for negative impacts against the defined equality groups.

Annex 6

Sources of evidence

Introduction

A6.1 We have noted throughout the consultation the evidence we have relied upon in relation to our findings and how we have relied upon that evidence. This Annex lists the main sources of evidence used. We also list responses to the 2013 WBA Consultation and to our various section 135 notices received subsequent to the 2013 WBA Consultation.

A6.2 Whilst the Annex lists the main evidence we have relied upon, the list is for convenience only and is not intended to be exhaustive. Details of further evidence is included in Annex 14 to the 2013 WBA Consultation.

List of respondents to the 2012 WBA Call for Inputs

A6.3 On 9 November 2012, we published the 2012 WBA Call for Inputs to gather input from stakeholders on the key issues with regard to this review.[89]

A6.4 We have published non-confidential versions of the responses we have received on our website.[90]

List of respondents to the 2013 WBA Consultation

A6.5 On 11 July 2013, we published the 2013 WBA Consultation to gather stakeholder views on the key issues with regard to this review.[91]

A6.6 In addition to one respondent that requested to remain anonymous, the following stakeholders provided written responses to the 2013 WBA Consultation:

- BT;
- Everything Everywhere Ltd (EE);
- KCOM Group (KCOM);
- TalkTalk; and
- Virgin Media Limited (Virgin Media);

A6.7 We have published non-confidential versions of the responses from all the companies listed above. These can be found on our website.[92]

[89] Review of the wholesale broadband access markets, Call for Inputs, 9 November 2012, http://stakeholders.ofcom.org.uk/consultations/review-wholesale-broadband/summary.
[90] http://stakeholders.ofcom.org.uk/consultations/review-wholesale-broadband/?showResponses=true&pageNum=1#responses.
[91] Review of the wholesale broadband access markets, Consultation on market definition, market power determinations and remedies, 11 July 2013, http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/.
[92] http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/?showResponses=true.

Information-gathering using statutory powers (s135)

A6.8 During this market review and the 2012 Fixed Access Market Reviews, we have issued a series of notices under section 135 of the 2003 Act, requiring various CPs to provide specified information as set out in these notices. These information requests are listed below.

A6.9 Information request of 20 August 2013 regarding further information on returns for wholesale broadband access in Markets 1 as defined in Ofcom's 2010 WBA Market Review Statement. Request sent to and response received from:

- BT Group.

A6.10 Information request of 9 October 2013 regarding the roll-out of commercially-funded and state-funded fibre in the UK. Request sent to and response received from:

- BT Group.

A6.11 Information request of 14 October 2013 regarding exchange data and LLU roll-out data. Request sent to and response received from:

- BT Group.

A6.12 Information request of 18 November 2013 regarding further information on the following:

- the anticipated roll-out of commercially-funded and state-funded fibre in the UK;
- component level costs for wholesale broadband access in Markets 1,2, and 3 as defined in Ofcom's 2010 WBA Market Review Statement;
- BT's internal forecasts of its efficiency improvements;
- how BT has allocated costs relating to 21CN components in the Regulatory Financial Statements; and
- actual and forecast volumes of WBA services.

Request sent to and response received from:

- BT Group.

A6.13 Information request of 16 January 2014 regarding additional information, updates and clarifications on information previously provided.

Request sent to and response received from:

- BT Group.

A6.14 Information request of 19 November 2013 regarding further information on the following:

- business plans for the residential broadband market, and

- forecasts of bandwidth requirements of end users.

Request sent to and response received from:

- Vodafone.

A6.15 Information request of 19 November 2013 regarding further information on the following:

- forecasts of bandwidth requirements of end users.

Request sent to and response received from:

- EE Limited.

A6.16 Information request of 19 November 2013 regarding further information on the following:

- network coverage in the Hull area; and
- services that the CP provides and/or intends to provide in the Hull area,

Request sent to and response received from:

- MS3 Networks Limited.

A6.17 Information request of 19 November 2013 regarding further information on the following:

- internal documents setting out the CP's future strategy in relation to superfast broadband, how much it had spent on marketing superfast broadband, as well as its view and forecasts of subscribers in the superfast broadband market, and
- forecasts of bandwidth requirements of end users.

Request sent to and response received from:

- BSkyB.

A6.18 Information request of 19 November 2013 regarding further information on the following:

- internal documents setting out the CP's future strategy in relation to superfast broadband, how much it had spent on marketing superfast broadband, as well as its view and forecasts of subscribers in the superfast broadband market, and
- forecasts of bandwidth requirements of end users.

Request sent to and response received from:

- TalkTalk.

A6.19 Information request of 19 November 2013 regarding further information on the following:

- cable connections in the UK, including future rollout;
- fibre connections in the UK, and
- forecasts of bandwidth requirements of end users.

Request sent to and response received from:

- Virgin Media.

Ofcom documents

A6.20 Ofcom, *Direction concerning ADSL Broadband Access Migration Services; and a Determination to resolve a dispute between Tiscali, Thus and BT concerning ADSL Broadband Access Migration Services - Final Statement*, 9 August 2004, www.stakeholders.ofcom.org.uk/binaries/consultations/bam/statement/statement.pdf.

A6.21 Ofcom, *Better Policy Making, Ofcom's approach to Impact Assessment, Consultation*, 21 July 2005. http://stakeholders.ofcom.org.uk/binaries/consultations/ia_guidelines/summary/condoc.pdf.

A6.22 Ofcom, *WBA Charge Control, Charge Control framework for WBA Market 1 Services, Statement,* 20 July 2011. http://stakeholders.ofcom.org.uk/binaries/consultations/823069/statement/statement.pdf.

A6.23 Ofcom, *Review of the wholesale broadband access markets, Call for Inputs,* 9 November 2012. http://stakeholders.ofcom.org.uk/binaries/consultations/review-wholesale-broadband/summary/reviewL.pdf.

A6.24 Ofcom, *Review of the wholesale broadband access markets, Consultation on market definition, market power determinations and remedies,* 11 July 2013, http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/.

A6.25 Ofcom, *Review of the fixed narrowband services markets, Statement on the proposed markets, market power determinations and remedies*, 26 September 2013, http://stakeholders.ofcom.org.uk/consultations/nmr-13/statement/

A6.26 Ofcom, *Infrastructure Report, 2013 Update*, October 2013, http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/infrastructure-report/IRU_2013.pdf.

A6.27 Ofcom, *Fixed access market reviews: Openreach quality of service and approach to setting LLU and WLR Charge Controls, Consultation*, 19 December 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-market-llu-wlr-charge-controls/summary/famr-2013.pdf.

UK Legislation

A6.28 *The Competition Act 1998*. http://www.legislation.gov.uk/ukpga/1998/41/contents.

A6.29 *The Enterprise Act 2002*. http://www.legislation.gov.uk/ukpga/2002/40/contents.

A6.30 *The Communications Act 2003, as amended.* http://www.legislation.gov.uk/ukpga/2003/21/contents.

EC documents

A6.31 *Consolidated versions of the Treaty of the European Union and the Treaty of the functioning of the European Union,* 30 March 2010, (2010/C 83/01). http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:083:FULL:EN:PDF.

A6.32 *Directive 2002/19/EC of the European Parliament and of the Council on access to and interconnection of electronic communications networks and associated facilities* (as amended by Directive 2009/136/EC), 7 March 2002.http://ec.europa.eu/digital-agenda/sites/digital-agenda/files/140access_1.pdf

A6.33 Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services, as amended by Directive 2009/140/EC and Regulation 544/2009. https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/140framework_5.pdf

A6.34 *Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (2002/C 165/03).* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:EN:PDF.

A6.35 *Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, (2007/879/EC).* http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:344:0065:0069:en:PDF.

A6.36 *Commission Staff Working Document, Explanatory Note accompanying document to the Commission Recommendation on Relevant Product and Service Markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services*, (C(2007) 5406). https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/sec_2007_1483_2_0.pdf

A6.37 *Commission recommendation of 11.9.2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment, 11.9.2013, C(2013) 5761 final,* https://ec.europa.eu/digital-agenda/en/news/commission-recommendation-consistent-non-discrimination-obligations-and-costing-methodologies.

Other BT information

A6.38 BT Group plc, *Regulatory Financial Statements,* 2012. https://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2012/index.htm.

A6.39 BT Group plc, *Regulatory financial statements*. http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/index.htm.

A6.40 BT Group plc, *Current Cost Financial Statements for 2012 including Openreach Undertakings.* http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2012/RFS_2012.pdf.

A6.41 BT Group plc, *Key Product Performance Indicators*. http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Ourundertakings/KeyPerformanceIndicators/KeyProductPerformanceIndicators/ipstream.htm.

A6.42 BT Group plc, *Annual Report & Form 20-F 2013*. http://www.btplc.com/Sharesandperformance/Annualreportandreview/pdf/2013_BT_Annual_Report.pdf.

A6.43 BT Group plc, *Regulatory financial statements 2013*. http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/index.htm.

A6.44 BT Group plc, *Current Cost Financial Statements 2013 including Openreach Undertakings*, http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/CurrentCostFinancialStatements2013.pdf.

A6.45 BT Group plc, *Report requested by Ofcom describing certain changes to the Accounting Documents for the year ended 31 March 2013 and illustrating the resulting differences to the Current Cost Financial Statements had those changes not applied*, 3 October 2013, https://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/ReportrequestedbyOfcomfortheyearended31March2013.pdf.

A6.46 BT, *IPstream & Wholesale Broadband Connect.* http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Ourundertakings/KeyPerformanceIndicators/KeyProductPerformanceIndicators/ipstream.htm

A6.47 BT Wholesale, *IP STREAM CONNECT.* https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Part_8_BT_IPstream_Connect/index.htm.

A6.48 BT Wholesale, *BROADBAND CONNECT(WBC).* https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Part_7_BT_Wholesale_Broadband_Connect__WBC_/index.htm.

A6.49 BT Group, Financial review: Profit on sale of property fixed assets. http://www.btplc.com/report/financial_fixedassets.shtml.

A6.50 BT Group plc, *Q4/full year 2012/13 results and business update – Part 2,* 10 May 2013. http://www.btplc.com/Sharesandperformance/Quarterlyresults/PDFdownloads/q413_slides_update_part2.pdf.

Annex 7

Glossary

21CN: BT's next generation network upgrade.

Alternative interface symmetric broadband origination (AISBO): A form of symmetric broadband origination service providing symmetric capacity between two sites, generally using an Ethernet IEEE 802.3 interface.

Access Network: The part of the network that connects directly to customers from the local telephone exchange.

Asymmetric Digital Subscriber Line (ADSL): a digital technology that allows the local loop to send a large quantity of data in one direction and a lesser quantity in the other.

Asset Volume Elasticity (AVE): The percentage increase in capital costs required for a 1% increase in volume.

Asynchronous Transfer Mode (ATM): A network technology that uses asynchronous time division multiplexing techniques and which supports data transmissions at up to 622Mbit/s.

Backhaul: Connection from the first access node (for example the local exchange or street cabinet) to the core network.

Bandwidth: The measure of the how much data can be carried across a link in the network.

Body of European Regulators for Electronic Communications (BEREC): The Body of European Regulators for Electronic Communications (BEREC) was established by Regulation (EC) No 1211/2009 of the European Parliament and of the Council of 25 November 2009 and it replaced the European Regulators Group for electronic communications networks and services which was established as an advisory group to the Commission in 2002.

Broadband Delivery UK (BDUK): Broadband Delivery UK (BDUK) is a team within the Department for Culture, Media and Sport that has a role to set up, operate, monitor and act as the national competence centre for the UK-wide broadband state-aid scheme, as this has been approved by the European Commission with the State Aid Decision SA.33671 (2012/N).

Broadband: A service or connection which is capable of supporting always-on services which provide the end-user with high data transfer speeds.

BT: British Telecommunications plc.

Business Connectivity Market Review (BCMR): An Ofcom market review published in March 2013, in which Ofcom set out our view of competition and imposed regulation in relation to the market for leased lines in the UK.

Bottom-up Long Run Incremental Costs-plus (BU LRIC+): It is a modelling approach that develops a cost model starting from the expected demand in terms of subscribers and traffic. It then models the efficient network that is required to meet the expected demand, and assesses the related costs according to a theoretical network-engineering model. The purpose of a bottom-up model is to calculate the cost on the basis of an efficient network

using the newest technology employed in large-scale networks. LRIC+ refers to the long run incremental costs of providing the service plus an appropriate mark up to take account of BT's common costs.

Charge control: A control which sets the maximum price that a communication provider can charge for a particular product or service. Most charge controls are imposed for a defined period.

Core network: The backbone of a communications network, which carries different services such as voice or data around the country.

Communications provider (CP): A person who provides an Electronic Communications Network or provides an Electronic Communications Service.

Cost Volume Elasticity (CVE): The percentage increase in operating costs for a 1% increase in volume.

Consumer price index (CPI): The consumer price index (CPI) is a measure of inflation. It measures changes in the price level of consumer goods and services purchased by households. The most significant item excluded in the CPI, but included in the RPI, is mortgage interest rate payments.

Current Cost Accounting (CCA): An accounting convention, where assets are valued and depreciated according to their current replacement cost whilst maintaining the operating or financial capital of the business entity.

Digital Subscriber Line (**DSL):** A family of technologies generically referred to as DSL, or xDSL, capable of transforming ordinary local loops into high-speed digital lines, capable of supporting advanced services such as fast Internet access and video-on-demand. ADSL (Asymmetric Digital Subscriber Line), HDSL (High bit rate Digital Subscriber Line) and VDSL (Very high data rate Digital Subscriber Line) are all variants of xDSL.

Digital Subscriber Loop Access Multiplexer (DSLAM): Apparatus used to terminate DSL enabled local loops, which comprises a bank of DSL modems and a multiplexer which combines many local loops into one data path.

Ethernet: A packet-based technology originally developed for and still widely used in Local Area Networks. Ethernet networking protocols are defined in IEEE 802.3 and published by the Institute of Electrical and Electronic Engineers.

Equivalence of Input (EOI): A remedy designed to prevent a vertically-integrated company from discriminating between its competitors and its own business in providing upstream inputs. This requires the regulated firm to provide the same wholesale products to all CPs including its own downstream division on the same timescales, terms and conditions (including price and service levels) by means of the same systems and processes, and includes the provision to all CPs (including its own downstream division) of the same commercial information about such products, services, systems and processes.

Fibre To The Cabinet (FTTC): An access network structure in which an optical fibre extends from the exchange to the cabinet. The street cabinet is usually located only a few hundred metres from the subscriber's premises. The remaining part of the access network from the cabinet to the customer is usually copper wire but could use another technology, such as wireless.

Fibre To The Premises (FTTP): An access network structure in which the optical fibre network runs from the local exchange to the end user's house or business premise. The optical fibre may be point-to-point – there is one dedicated fibre connection for each home – or may use a shared infrastructure such as a GPON. Sometimes also referred to as Fibre To The Home (FTTH).

Fully allocated cost (FAC): An accounting approach under which all the costs of the company are distributed between its various products and services. The fully allocated cost of a product or service may therefore include some common costs that are not directly attributable to the service.

Gbit/s: Gigabits per second (1 Gigabit = 1,000,000,000 bits) A measure of bandwidth in a digital system.

Gross Replacement Cost (GRC): The cost of replacing an existing tangible fixed asset with an identical or substantially similar new asset having a similar production or service capacity.

Generic Ethernet Access (GEA): BT's wholesale non-physical product providing CPs with access to higher speed broadband products

Hull Area: The area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and KCOM plc (formerly Kingston Communications (Hull) plc).

Hypothetical ongoing network (HON): A modelled network used for the purposes of assessing the cost base on which to base a charge control. The costs are assumed to include all those costs that would be incurred in running the network on an ongoing basis.

Internet Protocol (IP): The packet data protocol used for routing and carriage of messages across the Internet and similar networks.

IPstream: A BT Wholesale Broadband Access product, offering maximum downstream speeds of up to 8Mbit/s.

Integrated services digital network (ISDN): A set of communications standards for digital transmission of voice, video, data, and other network services over the traditional circuits of the PSTN.

ISDN2: Integrated Service Digital Network standard, providing a connection to the end customer (usually over a copper access network) comprising two 64kbit/s digital channels.

ISDN30: A digital telephone service that provides up to the equivalent of 30 analogue lines over a common digital bearer circuit. These lines provide digital voice telephony, data services and a wide range of ancillary services.

Kbit/s: Kilobits per second (1 kilobit = 1,000 bits) A measure of bandwidth in a digital system.

KCOM: KCOM plc (formerly Kingston Communications (Hull) PLC).

Latency: A measure of delay in transmission over a transmission path.

Local loop: The access network connection between the customer's premises and the local serving exchange, usually comprised of two copper wires twisted together.

Local loop unbundling (LLU): A process by which a dominant provider's local loops are physically disconnected from its network and connected to competing provider's networks. This enables operators other than the incumbent to use the local loop to provide services directly to customers.

Long Run Incremental Cost (LRIC): The cost caused by the provision of a defined increment of output given that costs can, if necessary, be varied and that some level of output is already produced.

Mbit/s: Megabits per second (1 Megabit = 1 million bits). A measure of bandwidth in a digital system.

Main distribution frame (MDF): The equipment where local loops terminate and cross connection to competing providers' equipment can be made by flexible jumpers.

Metallic Path Facility (MPF): The provision of access to the copper wires from the customer premises to a BT MDF that covers the full available frequency range, including both narrowband and broadband channels, allowing a competing provider to provide the customer with both voice and/or data services over such copper wires.

Mean capital employed (MCE): The mean value of the assets that contribute to a company's ability to generate revenues.

Multi Service Access Node (MSAN): A network access device associated with an IP-based core network that provides network interfaces for telephony, broadband and other services. MSANs are typically installed in a telephone exchange or a roadside cabinet.

Narrowband: A service or connection that provides a maximum speed of up to 64kbit/s per circuit (and therefore up to 128kbit/s in the case of ISDN2). Narrowband modems generally offer a maximum rate of 56kbit/s.

Next Generation Access (NGA): Wired access networks which consist wholly or in part of optical elements and which are capable of delivering broadband access services with enhanced characteristics (such as higher throughput) as compared to those provided over already existing copper networks. In most cases NGAs are the result of an upgrade of an already existing copper or co-axial access network

Net replacement cost (NRC): Gross replacement cost less accumulated depreciation based on gross replacement cost. An alternative is *Depreciated replacement cost (of tangible fixed assets other than property:*-The cost of replacing an existing tangible fixed asset with an identical or substantially similar new asset having a similar production or service capacity, from which appropriate deductions are made to reflect the value attributable to the remaining portion of the total useful economic life of the asset and the residual value at the end of the asset's useful economic life.

Ofcom: The Office of Communications.

Openreach: The access division of BT established by Undertakings in 2005.

Passive Infrastructure Access (PIA): A remedy requiring BT to provide CPs with access to its passive access network infrastructure (i.e. ducts and poles).

Regulatory Asset Base (RAB): The total capital value of the assets used to calculate the costs of the regulated services.

Regulatory financial statements (RFS): The financial statements that BT is required by Ofcom to prepare, have audited and publish.

Retail price index (RPI): A measure of inflation published monthly by the Office for National Statistics. It measures the change in the cost of a basket of retail goods and services.

Stand Alone Cost (SAC): An accounting approach under which the total cost incurred in providing a product is allocated to that product.

Sub-loop unbundling (SLU): Like local loop unbundling (LLU), except that communications providers interconnect at a point between the exchange and the end user, usually at the cabinet.

Superfast Broadband (SFBB): A broadband connection that can support a maximum download speed of 30Mbps or greater.

Synchronous Digital Hierarchy (SDH): A digital transmission standard that is widely used in communications networks.

SMP: The Significant Market Power test is set out in European Directives. It is used by National Regulatory Authorities (NRAs) such as Ofcom to identify those communications providers who must meet additional obligations under the relevant Directive.

Shared metallic path facility (SMPF)/shared access: The provision of access to the copper wires from the customer's premises to a BT MDF that allows a competing provider to provide the customer with broadband services, while the dominant provider continues to provide the customer with conventional narrowband communications.

TI symmetric broadband origination (TISBO): A form of symmetric broadband origination service providing symmetric capacity from a customer's premises to an appropriate point of aggregation in the network hierarchy, using a CCITT G703 interface

Virtual Unbundled Local Access (VULA): It provides a connection from the nearest 'local' aggregation point to the customer premise.

Wholesale Broadband Access (WBA): Is between the WLA market and retail market for provision of fixed telecommunications services to end users.

Wholesale Broadband Connect (WBC): A BT Wholesale Broadband Access product, using ADSL2+ technology to offer maximum downstream speeds of up to 24Mbit/s, or using Openreach's GEA product to offer speeds above 30Mb/s where GEA is available.

Wholesale Local Access (WLA) Market: The wholesale market for fixed telecommunications infrastructure, specifically the physical connection between end users' premises and a local exchange.

Wholesale Line Rental (WLR): The service offered by BT to other UK communications providers to enable them to offer retail line rental services in competition with BT's own retail services. Line rental is offered along with calls (and other service elements, such as broadband) to retail customers.

Annex 8

Draft legal instrument

PART I - NOTIFICATION OF PROPOSALS UNDER SECTION 48A OF THE COMMUNICATIONS ACT 2003

Proposals for the setting of SMP services conditions on BT under section 45 of the Communications Act 2003

Background

1. On 11 July 2013, OFCOM published a consultation document entitled "*Review of the wholesale broadband access markets: Consultation on market definition, market power determinations and remedies*" (the "**2013 WBA Consultation**"). Annex 6 to the 2013 WBA Consultation set out the notification under sections 48A and 80A of the Act in which OFCOM proposed to:

   - identify certain markets;
   - make market power determinations; and
   - set SMP services conditions,

   (the "**2013 WBA Notification**").

2. In relation to BT, OFCOM proposed in the 2013 WBA Notification to determine that BT has Significant Market Power in the market for wholesale broadband access provided in Market A over the period of the review undertaken in the 2013 WBA Consultation.

3. As a result of the proposed market power determination in the market referred to in paragraph 2 above, OFCOM proposed in the 2013 WBA Notification to set a number of SMP services conditions on BT in that market, including an SMP services condition imposing charge controls.

4. The period within which representations could be made to OFCOM about its proposals in the 2013 WBA Consultation ended on 25 September 2013. OFCOM received representations from several respondents to the proposals set out in the 2013 WBA Consultation. In light of OFCOM's consideration of those representations and further information obtained by OFCOM during the course of the market review,

OFCOM sets out in this notification its further proposals in relation to certain of the SMP conditions proposed to be set in respect of BT in the market set out at paragraph 2 above.

Proposed SMP services condition 7 – WBA Charge Control in Market A

5. OFCOM hereby gives notice of its proposals, in accordance with section 48A of the Act, in relation to the market for the provision of wholesale broadband access in Market A to set SMP price control conditions on BT as set out in proposed condition 7, which is set out in Schedule 1 to this notification, pursuant to their powers under section 87(9) of the Act. This proposed SMP services condition 7 replaces the proposed SMP services condition 7 set out in the 2013 WBA Notification. It is proposed that this condition will take effect from the date of any notification under section 48(1) of the Act adopting the proposals set out in this notification.

6. The effect of, and the reasons for making, the amended proposal set out above at paragraph 5 above are set out in the consultation document accompanying this notification.

Ofcom's duties and legal tests

7. OFCOM considers that the proposals set out in this notification comply with all applicable legal tests, including the requirements of sections 45 to 47, 87 and 88 of the Act as appropriate and relevant to them.

8. In making the proposals referred to in this notification, OFCOM has:

    a. considered and acted in accordance with its general duties set out in section 3 of the Act and the six Community requirements in section 4 of the Act;

    b. taken due account of all applicable recommendations issued by the European Commission in accordance with section 4A of the Act; and

    c. taken utmost account of any relevant opinion, recommendation, guidance advice or regulatory practice adopted by BEREC in accordance with Article 3(3) of Regulation (EC) No 1211/2009.

Making representations

9. Representations may be made to OFCOM about any of the proposals set out in this notification and the accompanying consultation by no later than **10 March 2014**.

10. A copy of this notification and the accompanying consultation document have been sent to the Secretary of State in accordance with section 48C(1) of the Act.

Interpretation

11. For the purposes of interpreting this notification:

    a) except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them below in paragraph 25, and otherwise any word or expression shall have the same meaning as it has in the Act;

    b) headings and titles shall be disregarded;

    c) expressions cognate with those referred to in this notification shall be construed accordingly; and

    d) the Interpretation Act 1978 (c. 30) shall apply as if this notification were an Act of Parliament.

12. In this notification:

    a) "**Act**" means the Communications Act 2003 (c.21), as amended;

    b) "**BT**" means British Telecommunications plc, whose registered company number is 1800000, and any British Telecommunications plc subsidiary or holding company, or any subsidiary of that holding company, all as defined in section 1159 of the Companies Act 2006;

    c) **"Dominant Provider"** means BT;

    d) **"Market A"** means the area covered by the BT exchanges set out at Appendix 1 to Schedule 1 of the 2013 WBA Notification;

    e) "**OFCOM**" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (c. 11); and

    f) "**United Kingdom**" has the meaning given to it in the Interpretation Act 1978 (c. 30).

13. The Schedules to this notification form part of this notification.

Signed

David Clarkson

Competition Policy Director

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

27 January 2014

SCHEDULE 1

Condition 7 – WBA Charge Control in Market A

7.1 The Dominant Provider shall take all reasonable steps to secure that, at the end of each Relevant Year, the Percentage Change, C_t, (as determined in accordance with conditions 7.3, 7.4 and 7.5 below) in:

(a) the aggregate of Charges for all of the services listed in Part A of the Annex to this condition 7 (all such services together referred to as the "Basket");

(b) the Charge for the service listed in point 2 of the Annex to this condition;

(c) the Charge for the service listed in point 4 of the Annex to this condition;

(d) the Charge for the service listed in point 5 of the Annex to this condition;

(e) the Charge for the service listed in point 6 of the Annex to this condition; and

(f) the Charge for the service listed in point 7 of the Annex to this condition,

is not more than the Controlling Percentage, CP_t, (as determined in accordance with condition 7.6).

7.2 The Dominant Provider shall not make any Charge for the service listed in Part B of the Annex to this condition 7.

7.3 The Percentage Change for the purpose of each of the categories or services specified (each of which is referred to in this paragraph as a "single charge category") in condition 7.1(f) shall be calculated by employing the following formula:

$$C_{t,i} = \frac{\bar{p}_{i,t} - \bar{p}_{i,t-1}}{\bar{p}_{i,t-1}}$$

Where:

$\boldsymbol{C_{t,i}}$ is the Percentage Change in charges for the specific service, *i*, in the single charge category in question during the Relevant Year, *t*;

t refers to the Relevant Year;

t-1 refers to the Prior Year;

$\bar{p}_{i,t}$ is the weighted average Charge made by the Dominant Provider for the specific service, *i*, during the Relevant Year:

Where such Relevant Year Weighted Average Charge shall be calculated by employing the following formula:

$$\bar{p}_{i,t} = \sum_{j=1}^{m} (w_j p_j)$$

Where:

m is the number of periods for which there are distinct Charges during the Relevant Year;

j is a number from 1 to m for each of the m periods during which a Charge is in effect;

$w_{j,}$ is the proportion of the Relevant Year in which each Charge, p_j, is in effect, calculated by the number of days during which the Charge is in effect and dividing

(1) for the First Relevant Year, by 365;

(2) for the Second Relevant Year, by 366; and

(3) for the Third Relevant Year, by 365.

p_j is the Charge for the specified period, *j*, during the Relevant Year, for the specific service, *i*;

$\bar{p}_{i,t-1}$ is the weighted average Charge made by the Dominant Provider for the specific service, *i*, during the Prior Year:

Where such Prior Year Weighted Average Charge shall be calculated by employing the following formula:

$$\bar{p}_{i,t-1} = \sum_{j=1}^{m} (w_j p_j)$$

Where:

m is the number of periods for which there are distinct Charges during the Prior Year;

j is a number from 1 to m for each of the m periods during which a Charge is in effect;

$w_{j,}$ is the proportion of the Prior Year in which each Charge, p_j, is in effect, calculated by the number of days during which the Charge is in effect and dividing;

(1) for the First Prior Year, by 365;

(2) for the Second Prior Year, by 365; and

(3) for the Third Prior Year, by 366

p_j is the Charge for the specified period, *j*, during the Prior Year, for the specific service, *i*.

7.4 The Percentage Change for the purpose of each of the categories or services specified (each of which is referred to in this paragraph as a "single charge category") in conditions 7.1(b), 7.1(c) 7.1(d) and 7.1(e) shall be calculated by employing the following formula:

$$C_{t,i} = \frac{(\bar{p}_{i,t} - \bar{q}_{i,t}) - (\bar{p}_{i,t-1} - \bar{q}_{i,t-1})}{(\bar{p}_{i,t-1} - \bar{q}_{i,t-1})}$$

Where:

$\boldsymbol{C_{t,i}}$ is the Percentage Change in charges for the specific service, *i*, in the single charge category in question at a particular time during the Relevant Year, *t*;

t refers to the Relevant Year;

t-1 refers to the Prior Year;

$\bar{p}_{i,t}$ is as defined in condition 7.3 above, with reference to the services referred to in conditions 7.1(b), 7.1(c) 7.1(d) and 7.1(e);

$\bar{q}_{i,t}$ is the weighted average Charge made by the Dominant Provider to itself for the Input Services used to provide the specific service, *i*, during the Relevant Year:

Where such Relevant Year Weighted Average Charge shall be calculated by employing the following formula:

$$\bar{q}_{i,t} = \sum_{j=1}^{m} u_j \frac{\sum_{k=1}^{n} q_{j,k} v_{k,t-1}}{z_{t-1}}$$

Where:

t refers to the Relevant Year

t-1 refers to the Prior Year

m is the number of periods for which there are distinct Charges during the Relevant Year;

j is a number from 1 to m for each of the m periods during which a Charge is in effect;

u_j is the proportion of the Relevant Year in which each Input Service Charge $q_{j,k,}$ is in effect, calculated by the number of days during which the Charge is in effect and dividing

(1) for the First Relevant Year, by 365;

(2) for the Second Relevant Year, by 366; and

(3) for the Third Relevant Year, by 365.

n is the number of Input Services required to provide the

specific service, *i*

k is a number from 1 to n for each of the n Input Services required to provide the specific service, *i*

$q_{j,k}$ is the Input Service Charge for the specified period, *j*, during the Relevant Year, for Input Service k required to provide the specific service, *i*

$v_{k,t-1}$ is the volume of Input Service k used to provide the specific service, *i,* in the Prior Year

z_{t-1} is the volume of specific service, *i,* in the Prior Year. It should be consistent with the volume used calculate R_i in condition 7.5.

$\overline{\boldsymbol{p}}_{\boldsymbol{i,t-1}}$ is as defined in condition 7.3 above, with reference to the services referred to in conditions 7.1(b), 7.1(c) 7.1(d) and 7.1(e);

$\overline{\boldsymbol{q}}_{\boldsymbol{i,t-1}}$ is the weighted average Charge made by the Dominant Provider to itself for the Input Services used to provide the specific service, *i*, during the Prior Year:

Where such Prior Year Weighted Average Charge shall be calculated by employing the following formula:

$$\bar{q}_{i,t-1} = \sum_{j=1}^{m} u_j \frac{\sum_{k=1}^{n} q_{j,k} v_{k,t-1}}{z_{t-1}}$$

Where:

t-1 refers to the Prior Year

m is the number of periods for which there are distinct Charges during the Prior Year;

j is a number from 1 to m for each of the m periods during which a Charge is in effect;

$u_{j,}$ is the proportion of the Prior Year in which each Input

Service Charge, $q_{j,k}$, is in effect, calculated by the number of days during which the Charge is in effect and dividing;

(1) for the First Prior Year, by 365;

(2) for the Second Prior Year, by 365; and

(3) for the Third Prior Year, by 366

n is the number of Input Services required to provide the specific service, *i*;

k is a number from 1 to n for each of the n Input Services required to provide the specific service, *i*;

$q_{j,k}$ is the Input Service Charge for the specified period, *j*, during the Prior Year, for Input Service k required to provide the specific service, *i*;

$v_{k,t-1}$ is the volume of Input Service k used to provide the specific service, *i,* in the Prior Year;

z_{t-1} is the volume of specific service, *i,* in the Prior Year. It should be consistent with that used to calculate R_i in condition 7.5.

7.5 The Percentage Change for the purpose of the Basket shall be calculated by employing the following formula:

$$C_t = \frac{\sum_{i=1}^{n}\left[(R_i - S_i)\dfrac{\left(\left\{\overline{p}_{i,t} - \overline{q}_{i,t}\right\} - \left\{\overline{p}_{i,t-1} - \overline{q}_{i,t-1}\right\}\right)}{\left\{\overline{p}_{i,t-1} - \overline{q}_{i,t-1}\right\}}\right]}{\sum_{i=1}^{n}(R_i - S_i)}$$

Where:

$\boldsymbol{C_t}$ is the Percentage Change in the aggregate of Charges for the services in the Basket during the Relevant Year, *t*;

n is the number of individual services in the Basket;

i is a service numbered from 1 to n for each of the n services in the Basket;

$\boldsymbol{R_i}$ is the revenue during the Prior Financial Year in respect of service, *i*;

$\boldsymbol{S_i}$ is the amount of payments made by the Dominant Provider to itself for Input services during the Prior Financial Year used to provide service, *i*;

t refers to the Relevant Year;

t-1 refers to the Prior Year;

$\overline{\boldsymbol{p}}_{\boldsymbol{i,t}}$ is as defined in condition 7.3 above, with reference to the Basket of services referred to in condition 7.1(a);

$\overline{\boldsymbol{p}}_{\boldsymbol{i,t-1}}$ is as defined in condition 7.3 above, with reference to the Basket of services referred to in condition 7.1(a);

$\overline{\boldsymbol{q}}_{\boldsymbol{i,t}}$ is as defined in condition 7.4 above, with reference to the charges for the Input Services for the services included in the Basket referred to in condition 7.1(a);

$\overline{\boldsymbol{q}}_{\boldsymbol{i,t-1}}$ is as defined in condition 7.4 above, with reference to the charges for the Input Services for the services included in the Basket referred to in condition 7.1(a).

7.6 Subject to conditions 7.7, 7.8 and 7.9 below, the Controlling Percentage in relation to any Relevant Year shall be calculated by employing the following formula:

$$CP_t = CPI_t + X$$

Where:

$\boldsymbol{CP_t}$ is the Controlling Percentage for the Relevant Year, rounded to two decimal places;

$\boldsymbol{CPI_t}$ is the change in the Consumer Prices Index in the year of 12 months ending on 31 December immediately before the beginning of the Relevant Year expressed as a percentage, rounded to two decimal places;

X is for each Relevant Year,

(a) for the Basket of services specified in condition 7.1 (a), by [...];

(b) for the service specified in condition 7.1 (b), by [...];

(c) for the service specified in condition 7.1 (c), by [...];

(d) for the service specified in condition 7.1(d), by [...];

(e) for the service specified in condition 7.1(e), by [...]; and

(f) for the service specified in condition 7.1(f), by [...].

7.7 Where the Percentage Change in either the First Relevant Year or the Second Relevant Year is less than the Controlling Percentage (the "Deficiency"), then the Controlling Percentage for the following Relevant Year shall be determined in accordance with condition 7.9.

7.8 Where the Percentage Change in either the First Relevant Year or the Second Relevant Year is more than the Controlling Percentage (the "Excess"), then the Controlling Percentage for the following Relevant Year shall be determined in accordance with condition 7.9.

7.9 In the case of Deficiency (defined in condition 7.7 above) or Excess (defined in condition 7.8 above), the Controlling Percentage will be calculated by employing the following formula:

$$CP_t = [(100\% + CPI_t + X)(100\% + CP_{t-1})/(100\% + C_{t-1})] - 100\%$$

Where:

$\boldsymbol{CP_t}$ is the Controlling Percentage for the Second Relevant Year (in case of Deficiency or Excess in the First Relevant Year) or for the Third Relevant Year (in case of Deficiency or Excess in the Second Relevant Year);

$\boldsymbol{CP_{t-1}}$ is the Controlling Percentage for the First Relevant Year (in case of Deficiency or Excess in the First Relevant Year) or for the Second Relevant Year (in case of Deficiency or Excess in the Second Relevant Year);

$\boldsymbol{C_{t-1}}$ is the Percentage Change in the aggregate of Charges for the services in the Basket during the First Relevant Year (in case of Deficiency or Excess in the First Relevant Year) or for the Second Relevant Year (in case

of Deficiency or Excess in the Second Relevant Year), calculated in accordance conditions 7.3, 7.4 and 7.5;

$\boldsymbol{X}$ is as set out in condition 7.6 above; and

$\boldsymbol{CPI_t}$ is as set out in condition 7.6 above.

7.10 Where the Percentage Change in any Relevant Year is more than the Controlling Percentage, the Dominant Provider shall, to the extent reasonably possible, and as soon as reasonably practicable, repay the Relevant Excess Revenue to every Affected Communications Provider.

7.11 Where:

(a) the Dominant Provider makes a material change (other than to a Charge) to any service which is subject to this condition 7;

(b) the Dominant Provider makes a change to the date on which its financial year ends; or

(c) there is a material change in the basis of the Consumer Prices Index,

conditions 7.1 to 7.10 shall have effect subject to such reasonable adjustment to take account of the change as Ofcom may direct to be appropriate in the circumstances.

For the purposes of this paragraph, a material change to any service which is subject to this condition 7 includes (but is not limited to) the introduction of a new service wholly or substantially in substitution for that existing service.

7.12 The Dominant Provider shall record, maintain and supply to Ofcom in an electronic format, no later than three months after the end of each of the Relevant Years, the data necessary for Ofcom to monitor compliance of the Dominant Provider with the price control. The data shall include:

(a) pursuant to conditions 7.3, 7.4 and 7.5, the calculated Percentage Change relating to the aggregate of Charges for all of the services in the Basket specified in condition 7.1(a) and for each of the single charge categories specified in conditions 7.1(b), 7.1(c), 7.1(d), 7.1(e) and 7.1(f);

(b) all relevant data the Dominant Provider used in the calculation of the

Percentage Change as set out in (i) above, including for each specific service, i;

(c) all Charges published by the Dominant Provider from time to time during the Relevant Year and the Prior Year, including the Year they were in force;

(d) the Relevant Year Weighted Average Charges and the Prior Year Weighted Average Charges for all of the services in the Basket specified in condition 7.1(a) and for each of the single charge categories specified in conditions 7.1(b), 7.1(c), 7.1(d), 7.1(e) and 7.1(f) and calculations thereof; and

(e) any other data necessary for monitoring compliance with the charge control.

whereby all relevant revenues in respect of a specific service in the Basket are provided to at least the nearest £1,000.

7.13 If it appears to Ofcom that the Dominant Provider is likely to fail to secure that the Percentage Change does not exceed the Controlling Percentage for the Third Relevant Year, the Dominant Provider shall make such adjustment to any of its charges for the provision of the services listed in conditions 7.1(a) to 7.1(f) and by such day in that Relevant Year (or if appropriate in Ofcom's opinion, by such day that falls after the end of that Relevant Year) as Ofcom may direct for the purpose of avoiding such a failure.

7.14 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this condition 7.

7.15 Conditions 7.1 to 7.13 shall not apply to such extent as Ofcom may direct.

7.16 In this Condition:

(a) **"Affected Communications Provider"** means each communications provider to whom the Dominant Provider has provided any of the services listed in the Annex to this Schedule 1 during the Relevant Period;

(b) **"Basket"** means the services listed in Part A of the Annex to this condition 7;

(c) **"Charge"** means the charge (being in all cases the amounts offered or

charged by the Dominant Provider, excluding any discounts) to a communications provider for a unit of any Charge Controlled Service;

(d) **"Charge Controlled Service"** means a service or Basket of services listed in conditions 7.1 or 7.2;

(e) **"Charge Controlled Product"** means any wholesale broadband access product supplied by the Dominant Provider to communications providers (including itself) based on IP connectivity that allows those communications providers to connect at a number of handover points to the Dominant Provider's network in order to provide a service to end users with an access connection capable of supporting downstream speeds of up to 8Mb/s, such product being currently known as IPstream Connect Max and IPstream Connect Max Premium;

(f) **"Consumer Prices Index"** means the index of consumer prices compiled by an agency or a public body on behalf of Her Majesty's Government or a governmental department (which is the Office of National Statistics at the time of publication of this Notification) from time to time in respect of all items;

(g) **"Controlling Percentage"** is to be determined in accordance with condition 7.6;

(h) **"CPI"** means the amount of the change in the Consumer Prices Index in the period of twelve months ending on 31 December immediately before the beginning of the Relevant Year, expressed as a percentage (rounded to two decimal places) of that Consumer Prices Index as at the beginning of that first mentioned period;

(i) **"December 2013 LLU Charge Control Notification"** means the notification contained in Annex 15 to the Ofcom consultation document entitled "*Fixed access market reviews: Openreach quality of service and approach to setting LLU and WLR Charge Controls*", dated 19 December 2013;

(j) **"Input Service"** means, in relation to each service listed in the Annex to this condition, a service provided by the Dominant Provider to itself and made available to other parties, which the Dominant Provider uses as a

specific input for each such service listed in the Annex to this condition. There may be no, one or more than one Input Service used for each service. The Input Services for each service are listed in Part C;

(k) **"Input Service Charge"** means the charge (being in all cases the amounts offered or charged by the Dominant Provider, excluding any discounts) to a communications provider for a unit of any Input Service;

(l) **"Metallic Path Facilities"** means a circuit comprising a pair of twisted metal wires employing electric, magnetic, electro-magnetic, electro-chemical or electro-mechanical energy to convey signals when connected to an electronic communications network;

(m) **"Percentage Change"** is to be determined in accordance with conditions 7.3, 7.4 and 7.5;

(n) **"Prior Financial Year"** means the year of 12 months ending on 31 March immediately preceding the Relevant Year in question;

(o) **"Prior Year"** means each of the following three years:

(1) in relation to the First Relevant Year, the year beginning 1 April 2013 and ending 31 March 2014 (the "First Prior Year");

(2) in relation to the Second Relevant Year, the year beginning 1 April 2014 and ending 31 March 2015 (the "Second Prior Year"); and

(3) In relation to the Third Relevant Year, the year beginning 1 April 2015 and ending 31 March 2016 (the "Third Prior Year");

(p) **"Prior Year Weighted Average Charge"** is to be determined in accordance with the relevant formula in conditions 7.3, 7.4 and 7.5;

(q) **"Relevant Excess Revenue"** means the Excess Revenue earned from charging the Affected Communications Provider;

(r) **"Relevant SMPF Special Fault Investigations"** shall be construed as being those SMPF Special Fault Investigations required to support the provision of End User Access Rental Services for the Charge Controlled

Products;

(s) **"Relevant SMPF Tie Pair Modification services"** shall comprise those SMPF Tie Pair Modification and SMPF Tie Pair Modification (Multiple Re-termination) services that are used to support the provision of End User Access Rental Services for the Charge Controlled Products;

(t) **"Relevant Tie Cables"** shall be construed as being those Tie Cables used to support the provision of End User Access Rental Services for the Charge Controlled Products, excluding any Tie Cables listed in rows 13 to 22 of the table in Part 1 of the Annex to Condition 7A of the December 2013 LLU Charge Control Notification;

(u) **"Relevant Year"** means each of the following three years:

(1) The year beginning on 1 April 2014 and ending on 31 March 2015 (the "First Relevant Year");

(2) The year beginning on 1 April 2015 and ending on 31 March 2016 (the "Second Relevant Year"); and

(3) The year beginning on 1 April 2016 and ending on 31 March 2017 (the "Third Relevant Year");

(v) **"Relevant Year Weighted Average Charge"** is to be determined in accordance with the relevant formula in conditions 7.3, 7.4 and 7.5;

(w) **"Shared Access"** means the non-voice band frequency of Metallic Path Facilities;

(x) **"Shared Metallic Path Facility (SMPF) New Provide"** means the provision of Shared Access on a line that previously did not have Shared Access, including when the line was previously provided with Metallic Path Facilities;

(y) **"Shared Metallic Path Facility (SMPF) Rental"** shall be construed as rental of access to the non-voice band frequency of Metallic Path

Facilities;

(z) **"SMPF Special Fault Investigations"** shall be construed as comprising SMPF Special Fault Investigation 2 (SFI2) – Base module, SMPF Special Fault Investigation 2 (SFI2) – Coop module, SMPF Special Fault Investigation 2 (SFI2) – Frame direct module, SMPF Special Fault Investigation 2 (SFI2) – Frame module, SMPF Special Fault Investigation 2 (SFI2) – Internal equip module, SMPF Special Fault Investigation 2 (SFI2) – Internal Wiring module and SMPF Special Fault Investigation 2 (SFI2) – Network module, each of which shall have the same meaning as in the December 2013 LLU Charge Control Notification;

(aa) **"SMPF Tie Pair Modification"** and **"SMPF Tie Pair Modification (Multiple Re-termination)"** shall have the same meaning as in the December 2013 LLU Charge Control Notification; and

(bb) **"Tie Cables"** shall be construed as having the same meaning as in the December 2013 LLU Charge Control Notification.

Annex to Condition 7

Part A – Services subject to the charge control pursuant to Condition 7.1

Each of the services set out below is subject to the charge control in condition 7 in so far as and only to the extent that it is provided in connection with the provision by BT of wholesale broadband access services in Market A:

1. End User Access Connection Services: i.e. any service required in order to provide the initial connection of an end user to the Dominant Provider's broadband network for the purposes of providing the Charge Controlled Product, such service currently being known as IPstream Connect Max and Max Premium End User Access Connection.

2. End User Access Rental Services: i.e. any service related to the ongoing provision of a connection of an end user to the Dominant Provider's broadband network for the purposes of providing the Charge Controlled Product, such service currently being known as IPstream Connect Max and Max Premium End User Access Rental.

3. **End User Bandwidth Rental Services:** i.e. any service in addition to End User Access Rental Services provided on an End User basis and related to the ongoing provision of End User bandwidth by the Dominant Provider to a communications provider, for the purposes of providing the Charge Controlled Product, such service currently being known as IPstream Connect Max and Max Premium EU bandwidth charge per month.

4. **End User Migration Services:** i.e. any service required to migrate an end user of a product provided using the Charge Controlled Product from one communications provider to another (including to or from a retail division or subsidiary of the Dominant Provider) or between a product provided using the Charge Controlled Product and a product provided using other wholesale broadband access services provided by the Dominant Provider, such service currently being known as BT IPstream Connect End User Transfer.

5. End User Re-grade Services: i.e. any service required to change the upstream or downstream speed of the connection provided to the end user, where the end user continues to be connected to the same communications provider, where all other features of the service provided by the Dominant Provider to the communications provider stay the same, and where the effect of the change of upstream or downstream speed is such that the service provided by the Dominant Provider is the Charge Controlled Product either prior to or after the re-grade. This would include, for example, re-grading from a lower speed to achieve a downstream speed of up to 8Mbit/s or by re-grading between products that provide a

downstream speed of up to 8Mbit/s in order to achieve a different maximum theoretical upstream speed, such service currently being known as BT IPstream Connect End User Re-grade.

6. End User Cancellation Services: i.e. any service required to cancel an order for an End User Access Connection service during the course of connecting that service but prior to the service connection being completed, such service currently being known as IPstream Connect ADSL Cancellation.

7. **Contracted Bandwidth Rental Services:** i.e. any service related to the provision of bandwidth purchased by a communications provider at each of the handover points for the purpose of providing a product to end users which uses the Charge Controlled Product (either individually or in aggregate across handover points), irrespective of the actual bandwidth used, such service currently being known as IPstream Connect Contracted Bandwidth per Mbit/s per node.

8. **Communications Provider Handover Rental Services:** i.e. any service related to the connection by the communications provider at each of the handover locations required to connect to the Charge Controlled Product, such service currently being known as IPstream Connect Communications Provider (CP) Handover.

9. **Interconnect Links:** i.e. any service provided by the Dominant Provider to connect between any of the handover points of the Charge Controlled Product and the communications provider's network, such service currently being known as IPstream Connect Interconnect Links 1Gbit/s and 10Gbit/s.

Part B – Services subject to the charge control pursuant to Condition 7.2

End User Cease Services: i.e. any service required to disconnect an end user in Market A from any wholesale broadband access product provided in Market A.

Part C – Input Charges for the services subject to the charge control pursuant to Condition 7.1 and 7.2

The Table below lists the only Input Services that are relevant for the purposes of calculating average Charges made by the Dominant Provider to itself under conditions 7.4 and 7.5.

Service	**Input Service**
End User Access Connection Services	Shared Metallic Path Facility (SMPF) New Provide
End User Access Rental Services	Shared Metallic Path Facility (SMPF) Rental, Relevant SMPF Tie Pair Modification services Relevant SMPF Special Fault Investigations Relevant Tie Cables
End User Bandwidth Rental Services	None
End User Migration Services	None
End User Re-grade Services	None
End User Cancellation Services	None
Contracted Bandwidth Rental Services	None
Communications Provider Handover Rental Services	None
Interconnect Links	None
End User Cease Services	None

Except in so far as the context otherwise requires, the terms or descriptions of products and/or services used in Part C shall be construed as having the same meaning as those provided by the Dominant Provider on its website for definitions and explanations of its products in addition to future product updates. These are as at 27 January 2014 found as follows:

• For SMPF product information, please refer to:
http://www.openreach.co.uk/orpg/home/products/llu/mpf/mpf.do