
Wholesale Local Access Market Review: Statement – Volume 1

Markets, market power determinations and remedies

[§<] Redacted for publication

STATEMENT

Publication Date: 28 March 2018

About this document

This document sets out the conclusions of our Wholesale Local Access Market Review in relation to the UK excluding the Hull Area.

Wholesale local access refers to the connections from the local telephone exchange to a home or business premises, which are used to provide broadband and other services at the retail level.

We have concluded that BT continues to have significant market power in the wholesale local access market and have imposed a package of remedies to address the competition concerns arising from BT's SMP, which are designed to promote investment and competition.

This document consists of three volumes and detailed annexes we refer to in Volumes 1-3:

- Volume 1 sets out our analysis of the wholesale local access market and our decisions to impose a number of remedies on BT.
- Volume 2 sets out the detail of the charge controls we are imposing on BT's MPF local loop unbundling and 'up to 40 Mbit/s' wholesale services.
- Volume 3 sets out the details of the physical infrastructure access (PIA) remedy we are imposing on BT giving duct and pole access (DPA).

We have separately published our Quality of Service Statement, which sets out the detailed requirements we are imposing to ensure quality of service on BT's network.

Please note that on 22 May 2018 Ofcom published a Modification to the SMP conditions to correct a modelling error which increased some Metallic Path Facility (MPF) rental services and certain Local Loop Unbundling (LLU) ancillary services prices by around 1% (see Ofcom's explanatory note: https://www.ofcom.org.uk/data/assets/pdf_file/0011/114203/Explanatory-note-modification-SMP-condition-7a.pdf).

Contents

Volume 1

1. Executive summary	4
2. Introduction	14
3. Market definition	29
4. Market power assessment	67
5. Approach to remedies	87
6. General remedies	105
7. Specific access remedies	150
8. Quality of service remedies	170
9. Price regulation of VULA	177
10. Price regulation of copper access services, including LLU and SLU	218
11. Restriction on BT's ability to geographically target price reductions	232

Volume 2

1. Introduction	
2. Economic principles	
3. Charge control design	
4. Charge control cost modelling	
5. Implementation of our WLA charge control decisions and legal tests	

Volume 3

1. Introduction	
2. Physical infrastructure access remedy	
3. Non-discrimination requirements	
4. Recovery of PIA related costs	
5. Price regulation of PIA	
6. Improvements to PIA process and systems	
7. Implementation timetable	

Annexes

- A1. Regulatory framework
- A2. General analytical approach to market definition and SMP assessment
- A3. Equality impact assessment
- A4. Sources of evidence
- A5. Supporting evidence for market analysis
- A6. Assessment of the fair bet for past VULA investments
- A7. Additional comments raised by stakeholders
- A8. Regulatory reporting
- A9. Diagrams of service
- A10. Service volume forecasts
- A11. Top-down model: general approach
- A12. Top-down model: forecast adjustments
- A13. Quality of service cost modelling
- A14. Bottom-up model: documentation
- A15. Bottom-up model: calibration
- A16. Bottom-up and top-down models: results and sensitivities
- A17. Inflation
- A18. Cost and asset volumes elasticities
- A19. Efficiency
- A20. Cost of capital
- A21. Cumulo rates
- A22. Sales of copper and property
- A23. Ancillary services
- A24. Risk to BT's cost recovery from mixed usage
- A25. Asset cost component calculation
- A26. Calculation of the financial limit
- A27. Glossary
- A28. Cartesian report on GEA allocation
- A29. Cartesian report on bottom-up model
- A30. NERA report on incorporating BT's pension deficit in the cost of capital calculation
- A31. NERA report on the Equity Beta and Asset Beta for BT Group and Comparators
- A32. NERA report on the evidence for differences in risk for fixed vs. mobile telecoms
- A33. Legal instruments

1. Executive summary

- 1.1 Broadband has become increasingly important to people and businesses. All of us are more reliant than ever on the internet for business, banking, shopping, entertainment and socialising.
- 1.2 Nearly all UK homes and offices have access to ‘superfast’ broadband speeds of 30 Mbit/s or more, and average connection speeds have increased from 18 Mbit/s to 36 Mbit/s over the last three years. Residential data usage has risen by 36% year on year, in part driven by the growth of over-the-top services such as Netflix and Amazon Prime. Small and medium sized companies, as well as the smaller branch offices of larger organisations, are increasingly adopting cloud-based services, which depend on fast, reliable and consistent connections.
- 1.3 While this progress is encouraging, there is more to do to ensure that the country is ready to take advantage of further technological developments. Greater investment is needed to build broadband networks that are fit for the 21st century. This includes full-fibre networks that can deliver speeds in excess of 1 Gbit/s; are more reliable than copper-based networks, with five times fewer faults; and can give more consistent performance with speeds closer to those advertised.
- 1.4 We believe competition among different networks is the most effective way to spur continued investment and innovation in high-quality, fibre networks. Virgin Media’s Project Lightning (which plans to reach a further four million premises) has galvanised BT to develop its ‘G.fast’ technology, which is designed to deliver yet greater speeds from its copper network. In our Strategic Review of Digital Communications, we observed from analysis of network deployment across several different countries that the scale of full-fibre coverage tends to correlate with the level of network competition.
- 1.5 Promoting competition is central to our efforts to stimulate investment in the UK’s telecoms sector and the infrastructure the country needs. We have therefore adopted a major strategic shift to encourage large-scale investment in full-fibre networks, and away from reliance on the predominately copper-based technologies of BT’s existing network. This regulatory approach will support recent commitments by broadband companies to connect several million premises to full-fibre over the next few years, and is designed to promote further investment beyond these ambitions.
- 1.6 There are two complementary measures we can take to encourage competitive network investment:
 - reducing the cost and making it quicker and easier for competing providers to build their own networks; and
 - ensuring competing providers have appropriate incentives to build their own networks rather than buying wholesale services from Openreach, the telecoms network company owned by BT.
- 1.7 The largest part of the cost of deploying a network is the cost of physical infrastructure, such as underground ducts and telegraph poles. BT owns a vast network of these ducts

across the country and around 90% of them are likely to have space to lay new fibre cables. By opening up BT's ducts and poles to enable rival operators to install their own fibre networks, we estimate that the up-front costs of building fibre networks could be reduced by around 50%. These networks can also be deployed much more quickly. For example, while it can take days to build 200 metres of duct using traditional construction methods, fibre cables can be installed in the same length of existing duct in a matter of hours. Effective access to existing ducts and poles can transform the business case for investing in full-fibre networks.

- 1.8 But competing providers will only invest in building their own networks if this is more attractive than buying wholesale services from BT, as many do at present. The pricing of BT's wholesale services therefore plays an important role in investment incentives. Setting regulated prices where there is the prospect of competition requires a balance between retaining the incentives to invest in new networks (leading to longer-term benefits to consumers such as choice and innovation), and the risk of higher retail prices (with the associated shorter-term harm to consumers).
- 1.9 In principle, we might look to achieve this balance by recognising that network competition is possible in some parts of the country, but not all: prioritising incentives to invest in new networks in geographic areas that are prospectively competitive, and on protecting consumers in areas which are not. However, at this stage, the limited evidence as to where different companies will build new networks makes identifying the boundaries between these geographic areas impracticable for this review.
- 1.10 As an alternative, we think the combination of providing pricing flexibility for higher-speed services above 40 Mbit/s, and a control on BT's prices for its 'up to 40 Mbit/s' wholesale services, will achieve a reasonable balance. Where there is investment in new networks this is likely to be in full-fibre networks capable of delivering much higher speeds. Pricing flexibility for higher-speed services will help support these investment opportunities. In contrast, copper-based networks, which are used to deliver lower-speed superfast broadband, are now well-established. Our charge control will protect users of these services from the risk of high prices.
- 1.11 Over time, we would expect to adopt a regulatory approach that increasingly takes account of how network competition develops in different geographic areas. In places where there is evidence of effective competitive pressure emerging, we would expect to deregulate. Conversely, for the places where it becomes clear that competition will not emerge, there is an increasing risk of high prices for higher-speed services. In those geographic areas we would expect to control the wholesale price of higher-speed services to ensure that people continue to get a good deal from their broadband services. This geographically differentiated approach to regulation successfully promoted competition in copper-based broadband services in the mid-2000s.
- 1.12 Building future fibre networks will take time, and network competition will not be possible in all areas of the country. In this review, we have therefore also decided to put in place measures to protect consumers that rely on BT's existing network.

Key decisions

In this document, the key measures we are taking to promote competition are:

- improving access to BT's ducts and poles to make it easier and cheaper for competitors to build their own fibre networks;
- continuing pricing flexibility for BT's wholesale services with speeds above 40 Mbit/s, while introducing a control on BT's prices for its 'up to 40 Mbit/s' wholesale services, to support incentives to invest in fibre network build; and
- maintaining access and pricing controls on BT's copper network to protect consumers in the transition to greater network competition.

1.13 These measures are complemented by other initiatives to drive network investment:

- Plans to reform Openreach, BT's network division, into a legally separate company with a greater openness to different models of investment and risk-sharing, and stronger incentives to be responsive to all its customers, including in its consideration of technology investment choices.
- The UK Government is working to improve the business case for future infrastructure investment through a number of initiatives, including its Local Full Fibre Networks programme, the Digital Infrastructure Investment Fund, business rates relief for fibre networks, and its Barrier Busting Task Force.
- The UK Government has confirmed that universal broadband will be delivered by a regulatory Universal Service Obligation (USO), giving everyone in the UK access to speeds of at least 10 Mbit/s by 2020. We are ready to commence implementation of the USO once the Government passes the necessary secondary legislation.
- The Scottish and Welsh Governments and the Northern Ireland Executive have also announced plans to bring benefits to many homes and business in the nations.

1.14 Together, these initiatives will work towards the national priority of ensuring the country has the broadband infrastructure required to support the needs of UK consumers and businesses, ensuring they can benefit from new technologies and innovative services.

Market context

1.15 Almost all buildings in the UK are connected to a fixed telecoms network, which is used to provide broadband, telephone and now increasingly TV services. The wholesale services that support these connections form the wholesale local access (WLA) market.

1.16 Broadband services are generally marketed with reference to download speeds. For example, standard broadband, with download speeds up to 30 Mbit/s, is provided using copper to connect homes to BT's local exchange in almost all cases. BT has now overlaid fibre for part of the connection using fibre-to-the-cabinet (FTTC). Superfast broadband, with download speeds above 30 Mbit/s, is typically delivered using a combination of BT's wholesale copper access services and its FTTC services. Full-fibre broadband connections can offer speeds of 1 Gbit/s or more, as well as greater reliability.

- 1.17 In most parts of the country there are only one or two physical networks. BT and Virgin Media are by far the largest fixed access network providers, reaching nearly 100% and around 45% of UK homes respectively, with Virgin Media planning to extend its coverage to around 60%. Other smaller network providers operate in specific parts of the country. As a result of long-standing regulation, BT, through Openreach, provides wholesale access to its network to other companies, the largest of which are Sky and TalkTalk. These companies offer retail services in competition with BT Consumer.
- 1.18 Superfast broadband services are available to over 90% of UK premises. Our analysis of broadband take-up shows that demand for superfast speeds is growing rapidly. Where available, 50% of broadband lines were at superfast speeds by 2017, with a forecast of above 70% by 2020/21. But while the UK performs well internationally in terms of the availability and take-up of superfast broadband, it lags well behind other countries in full-fibre broadband, with just 3% of premises currently able to benefit from these types of connections. The challenge now is to look to the future and the need to encourage investment in full-fibre networks.
- 1.19 In recent months there has been growing momentum behind investment, with a number of BT's competitors having announced plans to build new full-fibre networks:
- Virgin Media is continuing to expand its network and, as noted above, aims to reach a further four million premises, half of which will be connected using full-fibre.
 - CityFibre announced in November 2017 a plan to roll out full-fibre to one million homes in 12 cities over the next four years, in conjunction with Vodafone – and possibly as many as five million homes by 2025.
 - Hyperoptic has announced that its fibre network now covers 350,000 premises. It further plans to cover two million urban homes by 2022 and five million by 2025.
 - TalkTalk has announced plans to roll out full-fibre to three million premises.
 - Gigaclear's network reaches 60,000 premises in rural areas and it plans to expand to 150,000 premises by 2020.
- 1.20 BT has recently announced plans to speed up its deployment of full-fibre, with a commitment to reach up to three million premises by 2020. It has also outlined plans to reach 10 million by the mid-2020s, conditional on a number of regulatory and public policy enablers.

Measures to promote investment and competition

- 1.21 Having consulted on proposals in our review of the WLA market last year, we have concluded that BT continues to have significant market power (SMP). A primary concern is that BT's SMP reduces incentives for both BT and its competitors to invest in new networks. In this document we set out our decisions to impose a comprehensive package of measures to address the competition concerns arising from BT's SMP.
- 1.22 Our package of measures to promote investment and competition consists of:

- duct and pole access: improving access to BT's ducts and poles to promote investment by competitors; in turn, competitive network investment will incentivise BT to invest in fibre networks;
- pricing of wholesale services: continuing pricing flexibility for BT's wholesale services with speeds above 40 Mbit/s, while introducing a control on BT's prices for its 'up to 40 Mbit/s' wholesale services, to support both BT's and competitors' incentives to invest in fibre network build;
- access to existing networks: maintaining access and pricing controls on BT's copper network to protect consumers in the transition to greater network competition, recognising that fibre networks will take time to build and network competition will not be possible in all areas of the country; and
- improving quality of service: setting higher standards of quality on BT's copper network to protect consumers in the transition to greater network competition.

Duct and pole access to promote competitive network investment

- 1.23 The high costs of building physical infrastructure, such as ducts and poles, is a barrier to large-scale network deployment in significant parts of the country. BT's SMP means that it has limited incentive to provide rivals with access to its universal physical infrastructure.
- 1.24 While BT has been required to provide duct and pole access (DPA) since 2010, the original remedy was designed to support telecoms providers wanting to offer services in advance of BT's superfast broadband rollout, particularly to increase the contestability of public funding to build new networks in rural areas. Initial interest from competing providers failed to materialise and there was limited motivation to develop the remedy further.
- 1.25 In light of the priority to encourage investment in full-fibre networks, our focus has been on producing a practical DPA remedy, with infrastructure that is ready for use by competing network providers as soon as possible.
- 1.26 Our DPA remedy will broadly allow other telecoms providers to access BT's ducts and poles as easily as BT itself, using (as far as is possible) the same processes, service levels, systems and digital map data. We are enabling greater flexibility in the use of BT's ducts and poles, so telecoms providers can deploy 'mixed use' local access networks offering both broadband and non-broadband services (such as mobile backhaul services), provided the primary purpose of the network deployment is the delivery of retail broadband services. We are spreading the costs of the DPA remedy across all services using ducts and poles, meaning rental prices should fall to around half their current levels.
- 1.27 In response to stakeholders' comments on the scope of the DPA remedy and associated regulated pricing, we are providing more guidance to give greater certainty to investors in competing full-fibre networks.
- 1.28 Our DPA remedy could transform the business case for companies investing in fibre – lowering the upfront cost by around 50% and reducing the time to market, leading to greater investment in alternative networks in the future. Our decision to impose the DPA remedy, and details of how it will work, is discussed in Volume 3 of this statement.

Pricing of wholesale services to support network investment

- 1.29 The majority of providers who compete with BT to offer retail broadband services, including Sky and TalkTalk, currently purchase wholesale services from BT. These retail providers will only invest in building their own networks if they consider this to be more attractive than buying wholesale services from BT. In addition, BT's incentives to invest in new networks will be influenced by the return that BT can achieve on its investment, which in turn depends on the prices it can charge for services delivered over the network. The pricing of BT's wholesale services therefore plays an important role in investment incentives, both for BT and its competitors.
- 1.30 BT's wholesale copper access services have been subject to price controls for some time. In contrast, BT has had flexibility in how it sets prices for its FTTC services, even though they have been subject to regulated access since commercial launch in 2009 through an obligation we refer to as virtual unbundled local access (VULA).
- 1.31 Setting regulated wholesale prices where there is the prospect of network competition requires a balance between retaining the incentives to invest in building new networks, and the risk of higher retail prices. Higher VULA prices would in general make both past and future investment more profitable, though the relationship between prices and incentives for new investment is complex. In the longer term, investment in competing networks can be expected to deliver significant benefits of innovation and competition, in terms of greater choice, quality and incentives to price keenly. But higher VULA prices would be expected to result in higher retail prices and a degree of harm to consumers in the shorter term. In particular, during the period of transition as new networks are built, and in parts of the country where network competition does not emerge. Currently, around 40% of consumers take superfast broadband services which rely on the Openreach network and we expect this to increase over the review period.
- 1.32 In principle, an appropriate balance could be achieved by recognising that geography plays a role in the prospects for network competition. Some areas of the country (for example densely populated cities with a high proportion of residential apartment buildings) are likely to be prospectively competitive. In these areas, it would make sense to prioritise incentives to invest in network build. Other areas of the country (such as more rural communities) may not be able to support more than one fibre network, and in these areas the priority would be to protect consumers from high retail prices.
- 1.33 In practice, business cases for deploying fibre networks are complex and diverse, taking into account a wide range of criteria. These include variations in both the cost of deployment (for example in different geographies) and in the revenue opportunities (such as offering business services over the network in addition to broadband, or bundling other retail services such as mobile). At this stage, it is not possible to reliably identify the geographical boundary between prospectively competitive areas, and those which are not. The associated regulatory risks of misspecification include failing to protect consumers from higher prices in areas where no network competition emerges. Conversely, there is a risk of deterring network investment in other areas due to regulating wholesale prices too tightly.

- 1.34 We have therefore considered whether an appropriate balance can be achieved by considering different product bandwidths – lower-speed and higher-speed services – rather than different geographic areas.
- 1.35 In our consultation, we noted that pricing flexibility for FTTC services, while imposing a cost-based control on lower-speed copper services, has successfully incentivised FTTC investment and contributed to the take-up of superfast broadband services. Allowing BT the opportunity to achieve a fair return on risky investments plays an important role in its investment incentives. Our assessment is that BT has had the opportunity to make a reasonable return on its initial risky investment in FTTC. Even taking our charge control on ‘up to 40 Mbit/s’ into account, BT’s return on its FTTC investments is well above the cost of capital it faced at the time and sufficient to compensate for the risks it then faced with this investment. This approach of regulating the price of a lower-bandwidth (or ‘anchor’) product at cost, which provides a degree of constraint on higher-bandwidth products, which otherwise benefit from pricing flexibility, is referred to as ‘anchor pricing’.
- 1.36 We consider that an appropriate balance between encouraging network investment and protecting consumers from the risk of higher retail prices can be achieved by a continuation of this successful anchor pricing approach. In this case, our approach is modified to recognise that the focus of investment is now on full-fibre networks, and there is the prospect of competitive investment, which was not the case for investment in FTTC.
- 1.37 We have decided to control prices of BT’s FTTC wholesale service – the ‘up to 40 Mbit/s’ VULA service.¹ We will allow BT continued flexibility in how it sets prices on VULA services of higher (and lower) bandwidths, including those using G.fast technology. In addition, BT will no longer be subject to the detailed VULA Margin Condition that we imposed in 2014.²
- 1.38 While we expect the charge control for ‘up to 40 Mbit/s’ VULA to constrain the prices of other speed variants and full-fibre network services to a reasonable degree, over time this constraint will weaken. As demand for higher-speed, more reliable services grows, we expect the average price of wholesale connections to increase.
- 1.39 Table 1.1 below sets out the charge control that will apply for VULA rentals during the review period. Both the ‘up to 40 Mbit/s’ service and the copper access service are required to provide retail superfast broadband services.
- 1.40 The VULA charge control starts on 1 April 2018 and runs to 31 March 2021. Charges are reduced from the current level in two steps, so they are aligned with our forecast of efficient cost in 2019/20 and continue to be cost-based in 2020/21.

¹ BT’s 40/10 FTTC service which provides download speeds of up to 40 Mbit/s and upload speeds of up to 10 Mbit/s.

² The VULA Margin Condition imposed obligations on BT to provide a sufficient margin between retail and wholesale prices and to provide details to Ofcom of the costs and revenues necessary to demonstrate its compliance, every six months.

Table 1.1 VULA charge controls³

	Current annual charge	Annual charges (£-nominal)*		
		2018/19	2019/20	2020/21
FTTC 40/10 ('up to 40 Mbit/s') rental	£88.80	£69.59	£61.12	£59.91
Copper access ⁴ rental	£84.38	£85.46	£84.95	£84.84
Combined rental charge	£173.18	£155.05	£146.07	£144.75

*Some of the figures in this table and paragraph 1.41 below have subsequently been amended as set out in the explanatory note: https://www.ofcom.org.uk/data/assets/pdf_file/0011/114203/Explanatory-note-modification-SMP-condition-7a.pdf

- 1.41 The combined rental charge in 2020/21 equates to £12.06 per month and is around 7% higher than what we consulted on in March 2017.
- 1.42 To prevent BT from stifling new investment by rivals as network competition emerges, BT will not be allowed to make geographically targeted reductions to wholesale rental charges in areas where competitors are starting to build new networks.
- 1.43 Our decision to impose a charge control for VULA services is set out in Section 9, and details of our charge control are set out in Volume 2 of this statement.

Future pricing regulation

- 1.44 We recognise that it will take time to build new networks, and hence for our strategy to encourage large-scale investment in full-fibre networks to play out. Over that time, we would expect the constraint imposed by the cost-based 'up to 40 Mbit/s' VULA services on the price of faster VULA services to weaken.
- 1.45 We cannot prejudge what actions we will take in the future, as any pricing decisions in future reviews will be made in light of the circumstances and legal framework applicable at that time. However, we do not expect to extend our charge controls beyond retaining cost-based controls on copper access and 'up to 40 Mbit/s' VULA services, as a matter of course.
- 1.46 Rather, with increasing investment by competing providers and improved prospects for network competition, we expect future reviews to consider the case for a shift away from price regulation of VULA. In time, a greater degree of differentiation in our regulatory approach across the UK is likely to emerge. Our strategy anticipates that different regulation is likely to be needed in different geographic areas.

³ The charge control is in the form of CPI-X. The annual charges set out for 2019/20 and 2020/21 are forecasts based on expected CPI.

We have updated a number of the inputs into the charge control models based on new or revised information (particularly in relation to inflation and BT's pension costs). This has had the effect of slightly increasing the level of the charge controls.

⁴ Copper access is provided with two different quality of service levels: level one and level two. We have decided to set the charge control on service level one as the industry is increasingly using this level.

- 1.47 In places where there is evidence of competitive pressure emerging, we would expect to deregulate. Conversely, for the places where it becomes clear that competition will not emerge, there is an increasing risk of high prices for higher-speed services. In those geographic areas, while we would expect to regulate wholesale prices, we would do so in a manner that takes into account the level of risk at the time the investments were made.
- 1.48 Given the challenges in identifying the criteria for distinguishing between geographic areas that are prospectively competitive, and those which are not, future market reviews will need to consider these criteria carefully based on the facts at the time. In light of this uncertainty, we expect to continue to place weight on the risk of harm to consumers resulting from stifling investment by competing providers. Our starting point will therefore be to err on the side of promoting investment.
- 1.49 We are also working with BT and other network providers to find practical solutions to facilitate the transition to full-fibre networks, while ensuring the transition does not damage consumers' experiences. We recognise the benefit of providing more clarity on regulatory principles, such as the 'fair bet', that should apply to new risky investments, and the application of rules that may affect the move from copper networks and the eventual removal of those networks. The principles that should apply fall outside the scope of this market review, but we will consider changes that take account of competition and the interests of consumers.

Ensuring access and regulated pricing for existing networks

- 1.50 Given that building fibre networks will take time and network competition will not be possible in all areas of the country, we have decided to put in place measures to protect consumers and the retail competition on BT's existing network.
- 1.51 We have decided that BT must continue to provide wholesale access, including to its full-fibre network, recognising that it will not be feasible for other providers to build competing networks throughout the whole of the UK. However, BT should continue to have flexibility in setting wholesale prices for full-fibre services where charge controlled FTTC services are also available. In the limited cases where BT has deployed a full-fibre network but offers no other superfast broadband services, the anchor pricing approach will apply, combining pricing flexibility for higher speeds and a control on the 40 Mbit/s full-fibre service.
- 1.52 Our key objective for BT's copper network is to maintain a stable regulatory regime during the transition to greater network competition, and protecting consumers who use the network from the risk of higher prices. Most customers using fixed services delivered via the Openreach network will continue to rely on the copper network over the review period, including many superfast broadband customers.
- 1.53 Our main decisions in respect of copper access regulation are:
- that BT must continue to offer local loop unbundling (LLU)⁵, which provides competitors with control of the copper access connection. We will continue to impose

⁵ LLU is a process by which BT offers access to its copper network to other telecoms providers.

a cost-based charge control on the main form of LLU and the supporting services used by BT's competitors; and

- to remove the specific network access obligation and charge control on shared LLU. BT will still have to provide network access to shared LLU on reasonable request and at fair and reasonable charges, and will be subject to a no undue discrimination obligation.

1.54 The copper access charge control (on the main form of LLU) results in a broadly stable rental charge over the next three years, with underlying costs estimated on a similar basis to that used previously (see Table 1.1 above). The control runs from 1 April 2018 to 31 March 2021. Our decision to impose the copper access charge control is set out in Section 10, and details of our charge control are set out in Volume 2 of this statement.

Improving quality of service

1.55 Effective network competition will deliver choice and innovation to people and businesses, with network providers competing not just on price, but on other features including service quality.

1.56 In the transition to greater network competition and large-scale deployment of full-fibre networks, good quality of service on BT's existing network is necessary for effective competition. Poor wholesale quality of service limits telecoms providers' ability to offer differentiated services to their customers, and consumers may be deterred from switching. BT's SMP means that absent regulation it does not have sufficient incentives to deliver quality of service at an appropriate level, or to innovate to improve service quality.

1.57 In 2014 we imposed new quality of service rules on BT in relation to repairing faults and installing new broadband lines on its copper network. This was necessary to stabilise BT's performance, which had declined steeply in prior years.

1.58 As set out in Section 8, we have decided to include a direction-making power in the SMP conditions enabling us to set appropriate quality of service standards on BT. The detail of our quality of service remedies – which we have extended to BT's FTTC services – is set out in our Quality of Service Statement.

2. Introduction

- 2.1 In this section we set out a description of wholesale local access (WLA) in the UK and the consultations we have conducted to inform our market review. We also summarise the process we have adopted in defining the markets in this review and the legal framework relating to the review process.
- 2.2 The conclusions of our review are published in three volumes and a number of Annexes, which together set out our analysis of and decisions regarding the WLA market in the UK excluding the Hull Area:
- Volume 1 sets out our market analysis, and the reasoning behind the remedies we are imposing on BT (excluding duct and pole access (DPA));
 - Volume 2 sets out the detail of the charge controls for local loop unbundling (LLU), in the form of metallic path facility (MPF), and the virtual unbundled local access (VULA) 40/10 Mbit/s service, together with a range of ancillary services supporting wholesale local access;
 - Volume 3 sets out the details of the physical infrastructure access (PIA) remedy giving duct and pole access (DPA) and our reasoning behind it; and
 - Annexes containing details which are referred to in each of the volumes. These Annexes support the analysis in Volumes 1 to 3 and are an integral part of our reasoning.
- 2.3 We have also separately published the Quality of Service Statement⁶, setting out our decisions to impose directions regarding quality of service issues on BT's fixed access network, a report by WiK on the benefits of full-fibre network deployment, consumer research and a number of charge control models.⁷

Wholesale local access in the UK

- 2.4 As we explain in Section 3, a range of voice, internet access and content services can be consumed when a household (or business) subscribes to a retail telecoms package. The telecoms provider which owns and operates the line over which these services are delivered is in a strong position to influence the choices available to end consumers.
- 2.5 WLA describes the underlying infrastructure (i.e. the line or fixed access connection) used by a retail telecoms provider to deliver services to end consumers.
- 2.6 In the UK excluding the Hull Area, there are two large local access networks, owned and operated by BT and Virgin Media respectively. In the Hull Area the main local access network is operated by KCOM.
- 2.7 For nearly two decades, BT has been required to provide WLA over its network of local access connections. This has primarily involved access via local loop unbundling (LLU),

⁶ Ofcom, 2018. *Quality of service for WLR, MPF and GEA Statement*. <https://www.ofcom.org.uk/consultations-and-statements/category-1/quality-of-service>.

⁷ <https://www.ofcom.org.uk/consultations-and-statements/category-1/wholesale-local-access-market-review>.

which enables a retail provider to take control of the copper access connection to each premise so-connected on the BT local access network. Since 2008/09, BT has been upgrading its access network by introducing fibre connections. In general BT has deployed fibre between local exchanges and street cabinets to make a fibre-to-the-cabinet (FTTC) network (with copper still used between the street cabinet and the customer's premises). In a small number of cases BT has deployed full-fibre connections, known as fibre-to-the-premises (FTTP)⁸ thus eliminating the need for a copper connection, including for the final connection to the customer. KCOM operates a copper access network in the Hull Area and has also been deploying fibre, mainly in the form of FTTP.

2.8 Virgin Media's access network architecture and the technologies it uses are different, but the underlying connection is similar to that in BT's network. It provides a connection between a customer's premises and a street cabinet using a copper coaxial cable to support TV and broadband, with a twisted copper pair to support standard telephony. Virgin Media then uses fibre to connect the street cabinets to the 'head-end' hub site. We refer to this network as a 'cable network', reflecting the original design of such networks being for the provision of cable television. Virgin Media is also deploying FTTP in its new network deployment.

2.9 In addition to these large fixed telecoms local access networks there are a number of small local access networks, including various fixed wireless networks, mostly offering broadband connectivity to consumers. Fixed wireless access enables a premises to be connected without a physical fibre or copper connection. Fixed wireless access services can be used for much the same purposes as fixed line services and, in some locations, may be functionally equivalent (e.g. where fixed broadband speeds are particularly low). As we recognise in Section 3, fixed wireless access services are evolving, driven by technological change, which may mean they gain increased consumer acceptance as an alternative to a copper, fibre or cable local access connection.

2.10 Mobile networks also provide access using wireless connections to customers' mobile devices directly (rather than via a router connected in the home or business premises). Unlike other forms of connection, this allows a customer to access voice and data services while on the move.

Retail services delivered over local access networks

2.11 Retail telecoms services are differentiated on a number of dimensions, including not only the services sold as a bundle (or separately), but also on the features of each individual retail service. Voice usage may be bundled with the telecoms package (e.g. evening and weekend calls) or priced on a metred basis. Similarly, internet access is often differentiated on the basis of usage (e.g. capped monthly usage or unlimited monthly usage). The most significant differentiation is often seen in the content bundled with the telecoms package – ranging from bundles with nothing other than "over the top" access to content such as

⁸ FTTP may also be referred as fibre-to-the home (FTTH).

Netflix, Amazon or YouTube, to packages bundling exclusive sports and other pay-TV content.

- 2.12 In relation to the speed of the internet access connection, a large number of bandwidth choices are available, but we have typically grouped these into four broad categories of download speeds as follows:
- narrowband internet access: download speeds up to the capacity of standard voice channel (i.e. up to 64 Kbit/s);
 - standard broadband (SBB): download speeds of up to 30 Mbit/s;
 - superfast broadband (SFBB): download speeds from 30 Mbit/s up to 300 Mbit/s; and
 - ultrafast broadband (UFBB): download speeds of 300 Mbit/s and above.⁹
- 2.13 Narrowband and SBB speeds are typically delivered over copper access connections. With fibre and cable based local access connections, telecoms providers can offer superfast or ultrafast broadband services, depending on the technology, as well as lower speeds if the end consumer so requires.¹⁰
- 2.14 SFBB is now available to almost 91% of homes and small businesses across the UK.¹¹ The reach of these services has advanced considerably over the last few years.
- 2.15 Our forecast for the period to 2020/21 is that take up of superfast broadband will increase to around 70% of all broadband connections (including those where superfast broadband is not yet supported).

⁹ There is no generally accepted definition of ultrafast. The UK Government has previously defined ultrafast as 100 Mbit/s or greater (<https://www.gov.uk/government/publications/broadband-investment-fund/broadband-investment-fund-request-for-proposals>). We also consider that the reliability with which the speed is delivered is an important attribute and expect the definition to ultrafast to evolve to take account of the importance of this reliability. We currently take ultrafast broadband services to be those that offer a minimum download speed of 300 Mbit/s or more (a factor of ten greater than the minimum offered by superfast). These services also offer higher upload speeds than superfast broadband. Over time we expect ultrafast technologies to evolve towards providing gigabit speeds and above – 1 Gbit/s or more.

¹⁰ The European Commission refers to these as Next Generation Access (NGA) networks, which it defines as 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. See *Commission Recommendation of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) (2010/572/EU)* (NGA Recommendation) <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010H0572&from=EN>. In the UK, FTTC and FTTP access connections fall under that characterisation of NGA.

¹¹ Ofcom, 2016. *Connected Nations 2016*. https://www.ofcom.org.uk/data/assets/pdf_file/0035/95876/CN-Report-2016.pdf.

Figure 2.1: Ofcom forecasts of SFBB take-up as a proportion of all broadband lines¹² (i.e. not adjusted for incomplete coverage of SFBB)¹³



Source: Ofcom forecast based on Openreach and Virgin Media data¹⁴

- 2.16 However, our 2017 Connected Nations report shows that in June 2017, around 1.1 million homes and businesses were still unable to receive download speeds of 10 Mbit/s¹⁵, and 2.6 million are unable to receive superfast speeds of 30 Mbit/s.¹⁶
- 2.17 The UK Government is supporting improvement of broadband services across the country. It established Broadband Delivery UK (BDUK) to deliver superfast broadband to areas where there was no prospect of commercial deployment, and has ensured broadband with download speeds of 24 Mbit/s or more is available to 95% of the UK. More recently, the Government has announced that universal high-speed broadband will be delivered by a regulatory Universal Service Obligation (USO), giving everyone in the UK the right to download speeds of at least 10 Mbit/s by 2020.¹⁷ The Nations are also implementing

¹² We have not adjusted this chart to take into account the fact that SFBB is not available in 100% of the UK. The share of SFBB in those locations where it is available may therefore be slightly higher than the figures presented here.

¹³ SFBB in this chart represents all fibre and cable lines, although in practice, a small fraction of these lines may not be capable of delivering speeds of 30mbit/s.

¹⁴ Response dated 3 December 2015 to questions 2,3,5 and 6 of the 1st WLA s.135 notice and response dated 2 September 2016 to questions 1 and 2 of the joint 2nd WBA and WLA BT s.135 notice; and Virgin Media, 31 December 2015, *Consolidated Financial statements*, <http://www.libertyglobal.com/pdf/fixed-income/Virgin-Media-December-31-2015-FINAL.pdf> and Virgin Media, 16 February 2016, 2016 *Liberty Global Group Investor Call*, <https://www.libertyglobal.com/pdf/presentations/Liberty-Global-Group-Q4-2016-Investor-Call-Presentation-FINAL.pdf>.

¹⁵ Our Connected Nations 2017 report found that 1.1m homes are unable to receive decent broadband – this includes a minimum download speed of at least 10Mbit/s with additional quality parameters of a minimum of 1Mbit/s upload speed, minimum standard of latency and contention and a data cap of at least 100GB per month. Ofcom, 2017. *Connected Nations 2017: Data Analysis*, paragraph 4.25. https://www.ofcom.org.uk/data/assets/pdf_file/0016/108511/connected-nations-2017.pdf

¹⁶ 9% of UK premises are unable to receive broadband speeds of 30 Mbit/s or higher.

¹⁷ Government press release, December 2017 <https://www.gov.uk/government/news/high-speed-broadband-to-become-a-legal-right>.

programmes to deliver superfast broadband: Reaching 100% in Scotland¹⁸, Superfast Cymru in Wales¹⁹ and Superfast Northern Ireland.²⁰

- 2.18 Ultrafast broadband can be provided with different technologies. The majority of ultrafast broadband services are currently provided with full-fibre. In 2017, only around 3% of homes and small businesses (840,000) had access to full-fibre.²¹ BT is now piloting G.fast technology which uses fibre to the cabinet and copper for the final connection to the customer, and which may be able to provide ultrafast services to some of the customers in the areas where it is deployed.²² Virgin Media is in the process of upgrading its network (through a combination of updating its cable network and deploying full-fibre) and is beginning to offer services with download speeds of up to 300 Mbit/s. Later versions of the technology used could support, in theory, download speeds of up to 10 Gbit/s and upload speeds of up to 1 Gbit/s.²³

WLA services

- 2.19 BT, through Openreach, provides wholesale local access to other telecoms providers, the largest of which are BT Consumer, Sky and TalkTalk, who then offer services to end consumers. There are a number of WLA services that telecoms providers use to provide fixed voice and broadband services using BT's network, which BT offers to fulfil the specific network access obligations that we impose:

- PIA: a form of duct and pole access that enables providers to deploy fibre in the access network using BT's ducts and poles;
- LLU: enables providers to deliver standard broadband over BT's copper network. The two variants of LLU are MPF and Shared Metallic Path Facility (SMPF)²⁴;
- Sub Loop Unbundling (SLU): allows providers to physically take over or share part of BT's existing copper lines between a cabinet and the customer's premises; and
- VULA: provides access to BT's fibre through a virtual connection. BT meets this obligation through the provision of Generic Ethernet Access (GEA). It has two variants: GEA-FTTC and GEA-FTTP, each of which is available in a range of bandwidths with the price of the service increasing with the bandwidth offered.

¹⁸ <http://www.gov.scot/Publications/2017/07/4529/343135>.

¹⁹ <https://beta.gov.wales/superfast-broadband>.

²⁰ <http://nibroadband.com>.

²¹ Ofcom, *Connected Nations Report 2017*.

²² G.fast is a technology which is similar to VDSL2 over FTTC that provides higher bandwidth broadband using a copper/fibre infrastructure of local access connections. BT offers two speed variants in its G.fast pilot: the first offers up to 160 Mbit/s download and 30 Mbit/s upload, and the second offers up to 330 Mbit/s download and 60 Mbit/s upload. These higher speeds may only be available to customers within 300-400m of the cabinet. Unlike FTTP, G.fast technology can offer only asymmetric download and upload speeds.

²³ See the commentary on DOCSIS3.1 and other cable futures in <http://www.libertyglobal.com/pdf/public-policy/Liberty-Global-Policy-Series-Connectivity-for-the-Gigabit-Society.pdf>.

²⁴ With MPF a telecoms provider can provide narrowband (voice) and broadband services, and with SMPF just broadband services to customers (with another provider supply voice).

- 2.20 LLU and VULA are the most widely used WLA services. Telecoms providers use BT’s LLU service to serve around ten million customers. VULA is used by BT’s competitors to supply around 4 million customers at present.²⁵ Some smaller telecoms providers use SLU, but compared to LLU and VULA the number of lines supplied in this way is very limited; as of 11 September 2015, there were fewer than 200 cabinets where SLU had been implemented.²⁶
- 2.21 PIA was first introduced as a network access remedy to support potential competition for contracts in the early stages of the BDUK programme, but to date take-up has been limited. As we discuss in Volume 3 of this statement, we are introducing a revised passive access remedy, designed to secure more effective network-level competition in local access through improved access to BT’s ducts and poles.

Consultations

- 2.22 The below table summarises the consultations we have published in the lead up to this statement.

Table 2.1: Summary of WLA and quality of service (QoS) consultations

	Consultation
9 May 2016	2016 WLA Consultation on possible approaches to fibre cost modelling. ²⁷
6 December 2016	2016 PIA Consultation with our initial proposals to develop an effective PIA remedy. ²⁸
31 March 2017	March 2017 WLA Consultation on our assessment of the state of competition in the wholesale local access market in the UK excluding the Hull Area and our proposals (including charge controls). ²⁹

²⁵ BT Key Performance Indicators Q3 2017/2018, <https://www.btplc.com/Sharesandperformance/Quarterlyresults/2017-2018/Q3/Downloads/KPIs/q318-KPIs.pdf>

²⁶ BT response to s.135 notice dated 8 October 2015. We estimate that SLU volumes have not changed significantly since we gathered this information from BT.

²⁷ Ofcom, 2016. *Wholesale Local Access Market Review – Consultation on possible approaches to fibre cost modelling*. <https://www.ofcom.org.uk/consultations-and-statements/category-3/wholesale-local-access-market-review-fibre-cost-modelling>.

²⁸ Ofcom, 2016. *Wholesale Local Access Market Review – Initial proposals to develop an effective PIA remedy*. https://www.ofcom.org.uk/_data/assets/pdf_file/0024/95109/Wholesale-Local-Access-Market-Review.pdf.

²⁹ Ofcom, March 2017. *Wholesale Local Access Market Review – Consultation on the proposed market, market power determinations and remedies*. https://www.ofcom.org.uk/_data/assets/pdf_file/0033/99636/Vol1-Market-review.pdf.

Consultation

31 March 2017	March 2017 QoS Consultation setting out preliminary proposals for regulating the quality of Openreach’s various access services (WLR, MPF and GEA-FTTC). ³⁰
20 April 2017	April 2017 DPA Consultation with our proposals for revisions to Openreach’s PIA product. ³¹
9 August 2017	August 2017 WLA Consultation setting out how we would amend our charge control proposals in light of the additional relevant costs that BT would incur should it enter into a voluntary agreement with the Government to invest in universal broadband. ³²
20 August 2017	August 2017 DPA Consultation setting out detailed pricing proposals on the setting of rental charges. ³³
14 September 2017	September 2017 WLA Further Consultation on specific issues relating to our charge control proposals in the March 2017 WLA Consultation. ³⁴
14 September 2017	September 2017 QoS Further Consultation on quality of service regulation, revising some of our March proposals. ³⁵
20 November 2017	November 2017 Regulatory Financial Reporting Consultation on a set of draft directions relating to BT’s Regulatory Financial Reporting obligations, which implement and support our proposals in the March 2017 WLA Consultation. ³⁶

³⁰ Ofcom, March 2017. *Quality of service for WLR, MPF and GEA – Consultation on proposed quality of services remedies*. https://www.ofcom.org.uk/data/assets/pdf_file/0033/99645/QoS-WLR-MPF-GEA.pdf.

³¹ Ofcom, 2017. *Wholesale Local Access Market Review – Consultation on Duct and Pole Access remedies*.

https://www.ofcom.org.uk/data/assets/pdf_file/0008/101051/duct-pole-access-remedies-consultation.pdf.

³² Since the publication of this consultation, the Government has decided not to accept BT’s proposals. As such, we have not adopted any of these proposals and we do not discuss this issue further in this statement. Ofcom, August 2017. *Wholesale Local Access Market Review – Recovering the costs of investment in network expansion*.

https://www.ofcom.org.uk/data/assets/pdf_file/0022/105682/Recovering-the-costs-of-investment-in-network-expansion.pdf.

³³ Ofcom, 2017. *Wholesale Local Access Market Review – Consultation on pricing proposals for Duct and Pole Access Remedies*. https://www.ofcom.org.uk/data/assets/pdf_file/0019/105427/consultation-dpa-pricing.pdf.

³⁴ Ofcom, September 2017. *Wholesale Local Access Market Review – Further consultation on proposed charge control for wholesale standard and superfast broadband*. https://www.ofcom.org.uk/data/assets/pdf_file/0023/106448/Proposed-charge-control-for-wholesale-standard-and-superfast-broadband.pdf.

³⁵ Ofcom, September 2017. *Quality of service for WLR, MPF and GEA – Further consultation on proposed quality of service remedies*. https://www.ofcom.org.uk/data/assets/pdf_file/0012/106311/consultation-quality-service-wlr-mpf-gea.pdf.

³⁶ Ofcom, November 2017. *Regulatory Financial Reporting – Consultation on proposed directions to BT arising from the Wholesale Local Access and Wholesale Broadband Access market reviews*. https://www.ofcom.org.uk/data/assets/pdf_file/0022/108166/Regulatory-financial-reporting.pdf.

Consultation

- | | |
|-----------------|--|
| 1 December 2017 | December 2017 WLA Consultation setting out our proposal to introduce a new clause to the March draft SMP conditions specifying that targeted geographic discounting will amount to undue discrimination. ³⁷ |
|-----------------|--|

- 2.23 We received responses from 55 stakeholders in response to the above WLA consultations (see Annex 4 for a full list of respondents). We consider that the range of respondents offers representation of all sides of industry, as well as other relevant organisations. We have carefully considered the responses and discuss how we have taken them into account in our analysis at appropriate points throughout the documents.

Summary of existing regulation

- 2.24 In the 2014 Fixed Access Market Review (FAMR) we defined the market for wholesale local access at a fixed location as comprising the provision of copper, cable and fibre lines at a fixed location.³⁸ We defined two geographic markets: the UK excluding the Hull Area and the Hull Area. We found that BT held significant market power (SMP) in the first of these geographic markets and KCOM in the second, and we applied remedies in each accordingly.
- 2.25 We imposed charge controls on BT's supply of LLU and the relevant ancillary services. We also imposed an obligation on BT to provide VULA. We did not impose a charge control on this service but allowed BT pricing flexibility subject to it complying with the VULA margin condition.³⁹ The current LLU charge controls expired on 31 March 2017.
- 2.26 Despite the expiry of the LLU charge controls, BT still remains subject to a requirement for its charges to be fair and reasonable. BT made a voluntary commitment to reduce and maintain the price until the charge control imposed by this review comes into force.⁴⁰

³⁷ Ofcom, December 2017. *Wholesale Local Access Market Review: Promoting network competition in superfast and Ultrafast broadband – Consultation*. https://www.ofcom.org.uk/_data/assets/pdf_file/0021/108381/consultation-wla-competition-superfast-ultrafast-broadband.pdf.

³⁸ Ofcom, 2014. *Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30* (2014 FAMR Statement), paragraph 7.9. https://www.ofcom.org.uk/_data/assets/pdf_file/0032/78863/volume1.pdf.

³⁹ VULA margin means the difference between the charge levied by BT for Virtual Unbundled Local Access and the charge levied by its retail divisions for the supply of a VULA-based broadband package. See Ofcom, 2015. *Fixed Access Market Reviews: Approach to the VULA margin*, SMP Condition 14. https://www.ofcom.org.uk/_data/assets/pdf_file/0020/71606/vula_margin_statement_annexes.pdf.

⁴⁰ We consulted in March on defining fair and reasonable charges as £84.38 and BT subsequently volunteered to set prices at £84.38.

Regulatory framework

- 2.27 The regulatory framework for market reviews is set out in UK legislation and is transposed from five EU Directives. These Directives impose a number of obligations on relevant regulatory authorities, such as Ofcom, one of which is to carry out periodic reviews of certain electronic communications markets.⁴¹
- 2.28 This market review process is carried out in three stages:
- we identify and define relevant markets;
 - we assess whether the markets are effectively competitive, which involves assessing whether any operator has SMP in any of the relevant markets; and
 - where we find SMP, we assess the appropriate remedies, based on the nature of the competition problems identified in the relevant markets.
- 2.29 In carrying out the review we are required to define relevant markets appropriate to national circumstances. In so doing, we are also required to take due account of the European Commission's (EC) Recommendation on relevant product and service markets⁴² (the 2014 EC Recommendation) and SMP Guidelines.⁴³ More broadly, we are required to take utmost account of all applicable opinions, common positions, recommendations, guidelines, advice or regulatory best practice adopted by BEREC.⁴⁴

Relevant documents

- 2.30 The following summarises a number of relevant documents that are referred to in this statement.

The 2014 EC Recommendation

- 2.31 The Relevant Markets Recommendation sets out those product and service markets which, at a European level, the Commission has identified as being susceptible to *ex ante*

⁴¹ We set out the applicable regulatory framework and the approach to market definition and SMP assessment in more detail in Annexes 5 and 6.

⁴² The WLA market is Market 3a in the Commission's list of relevant markets. *Commission Recommendation of 9 October 2014 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* (2014/710/EU) <http://eurlex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014H0710&from=EN>.

⁴³ *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) (SMP Guidelines). [http://eurlex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52002XC0711\(02\)&qid=1488374690159&from=EN](http://eurlex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52002XC0711(02)&qid=1488374690159&from=EN).

⁴⁴ Body of European Regulators for Electronic Communications. See Article 3(3c) of the Framework Directive. See also Article 3(3) of *Regulation (EC) No 1211/2009 of the European Parliament and of the Council of 25 November 2009 establishing the Body of European Regulators of Electronic Communications (BEREC) and the Office* (the BEREC Regulation). <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:337:0001:0010:EN:PDF>.

regulation.⁴⁵ These markets are identified on the basis of the cumulative application of three criteria:

- the presence of high and non-transitory barriers to entry;
- a market structure which does not tend towards effective competition within the relevant time horizon; and
- the insufficiency of competition law alone to adequately address the market failure(s) concerned.

2.32 We, as the national regulatory authority in the UK, in accordance with competition law and taking due account of the 2014 EC Recommendation, have defined the proposed relevant markets appropriate to our national circumstances in Section 3 of this statement.

The EC SMP Guidelines

2.33 The EC SMP Guidelines include guidance on market definition, assessment of SMP and SMP designation.⁴⁶ In Sections 3 and 4 of this statement, we set out how we have taken the EC SMP Guidelines into account in reaching our proposals.

The NGA Recommendation and the Costing and Non-discrimination Recommendation

2.34 The NGA Recommendation⁴⁷ aims to foster the development of the single market by enhancing legal certainty and promoting investment, competition and innovation in the market for broadband services, and in particular, the transition to next generation access networks. It does so by setting out a common approach for the implementation of remedies with regard to such networks.

2.35 The Costing and Non-discrimination Recommendation⁴⁸ concerns the application of non-discrimination, price control and cost accounting obligations. It provides further guidance on the regulatory principles established by the NGA Recommendation, in particular the conditions under which regulation of wholesale access prices should or should not be applied.

2.36 In relation to both of these documents, we must take utmost account of each recommendation, but in light of particular factors it may be appropriate to depart from them.

⁴⁵ Commission Recommendation of 9 October 2014 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 (2014/710/EU). <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014H0710&from=EN>.

⁴⁶ 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/legalcontent/EN/TXT/PDF/?uri=CELEX:52002XC0711\(02\)&from=EN](http://eur-lex.europa.eu/legalcontent/EN/TXT/PDF/?uri=CELEX:52002XC0711(02)&from=EN).

⁴⁷ Commission Recommendation of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) (2010/572/EU). <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010H0572&from=EN>.

⁴⁸ Commission Recommendation of 11 October 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (2013/466/EU). http://ec.europa.eu/smart-regulation/impact/ia_carried_out/docs/ia_2013/c_2013_5761_en.pdf.

BEREC Common Position

2.37 In considering remedies, we have taken utmost account of the BEREC Common Position on remedies in the market for wholesale (physical) network infrastructure access at a fixed location, as set out in the sections below. To the extent that any of our proposals depart from the BEREC Common Position, we have set out our reasons in this statement.

Relevant legal tests and statutory duties

2.38 Where we find that a market is not effectively competitive, we identify the undertaking(s) – i.e. telecoms provider(s) – with SMP in that market and impose appropriate SMP obligations. When imposing a specific SMP obligation, we need to demonstrate that the obligation in question is based on the nature of the problem identified, proportionate and justified in light of the policy objectives as set out in Article 8 of the Framework Directive.⁴⁹

2.39 For each SMP condition set in this statement we explain why we consider the conditions we are imposing satisfy the test set out in section 47 of the Communications Act 2003 (the Act), namely that the obligation is:

- objectively justifiable in relation to the networks, services or facilities to which it relates;
- not such as to discriminate unduly against particular persons or against a particular description of persons;
- proportionate to what the condition or modification is intended to achieve; and
- transparent in relation to what is intended to be achieved.

2.40 Additional legal requirements also need to be satisfied depending on the SMP obligation in question. For example, under section 88, when we set a charge control, we must consider whether there is a relevant risk of adverse effects arising from price distortion; and the appropriateness of the control for the purpose of promoting efficiency; sustainable competition; and conferring the greatest possible benefits on end-users of public electronic communications services.

2.41 We also explain why we consider the performance of our general duties under section 3 of the Act would be secured or furthered by our proposed regulatory intervention. Our principal duty, in this regard, is to further the interests of citizens in relation to communications matters and customers in relevant markets, where appropriate by promoting competition. We explain why we are acting in accordance with the six Community requirements under section 4 of the Act. This is also relevant to our assessment of the likely impact of implementing our proposals.

2.42 Consistent with our duties under section 4A of the Act and under Article 3(3) of the BEREC Regulation, we have also taken due account of the applicable EC recommendations and utmost account of the applicable opinions, common positions, recommendations,

⁴⁹ See Article 8(4) of the Access Directive.

guidelines, advice and regulatory best practices adopted by BEREC relevant to the matters under consideration in this statement (which we have identified above).

Forward look

- 2.43 Market reviews look ahead to how competitive conditions may change in the future. For the purposes of this review, we consider the period up to March 2021, reflecting the characteristics of the retail and wholesale markets and the factors likely to influence their competitive development.
- 2.44 The prospective nature of our assessment over this period means that we are required to gather a range of evidence to assess actual market conditions as well as to produce forecasts that we consider will appropriately reflect developments over time. This is particularly the case in our assessment of market definition and market power, and in our detailed modelling work underpinning the charge controls, PIA and QoS remedies we have decided to impose. Where appropriate, we have exercised our regulatory judgement to reach decisions on the evidence before us with a view, ultimately, to addressing the competition concerns we identify in order to further the interests of citizens and consumers in these markets.

Impact assessment and equality impact assessment

Impact assessment

- 2.45 The consultation documents summarised above constituted our impact assessment for the purposes of section 7 of the Act.
- 2.46 Impact assessments provide a valuable way of assessing the options for regulation and showing why the chosen option was preferred. They form part of best practice policy-making. This is reflected in section 7 of the Act, which means that, generally, we have to carry out impact assessments in cases where our conclusions would be likely to have a significant effect on businesses or the general public, or where 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.⁵⁰

Equality impact assessment (EIA)

- 2.47 Annex 3 sets out our EIA for this market review. We are required by statute to assess the potential impact of all our functions, policies, projects and practices on equality. We have a general duty under the 2010 Equality Act to advance equality of opportunity in relation to age, disability, sex, gender reassignment, pregnancy and maternity, race, religion or belief and sexual orientation. EIAs also assist us in making sure that we are meeting our principle

⁵⁰ For further information, see Ofcom, 2005. *Better Policy Making: Ofcom's approach to Impact Assessment*. https://www.ofcom.org.uk/_data/assets/pdf_file/0029/45596/condoc.pdf.

duty of furthering the interests of citizens and consumers regardless of their background or identity.

- 2.48 It is not apparent to us that the outcome of our review is likely to have any particular impact on race, disability and gender equality. More generally, we do not envisage the impact of any outcome to be to the detriment of any group of society. Nor do we consider it necessary to carry out separate EIAs in relation to race or sex equality or equality schemes under the Northern Ireland and Disability Equality Schemes.

Document structure

- 2.49 The following sets out the structure of this statement across the three Volumes and Annexes:

Volume 1

- Section 3 defines the relevant product and geographic markets.
- Section 4 completes the assessment of market power and builds on the analysis of the relevant market undertaken in Section 3.
- Section 5 sets out our over-arching approach to remedies and how it will address our competition concerns as well as reflect our long-term strategy for digital communications.
- Sections 6 and 7 set out the general and specific access remedies which we are imposing.
- Section 8 sets out the quality of service conditions we are imposing which will allow us to set minimum standards and reporting requirements.
- Sections 9 and 10 set out the pricing remedies which we impose on BT's supply of VULA and LLU.
- Section 11 sets out the specific no undue discrimination obligation we are imposing to prevent BT using targeted geographic price reductions to undermine competing investment.

Volume 2

- Section 2 sets out details of our economic principles for setting cost-based charges. We set out details of our decisions on the form of charge controls, the cost standard and allocations of common costs we apply and our network model choice.
- Section 3 sets out details of our charge control design. This includes the specification of the MPF and GEA rental charge controls, the duration of the charge controls and the speed over which charges will align with costs within the charge controls. We also set out particulars of the basket design for some of the ancillary services and determine how these baskets will work in practice.
- Section 4 sets out summaries of our models used to determine the costs of MPF and GEA 40/10 rental services and some of the related ancillary services. This includes the top-down model that we use to estimate the costs of MPF services and allocate common costs across all WLA services, and the bottom-up model we have developed

to estimate the costs of GEA services. In particular we set out the key modelling decisions that underpin these models, including decisions in relation to the main modelling inputs.

- Section 5 sets out how our decisions have been implemented in our legal instruments and how they meet the relevant legal tests.

Volume 3

- Section 2 sets out the details of the physical infrastructure access remedy.
- Section 3 details the non-discrimination requirements.
- Section 4 sets out how certain costs related to the provision of PIA should be recovered by Openreach.
- Section 5 sets out our decisions on pricing remedies with respect to PIA.
- Section 6 sets out our decision to require BT to publish a Reference Offer specifying the terms and conditions on which BT will provide PIA. It also set out our views on how the processes and systems for PIA could be improved as part of complying with the Reference Offer condition.
- Section 7 sets out our decision relating to the timescales by which Openreach is required to implement the various elements of the new PIA remedy.

Annexes

2.50 There are also a number of annexes which apply across Volumes 1-3 including:

- Annex 1 sets out our regulatory framework.
- Annex 2 sets out our general analytical approach to market definition, SMP assessment and remedies.
- Annex 3 sets out our equality impact assessment.
- Annex 4 sets out our sources of evidence.
- Annex 5 sets out supporting evidence for market analysis including detailed analysis of demand for broadband over local access connections.
- Annex 6 sets out further supporting analysis of the ‘fair bet’.
- Annex 7 summarises and responds to stakeholder comments which are not featured in the main volumes.
- Annex 8 sets out our decision on regulatory financial reporting.
- Annex 9 sets out diagrams of the relevant services.
- Annex 10 sets out details of our service volume forecasts.
- Annex 11 sets out details of the top-down copper access model that we have used to estimate the cost of MPF services and allocate common costs between copper and VULA services.
- Annex 12 sets out the adjustments we have made to our base year data and forecasted costs within our top-down model we have used to estimate the cost of MPF services.
- Annex 13 sets out details of our modelling on quality of service.
- Annex 14 sets out documentation on our bottom-up model that we have used to estimate the cost of GEA services.
- Annex 15 sets out details of the calibration of our bottom-up model.

- Annex 16 sets out details of the results of our top-down and bottom-up models and sensitives.
- Annex 17 sets out details of our decision on inflation.
- Annex 18 sets out details of the cost and asset volume elasticities we use in our modelling.
- Annex 19 sets out details of our decision on efficiency.
- Annex 20 sets out details of our decision on cost of capital.
- Annex 21 sets out details of our decision on business rates (cumulo).
- Annex 22 sets out details of our decision on the sales of copper and property.
- Annex 23 sets out details of our decision on certain wholesale ancillary services
- Annex 24 sets out the risk to BT's cost recovery from mixed usage.
- Annex 25 sets out our rental charge methodology.
- Annex 26 sets out our financial limit methodology.
- Annex 27 sets out our glossary.
- Annex 28 sets out Cartesian's GEA allocations report.
- Annex 29 sets out Cartesian's bottom-up model report.
- Annexes 30 to 32 set out NERA's reports on incorporating BT's pension deficit in the cost of capital calculation, update of the equity and asset beta for BT group and comparators and the evidence of difference in risk for fixed versus mobile telecommunications operators.
- Annex 33 sets out our legal instruments.

European consultation

- 2.51 We notified the European Commission (Commission), BEREC and other national regulatory authorities of our final proposals for our market analysis and remedies on 23 February 2018, as required under Article 7 of the Framework Directive. The Commission issued a request for information on 5 March, to which we responded on 8 March.
- 2.52 We received the Commission decision providing no comments on our notification in accordance with Article 7(3) of the Framework Directive on 23 March 2018.⁵¹

⁵¹ The Commission's letter is published here: <https://www.ofcom.org.uk/consultations-and-statements/category-1/wholesale-local-access-market-review>.

3. Market definition

- 3.1 In this section, we set out our conclusions on product and geographic market definition for the purposes of the wholesale local access (WLA) review. WLA involves the provision of a connection at a fixed location (i.e. to a customer’s premises) from a point of aggregation of such connections which can be accessed by another telecoms provider.
- 3.2 WLA corresponds to Market 3(a) in the 2014 EC Recommendation.⁵² In our assessment of market definition for this review we have taken utmost account of that recommendation and the SMP Guidelines. The reason for carrying out a market definition assessment, including our general approach to doing so, is set out in Annex 2.

Summary of our decision

- 3.3 In summary, we have:
- defined a single product market for the supply of wholesale local access (WLA) at a fixed location; and
 - defined two distinct geographic markets for the WLA product market identified above, namely (i) the UK excluding the Hull Area, and (ii) the Hull Area.

Role of and approach to market definition

- 3.4 In undertaking our assessment of market definition, and subsequently of SMP, we look at a wide range of evidence and past practice, taking account of European and domestic guidance on such matters (most notably the 2014 EC Recommendation, EC Notice on Market Definition⁵³, EC SMP Guidelines, BEREC Common Position and OFT market definition guidelines⁵⁴). We have also reflected the relevant aspects of the recent judgment of the Competition Appeal Tribunal (CAT) in the appeal of Ofcom’s 2016 Business Connectivity Market Review (2017 BCMR judgment), which addressed market definition.⁵⁵
- 3.5 The market review procedure requires us to analyse markets to determine whether any provider holds SMP in any given market, and whether any subsequent SMP conditions and remedies should be imposed. Hence, under the regulatory framework for electronic communications, and following established competition law practice, it is first necessary to define the relevant market. This involves consideration of the competitive constraints

⁵² Commission Recommendation of 9 October 2014 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 (2014/710/EU), <http://eurlex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014H0710&from=EN>.

⁵³ Commission notice of 9 December 1997 on the definition of relevant market for the purposes of Community competition law, [http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31997Y1209\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31997Y1209(01)&from=EN).

⁵⁴ OFT, 2004. Market definition – understanding competition law. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/284423/oft403.pdf.

⁵⁵ British Telecommunications plc v Office of Communications [2017] CAT 25. (CAT BCMR Judgment). http://www.catribunal.org.uk/files/1260_BT_Judgment_CAT_25B_101117.pdf.

acting on the products, and in turn, the geographic areas, under investigation. This typically begins with consideration of demand-side and supply-side substitution.

- 3.6 From an economic perspective, market definition is a means to an end; the end being to identify market power. The identification of market power should not be sensitive to the definition of the product or geographic market, provided all relevant constraints on prices are identified and taken into account at some stage in the market analysis. In particular, supply-side constraints may be taken into account either in the analysis of market power (as potential entry) or, if entry is rapid and low-cost, at the market definition stage as supply-side substitution. What is important is that all relevant constraints are taken into account (and not double-counted), and the stage at which this is done should not affect the conclusion regarding market power. It also follows from this that mechanical inferences about SMP from market shares should be avoided.
- 3.7 In this *ex ante* market definition assessment we assess a range of evidence, including forecasts of likely developments in the market, and reach a view on what this means for our decision on market definition. Where there is scope for interpretation of the evidence, or whether alternative approaches might be taken on the basis of the same evidence, we have used our judgement based on our experience of regulating fixed telecoms markets over successive reviews to take what we consider to be appropriate decisions on market definition.
- 3.8 Under the relevant European and domestic guidelines, cited above, the analytical framework for assessing demand- and supply-side substitution for the purposes of market definition involves undertaking the hypothetical monopolist test (HMT). This looks at whether it would be profitable for a hypothetical monopolist of a focal product to impose a small but significant and non-transitory increase in price (SSNIP) above the competitive level. In other words, the HMT asks whether a SSNIP on the focal product would be unconstrained by switching to substitute products such that a price rise above the competitive level (typically by 5-10%) was profitable.⁵⁶
- 3.9 In order to undertake the HMT, we must first identify a focal product. For the reasons set out below (and in line with our approach in previous market reviews including the last review of this market in the 2014 FAMR)⁵⁷, we consider that the appropriate focal product from which to start our assessment is local access over copper/fibre connections. This is consistent with the SMP guidelines, which say that:

“NRAs should thus commence the exercise of defining the relevant product or service market by grouping together products or services that are used by consumers for the same purposes”.⁵⁸

⁵⁶ SMP guidelines, paragraph 40.

⁵⁷ Ofcom, 2014 FAMR Statement, paragraphs 7.32-7.34.

⁵⁸ SMP guidelines, paragraph 44.

3.10 As we set out below, we must then consider whether alternative products are sufficiently substitutable for the focal product. While this review is concerned with Wholesale Local Access, we must first consider retail services.

3.11 In principle, the HMT also provides a framework for geographic market definition.⁵⁹ However, one limitation of the HMT in the case of geographic market definition for fixed telecoms services is that it will often lead to overly narrow geographic markets⁶⁰:

- in the case of demand-side substitution, it is extremely unlikely that individual consumers will move home in response to a SSNIP on the price of their retail services; and
- in the case of supply-side substitution, it is unlikely that a network provider will expand its network to individual premises in response to a SSNIP.

3.12 To identify the appropriate geographic market, and consistent with the idea of market definition as a means to an end, it is therefore helpful to aggregate geographic areas into areas where “the conditions of competition are similar or sufficiently homogenous”.⁶¹ Again consistently, areas should be defined as separate markets if competitive conditions “differ...with potential effects on either the SMP finding or the identified competition problems”.⁶² Hence, when defining geographic markets:

“it is important for NRAs to bear in mind the purpose of market definition, which is not an end in itself but a means to undertaking an analysis of competitive conditions, for the purposes of determining whether ex-ante regulation is required or not.”⁶³

3.13 BEREC also notes that the definition of the relevant geographic market may be informed by the presence of a common pricing constraint:

“If prices of the incumbent and alternative operators are geographically uniform, that is, do not differ between geographical areas, this may be an indication of insufficient geographical variations in competitive conditions to justify the definition of subnational geographical markets.

This is, however, not always the case. An NRA should always check underlying facts possibly indicating the opposite. If the prices of the incumbent are geographically uniform but the prices of the alternative operators with national coverage differ

⁵⁹ BEREC common position, paragraph 15.

⁶⁰ BEREC common position, paragraph 15.

⁶¹ SMP guidelines, paragraph 56. Similarly, in *Tiercé Ladbroke v Commission* [1997] ECR II-923, paragraph 102, “The geographical market can be defined as the territory in which all the traders concerned are exposed to objective conditions of competition which are similar or sufficiently homogeneous”. Similar wording was previously used in *United Brands v Commission* [1978] ECR 207, paragraph 44, *Michelin v Commission* [1983] ECR 3461, paragraph 26 and *Alsatek v Novasam* [1988] ECR 5987, paragraph 15.

⁶² BEREC common position, paragraph 129.

⁶³ BEREC common position, paragraph 129. In *Alsatek vs Novasam*, the relevant geographic market is defined as the area “in which the conditions of competition are sufficiently homogeneous to enable the economic strength of the undertaking in question to be assessed” op. cit. paragraph 15.

between geographical areas, particularly between competitive and less competitive areas, the indications for a national market are less clear.”⁶⁴

We discuss the meaning of “sufficiently homogeneous” in the context of WLA, and the relevance of uniform pricing, later in this section.

- 3.14 Whilst market definition is a means to an end, under the regulatory framework for electronic communications – which imports the established practice of competition case law – market definition precedes the assessment of dominance (i.e. SMP). Market shares, for example, often vary depending on the breadth of the product or geographic market and market shares play a particular role in competition and regulatory assessments of market power. As noted in Bishop and Walker (2010), it is important to define the relevant market appropriately so that market shares “provide...a good proxy of market power.”⁶⁵
- 3.15 We have therefore considered in the SMP assessment (in Section 4 of this statement) how market shares and other relevant indicators of competitive conditions would vary between different product market segments and geographic areas.

Responses to our consultation

- 3.16 The majority of consultation respondents who commented on our proposed product market definition (including Openreach⁶⁶, Virgin Media⁶⁷, Vodafone⁶⁸, CityFibre⁶⁹ and Scottish Futures Trust⁷⁰) agreed with our proposal that the relevant market was WLA at a fixed location, encompassing copper-, fibre- and cable-based local access.
- 3.17 BT Group argued that there are certain anomalies in the way that we have defined the WLA market, including that we have found BT to have SMP in relation to fibre-based local access from the moment it invested in next generation access (NGA) despite these services being fairly nascent and BT facing competition from Virgin Media which commenced NGA rollout earlier.
- 3.18 In its response to our June 2017 WBA Consultation, but referencing also our findings in WLA, TalkTalk⁷¹ also questioned whether cable services provided by Virgin Media should be included within the same product market. However, TalkTalk did not propose an alternative focal product to local access over copper/fibre connections.⁷²
- 3.19 The majority of stakeholders agreed with our proposal to exclude wireless access services from the market, including access over mobile networks, fixed wireless access (FWA) and

⁶⁴ BEREC common position, paragraphs 48-49, and see also paragraphs 113-120.

⁶⁵ Bishop & Walker, *The Economics of EC Competition Law* (2010)

⁶⁶ Openreach response to the March 2017 WLA Consultation, paragraph 91.

⁶⁷ Virgin Media response to the March 2017 WLA Consultation, paragraph 134.

⁶⁸ Vodafone response to the March 2017 WLA Consultation, page 59

⁶⁹ CityFibre response to the March 2017 WLA Consultation, paragraphs 4.1.19-4.1.44

⁷⁰ Scottish Futures Trust response to the March 2017 WLA Consultation, page 2

⁷¹ TalkTalk response to the March 2017 WLA Consultation, paragraph 2.5.

⁷² In its response to the June 2017 WBA consultation (paragraph 2.4), TalkTalk claims that “Ofcom does not clearly identify different focal markets (sic)”, although this appears to be a criticism specific to the WBA review. TalkTalk’s main concern in its response to the March 2017 WLA Consultation appears to be to make the case for a charge control on BT’s GEA product(s).

satellite. BT argued, however, that with innovations in wireless technology and the advent of 5G spectrum standards, FWA services could become a stronger substitute in the future. BT also noted some recent and upcoming developments in the satellite broadband sector, and argued that these developments may affect its substitutability for fixed broadband.

- 3.20 CityFibre agreed that fixed wireless services were not part of the WLA market over the three-year review period, but argued that a longer review period would have resulted in the inclusion of FWA in the WLA market. CityFibre also argued that mobile is not in the market at present but that this will change in the medium term when 5G is available.
- 3.21 Scottish Futures Trust agreed that our product market definition was broadly accurate at present but argued that mobile services will converge with WLA services and prices in future.
- 3.22 The main stakeholder who disagreed with our position on wireless services was Three, who argued that FWA is increasingly competitive with other fixed technologies in terms of both cost and performance and should be included in the WLA market. Virgin Media agreed with our product market definition but argued that mobile will act as a constraint on superfast broadband (SFBB) – particularly as the performance of mobile continues to improve and/or if there was a sharp increase in the pricing of SFBB.⁷³
- 3.23 In relation to services delivered over local access connections, views differed on the strength of the constraints between standard broadband (SBB) and SFBB.
- 3.24 Vodafone agreed with our product market definition proposals and said that we had rightly identified that the price constraining impact of SBB on SFBB has weakened rapidly. It said that the lack of substitutability between SBB and SFBB is clearly illustrated by both the consumers who are unable to access SFBB services, held back and left frustrated on their SBB offerings by virtue of the lack of market alternatives available to them, or by the consumers who have already made the switch to SFBB and who would now be unwilling to make a backwards step to SBB for reasons of price.⁷⁴
- 3.25 TalkTalk agreed that the SBB constraint on SFBB is diminishing, but said that SBB and SFBB are already in separate economic markets, and that the markets are likely to diverge over the next four years. It said that copper-based broadband will no longer impose a competitive constraint on SFBB by 2021, given that:
- a) Over half of UK broadband customers will be on SFBB products, with a trend towards that proportion increasing further;
 - b) SBB will increasingly only be used by price-sensitive consumers, particularly those with budgetary constraints; and
 - c) The majority of SFBB customers will not even consider trading down to SBB in the case of price rises across SFBB products.⁷⁵

⁷³ Virgin Media response to the March 2017 WLA Consultation, paragraph 77

⁷⁴ Vodafone response to the March 2017 WLA Consultation, paragraphs 3.3-3.4.

⁷⁵ TalkTalk response to the March 2017 WLA Consultation, paragraph 2.5.

- 3.26 Furthermore, in its response to the June 2017 WBA consultation, TalkTalk said that we had not taken into account the possibility that there were asymmetric markets, where product A acts as a competitive constraint on product B, but product B does not act as a competitive constraint on product A. It said that the appropriate finding is that there are two different relevant product markets – a market containing only SFBB products provided over the Openreach network, and a market containing all products provided over the Openreach network. TalkTalk argued that as the market definition in this case is almost certainly asymmetric, we must fully assess SMP in each of these separate markets.⁷⁶
- 3.27 Other stakeholders agreed with our proposal to define a single product market comprising access to services of all speeds supplied over copper, fibre and cable local access connections.⁷⁷ Indeed, BT and Virgin Media argued that we have underestimated the strength of the constraint from SBB on SFBB.⁷⁸ In summary, they said that:
- a) Customers indicate high levels of satisfaction with current speeds, and a material proportion of households do not have (or anticipate having) a need for higher speeds;
 - b) Our SFBB take-up forecasts are too high;
 - c) A high level of migration from SBB to SFBB does not in itself indicate a lack of substitutability between the products, particularly as a significant proportion of migrations have been provider-led;
 - d) Customers consider price to be an important factor when choosing their broadband service, and we have understated willingness to downgrade from SFBB to SBB; and
 - e) Contrary to the evidence presented in Figure 3.11 of the March 2017 Consultation, the price differential between SBB and SFBB has narrowed over time.
- 3.28 Overall, BT and Virgin Media both said we had not demonstrated that market and demand conditions have changed sufficiently, or will do so over the market review period, to justify a different conclusion to that reached in 2014 on the constraint exerted by SBB on SFBB. Furthermore, BT said it expects a significant proportion of customers will continue to regard SBB as a viable substitute for SFBB services, sufficient to constrain the pricing of SFBB services.⁷⁹
- 3.29 CityFibre said that, whilst there are substantial differences between SBB and UFBB products, they are likely linked through a chain of substitution and should be considered as part of the same relevant market from the point of view of regulation.⁸⁰

⁷⁶ TalkTalk response to the June 2017 WBA Consultation, paragraphs 2.4 and 2.13. As noted above, TalkTalk also disputes the inclusion of cable-based services in either the WBA market and, (at least by implication) in the WLA market.

⁷⁷ Virgin Media said (page 26) there is a serious risk of regulatory error if interventions are designed on the shaky premise of a 'distinct' market for SFBB.

⁷⁸ BT response to the March 2017 WLA Consultation, paragraphs 2.28-2.35 and Annexes 1 and 2. Virgin Media response to the March 2017 WLA Consultation, Section 3.

⁷⁹ BT and Virgin Media responses to the March 2017 WLA Consultation, paragraphs 2.28-2.29 and 79.

⁸⁰ CityFibre response to the March 2017 WLA Consultation, paragraph 4.1.23.

Structure of this section

- 3.30 This structure of the remainder of this section is as follows:
- the definition of wholesale local access, the retail services it supports, and our choice of focal product;
 - analysis of retail indirect constraints - first from cable services, then from wireless services (including satellite, FWA and mobile broadband), and finally from leased lines;
 - our conclusion on wholesale product market definition;
 - analysis of geographic market definition, including consideration of the impact of cable areas on our market definition; and
 - our conclusion on geographic market definition.

Local access, the retail services it supports, and the choice of focal product

Definition of local access

- 3.31 Local access is identifiable at the retail level as the service underpinning most consumers' fixed voice and broadband packages. Upstream from this sit a number of possible wholesale markets, with the most upstream within the EU regulatory framework being "wholesale local access provided at a fixed location".
- 3.32 WLA products have been available for some time as a result of economic regulation, most notably following the introduction of local loop unbundling and sub-loop unbundling over 15 years ago⁸¹, and various refinements since then – including physical infrastructure access (PIA) and virtual unbundled local access (VULA) nearly 10 years ago.⁸² However, the wholesale products in question might not exist without regulation because the incumbent providers of services over local access networks are vertically integrated and are likely to have a strong incentive to retail services over their local access connections, rather than offer wholesale access to retail providers that would compete with them downstream.
- 3.33 Therefore, in order to define what we mean by WLA it is helpful to unpack the key features of this access market. First, there is a range of possible wholesale products, including service agnostic "passive" infrastructure (e.g. duct and pole access, sub-loop unbundling and local loop unbundling) as well as wholesale "active" products (e.g. VULA, which is a bitstream product available for interconnection at BT's fibre-enabled exchanges). It is not clear, absent regulation (consistent with the modified greenfield approach explained in Annex 5), what the wholesale market for local access would look like, if such a market were present at all.⁸³ As noted above, it is likely that BT would have an incentive to act as a

⁸¹ An overview of the early history of LLU is set out at <https://publications.parliament.uk/pa/cm200001/cmselect/cmtrdind/90/9006.htm>.

⁸² Ofcom, 2010. *Review of the wholesale local access market – Statement*. https://www.ofcom.org.uk/data/assets/pdf_file/0027/37935/wla_statement.pdf.

⁸³ The modified greenfield approach is an approach to analysing markets where we consider a hypothetical scenario in which there are no *ex ante* SMP remedies in the market being considered or in any markets downstream of it.

vertically integrated provider focused on providing retail services, rather than wholesale access, in a similar way to the cable provider, Virgin Media, does today (and consistent with BT's behaviour before regulation was imposed).

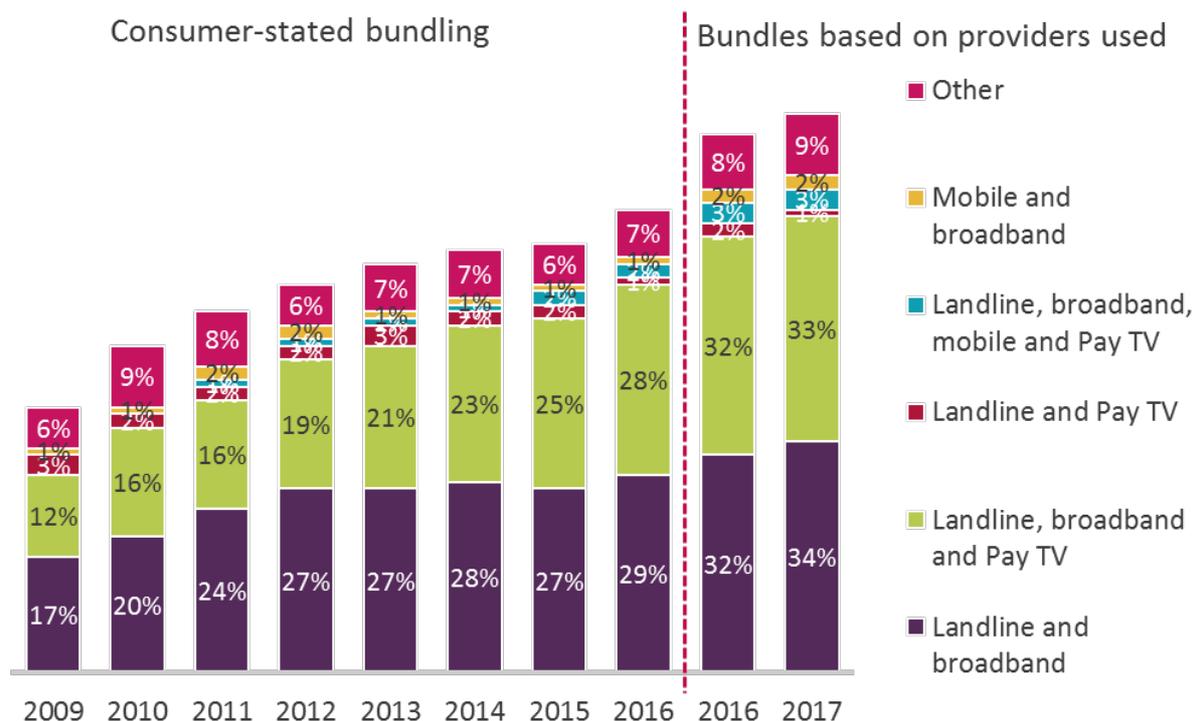
- 3.34 A second key feature of local access is that it provides the opportunity to offer a range of differentiated services and bundles to end consumers. Typically, this differentiation comes from equipment purchased by access seekers (i.e. wholesale customers) which is installed further into the network (as is the case with voice and internet access services) and/or from inputs sourced from other supply chains (e.g. wholesale TV content). Retail services delivered over local access connections today are highly differentiated, not only in terms of the types of services offered (as we explain under the next heading), but also within those services themselves. For example, broadband tariffs alone are differentiated not only on speed but also on usage (e.g. whether limited or unlimited monthly usage).
- 3.35 In other words, local access defines the network assets that are used to provide connectivity to a range of downstream services at a point of interconnection close to the end user.
- 3.36 Third, the European regulatory framework emphasises that we are concerned with local access connections at a fixed location rather than, for example, access to services capable of being used in motion (i.e. mobile access). Historically mobile access has not provided the same degree of connectivity (e.g. internet access speed and usage allowances) as services provided over fixed networks. Nevertheless, the voice, internet access and content services provided over mobile networks represent potential substitutes to the services provided over fixed networks and therefore need to be examined. The focus in this statement is on internet access, as voice services were covered in the 2017 NMR statement.⁸⁴

Retail services that use WLA inputs

- 3.37 Demand for wholesale services is derived from retail demand and so it is relevant for the purposes of assessing the wholesale market definition to look at the retail services provided over local access connections. We can identify three broad categories of usage services over local access connections:
- internet access (typically via broadband, although some narrowband data usage remains by business consumers – e.g. ISDN2 or ISDN30);
 - the ability to receive TV content (in particular cable TV, IPTV or as a complement to satellite TV services); and
 - the ability to make and receive voice calls.
- 3.38 As set out in Figure 3.1 below, a large majority of consumers now take broadband as part of a bundle of services including fixed voice. For example, in 2017 70% of consumers took a bundle including landline and broadband (including some taking packages that also included Pay TV or mobile).

⁸⁴ Ofcom, 2017. *Narrowband Market Review – Statement*. (2017 NMR Statement). https://www.ofcom.org.uk/_data/assets/pdf_file/0020/108353/final-statement-narrowband-market-review.pdf.

Figure 3.1: Bundling of retail broadband, voice, mobile and TV services



Source: Ofcom, CMR 2017⁸⁵

- 3.39 There are still, however, a minority of consumers who do not purchase these services together in a bundle. In our review of standalone landline services, we estimated that about 1.7m residential consumers buy landline services but do not purchase fixed broadband (voice-only consumers), and a further 1.2m residential consumers buy landline and broadband services from separate providers (split-purchasers).⁸⁶
- 3.40 The increasing trend towards bundles was noted in the Explanatory Note to the 2014 EC Recommendation.⁸⁷ However, it concluded that:

“[D]espite the fact that bundling is one of the dominant trends observed at the retail level, this Recommendation does not propose to define a separate retail market for bundles because evidence to date has not indicated that there is a need for *ex ante* regulation of bundles, which may contain a previously regulated input. Furthermore, even if an NRA would define a retail market for triple play, for example, the

⁸⁵ Ofcom has recently revised its bundle take-up figures; in previous years we have reported data from a question asking consumers ‘Do you receive more than one of these services as part of an overall deal or package from the same supplier?’. From 2017 we are reporting bundling data based on whether the same provider was stated for two or more services, and have revised 2016 for comparison to 2017.

⁸⁶ Ofcom, Review of the market for standalone landline telephone services, 26 October 2017,

https://www.ofcom.org.uk/data/assets/pdf_file/0015/107322/standalone-landline-statement.pdf

⁸⁷ European Commission, Explanatory Note accompanying the Commission Recommendation on relevant product and service markets within the electronic communications sector, 9 October 2014, available at <https://ec.europa.eu/digital-single-market/en/news/explanatory-note-accompanying-commission-recommendation-relevant-product-and-service-markets>

wholesale inputs needed to compose this bundle would remain separate and non-substitutable, such as for example local access, higher-level access and termination.”

3.41 Even if consumer demand varies between retail segments, with some packages potentially better substitutes than others, almost all services are provided over the same local access connection (except for mobile services bundled with broadband packages and bundles where the television service is provided over satellite).

3.42 From a downstream supply-side perspective, WLA products allow substitution between a variety of retail bundled (or unbundled) segments. For example, a provider offering dual-play bundles using MPF LLU would be able to switch into offering voice-only lines, or to switch into providing triple-play services (i.e. to bundle in TV content over IPTV or via satellite, subject to obtaining rights to distribute TV content in most cases).

3.43 Although multiple services can be provided over a local access connection, in this review, our focus is primarily on internet access at a fixed location. Below we briefly outline our findings in relation to other services that rely on local access:

- Retail voice calls and exchange line services were examined in the 2017 Narrowband Market Review (NMR). In that review, we identified that while there is an increasing constraint from mobile access⁸⁸, this was insufficient to constrain a hypothetical monopolist of fixed analogue exchange lines.⁸⁹ In doing so we also identified the importance of fixed analogue exchange lines in delivering broadband services.⁹⁰ In the 2017 NMR we found BT to have SMP in wholesale analogue exchange lines (supplied in practice via its wholesale line rental product, WLR), but recognised that this SMP was diminishing. However, where customers currently served using WLR value fixed broadband, they will continue to require a local access connection.
- Narrowband internet access services also run over a local access connection. Exchange lines enabled for ISDN (Integrated Services Digital Access Network) are capable of providing voice and narrowband data connectivity simultaneously. Competition at the wholesale level in ISDN exchange lines was examined in the 2017 NMR and we found BT to have SMP in these services.⁹¹ While that may diminish in the coming years with the growth in IP alternatives, many of those customers will continue to require a local access connection.
- We do not undertake an analysis of TV or content services consumed over local access in this review, even though TV is increasingly bundled with local access at the retail level. We recognise that a range of technologies are used to deliver TV content at a fixed location (IPTV, cable, satellite, DTT). However, local access networks are integral to many of these solutions – either directly (because they share the same connection –

⁸⁸ See Ofcom, 2017 NMR Statement.

⁸⁹ These exchange lines run over a wholesale local access connection

⁹⁰ 2017 NMR Statement, paragraph 4.40.

⁹¹ 2017 NMR Statement, paragraph 6.2.

e.g. IPTV⁹² or cable TV) or indirectly (e.g. broadband connections supporting satellite TV services).⁹³

- 3.44 A further dimension of product differentiation at the retail level between services delivered over a local access network are services to residential and business customers. However, as with the service differentiation identified earlier, the differentiation between residential and business customers comes from activities downstream from the wholesale network access layer. Therefore, it would be difficult for any supplier at the wholesale input level (i.e. WLA) to discriminate between downstream providers that were then serving different retail segments (in this case residential and business customers).
- 3.45 Moreover, we do not think the potential constraints from services delivered over alternative forms of access (e.g. cable or wireless services) discussed below are likely to differ significantly between residential and business services. The only exception would be leased lines which are consumed by business customers (typically larger business sites) and not residential customers.

Focal product – including consideration of downstream access speeds

- 3.46 As set out above, to assess whether market power is present in any given market we first define the relevant market. To undertake the hypothetical monopolist test, we identify a focal product – this is the product that is under investigation. Once we have done this, we can consider whether an expanded market, including the focal product and its closest substitute, would also be profitable to monopolise. If so, the original focal product is expanded to include the substitute products.
- 3.47 The 2014 FAMR began the market analysis with a focal product of “...wholesale local access at a fixed location by a network that uses a mixture of copper loops and fibre.”⁹⁴ For the reasons we explain below, we maintain that this remains the appropriate focal product.
- 3.48 TalkTalk did not comment specifically on our choice of focal product in response to the WLA Consultation, but in its 2017 WBA Consultation response argued that there should be two separate markets – a market including SBB and SFBB where the focal product is SBB, and another market containing only SFBB where the focal product is SFBB.⁹⁵ This aligns with its WLA response where it argued that SBB and SFBB are already in separate economic markets⁹⁶ and mirrors its arguments in the 2014 FAMR.
- 3.49 From the perspective of wholesale local access at the infrastructure level, the product market does not need to distinguish between different broadband speeds or services that use WLA as an input – i.e. the market is service agnostic. Put another way, wholesale local

⁹² For example, Youview requires a broadband connection of at least 3mbit/s <https://www.youview.com/get-youview/>

⁹³ Sky Q requires an internet connection for activation and for on demand services: <http://www.sky.com/shop/tv/sky-q/>

⁹⁴ 2014 FAMR, paragraph 7.32.

⁹⁵ TalkTalk response to the June 2017 WBA Consultation, paragraph 2.4.

⁹⁶ TalkTalk response to the March 2017 WLA Consultation, paragraph 2.5.

access is defined by the infrastructure supporting the electronic communications services provided at a fixed location. As we put it in the 2014 FAMR,

“the key characteristic is the provision of access, rather than the type of service that access is being provided for. The different services that can be provided using WLA (such as narrowband, broadband, ISDN etc) lie downstream”.⁹⁷

- 3.50 Integral to the ownership of local access infrastructure is the economy of scope from providing multiple downstream services, including (but not limited to) internet access at different speeds.⁹⁸ We have preferred to recognise the economies of scope (and opportunity for leverage into different downstream services) inherent in control of local access through a definition of the focal product centred on the underlying connection to premises.
- 3.51 This is reflected not only in how local access networks are built, but also in the marketing and take-up of retail fixed line services. A retail consumer’s monthly subscription entitles them to use that fixed line to make and receive calls and, typically, to access the internet and increasingly to access pay-TV services. While many consumers consider broadband speed as an important aspect when choosing a bundle of fixed-line services, in practice there is a multitude of factors and service characteristics that consumers will take into account simultaneously when deciding whether a retail tariff is value for money.⁹⁹
- 3.52 Taking today as our starting point, and considering the forward look for our market review, a wholesale local access network would be fibre-enabled. While a new entrant provider of local access would likely operate a full-fibre (FTTP) network, we recognise that, in practice, the only national local access network is operated by BT (in the UK excluding the Hull Area) and is a hybrid copper and fibre network (FTTC) rather than full-fibre (FTTP). Similarly, Virgin Media’s cable network relies on a hybrid fibre co-axial (HFC) deployment, in which the final connection to the customers’ premises is copper, with fibre to the street cabinet.¹⁰⁰
- 3.53 An FTTP deployment would share much of the same local access network infrastructure (e.g. ducts, poles, accommodation) as a network using copper/fibre. In any case, very few customers are today on FTTP connections, and we would expect such customers to exhibit similar preferences to those on copper/fibre connections in respect of substitute forms of access connections (e.g. wireless solutions). In other words, future FTTP customers are, today, on copper/fibre (or cable) connections.

⁹⁷ 2014 FAMR, paragraph 7.34.

⁹⁸ For example, BT’s network was originally designed to provide voice telephony and Virgin Media’s to provide cable TV. Subsequent innovations over the local access infrastructure led to the BT network and cable network providing narrowband internet access, then from 2000, they provided broadband internet access – see <http://news.bbc.co.uk/1/hi/business/687899.stm> and <https://publications.parliament.uk/pa/cm200001/cmselect/cmtrdind/90/90ap16.htm>. In 2007 Virgin Media [announced rollout plans for superfast broadband](#), followed by a [similar announcement by BT](#) in 2008, which was driven in part by [3<]

⁹⁹ We set out the results of surveys undertaken on the importance of various attributes to consumers in Annex 5, paragraphs A5.98-A5.103

¹⁰⁰ See Connected Nations 2017, Data Analysis, page 15, https://www.ofcom.org.uk/_data/assets/pdf_file/0016/108511/connected-nations-2017.pdf

- 3.54 In light of the above, we start our market definition analysis with a focal product of local access at a fixed location using copper/fibre connections because it is the type of network operated by BT. Hence it best recognises (a) that BT's is the local access network most prevalent across the UK; and (b) that we are reviewing a market (defined in the 2014 FAMR) in which BT was found to be the provider with SMP. Hence, it is appropriate to begin with a focal product centred on the network currently offering wholesale access products (that network being predominantly a copper/fibre local access network).
- 3.55 Nevertheless, a number of respondents have provided representations or analysis on the substitutability of broadband at different speeds, even if they have not necessarily argued that this should form the relevant focal product for WLA market definition. For completeness and by way of addressing representations received from stakeholders on this matter, we have investigated in Annex 5 whether starting with a more narrowly-defined focal product could result in the identification of narrower product markets.¹⁰¹
- 3.56 Taking account of the range of evidence today (such as surveys, price trends and quantitative SSNIP analysis), we find that retail packages offering SFBB at a fixed location are likely to constrain the pricing of packages offering SBB at a fixed location. We also consider that retail packages offering SBB would be likely to constrain packages offering SFBB based on the available evidence today. However, these constraints appear to be asymmetric in that demand-side substitution from SBB to SFBB would appear greater than from SFBB to SBB, and could diminish in later periods, for example, if the migration to SFBB is accompanied by a greater attachment to SFBB.
- 3.57 However, even if the demand-side analysis suggested separate downstream product markets based on the broadband speed offered to end consumers, we do not consider it should alter our approach to defining the WLA market. This is because local access networks are built with properties that make them amenable to delivering a range of broadband speeds.
- 3.58 Our focal product does not include the provision of cable-based or FWA-based wholesale local access or the provision of access using mobile networks. Rather we consider whether cable networks, FWA networks and mobile networks lie within the relevant market as part of our assessment of indirect constraints. We test the extent of substitutability between retail services delivered by our focal product and retail services delivered by alternative access networks below. In fact, the key question for the purposes of the definition of the WLA market is the extent of substitutability between services provided by different access networks, rather than between different services supplied by the same network.
- 3.59 Therefore, we start our analysis by considering the constraints on a hypothetical monopolist of copper/fibre connections at a fixed location.

¹⁰¹ In any event, as we explain in Section 4, our market power assessment is not sensitive to a narrower product market centred on internet access speeds.

Retail indirect constraints

- 3.60 The analysis of retail constraints is logically prior to the definition of the wholesale local access market because the demand for the upstream wholesale service is a derived demand – i.e. the level of the demand for the upstream input depends on the demand for the retail service. However, as we are concerned with a wholesale product, in principle there are two sets of constraints to consider. First, there may be direct constraints which would arise from the presence of suppliers of alternative wholesale products (if any). Second, there may be indirect constraints which would arise from substitution by retail customers to alternative products at the retail level. These retail products could be provided using other networks, such as a cable, FWA or mobile infrastructure.
- 3.61 Indirect constraints arise when an increase in price at the wholesale level is passed on in the retail price and induces switching to alternatives as a result. Indirect constraints can be effective because a rise in the price of a wholesale service which is passed through in the price of one retail service will cause retail customers to switch to substitute retail products, reducing demand for the wholesale input. In principle, the larger the proportion of the retail price accounted for by the price of the wholesale product, the stronger the indirect constraint is likely to be. Indirect constraints may often be more important than direct constraints at the wholesale level in telecoms markets (given the modified greenfield approach) where operators may not offer wholesale products unless required to do so by regulation.
- 3.62 We assume a hypothetical monopolist of copper/fibre access. If this hypothetical monopolist imposes a SSNIP, the only potential source of direct constraints would be a supplier of wholesale access over a different network, for example, a wholesale cable or FWA service. In practice, most owners of these alternative networks do not provide wholesale local access services to third parties.
- 3.63 In any case, wholesale access over one of these networks could only substitute for wholesale access over copper/fibre if the downstream retail services were sufficiently close substitutes for each other. Hence, the range of available substitutes at the downstream (retail) level will inform the likely range of substitutes for the upstream (wholesale) service. The question of whether other access infrastructures such as cable or FWA should be included in the WLA market therefore necessarily turns on the extent to which the different retail services are substitutes at the retail level.
- 3.64 The fact that we are concerned with indirect constraints on wholesale charges means that we may need to consider dilution and pass-through. Pass-through refers to the extent to which an increase in the wholesale price of one input is passed through to retail users in the form of higher prices. Dilution refers to the fact that there may be other costs associated in the provision of retail services, and so a 10% increase in the wholesale price of one input may represent a less than 10% increase in the retail price even if there is full pass-through.
- 3.65 If it were possible to directly observe wholesale demand responses to a wholesale SSNIP, dilution effects would not be relevant. In the context of WLA we are not able to ascertain

wholesale demand responses absent regulation because very few wholesale alternatives exist (i.e. absent regulation wholesale access would need to be offered by another network – e.g. a cable or a wireless network). Absent such direct choices, we need to infer how retail consumers might respond if a wholesale SSNIP was passed on by their retail provider. In that context it is relevant to consider whether dilution would arise such as to mute the retail demand response. If it did, this could suggest that a wholesale SSNIP was profitable and that a narrow wholesale market existed.

- 3.66 In principle, both pass-through and dilution are empirical questions, and the degree to which an increase in the wholesale price translates into a retail price increase will vary depending on the market being considered.¹⁰² For the purposes of defining the WLA market, we consider that an assumption of approximately full pass-through is reasonable on the assumption that retail markets are effectively competitive. An assumption of competitive retail markets is appropriate because, firstly, it is correct for the SSNIP test to use competitive prices as a benchmark and, secondly, because we do not find any provider to have SMP at the retail level.
- 3.67 In principle, dilution can be taken into account by means of a proportionate reduction in the percentage retail price change consequent on a wholesale level SSNIP. For example, if the wholesale input makes up 50% of the competitive retail price, a 10% increase in the wholesale price which was passed on in full would result in only a 5% increase in the retail price.
- 3.68 However, a mechanistic approach such as this is not a requirement of the Guidelines and requires careful interpretation of any results obtained from such quantification. For example, in some circumstances, applying significant dilution factors to a wholesale SSNIP risks leading to excessively narrow markets which do not reflect the choices open to retail customers. In such cases, definition of a narrow wholesale market on the basis of a diluted SSNIP could lead to a finding of SMP even though the risk of harm to final consumers is slight, and may not always be appropriate.
- 3.69 Taking the retail focal product of copper/fibre connections at a fixed location, we now consider the indirect (retail) constraints on a hypothetical monopolist of such access.

Local access over cable

- 3.70 All the retail services provided over a copper/fibre connection – i.e. fixed voice services, internet access, and TV content – can be, and are, provided over cable infrastructures. At the retail-level, services provided over each network are likely to be close substitutes.¹⁰³

¹⁰² For a discussion of pass-through from both a theoretical and an empirical standpoint, though not in the context of market definition, see RBB Economics, 2014, *Cost pass-through: theory, measurement, and potential policy implications A Report prepared for the Office of Fair Trading*. As noted there, pass-through can in theory be greater than 100%, depending on the shapes of the cost and demand functions. Pass-through of industry-wide cost changes (of which a charge increase by a wholesale-level monopolist might be regarded as an example) is likely to be higher than for firm-specific cost changes. There is some evidence of industry-wide cost pass-through increasing with intensity of competition.

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/320912/Cost_Pass-Through_Report.pdf.

¹⁰³ March 2017 WLA Consultation, paragraph 3.14 and footnote 50.

- 3.71 However, TalkTalk’s response to our June 2017 WBA Consultation, questioned whether cable services provided by Virgin Media should be included within the same product market. TalkTalk also argued that we had not looked at evidence on elasticities and substitution between copper/fibre and cable and had not followed the SSNIP methodology. We have therefore further investigated the extent to which local access over cable would be likely to constrain a hypothetical monopolist of copper/fibre connections.
- 3.72 There are two cable operators in the UK, by far the largest of which is Virgin Media’s network covering just under half UK premises.¹⁰⁴ Table 3.2 below shows example product pages from the BT Consumer and Virgin Media websites:

Table 3.2: BT and Virgin Media retail packages¹⁰⁵

	BT	Virgin Media
Price ¹⁰⁶	£25-45 ¹⁰⁷	£29-44 ¹⁰⁸
Connection/activation fee	£10-20	£20
Contract length	18 months	12 months or 30 days
Usage limit	Unlimited ¹⁰⁹	Unlimited ¹¹⁰
Headline speed	17, 52 and 76 Mbit/s	50, 100, 200 and 300 Mbit/s ¹¹¹
Inclusive calls	Unlimited UK weekend	Inclusive weekend calls to UK landlines, Virgin Mobile numbers, plus inclusive weekend minutes to 0870 numbers
TV content	SFBB packages include BT Sport, also available as add-on	Available as add-on

¹⁰⁴ The other cable operator is Wightfibre, which is only available on the Isle of Wight, and serves around 25% of households on the island: <https://www.wightfibre.com/about-us/> [accessed 21 February 2018]. Given that there are only around 70,000 homes on the Isle of Wight, the number of Wightfibre customers is so low that it does not feature in our market share analysis.

¹⁰⁵ Sources: <https://www.productsandservices.bt.com/broadband/deals/> [accessed 21 February 2018]; <http://store.virginmedia.com/serviceability/active> [accessed 13 February 2018].

¹⁰⁶ Promotional period price per month, only includes most basic call package.

¹⁰⁷ Up to 17 Mbit/s Unlimited Broadband, £24.99; Up to 52 Mbit/s Unlimited Infinity, £35.99; Up to 76 Mbit/s Unlimited Infinity 2, £44.99.

¹⁰⁸ Prices shown are for 12-month contract options. Up to 50 Mbit/s VIVID 50 fibre broadband, £29/£40 on a 30-day rolling contract; Up to 100 Mbit/s VIVID 100 fibre broadband, £34/£45 on a 30-day rolling contract; Up to 200 Mbit/s VIVID 200 fibre broadband, £39/£50 on a 30-day rolling contract; Up to 300 Mbit/s VIVID 300 fibre broadband, £44/£55 month on a 30-day rolling contract.

¹⁰⁹ Except Up to 52 Mbit/s Infinity, which has a monthly usage allowance of 30Gbit, £24.99.

¹¹⁰ Acceptable use policy applies.

¹¹¹ Up to 300 Mbit/s packages available on 92% of the Virgin Media network,

- 3.73 While BT and Virgin Media offer packages of different speeds, their offers have several similar characteristics and are targeted at similar customers and at comparable prices. Both providers also offer triple-play bundles, i.e. each with TV provided over a fixed connection that also delivers voice and broadband services. BT’s tariffs are available nationally¹¹², and we are not aware that BT discounts from list prices more heavily in cable than in non-cable areas, rather, [redacted]¹¹³
- 3.74 We also note that information available to consumers, for example price comparison websites¹¹⁴, sets out cable-based services alongside copper/fibre services and typically emphasises the range of services (broadband speed, download limits, inclusive voice calls, etc), rather than the underlying access connection.¹¹⁵ Virgin Media has also gained a significant share of broadband customers in the areas where it is present (i.e. has around 40% of connections within its coverage area).¹¹⁶ This shows that a significant proportion of consumers have actively chosen to take retail local access services over the cable network rather than over copper/fibre local. Furthermore, we have found that 39% of all switching by consumers between retail providers involves switching between different networks¹¹⁷, with [redacted].¹¹⁸
- 3.75 TalkTalk argued that indirect constraints are necessarily weaker than direct constraints because of less-than-full pass-through and what might be characterised as dilution. TalkTalk claims that only 70% or less of the absolute amount of a wholesale price change will be passed through in higher or lower retail prices and that BT’s wholesale products comprise half or less of the cost stack for retail broadband. TalkTalk argues that the combined effects of pass-through of less than 70% and dilution of more than 50% suggest that a 10% increase in the wholesale price would lead to only a 3% or lower increase in the retail price, with the effect of “reducing switching and the extent of wholesale market constraints”¹¹⁹.
- 3.76 In addition, TalkTalk argues that the constraining effect of Virgin Media on Openreach is further weakened because “Virgin Media is only present in around half the country, where it has a market share of just over 40%; this means that only around a third of retail broadband customers on the Openreach network could switch to Virgin Media, even if

¹¹² BT’s FTTC rollout is now near-national.

¹¹³ BT response dated 30 January 2018 to the 3rd WBA-WLA s.135 notice dated 21 December 2017.

¹¹⁴ For example, see Ofcom accredited price comparison sites at <https://www.ofcom.org.uk/phones-telecoms-and-internet/advice-for-consumers/costs-and-billing/price-comparison> [accessed 21 February 2018].

¹¹⁵ However, Virgin Media’s own advertising sometimes highlights its DOCSIS co-axial network as a source of differentiation from services over BT’s Openreach network.

¹¹⁶ We consider shares of broadband connections in subnational geographic areas in Section 4 and Annex 5.

¹¹⁷ I.e. switches to or from Virgin Media’s cable platform, switches to or from Sky’s standalone pay TV service, switches from Sky’s triple play package. See Ofcom triple play statement, paragraph 4.7, footnote 76.

¹¹⁸ Ofcom, 2016. *Triple Play Consultation*, Annex 6, Table 1.

https://www.ofcom.org.uk/data/assets/pdf_file/0016/54106/annex.pdf.

¹¹⁹ TalkTalk response to the June 2017 WBA Consultation, paragraph 2.10.

they wished to do so.” TalkTalk claims that “cable services provided by Virgin Media should not be included within the same relevant market without detailed analysis of elasticities of demand, pass-through rates, and substitutability in order to provide evidence that they are indeed in the same market.”¹²⁰

- 3.77 As set out above, we consider that it is reasonable to assume approximately full pass-through of the absolute amount of a wholesale SSNIP in the retail price for the purposes of the SSNIP test. As for dilution, our view is that a mechanistic approach, as advocated by TalkTalk, is not always appropriate. In the present case, absent regulation, competition would be confined to vertically integrated networks, so we have first considered the SSNIP test from the perspective of a vertically integrated monopolist, for which we make no adjustment for dilution and second, from the perspective of an upstream monopolist. We consider that a dilution ratio of approximately 50% broadly reflects current relative wholesale and retail charges, and we have reflected this in our quantified SSNIP analysis for the wholesale-only monopolist (as set out in Annex 5). Nonetheless, our survey found that consumer responses to a 5% SSNIP tended to be very similar to those for a 10% SSNIP.
- 3.78 We do not agree with TalkTalk’s comments regarding the exclusion of cable services in the market. First, if we focus on retail pricing, it is clear that the marketing and tariff offers over the cable network are designed to compete with services over the copper/fibre local access network. These offers have clearly been successful in winning customers away from the copper/fibre network, as Virgin Media has around a 40% share of connections within its coverage area.¹²¹ Assuming these consumers value broadband, fixed voice services and/or TV over local access enough not to give them up, then absent a cable network, they would (presumably) take-up retail services over BT’s copper/fibre network. Whilst it is theoretically possible that they might instead choose to become mobile only households (or take other wireless services), as we show in Annex 5, our survey evidence suggests that few consumers that take a fixed-line broadband service would switch to relying on wireless services in response to a SSNIP on fixed-line broadband.¹²²
- 3.79 Second, we consider that it is not always necessary to carry out a quantitative analysis of the kind suggested by TalkTalk. This is consistent with the relevant guidelines and the recent CAT BCMR judgment.¹²³
- 3.80 Our consumer survey did not ask respondents about their willingness to switch between different providers of broadband services and hence in the present case the data which would enable a full new critical loss analysis to be undertaken are not available. However, previous surveys have found that “a significant proportion of respondents ...indicated they

¹²⁰ TalkTalk response to the June 2017 WBA consultation, paragraph 2.11.

¹²¹ See Section 4 and Annex 5.

¹²² In our survey, few consumers would switch to relying on wireless services in response to a SSNIP on SBB or SFBB. From these results, we have estimated the likely level of consumer response to a SSNIP on all fixed-line broadband. See Annex 5 for details.

¹²³ CAT BCMR Judgment, paragraphs 165-166.

would be willing to switch between providers using these [MPF and cable] technologies”.¹²⁴ As in the 2014 FAMR, when we found cable services to be part of the WLA market, neither TalkTalk nor other stakeholders have provided any evidence suggesting that there has been a reduction in the extent to which retail customers consider cable access to be a substitute for access over BT’s network.¹²⁵

- 3.81 Third, while we do not have new survey data on the actual loss of demand for copper/fibre based services which would occur due to switching to cable in response to a SSNIP on copper/fibre based services only, we do have estimates of the critical loss for both a vertically integrated and a wholesale-only monopolist. These are set out in Annex 5 for a range of assumptions. It is notable that for WLA services, estimates of the critical loss tend to be relatively low because gross margins are relatively high, as is necessary to enable fixed costs to be recovered - even in a competitive market. Moreover, this is true of both the vertically integrated and the wholesale-only monopolist. This increases the likelihood that any projected loss will exceed the critical loss. Hence, in light of the evidence of retail competition between cable and copper/fibre based services set out above and the previous survey evidence also referred to, we consider that a SSNIP on copper/fibre prices alone is likely to be unprofitable.
- 3.82 Fourth, as for estimates of own-price or cross-price elasticities of demand, these are empirically difficult to determine and any existing data or evidence will reflect the current regulatory regime. Thus, they may not be applicable to the modified greenfield scenario, not least as there is likely to be little or no use of BT’s access infrastructure by retail providers in that scenario (meaning competition in fixed line services is likely to be between vertically integrated retail providers only).
- 3.83 Nonetheless, we could use data collected in our survey to carry out another type of quantitative analysis of whether cable access constrains the pricing of access over copper/fibre. That is, we could use a technique similar to one sometimes used in the analysis of mergers to calculate by how much prices might rise if two firms merged. A number of such measures of “upward pricing pressure” have been developed to allow competition authorities to assess the strength of the incentives on merging firms to raise prices post-merger.¹²⁶ The essence of these methods is that a merger between two competing firms will give the merged firms an incentive to raise prices by eliminating an alternative supplier to which consumers would switch if one firm alone raised its price. If the predicted price increase is very large relative to a SSNIP, this suggests that competition between the firms is a significant constraint on the prices they can charge. Other things equal, the greater the margins observed at current prices and the greater the

¹²⁴ 2014 FAMR Statement paragraph 3.67.

¹²⁵ 2014 FAMR Statement paragraph 3.68.

¹²⁶ These approaches are described in general terms in the CMA, 2010 CC2 (Revised), *Merger Assessment Guidelines*, paragraphs 5.4.6-5.4.12

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/284449/OFT1254.pdf. For an example of one such approach, see Competition Commission, September 2005. *Somerfield plc and Wm Morrison Supermarkets plc: A report on the acquisition by Somerfield plc of 115 stores from Wm Morrison Supermarkets plc*. <http://webarchive.nationalarchives.gov.uk/20140402204005/http://www.competition-commission.org.uk/our-work/directory-of-all-inquiries/somerfield-plc-wm-morrison-supermarkets-plc/final-report-and-appendices-glossary>.

substitutability of two products, the greater will be the price increase that would be possible if the two competing firms merged.

- 3.84 From our survey (see Annex 5 Figures A5.5 and A5.6) we find that in the event of a SSNIP on fixed broadband there would be little switching to other forms of access (suggesting a relatively high perceived substitutability between broadband over cable and copper/fibre access). In relation to margins we find that these are relatively high which is to be expected in an industry with high fixed and sunk costs (see Annex 5 Figure A5.1). As such, we find that BT would, in the absence of competition from Virgin Media, have the scope to charge much higher prices than it does now, with an implied increase far above the 5-10% level usually considered in the SSNIP framework. This further suggests that access over Virgin Media's cable network is likely to exercise a strong constraint on BT such that cable access would be regarded as part of the same market as access over copper/fibre.
- 3.85 Finally, we recognise TalkTalk's point concerning the limited coverage of Virgin Media's cable network. We consider that the implications of Virgin Media's smaller coverage are most appropriately taken into account in the assessment of geographic market definition (later in this section) and SMP (in Section 4). Product market definition should precede geographic market definition which in turn precedes SMP analysis¹²⁷, and so we do not consider that an adjustment for this is appropriate at the product market definition stage.
- 3.86 In light of the above evidence and reasoning, we consider that a hypothetical monopolist of copper/fibre connections, either vertically integrated or wholesale-only, is unlikely to be able to profitably impose a SSNIP above the competitive level due to substitution to retail packages over cable.
- 3.87 We therefore conclude that cable is a sufficiently close substitute to retail services over copper/fibre connections, and expand our focal product to include cable.

Wireless access services

- 3.88 There are various forms of wireless access services. The pricing and consumer experience varies markedly across these, with some wireless-based services likely to serve as better substitutes than others to retail services over copper/fibre/cable local access. The extent to which these services are available in different parts of the country, and the groups of consumers at which they are targeted, also varies.
- 3.89 Alternative forms of wireless access include:
- satellite;
 - smartphone access over a mobile network (using 3G or 4G);
 - Line of sight (LoS) FWA services; and
 - non-LoS FWA and mobile broadband services (e.g. dongles) designed for use at a fixed location.

¹²⁷ CAT BCMR judgment paragraphs 392 – 393.

Satellite services

- 3.90 Satellite coverage is available everywhere in the UK including the Scottish Islands and it therefore has similar coverage to copper/fibre/cable local access connections.
- 3.91 Satellite services are typically taken up in rural areas with very poor or no fixed-line services. Satellite broadband generally offers up to 20 Mbit/s and is therefore consistent with SBB rather than SFBB. Another service aspect where there is a difference between satellite broadband and fixed broadband is latency. The latency of satellite broadband services tends to be poorer than services over copper/fibre/cable connections. This could potentially affect some users who have requirements for low latency (e.g. gamers and consumers wishing to make VOIP calls).¹²⁸ Furthermore, consumers who want to purchase a fixed voice service would need to do so separately, as these are not typically offered with satellite broadband services.
- 3.92 Prices for low data allowance satellite services are comparable to broadband services available over copper/fibre/cable, but typically exclude voice services and the data usage allowances vary markedly. For example, Europasat, Broadband Wherever and Satellite Internet all offer services with 5-10 GB data allowances for around £24.95 a month. These prices increase substantially for higher allowances, for example a 50 GB allowance is charged at around £60 per month.¹²⁹ In contrast, broadband over copper/fibre/cable, is often available on an unlimited basis for prices around £25 (inc. VAT) per month at SBB speeds and from around £35 per month for SFBB speeds, which typically involve bundling of some fixed voice usage (and occasionally some TV content).¹³⁰
- 3.93 The other significant pricing difference for satellite services is that they typically involve large upfront charges for equipment, which can be in the region of £300¹³¹, whereas the retail connection charge for copper/fibre/cable services is typically less than £25.
- 3.94 From the responses to our consumer survey, we found that at most 2% of consumers said they would consider switching to satellite in response to a 10% SSNIP on fixed-line broadband; this is lower than or equal to the proportion of consumers that said they would consider giving up internet access altogether.¹³²

¹²⁸ Some satellite providers set this out explicitly – see for example <http://avonlinebroadband.com/about-satellite-broadband/how-satellite-broadband-works/> [accessed 13 February 2018].

¹²⁹ <https://www.europasat.com/satellite-broadband-tariffs/england/>, <http://www.broadbandwherever.net/home-user/>, [accessed 21 February 2018], <https://www.satelliteinternet.co.uk/satellite-packages> [accessed 21 February 2018].

¹³⁰ See Annex 5, Figures A5.7 and A5.8

¹³¹ For example, the three providers above have setup charges of £299, £399 and £299 respectively, with some providers charging additional installation costs on top of this.

¹³² See Figure A5.6 in Annex 5. It is also possible that some respondents would have confused satellite broadband services with Sky TV, which is typically received via a satellite dish. This would reduce the proportion further if so.

Smartphone access over a mobile network

- 3.95 Use of mobile data services on smartphones is increasing – 66% of consumers now use these services, compared to 57% in 2014.¹³³ However, our most recent technology tracker shows that despite mobile access via 4G being the most common alternative to fixed line broadband, only 5% of households only connect to the internet at home using a 3G or 4G mobile connection.¹³⁴ This suggests that the vast majority of consumers view mobile data services as desirable in addition to fixed line broadband, and not a substitute.
- 3.96 Usage allowances may still be restrictive for the majority of customers. Our latest Communications Market Report shows that the median fixed broadband line uses 84 GB of data per month, with mean usage at 190GB.¹³⁵ There are very few mobile-specific packages offering more than 30 GB of data.¹³⁶
- 3.97 While it is a theoretical possibility for customers to tether¹³⁷ from multiple devices, we consider that consumers would be unlikely to consider this a satisfactory course of action in response to a SSNIP on broadband over a copper/fibre/cable connection. We consider that this is especially unlikely since even households with usage half that of the median usage household would likely need to tether from at least two different SIMs (since very few mobile tariffs offer data allowances above 30GB per month). This would likely prove difficult and impractical for many households. Promotional SFBB prices and SBB prices are also cheaper than even the incremental data price for most consumers.¹³⁸ In addition, our consumer research suggests that no more than 5% of consumers would consider switching to mobile in response to a 10% SSNIP, well below any critical loss threshold, which implies switching to mobile access would not constrain a SSNIP on retail broadband offered over copper/fibre/cable local access.¹³⁹
- 3.98 While, as some stakeholders suggested, the use of mobile data services over a smartphone may become a greater substitute to internet access over copper/fibre/cable in future, our evidence shows that mobile access services are more likely to be used in addition to a fixed local access connection rather than as a substitute, and we do not believe that this will change sufficiently over the review period to make mobile access a competitive constraint.

¹³³ Ofcom, *Connected Nations 2017*, Figure 3. https://www.ofcom.org.uk/data/assets/pdf_file/0024/108843/summary-report-connected-nations-2017.pdf.

¹³⁴ Ofcom, *Technology Tracker H2 2017*, Table 46.

https://www.ofcom.org.uk/data/assets/pdf_file/0017/107360/Ofcom-Technology-Tracker-H2-2017-data-tables.pdf.

¹³⁵ The mean is much higher due to a small proportion of consumers using very large amounts of data. Source: *Connected Nations 2017 – Detailed Analysis*, paragraph 4.63,

https://www.ofcom.org.uk/data/assets/pdf_file/0016/108511/connected-nations-2017.pdf.

¹³⁶ Based on 12-month Sim Only packages including minutes and text (i.e. not mobile broadband-specific tariffs).

¹³⁷ Tethering involves accessing the internet on a device such as a laptop using a mobile phone's data connection via a mobile, rather than fixed, network.

¹³⁸ For three of the four large mobile providers, the incremental data spend for upgrading two SIMs from a 1 GB or 2 GB package to a 30 GB or 40 GB package is around £45-50 – i.e. well above the average dual-play or triple-play broadband tariff, including most SFBB tariffs. For Three, the incremental cost is lower but still comparable to the price of the market leading SFBB tariff.

¹³⁹ See Table A5.6 in Annex 5

Line of Sight (LoS) FWA

3.99 FWA services have long been present in specific geographic areas, particularly in rural areas, where broadband speeds over fixed local access connections are more likely to be slow. Speeds offered by providers vary, with basic packages having speeds from 2 Mbit/s upwards. Some providers offer packages with speeds of 30 Mbit/s, or occasionally higher in a few locations. Most cheaper packages have data caps, although some providers' more expensive packages offer higher or unlimited data caps. In general, prices are above fixed access SBB prices and are similar to non-promotional fixed access SFBB prices.

Table 3.3: Fixed wireless retail packages

Tariff	Broadband type	Speed ("up to", Mbit/s)	Price (£)	Setup fees (£)	Usage	Inclusive calls
Average SBB	ADSL2+	17	25	0	Unltd	Some
Average SFBB	FTTC/cable	38-200	35	0	Unltd	Some
Country Broadband - NGA home prime	FWA	24	31.99	99	120GB	No
Airnet - Gold	FWA	30	32	120-200	Unltd	No
Ineedbroadband	FWA	50	49.99	99.99	Unltd	No

Sources: Pure pricing January 2018, FWA provider websites

3.100 However, these FWA services are, in general, slower and more expensive than promotional superfast broadband packages, and come with substantial setup fees (typically around £100-200). This level of set-up fee would typically exceed the value of a SSNIP on a typical dual-play broadband tariff over a fixed access connection, even when spread over the length of a typical fixed retail contract.¹⁴⁰ These services sometimes offer a voice service using a VOIP phone, either bundled with the broadband or marketed as an add-on from a partner VOIP provider. These typically come at an additional price to the broadband access.

3.101 While these LoS packages may have some customer appeal in areas with very low broadband speeds over copper/fibre/cable connections, they would not be seen as good substitutes by the majority of consumers in areas with internet access at or around the speeds typically marketed over copper, fibre or cable connections (i.e. up to 17 Mbit/s, up to 38 Mbit/s, up to 55 Mbit/s, etc.). While difficult to extrapolate to the population at

¹⁴⁰ A £150 setup fee would be equivalent to an £8.33 per month rise over an 18-month contract, which is far more than 10% of the average monthly bill of a fixed broadband consumer (the average dual-play SBB/SFBB tariffs are around £25/£35 per month respectively).

large, we note that in the Hull Area, where fixed wireless providers are able to serve the majority of consumers¹⁴¹, take-up of FWA remains very low compared to broadband and voice services over fixed access connections.

3.102 From the data we have on fixed wireless coverage outside the Hull Area and London, we believe that only a small fraction of the population have access to a FWA service, and that take-up in the UK (excluding the Hull Area and London – see discussion of Relish below), is very low, at no more than around 50,000 customers. The low take-up, even in the areas where they are available, suggests that LoS FWA services are not a close substitute for a copper, fibre or cable connection. We consider that the number of consumers who would switch from services over copper/fibre/cable access to services over LoS FWA in response to a SSNIP is unlikely to be material.

Non-LoS FWA technologies and mobile broadband services designed for use at a fixed location

3.103 Historically, consumers have also been able to access the internet using dongles or built in data cards in laptops or tablets. The use of these technologies is declining; the proportion of households using dongles or built in data cards in laptops or tablets is down from 17% in 2011 to 2% today.¹⁴²

3.104 More recently, some providers have launched non-LoS FWA services, which share many of the characteristics of mobile broadband but are designed for use in the home. Two suppliers of such services are EE and Three. Three offers these services through both its own HomeFi product and more recently through its purchase of Relish from UK Broadband. Some of these services can be used in multiple locations, for example, Three's HomeFi service, is available nationally wherever Three's 3G or 4G network is available¹⁴³, however, take-up hasn't been comparable to fixed networks to date at just [§<].¹⁴⁴ EE has only recently released its 4GEE router designed for use in the home, although its 4GEE WiFi router, which is designed for use both in the home and outside, has only had a take-up of around [§<] (<5000) despite being available for several years.¹⁴⁵

3.105 In some respects, these services can be comparable to fixed line broadband. They typically provide speeds comparable with SBB or low-end SFBB services. However, the services are often capped, for example, EE offers its 4GEE router with various data packages, the highest 200GB per month at £60 per month.¹⁴⁶ The cheapest package, at prices comparable

¹⁴¹ Ofcom, June 2017. *Wholesale Local Access and Wholesale Broadband Access Market Reviews: Review of competition in the Hull Area*, paragraphs 3.13-3.19. https://www.ofcom.org.uk/data/assets/pdf_file/0009/103203/wla-wba-hull-consultation.pdf.

¹⁴² Connected Nations 2017.

¹⁴³ <http://www.three.co.uk/Discover/Devices/Huawei/HomeFi> [accessed 21 February 2018].

¹⁴⁴ [§<]

¹⁴⁵ [§<]

¹⁴⁶ Taken from <https://www.ofcom.org.uk/research-and-data/multi-sector-research/general-communications/pricing-on-13/02/2018>. The price packaged at £25, similar to SBB, only offers 10GB of data, and the £35 package (comparable to SFBB) only includes 50GB. This contrasts with those SBB and SFBB packages as these would typically include unlimited usage, and in some cases inclusive fixed line calls, for the same price.

to SBB, only includes 10GB of data, while Three’s HomeFi service offers just 40GB from £23 per month.¹⁴⁷ Relish’s offer is more comparable to fixed line broadband in that it offers unlimited data usage from £22 per month with a headline speed of 40 Mbit/s.¹⁴⁸

- 3.106 These FWA services are also not sold with a voice service – indeed, Relish advertises itself as not needing to take a landline - which certain groups of customers may value.¹⁴⁹ These services also do not appear to promote an alternative fixed voice solution such as a VOIP service.
- 3.107 However, while non-LoS FWA services may appear comparable to fixed line broadband in some respects, it appears that take-up of these services remains fairly low. Relish, which has been marketed in central London since 2014 (and more recently in Swindon), has only managed to gain a total of [X] customers.¹⁵⁰ This represents a small share of [X] (less than 10%) in the relevant areas in which Relish providers coverage [X].¹⁵¹
- 3.108 The reasons for this low level of take-up within footprint are unclear. Three argues that larger coverage could be achieved through broader national coverage allowing for mass sales and marketing, plus the use of multiple distribution channels.
- 3.109 We also note that in response to our 2014 consultation on extending UK Broadband’s (UKBB) 3.4GHz license, UKBB said that Relish was “not aiming to go head to head with the larger operators but seeking to fill perceived gaps in the market”¹⁵², [X].
- 3.110 It may also be the case that either the lack of a voice service sold in conjunction with FWA broadband, or lower perceived reliability of FWA networks due to experiences with mobile networks indoors, have led to low levels of take-up. This is in contrast to, for example, cable broadband, which has achieved a much higher take-up within its network coverage.
- 3.111 These findings are also consistent with our summer 2017 consumer research.¹⁵³ While that survey did not identify FWA services as a specific choice for consumers in response to a 10% SSNIP on fixed broadband, the overall responses in the category of “other” were at most 3%.¹⁵⁴ Even if this were entirely comprised of switching to FWA, it is a very low response rate to a 10% SSNIP.

Future potential 5G and FWA technologies

- 3.112 In its response to our consultation, CityFibre agreed that fixed wireless services were not part of the WLA market over the three-year review period, but argued that a longer review

¹⁴⁷ We understand that Three has trialed a 100GB HomeFi package in some stores.

¹⁴⁸ Taken from <https://www1.relish.net/athome> [accessed 13 February 2018]. Some customers will be unable to get a speed of 40mbit/s even at the point of sale.

¹⁴⁹ Although our 2017 NMR statement found that around a third of consumers (39%) disagreed with the statement that, under certain circumstances, they would be prepared to give up the ability to make and receive calls from their landline (2017 NMR Statement, table 4.1).

¹⁵⁰ Three response to the March 2017 WLA consultation, paragraph 14.

¹⁵¹ [X]

¹⁵² Ofcom, 2014. *Variation of UK Broadband’s 3.4 GHz licence*, paragraph 5.90.

¹⁵³ We discuss the details and results of this survey in Annex 5.

¹⁵⁴ See Figure A5.6, Annex 5. The set of specific alternatives to fixed line broadband was: mobile, satellite, “give up internet” and “other”.

period would have resulted in the inclusion of FWA in the WLA market. Additionally, BT argued that, with innovations in wireless technology and the advent of 5G spectrum standards, FWA services could become a stronger substitute in the future.

3.113 As we noted in the March 2017 Consultation, there have been recent innovations that may lead to terrestrial-based wireless services becoming stronger substitutes to local access connections over copper/fibre and cable in the longer term. These developments include:

- the release of higher frequency spectrum which may be suited to small cell, limited distance high bandwidth applications; and
- 5G standards may lead to the availability of higher speed data services.

3.114 The widespread rollout of such technologies could lead to service offerings which consumers find to be closer substitutes for services provided over fixed access connections than the FWA services currently available.¹⁵⁵ Such services may also blur the boundary between traditional fixed line access and wireless access at a fixed location if, for example, fibre is used for connections up to very distributed small cells, with 5G or public wifi used to deliver the “final drop” to the customers’ premises.

Conclusion on wireless access services

3.115 Wireless-based services are highly differentiated and in previous reviews have not been found to act as a constraint on a hypothetical monopolist of local access over copper/fibre or cable connections. While there are some ongoing developments in the satellite and traditional LoS FWA sectors, we do not believe that changes over the review period will be significant enough such that either satellite or LoS FWA are likely to act as a significant constraint on a hypothetical monopolist of copper/fibre or cable connections.

3.116 We also consider that other forms of wireless access based on cellular mobile technologies remain, at present, an insufficient constraint on a hypothetical monopolist of copper/fibre and cable access connections.

3.117 However, with advances in wireless technologies such as LTE and with the advent of 5G, we expect that some wireless technologies could begin to gain consumer acceptance as an alternative to a copper, fibre or cable connection. Should such services become more widely available to consumers, and where they are able or likely to provide an effective constraint on retail services over copper/fibre or cable connections, we would review our position accordingly.

Leased lines

3.118 Leased lines provide equal upload and download speeds and can be configured to deliver high quality broadband services for example with a bandwidth guarantee, lower latency and dedicated connectivity. As noted in the March 2017 Consultation, there are large price

¹⁵⁵ [3<]

differences between leased lines and fixed broadband services and the services are marketed to different groups of customers with different needs.¹⁵⁶

- 3.119 Most stakeholders did not comment on our decision not to include leased line services in the WLA market. CityFibre argued that, in future, increased FTTP rollout will lead to the merging of broadband and leased line markets.
- 3.120 Given the existing price differences between local access services and leased lines, we consider that there is likely to be limited switching to leased lines in response to a small price increase in services provided over a local access connection. The 2016 BCMR statement also noted that users do not appear to regard them as close substitutes and neither do telecoms providers¹⁵⁷, and that this was reflected in most stakeholders' responses to the consultation, replies to the market research questionnaires and in telecoms providers' marketing of fibre-based services.¹⁵⁸

Conclusions on wholesale product market definition

- 3.121 In light of above analysis, we now set out our conclusions on wholesale product market definition. As noted earlier, the first stage in a market definition exercise using the HMT is the definition of the focal product. For the purposes of defining the WLA market, the most appropriate focal product at the wholesale level is the supply of wholesale access over copper/fibre connections, consistent with the focal product defined earlier in this section. This does not mean that, in the absence of regulation, the hypothetical monopolist would necessarily supply WLA to third parties. Indeed, our view is that it would be most likely to operate as a vertically integrated supplier to retail customers only.
- 3.122 As before, the analysis then proceeds by identifying potential substitutes which might constrain the ability of a hypothetical monopolist to impose a SSNIP on the focal product.
- 3.123 From the preceding analysis of retail (indirect) constraints on a hypothetical monopolist of local access over copper/fibre connections, we have found that certain alternative forms of access appear to provide a greater constraint on the provision of fixed broadband and voice services than others. Specifically, for the reasons explained above, cable networks offer a nearly indistinguishable broadband and voice service and cable has achieved a significant market share of around 40% in the areas where it is available.
- 3.124 From the range of wireless services considered, we do not believe that at present such wireless services in the round act as a significant constraint on local access services delivered via copper/fibre or cable connections. However, there is potential for this to change in future as wireless technologies develop and, while we do not expect this to

¹⁵⁶ For example, leased lines are priced around £149-467 per month for speeds ranging from below 30Mbit/s and up to 100Mbit/s (and can cost much more in some cases), whereas business broadband packages offering either SBB or SFBB speeds cost around £21-50 per month. See

<https://business.bt.com/products/broadband/> [accessed 21 February 2018] and

<https://www.virginmediabusiness.co.uk/connectivity/internet-access/business-broadband/> [accessed 21 February 2018].

¹⁵⁷ Ofcom, 2016 BCMR statement, Volume 1, paragraph 5.41,

https://www.ofcom.org.uk/data/assets/pdf_file/0015/72303/bcmr-final-statement-volume-one.pdf.

¹⁵⁸ Ofcom, 2016 BCMR statement, Volume 1, paragraphs 4.259-4.261.

happen within this market review period, it may in time be appropriate to include at least some FWA services in the WLA market.

- 3.125 Other services, such as leased lines, are essentially high-quality business products (or products used by other telecoms providers) and are not designed for the provision of broadband and voice services to the mass-market of premises connected with local access. Their pricing also makes them prohibitively expensive for such purposes.
- 3.126 These findings are supported by our quantitative SSNIP analysis in relation to fixed line broadband. In Annex 5 (paragraphs A5.58-5.63) we show that the projected switching rates would be insufficient – to render a 10% SSNIP on broadband connections unprofitable.
- 3.127 Taking account of direct and indirect constraints acting on a hypothetical monopolist at the wholesale level, we conclude that the relevant market for wholesale local access comprises services supplied over copper/fibre and cable connections. However, in recognition of the reference market in the 2014 EC Recommendation and the potential for services provided over alternative technologies (such as FWA) to be included in the market in future, a technology-neutral description is appropriate and so we define the market as “wholesale local access provided at a fixed location”. At present, however, the change in phrasing makes no practical difference to our assessment of market power (for example, take-up of FWA remains very low).

Geographic market definition

Background

- 3.128 In 2004, 2010 and 2014 we found the market for WLA to be national, but split between the UK excluding the Hull Area and the Hull Area. This is based primarily on consideration of the nature of competitive constraints, which suggested that prices would likely be uniform within each of those areas absent regulation. In the March 2017 Consultation, we proposed the same two geographic markets.
- 3.129 As we explained at the start of this section, analysis of demand- and supply-side substitution is likely to lead to relatively narrow geographic markets in the telecoms sector, which may overlook the reality of how markets for local access connections would operate, absent regulation. It is therefore appropriate to look at other characteristics of competition.

Stakeholder responses

- 3.130 Most stakeholders agreed with or did not comment on our proposal that the two relevant geographic markets are the UK excluding the Hull Area and the Hull Area.
- 3.131 BT agreed with our geographic market definition, but also argued that an anomaly in the geographic market definition is that we have taken a national rather than a local view

despite there being geographic areas in which BT is not the local access provider or has fewer access connections than Virgin Media.¹⁵⁹

- 3.132 CityFibre agreed with our proposed geographic market definition, but also suggested that it would (in theory) be possible to identify two separate submarkets of that national market, reflecting the parts of the country that are prospectively competitive.¹⁶⁰
- 3.133 TalkTalk agreed with our geographic market definition but said that we should commit to reviewing the case for subnational geographic markets in the next review period.¹⁶¹
- 3.134 Scottish Futures Trust broadly agreed with our geographic market definition but argued that there is a need to consider “regional workings of the telecoms market, and how this translates into infrastructure provision and services competition for remote and rural areas of Scotland and the wider UK”.¹⁶²

Our reasoning and decision

- 3.135 In the March 2017 Consultation we considered four main issues in relation to geographic market definition during the period covered by this review:
- the UK excluding the Hull Area and the Hull Area, which represent the areas covered by BT and KCOM’s networks, respectively;
 - areas covered by Virgin Media’s cable network or other operators alongside BT;
 - new build areas where BT is not present; and
 - areas included in the BDUK programme.

Assessment of demand and supply-side substitution

- 3.136 At the retail-level, the focal geographic area on the demand-side is the end customers’ premises. On the demand-side, consumers will not move premise in response to a SSNIP on services delivered over their local access connection.¹⁶³
- 3.137 At the wholesale level, local access is also defined by the end customer’s premises even if the point of interconnection to control that connection is close to or far from the end customer’s premises. For example, local access connections can be accessed at the local telephone exchange, sub-loops can be accessed at the street cabinet, and access to ducts and poles allows other providers to install their own cabling to the end customer or up to some other point of interconnection – e.g. a street cabinet.
- 3.138 On the supply-side, an access network that passes one premise could readily switch to supplying adjacent premises that are also passed. But over the time horizon typically

¹⁵⁹ BT response to the July 2017 WLA consultation, paragraph 2.45.

¹⁶⁰ CityFibre response to the July 2017 WLA consultation, paragraph 4.1.34.

¹⁶¹ TalkTalk response to the July 2017 WLA consultation, paragraph 4.11.

¹⁶² Scottish Futures Trust response to the July 2017 WLA consultation, page 2.

¹⁶³ BEREC common position, paragraphs 15-16.

considered for the SSNIP test, switching to supply a large number of premises outside the existing network footprint would be limited.¹⁶⁴ For example, Virgin Media’s Project Lightning, only passed just over half a million houses over a two-year period (less than 2% of UK premises excluding the Hull Area) and planning time would be in addition to this.¹⁶⁵ The cost of network build also suggests that significant expansion in response to a SSNIP would be unlikely.

3.139 Therefore, a hypothetical monopolist with customer connections at a fixed location could profitably impose a SSNIP, except for those premises passed by an alternative local access network and where network expansion by that other network required very modest activity (e.g. activating a disconnected line, or connecting premises within easy reach of an existing aggregation point).

3.140 Consideration of demand- and supply-side substitution therefore points to localised markets for wholesale local access at a fixed location.

Competitive conditions and uniform pricing

3.141 Nevertheless, in many markets (including telecoms) it can be appropriate to broaden the geographic market¹⁶⁶ if competitive conditions are “similar or sufficiently homogenous”¹⁶⁷, for example, because there is a common pricing constraint. In the present context, this is most relevant in considering (i) the Hull Area as distinct from the rest of the UK; and (ii) whether there are differences between cable and non-cable areas.

3.142 We noted above that, when deciding whether competitive conditions are “sufficiently homogeneous”, the relevant BEREC guidance indicates that NRAs should bear in mind that market definition is a means to an end, ultimately, of determining whether ex-ante regulation is required or not. Consistent with this, areas should be defined as separate markets if competitive conditions “differ...with potential effects on either the SMP finding or the identified competition problems”.¹⁶⁸ This suggests that, when defining geographic markets, we should give significant weight to the similarity of competitive outcomes, for example pricing.

¹⁶⁴ As a starting point, the time period for supply-side substitution of one year identified in the OFT guidance on market definition (para 3.15) might be a reasonable time frame for analysis of switching in the present context as residential customer contracts are typically 12-18 months long. However, a case could be made for considering a longer time horizon for switching – for example, the average customer lifetime is around 5 years. The EC SMP guidelines in considering supply-side substitution in the context of geographic market definition refer to entry “in the short term” (para 58) without specifying a particular time frame. The 2017 BCMR judgement also did not specify a time frame for a SSNIP, although suggested it should not be less than a year (paragraph 314).

¹⁶⁵ Virgin Media 2016 results, 16 February 2017. <http://www.virginmedia.com/corporate/media-centre/press-releases/virgin-media-2016-results.html>

¹⁶⁶ SMP guidelines, paragraph 56; 2017 BCMR judgement, paragraph 354.

¹⁶⁷ Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services, Paragraph 55. [http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52002XC0711\(02\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52002XC0711(02)&from=EN)

¹⁶⁸ BEREC Common Position, paragraph 129.

3.143 However, structural indicators may also be relevant. A set of indicators relevant to the assessment of competitive conditions are provided in the Explanatory Memorandum to the 2014 EC Recommendation:

“The exact criteria to be taken into account when assessing the homogeneity of competitive conditions in different geographic areas may vary depending on the market(s) in question but are based on the same competition law principles to be applied for any geographic market delineation. This means that NRAs should look at the number and size of potential competitors, distribution of market shares, price differences or variation in prices across geographies, and other related competitive aspects, which may result from relevant competitive variations between geographic areas (nature of demand, differences in commercial offers, marketing strategies etc.)”.¹⁶⁹

3.144 The BEREC Common Position lists a similar set of relevant indicators.¹⁷⁰

3.145 In the context of the WLA market, there are clearly some differences in the structure of competition between areas. The most obvious differences are between cabled and non-cabled areas. However, these differences are not conclusive in themselves and we put weight on the implications of these differences for assessment of competitive outcomes, consistent with the BEREC Common Position. The most important question is therefore whether market outcomes, including pricing, quality of service and investment would vary significantly between cabled and non-cabled areas in the absence of regulation.

3.146 In particular, a key question is whether any differences in competitive conditions between areas are large enough to lead to different prices being set in them. If prices in the absence of regulation would be uniform across areas, despite some differences in the number of competitors and shares of supply, then this would suggest that competitive conditions may in fact be sufficiently homogeneous to support the definition of a broad geographic market.

3.147 This is consistent with the BEREC common position. This states:

“If prices of the incumbent and alternative operators are geographically uniform, that is, do not differ between geographical areas, this may be an indication of insufficient geographical variations in competitive conditions to justify the definition of subnational geographical markets.”¹⁷¹

3.148 However, BEREC warns that this is not always the case, and that it is also necessary to consider the size of the “competitive” area, relative to the “non-competitive” area and the relative prices of the “incumbent” and other operators. Hence,

¹⁶⁹ Explanatory memorandum to the EC 2014 Recommendation on Markets, page 13.

http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?action=display&doc_id=7056

¹⁷⁰ BEREC Common Position, paragraphs 104-105.

¹⁷¹ BEREC Common Position, paragraph 113.

“If the competitive area is sufficiently large, the price of the incumbent operator as well as the differences in prices between the incumbent operator and the competitors will be low (close to the competitive level). Under such circumstances, the definition of a national market based on a common pricing constraint can be justified.”¹⁷²

3.149 By contrast:

“If the incumbent operator, on the other hand, does not set a uniform price this could be a strong indicator for differences in competitive conditions. It may suggest that, in those geographical areas where prices are lower, competitive constraints are stronger than in those areas where prices are higher.”¹⁷³

3.150 For the purposes of defining geographic markets for WLA, we therefore consider whether BT’s prices would be uniform between cabled and non-cabled areas in the absence of regulation, the relative sizes of the cabled and non-cabled areas and the extent of any differences between BT’s and Virgin Media’s prices. However, we note that the prices we observe reflect the impact of longstanding regulation in WLA.

The Hull Area and the rest of the UK

3.151 As we set out in our consultation, KCOM and BT operate distinct local access networks covering the Hull Area and the rest of the UK respectively and both have significantly larger market shares in these areas than other providers.

3.152 Stakeholders did not comment specifically on our proposals to find the UK excluding the Hull Area and the Hull Area to be separate geographic markets.

3.153 Competitive conditions are unlikely to be homogenous between the Hull Area and the rest of the UK given that they are served by different providers and, for similar reasons, there is unlikely to be common pricing behaviour absent regulation (or the threat of regulation). In line with our longstanding practice we consider that the Hull Area and the rest of the UK lie in separate geographic markets.

Areas covered by cable connections

3.154 While we concluded above that cable access is in the same product market as copper/fibre local access, cable coverage is sub-national. The cable network has covered almost half of UK premises today, whereas BT’s network covers almost 100% of UK premises (excluding the Hull Area). In other words, in just over half the country outside the Hull Area, BT is the only large-scale operator with a local access network (some smaller-scale local access providers are present in a limited number of areas) and, in the remainder, there are only two large-scale operators (again with smaller-scale local access providers in some areas). In

¹⁷² BEREC Common Position, paragraph 114.

¹⁷³ BEREC Common Position, paragraph 116.

the cable areas BT's share of local access connections is above 60%¹⁷⁴, whereas in the non-cable areas BT's share of local access is close to 100%.¹⁷⁵

- 3.155 While some indicators of competitive conditions linked to market structure differ between cable and non-cable areas (in particular, the number of providers and BT's share of connections), the most important question is whether competitive dynamics or market outcomes (such as pricing, quality of service and/or investment) would vary significantly. Inferring BT's likely conduct in the hypothetical scenario of no regulation and no competition other than cable is inherently a speculative exercise, albeit necessary in the context of defining the market for WLA within the modified greenfield approach envisaged under the European Framework.
- 3.156 In relation to price competition, there are a number of reasons why BT, as the ubiquitous provider of local access (excluding the Hull Area), might adopt a national pricing strategy.
- 3.157 First, absent regulation (or the threat of regulation), we consider that both BT and Virgin Media would operate as vertically integrated operators supplying retail services. As noted elsewhere, this is how Virgin Media operates at present and how BT operated before regulation required it to provide wholesale services.¹⁷⁶ In these circumstances, the question of the wholesale price BT would charge would not arise. We are therefore concerned primarily with the evidence relating to the uniformity of retail prices absent regulated wholesale local access. We therefore make inferences about the retail pricing that would prevail if BT faced only cable competition (i.e. no competition from retail providers using regulated inputs in the WLA market (such as LLU or VULA) or in related downstream regulated markets (such as wholesale line rental and wholesale broadband access (WBA))). However, if BT did choose to supply a wholesale local access service on unregulated terms, it is likely that the same factors tending to lead to uniform or differentiated pricing would apply.
- 3.158 The main component of retail bills remains the line rental, typically bundled with some voice usage and broadband access.¹⁷⁷ BT has a universal service obligation (USO) which requires it to supply and maintain "Telephony Services" at a uniform price.¹⁷⁸ Since the main costs of the access connection (duct, copper, exchange space and network

¹⁷⁴ BT's share is likely higher still when including other downstream services relying on local access infrastructure, i.e. ISDN and voice-only lines.

¹⁷⁵

See Section 4, Figure 4.3.

¹⁷⁶ Oftel required BT to make available its local loops to other operators in its 1999 statement – Oftel, 1999. *Access to Bandwidth: delivering competition for the information age*.

<http://webarchive.nationalarchives.gov.uk/20080715030212/http://www.ofcom.org.uk/static/archive/oftel/publications/1999/consumer/a2b1199.htm>. Also see

<https://publications.parliament.uk/pa/cm200001/cmselect/cmtrdind/90/9006.htm>.

¹⁷⁷ For example, on BT's website, line rental is £18.99 while the unlimited usage broadband element involves an incremental price of £6, £17 and £26 for speeds of up to 17 Mbit/s, 52 Mbit/s and 76 Mbit/s respectively.

<https://www.productsandservices.bt.com/broadband/deals/> [accessed 21 February 2018].

¹⁷⁸ Universal Service ensures that basic fixed line services are available at an affordable price to all citizens and consumers across the UK. <https://www.ofcom.org.uk/consultations-and-statements/category-1/uso>

maintenance) are recovered through the line rental, it follows that the retail pricing of local access will be national when the line rental is priced nationally.

- 3.159 Retail broadband pricing is often but not always uniform within a provider's coverage area. However, broadband provided by BT is not subject to a USO.¹⁷⁹ We also recognise that, while BT's brands of Plusnet and EE (for existing if not new customers) vary prices by region, this strategy reflects the acquisition of those retail brands since the emergence of significant competition from retail broadband competitors using regulated wholesale access.¹⁸⁰ Therefore, absent regulation of WLA, it seems more likely that pricing would be national.
- 3.160 The pressure to adopt uniform pricing might be increased by the fact that price differences based only on differences in competition could pose risks to BT's brand image. By pricing higher in its monopoly areas BT could damage its reputation with corresponding harm to either sales in cable areas or sales for additional services where BT faces competition, for example pay-TV. By way of inference in an unregulated access market, we note that historically, Sky priced retail pay-TV services nationally, despite facing competition from a variety of local cable competitors (each of which operated in non-overlapping cable franchise areas).¹⁸¹
- 3.161 Second, academic research has highlighted that national pricing by a firm that has a monopoly position in one region of a country may soften competition in competitive areas. BT may prefer uniform pricing of local access since it commits BT to price less aggressively than it otherwise would within areas where there is a rival local access network provider (i.e. in areas where a cable network is present). This commitment can induce rivals to price less aggressively.¹⁸²
- 3.162 Third, we understand that where BT has adopted local pricing it has been in response to relatively intense levels of competition, e.g. due to the presence of LLU competitors, not the presence of a single competitor or in response to cable infrastructure alone. In 2005, in response to increased competition from LLU operators, BT introduced a discount on its

¹⁷⁹ The government announced in December that a regulatory USO will be put in place to give everyone in the UK access to speeds of at least 10 Mbit/s by 2020: <https://www.gov.uk/government/news/high-speed-broadband-to-become-a-legal-right> [accessed 21 February 2018]. The designation process for finding the universal service provider (USP) for broadband is yet to be defined.

¹⁸⁰ BT acquired Plusnet in early 2007 (see <https://assets.publishing.service.gov.uk/media/555de3c9e5274a70840000ce/BT.pdf>), at which point around 80% of houses were connected to an unbundled exchange (see Figure 5.1 of 2010 Communications Market Report: https://www.ofcom.org.uk/data/assets/pdf_file/0013/25222/cmr_2010_final.pdf). BT acquired EE in January 2016, by which point over a third of broadband connections were over LLU (Ofcom, CMR 2017, Figure 4.15, https://www.ofcom.org.uk/data/assets/pdf_file/0013/25222/cmr_2010_final.pdf).

¹⁸¹ Competition Commission, 2000. *NTL Incorporated and Cable & Wireless Communications Plc: A report on the proposed acquisition*, Chapter 4, paragraph 4.35. http://webarchive.nationalarchives.gov.uk/20111202172407/http://www.competition-commission.org.uk/rep_pub/reports/2000/437ntl.htm.

¹⁸² Dobson and Waterson, 2008. *Chain-Store Competition: Customized vs. Uniform Pricing*. http://wrap.warwick.ac.uk/1375/1/WRAP_Dobson_twerp_840.pdf.

WBA products of Datastream and IPStream in its ‘dense cell’ exchanges, with these exchanges being identified by a number of different parameters, such as broadband take-up and number of delivery points served. BT increased the number of exchanges from which the discount was available as LLU rollout increased.¹⁸³

- 3.163 On that basis, we might infer that the pricing of wholesale access is also likely to be national if retail costs did not vary by region. This is because absent regulation, the most likely form of commercial wholesale access would likely be priced on the basis of the avoided costs from not retailing, and would not be priced in such a way as to undermine the commercial viability of the USO provider.
- 3.164 We also consider that, in the circumstances of the WLA market, uniform pricing is likely to indicate uniformity of competitive conditions. Following the BEREK guidance set out above, we find that:
- BT is the only national provider, but other operators also charge uniform prices within the area covered by their network;
 - the cabled area is significant relative to the national market, with Virgin Media’s network covering almost half of UK premises today and projected to grow to over half of premises by the end of the review period;
 - in practice, BT’s and Virgin Media’s retail prices are comparable, for comparable services – see Figure 3.2 above; and
 - BT has well over half of access connections (above 60%) within the cabled area.
- 3.165 This evidence suggests that, not only are prices likely to be uniform geographically in the absence of regulation, but that competition in the cabled area would have sufficient “weight” in BT’s price setting decisions potentially to influence the level of the national price. Hence, we consider that it is consistent with the relevant guidance to find that likely commercial behaviour, including common pricing constraints, points to a single geographic market outside of the Hull Area.
- 3.166 We recognise that in applying the same analytical framework for geographic market definition in the 2017 WBA Consultation (mirroring our approach in the previous 2014 WBA review) we proposed to define sub-national markets, whereas for WLA we find the evidence is more likely to point to a national market (absent regulation). However, for WBA we are able to make more robust inferences on competition and pricing that would exist absent regulation of WBA. This is because in most geographic areas we can observe the market outcomes that have emerged in light of entry using regulated WLA inputs, most notably LLU).
- 3.167 In the 2014 WBA review and the 2017 WBA Consultation, we grouped BT telephone exchange areas between those which have BT+2 POs (referred to as “Market B” areas – and which are considered effectively competitive) and the rest (referred to as “Market A”

¹⁸³ Ofcom, 2010. *Review of the wholesale local access market – Consultation*, paragraph 3.172. In paragraph 3.174, we noted that “where BT has voluntarily introduced local pricing it has done so in response to fairly intense competition from multiple alternative operators. BT has not introduced local pricing in response to more modest levels of competition. In particular, there is no observable instance where it has done so in the face of competition only from alternative cable infrastructure”.

areas – which are not considered effectively competitive). Most of the boundary between Market A and Market B areas in the WBA market is determined by the extent of unbundling of local loops by competing providers using BT’s regulated products from the WLA market. Analysis from the experience of entry using WLA remedies (i.e. LLU) is that when there are at least BT+2 POs in an exchange area, BT’s market share falls to below 50% within a three-year timescale.¹⁸⁴ In addition, we set out confidential evidence that “overall...wholesale prices in Market B are [X].¹⁸⁵

- 3.168 BT maintained national pricing in the face of competition from cable in the early years of broadband rollout¹⁸⁶ and it was only when faced with competition from multiple LLU-based providers that it moved away from nationally uniform pricing in the WBA market.¹⁸⁷ While we cannot be definitive about what pricing would emerge in a WLA market in the modified greenfield scenario, faced with competition only from a cable access operator it is reasonable to assume that BT would maintain a policy of national pricing as it did prior to the emergence of competition based on regulated wholesale local access products.¹⁸⁸ By contrast, given the WLA regulation that is actually in force, there is evidence of geographic differences in downstream prices reflecting the competition that has developed in many exchange areas.¹⁸⁹
- 3.169 Hence, applying the same analytical framework, we find that an expectation of uniform pricing (absent WLA regulation) supports the definition of a national market for WLA (outside the Hull Area) but that, in the presence of WLA regulation (but absence of WBA regulation) geographic variations in WBA and retail prices support the definition of two distinct geographic markets (outside the Hull Area) for WBA services.
- 3.170 Finally, in relation to non-price competition, it is not clear that investment by BT differs between cable and non-cable areas. For example, while Virgin Media was the first to upgrade its local access network to offer SFBB, BT’s commercial SFBB deployment exceeded the Virgin Media cable footprint. A BT board paper¹⁹⁰ from 2008 indicates that fibre would cover around 7-10m homes, which is c.40% of the BT network, and thus close to the cable coverage footprint. However, BT’s commercial rollout then exceeded this and

¹⁸⁴ Ofcom, 2014. *Review of the Wholesale Broadband Markets – Final Statement*, Figure 4.5.

https://www.ofcom.org.uk/_data/assets/pdf_file/0021/57810/WBA-Final-statement.pdf.

¹⁸⁵ June 2017 WBA consultation, paragraph 5.31.

¹⁸⁶ We noted in our WBA 2004 final statement that despite the launch of the Exchange Activate services, the relevant geographic market remained national and that BT’s wholesale broadband origination price was uniform at the time. See Ofcom, 2014, *Review of the Wholesale Broadband Access market – Final Explanatory statement and Notification*.

https://www.ofcom.org.uk/_data/assets/pdf_file/0021/53814/broadbandaccessreview.pdf.

¹⁸⁷ Ofcom, 2010. *Review of the Wholesale Broadband Access Markets – Consultation on market definition, market power determinations and remedies*, paragraph 3.235.

https://www.ofcom.org.uk/_data/assets/pdf_file/0018/33516/wbacondoc.pdf.

¹⁸⁸ There are a small number of locations across the UK where, in addition to BT, both Virgin Media and another infrastructure-based provider (such as Hyperoptic) is present. As in the WBA market, we would need evidence that BT+2 is enough to make the market competitive rather than simply assuming it. A very small fraction of the UK is currently served by networks other than BT or Virgin Media, with the largest expansion over this review period likely to be CityFibre’s planned rollout to around 1m homes by the early 2020s. Should this and other announced network investments take place, there may be greater variation in competitive conditions in future market reviews.

¹⁸⁹ Details are set out in the June 2017 WBA market review consultation, paragraphs 5.29-5.31 (wholesale pricing) and 4.16-4.20 (retail pricing).

¹⁹⁰ BT Group plc Board, GPLC(08)66.

covered over 60% of the country, exceeding the actual and planned cable coverage at the time. BT has since rolled out to 95% of the UK excluding the Hull Area. Some of this rollout has used BDUK funds, although refunds of subsidies are being made in some of these areas.

New build areas where BT is not present

- 3.171 In some geographic areas (e.g. new housing developments) telecoms providers other than BT have deployed fibre networks, while BT itself is not present.
- 3.172 No stakeholders commented on these areas, except for BT which noted that it was an anomaly that we have taken a national rather than a local view despite there being geographic areas in which BT is not the local access provider.
- 3.173 We recognise that there may be a case for identifying such areas as distinct geographic markets on the same basis as the Hull Area. This potentially leads to a number of additional geographic markets for each of which we would need to assess whether the local network operator has SMP.
- 3.174 However, where the areas relate to new build sites, the degree to which there is competition for the market (i.e. bidding to connect the new build sites), mitigates competition concerns from an *ex ante* perspective. This means such areas are less susceptible to *ex ante* regulation, at least initially.
- 3.175 Should competition concerns arise *ex post* we would consider the specific case in question and the appropriate regulatory instrument to address any concerns, including competition law.

Areas included in the BDUK programme

- 3.176 Stakeholders did not comment on the implications of BDUK areas for our geographic market definition.
- 3.177 In areas where connections were provided by BT under BDUK, in the vast majority of cases, local access connectivity was already present (in the form of a copper connection), and the BDUK-funded investment served to upgrade the premise to being a copper/fibre connection. As such, we might presume that for many of these connections the underlying market circumstances would be the same – since there was already an underlying access connection and, where BT was the winner of the BDUK contract, the BDUK-funded investment was an overlay to that existing connection.
- 3.178 In BDUK areas, BT has a number of obligations that are defined by contracts with local bodies (local authorities, groups of local authorities, devolved governments or local economic partnerships). Therefore, as we noted in the March 2017 Consultation, there is a possibility that BT's pricing could have been constrained by these contracts in a way in which it was not in the rest of the UK. However, following a review of a sample of BDUK

contracts¹⁹¹, we concluded that competitive conditions in the BDUK areas are not sufficiently different from those in the rest of the UK.

- 3.179 While some of the contracts in the sample have what amounts to charge control provisions these are linked to our market reviews. The contracts further contain procedures for changes to pricing and other terms in various circumstance and are of limited duration, minimizing the effect of any contractual constraints. BT appears to have priced at the same level for fibre access to lines upgraded under the BDUK programme and for lines where there was already a commercially deployed fibre upgrade to the access line.
- 3.180 Given that the underlying provision of connectivity to a fixed location is unchanged, and that BT appears to have priced at the same level in BDUK and non-BDUK areas, we have included BDUK areas within the same geographic market as that covered by the rest of BT's local access network.

Conclusion on geographic market definition

- 3.181 In light of the above, we conclude that there are two distinct geographic markets: (i) the UK excluding the Hull Area, and (ii) the Hull Area. In doing so, we recognise that this analysis has involved aggregation across geographic areas, including some where there is variation in market structure. However, we do not consider that such variation would be such as to deliver localised market outcomes – such as in the pricing of local access.
- 3.182 In so far as our assessment of SMP could be affected by the boundary of the geographic market, we have addressed this in the next section.

¹⁹¹ Response dated 12th July 2016 to question 1 of the 4th BT WLA s.135 notice.

4. Market power assessment

- 4.1 In this section, we set out our assessment of competition in the market defined in Section 3, namely the supply of wholesale local access at a fixed location in the UK, excluding the Hull Area. Specifically, we examine whether any provider has significant market power (SMP) in that market. Our general approach to the assessment of market power is described in Annex 2.
- 4.2 In summary, we have found that BT has SMP in the market for wholesale local access (WLA) at a fixed location in the UK excluding the Hull Area for the period covered by this review.
- 4.3 This is consistent with the proposed SMP finding in the March 2017 WLA Consultation.

Approach to assessment of market power

- 4.4 SMP is defined in the Act as being equivalent to the competition law concept of dominance, that is, a position of economic strength affording a telecoms provider the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers. In our assessment of competition in the WLA market, we have had regard to the criteria for assessing SMP set out in the EC SMP Guidelines.
- 4.5 The SMP Guidelines set out a non-exhaustive list of criteria to be considered in an SMP assessment, and state that a dominant position may derive from a combination of these criteria, which taken separately may not necessarily be determinative. Evidence on the most relevant SMP criteria should be considered in the round, and findings should not be based on assessment of a single criterion. We regard the following criteria as particularly relevant to the assessment of SMP in the wholesale local access market:
- market shares,
 - pricing and profitability,
 - barriers to entry and expansion, and
 - countervailing buyer power.
- 4.6 As noted in Section 3, we have also taken account of the 2017 BCMR judgment. The judgment was on an appeal against Ofcom’s definition of the relevant markets in that case and BT made no separate challenge to Ofcom’s SMP findings. Hence the CAT was not required to engage with the detailed methodology for determining SMP. However, as also noted in Section 3 of this volume, the CAT judgment emphasised that market definition should precede the analysis of SMP and this is the approach we have followed in this review of the WLA market.¹⁹²
- 4.7 In Section 3, we define the relevant market as wholesale local access provided at a fixed location in the UK, excluding the Hull Area. Hence, consistent with the regulatory framework and the 2017 BCMR judgment, in this section we consider whether any

¹⁹² CAT BCMR Judgment, paragraph 393.

provider has SMP in this market. Our assessment reflects that there are some variations in competitive conditions within downstream segments of the local access market and therefore we consider the question of market power in segments of particular interest.

- 4.8 In particular, we consider market positions in the provision of wholesale local access connections used to support retail packages including SFBB services (typically over fibre access connections) separately from the provision of wholesale local access connections used to support retail packages including SBB services (typically over copper access connections). We further consider market positions in the geographic areas served by Virgin Media’s cable network separately from market positions outside this area.¹⁹³

Provisional conclusion as set out in the March 2017 Consultation

- 4.9 Our provisional conclusion in the consultation was that BT will continue to have SMP in the supply of WLA in the UK, excluding the Hull Area, for the period covered by this review. Stakeholders were asked whether they agreed with this provisional conclusion and to provide reasons and evidence to support their views.

Stakeholder responses to the March 2017 Consultation

- 4.10 Most respondents either explicitly stated that they agreed with our provisional conclusion or made it clear that they did so without replying directly to the consultation question. No respondents disagreed with our provisional conclusion that BT will continue to have SMP in the supply of WLA in the UK, excluding the Hull Area, for the period covered by this review.

- 4.11 A number of respondents also commented on the extent of BT’s market power in the supply of particular services over WLA infrastructure, or in particular geographic areas. For example, TalkTalk, Vodafone and Sky emphasised that BT had SMP, including in the provision of both copper access and fibre access connections. Sky stated that:

“It is uncontroversial and long-recognised that BT’s SMP in wholesale local access is entrenched. Described as an ‘enduring economic bottleneck’, BT’s ubiquitous local access network – operated by Openreach – is non-replicable and non-contestable.”¹⁹⁴

- 4.12 Others, including [redacted] and the Scottish Futures Trust drew attention to variations they perceived in BT’s market power between areas.¹⁹⁵ [redacted], while stating that it agreed with

¹⁹³ Whilst a variety of other sensitivities could also be conducted, such as in relation to market positions in other services that use local access infrastructure (such as voice or other narrowband services), we have not done so as the focus of stakeholder responses has been on market positions in connections used to offer broadband services downstream. That said, absent regulation in WLA, BT’s wholesale position in narrowband exchange line services (voice or narrowband data) would be at least as great as its share in broadband enabled local access connections (since the main alternative infrastructure provider is also Virgin Media, which has proportionately far fewer voice only or ISDN connections than BT).

¹⁹⁴ Sky response to the March 2017 WLA Consultation, paragraph A1.12.

¹⁹⁵ Scottish Futures Trust, response to the March 2017 WLA Consultation, pages 2 – 4; [redacted] response to the March 2017 WLA Consultation, page 5.

- our SMP proposals, noted that in some areas there is growing investment in infrastructure which it thought might be of more importance for the next review of this market.
- 4.13 CityFibre also stated that it agreed with our proposal that BT has SMP “across the entire WLA market”, but was concerned that we had not paid sufficient attention to the new fibre networks which it and other “Competitive Networks”¹⁹⁶ were rolling out in some areas.¹⁹⁷ This may be of greater significance in future reviews: CityFibre said that “not including the Altnets in the current market share assessment is perhaps defensible”.¹⁹⁸
- 4.14 Similarly, INCA (Independent Networks Cooperative Association), whose members include “a majority of new entrants building full-fibre networks in the UK”, agreed that “it could be argued with some justification that the altnets do not yet have sufficient coverage to warrant serious attention in the WLA review”.¹⁹⁹
- 4.15 Openreach did not disagree with our provisional SMP finding, given our proposed market definition. Indeed, Openreach agreed that, given this definition, a finding that it “has an enduring position of SMP”²⁰⁰ would follow.
- 4.16 However, Openreach also said that “Ofcom has significantly understated the competitive constraints on Openreach, particularly for its VULA services and therefore overstated both Openreach’s market power and the extent of the alleged competition issue relating to VULA supply. As a result, Ofcom has overstated the extent to which price regulation of VULA is required and, where remedies are imposed, how intrusive the necessary remedies need to be.”²⁰¹
- 4.17 Openreach (and BT Group) argued that it faced competitive constraints from Virgin Media, from alternative access technologies including mobile access and fixed wireless access (FWA) and, on its fibre access services, also from copper access services.²⁰² Virgin Media also emphasised the strength of the constraint on fibre access prices from copper access services, although it was among the stakeholders who explicitly agreed with our SMP finding for the WLA market proposed in the March 2017 Consultation.²⁰³
- 4.18 Virgin Media also argued that mobile access could act as a constraint on fibre access prices, while CityFibre and Three argued that FWA services would increasingly do so, at least to the point where FWA becomes part of the WLA market, though CityFibre saw this as perhaps more likely to occur beyond the end of this review period.
- 4.19 We have concluded in Section 3, that mobile access and FWA are outside the WLA product market for the period of this review. However, in principle, products which are outside a

¹⁹⁶ Some respondents to our consultation have used the term “altnets” to describe network operators other than BT (and sometimes Virgin Media). We use the term “Competitive Networks” in this section

¹⁹⁷ CityFibre response to the March 2017 WLA Consultation, paragraph 4.1.45.

¹⁹⁸ CityFibre response to the March 2017 WLA Consultation, paragraph 4.1.46.

¹⁹⁹ INCA response to the March 2017 WLA Consultation, page 1.

²⁰⁰ Openreach response to the March 2017 WLA Consultation, paragraph 99.

²⁰¹ Openreach response to the March 2017 WLA Consultation, paragraph 88.

²⁰² Openreach said that it agreed with the inclusion of “fibre, cable and copper access technologies...in the same WLA product market...but disagrees with Ofcom’s contradictory finding that the competitive constraint of copper on fibre is weak, despite being in the same market”: Openreach response to the March 2017 WLA Consultation, paragraph 112.

²⁰³ Virgin Media response to the March 2017 WLA Consultation, paragraph 134.

market can still exert some constraining effect on the prices of products within it, and we therefore consider these below under the heading “external constraints”.

Market power assessment for the UK excluding the Hull Area

4.20 As noted above, in making our assessment we have had regard to the criteria for assessing SMP set out in the EC SMP Guidelines, in particular, market shares, pricing and profitability, barriers to entry and expansion, and countervailing buyer power. We turn now to our analysis against these criteria.

Market shares

4.21 The SMP Guidelines note that “market shares are often used as a proxy for market power”.²⁰⁴ The SMP Guidelines also state that:

- single dominance concerns normally arise where market shares exceed 40%;
- concerns can also arise at lower shares depending on the difference between the market shares of the undertaking in question and that of its competitors;
- very large market shares in excess of 50% are in themselves evidence of a dominant position, save in exceptional circumstances; and
- undertakings with market shares of no more than 25% are not likely to enjoy a (single) dominant position on the market concerned.

4.22 In Section 3, we set out our conclusion that the wholesale local access market comprises copper, fibre and cable connections, and that the relevant geographic market is the UK excluding the Hull Area. Hence, when calculating market shares, we focus primarily on shares of such fixed access connections rather than on shares of any particular service provided over these connections.²⁰⁵

4.23 We recognise that local access connections can be used to supply a number of distinct services downstream including narrowband voice services and internet access services of various speeds (which can in turn be used to provide various different forms of usage services e.g. internet browsing, e-mail access, use of social media and various forms of content services), as well as various forms of TV content (e.g. IPTV or cable TV). As noted above, some respondents have argued that the strength of competition varies between these services, and also between different geographic areas.

4.24 The service distinctions of most interest for present purposes are between SBB, typically provided over copper access connections²⁰⁶, and SFBB, typically provided over fibre (mostly FTTC) or cable access connections. The geographic distinctions of most interest are between the geographic area covered by the cable network (owned and operated by Virgin

²⁰⁴ SMP Guidelines, paragraph 75. [http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52002XC0711\(02\)&qid=1399986405910&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52002XC0711(02)&qid=1399986405910&from=EN).

²⁰⁵ This is consistent with the BCMR judgment which states that market definition precedes the analysis of SMP, CAT (2017) 25, *op cit*.

²⁰⁶ Historically SBB services were also provided over Virgin Media’s cable lines and, presently, some (FTTC) fibre lines only provide SBB speeds.

Media) and the rest of the UK excluding the Hull Area. To illustrate the extent of such differences we present below wholesale service shares calculated on a number of different bases, after first discussing our main estimates and forecasts of shares of the WLA market in the UK excluding the Hull Area.

- 4.25 However, as explained in Section 3, even if the demand-side analysis were to suggest separate product markets for broadband services of different speeds, we do not consider that it would affect our definition of the WLA market. Similarly, it would not affect our assessment of underlying market power at the WLA level. This is because what matters for market power in the WLA market is control of the access connection. Control of the underlying connection is what gives a telecoms provider the opportunity to leverage into different downstream services – be these segmented by broadband speed or otherwise. Telecoms providers also have the ability to undertake “provider-led” migrations, and therefore move their customer base between speeds.²⁰⁷

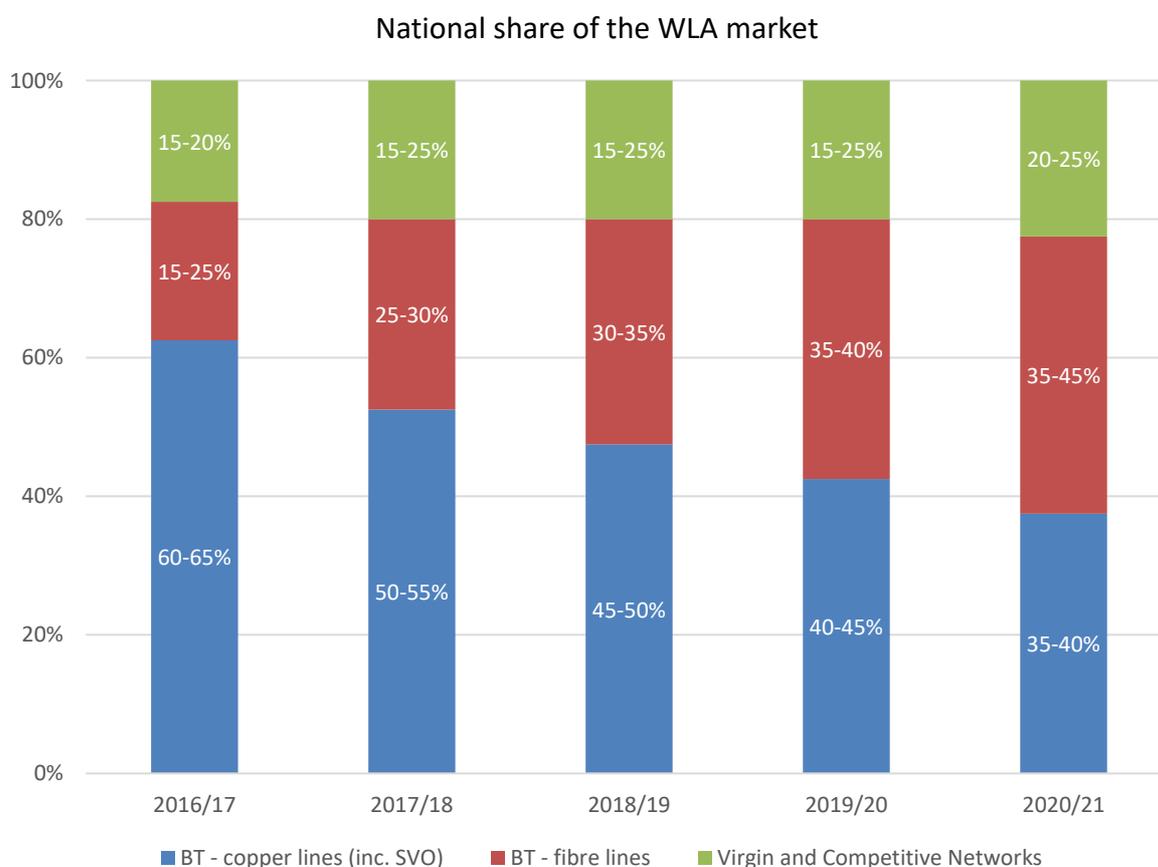
BT’s share of the wholesale local access market in the UK excluding the Hull Area

- 4.26 To calculate shares of the WLA market in the UK excluding the Hull Area, we have compared the number of access connections provided by BT with the number of access connections provided by Virgin Media and others. Because we are required to take a forward-looking approach, we have also taken account of forecast market shares over the review period. Our forecast is presented in Figure 4.1 below.²⁰⁸ Competing providers’ share is expected to grow over the review period, but still to remain at a low level. This is consistent with the statements of the competing providers themselves.

²⁰⁷ Both BT and Virgin Media have undertaken provider-led upgrades for parts of their customer bases.

²⁰⁸ This forecast is consistent with the volume of lines relied on in our financial modelling used to set the new charge controls on BT’s WLA services. BT’s downstream services over wholesale local access connections may also support ISDN access services where BT’s share of underlying connections is relatively high. BT’s share of wholesale ISDN2 and ISDN30 channels are set out in Ofcom, 2017, *Narrowband Market Review Statement*, and are nearly 100% and 62% respectively, paragraphs 6.95 and 6.69. https://www.ofcom.org.uk/data/assets/pdf_file/0020/108353/final-statement-narrowband-market-review.pdf.

Figure 4.1: Forecast WLA market shares²⁰⁹



Source: Ofcom forecast based on operator take-up data. Forecasts are for financial years

4.27 BT has a very high share of the WLA market in the UK excluding the Hull Area, currently [80] (around 80%). We forecast that BT’s market share will remain high at around 80% by 2020/21. As set out above and in Annex 2, market shares of the magnitude forecast here for BT give rise to a presumption of SMP.

4.28 Trends in market shares can also be an important indicator of market power. According to the Commission’s SMP guidelines, “an undertaking with a large market share may be presumed to have SMP...if its market share has remained stable over time. The fact that an undertaking with a significant position on the market is gradually losing market share may well indicate that the market is becoming more competitive, but it does not preclude a finding of significant market power.”²¹⁰

²⁰⁹ This figure corresponds to Figure 3.17 in the March 2017 WLA Consultation. The difference in BT copper lines between this chart and Figure 3.17 of our March consultation is that BT – copper lines here includes business and residential standalone voice-only (SVO) lines, which will form a large share of BT copper lines for the duration of the review period. While Virgin Media’s share also includes its SVO lines, BT has a very high market share of these lines, so the impact is largest when considering the proportion of Openreach lines that are copper or fibre lines.

²¹⁰ SMP Guidelines, paragraph 75.

- 4.29 We have therefore considered how BT’s market share has changed since the last review of this market, in addition to the forecast set out above. In the Statement concluding our 2014 review of the wholesale local access market, we stated “that BT’s market share is consistently very high (over 80%)...market shares of this magnitude give rise to a presumption that BT possesses SMP. Moreover, BT’s market share has been stable for many years”.²¹¹
- 4.30 As the numbers of voice only lines and ISDN lines have declined (these also use local access connections, in addition to broadband enabled lines), there may have been some small decline in BT’s market share since the 2014 review. However, it is a small one, and, looking forward, BT’s market share at around 80% of the market during the new review period, remains well above the level normally giving rise to a presumption of SMP.

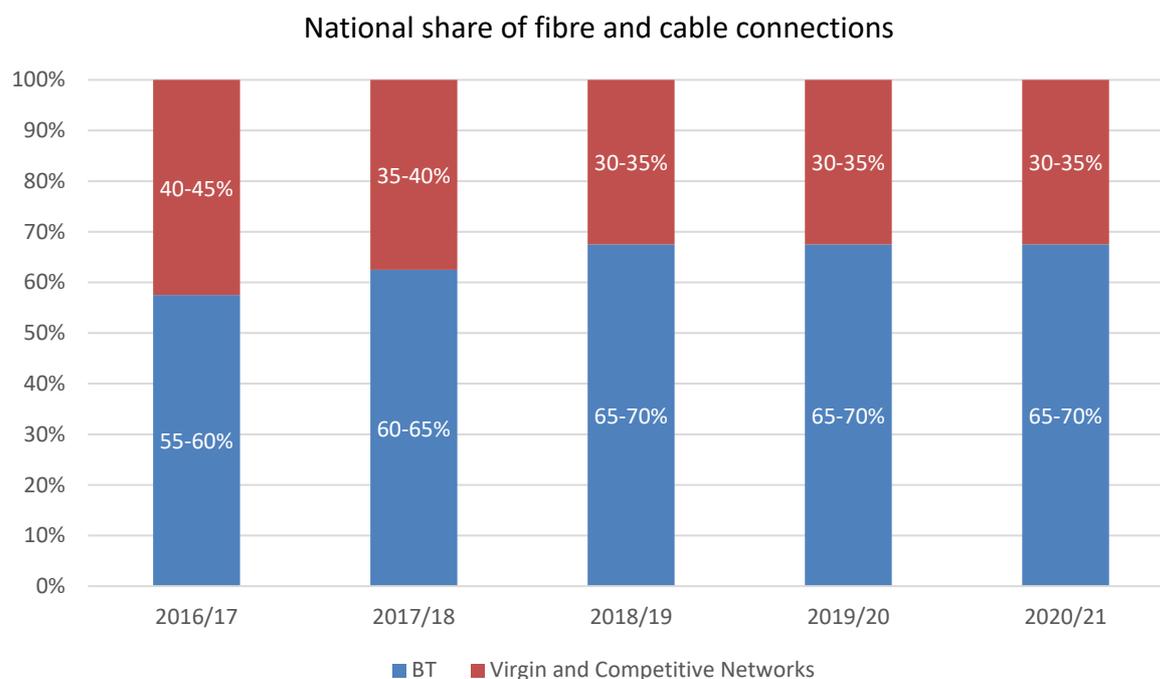
BT’s shares of the copper access and fibre/cable access segments

- 4.31 Turning now to our analysis of variations in BT’s share of services within possible segments of local access services, we first note that Openreach is the only supplier of copper access (which is typically used to provide SBB services, as well as supporting SFBB provision as part of an FTTC connection). While Openreach emphasised the constraining effect of standard broadband prices on superfast broadband prices (as did Virgin Media), its near-monopoly position in the wholesale provision of these services means that, in the absence of regulation, SBB would not be an effective constraint on its ability to exploit market power in the provision of SFBB: BT would be able to simply raise prices above the competitive level across the board.
- 4.32 We noted above that Openreach and some other stakeholders argued that there was greater competition in the segment of current active SFBB connections (i.e. the fibre and cable access segment) than in the segment of current active SBB connections (i.e. the segment now primarily served using copper access). Even so, BT’s share of fibre and cable access connections is currently over 60% and growing in the UK excluding the Hull Area, as Figure 4.2 shows. As noted previously, a share of over 50% is in itself consistent with a presumption of dominance (SMP) in a relevant market.
- 4.33 BT’s current share of services over fibre access connections alone is not a good proxy for its market power. This is because an increasing number of customers will migrate (or be migrated by BT) to fibre access connections over the review period. Hence, BT’s market share is lagging its market power in this segment and, in the medium to long term, the BT share of fibre access connections will converge towards that of its share of the WLA market today. Absent regulation of WLA and as a vertically integrated provider, BT would be in a position to leverage its market power in fixed access connections into different downstream segments (such as services of different internet access speeds), whereas the observed market outcome is one in which certain retail competitors using the Openreach

²¹¹ Ofcom, 2014 FAMR Statement, Volume 1, paragraph 7.86.

network (such as TalkTalk and Sky) have, until recently, promoted SBB rather than SFBB tariffs.²¹² Our forecast of BT's share of wholesale fibre and cable connections is presented in Figure 4.2 below, with all cable connections included as we understand these are now entirely used to provide SFBB services, even if historically cable connections were also used to deliver SBB services.

Figure 4.2: Forecast shares of wholesale fibre and cable access connections



Source: Ofcom forecast based on operator take-up data. Forecasts are for financial years

- 4.34 BT's share of the WLA market is, understandably, lower in the area where it competes with Virgin Media than in other parts of the UK excluding the Hull Area where BT has a near-monopoly of access connections. Nonetheless, as shown in Figure 4.3, BT's share of all broadband enabled wholesale access connections is at least 60% in cabled areas and, if this were the relevant geographic market, such a market share would be consistent with a presumption of dominance (i.e. SMP).²¹³
- 4.35 Finally, we recognise that Virgin Media rather than BT is currently the largest supplier of local access connections currently supporting active SFBB services in the area covered by its cable network (see Figure 4.3). This reflects the marketing strategy Virgin Media has followed, as a result of which it no longer offers SBB services. This means that BT's current share of combined fibre and cable connections is a poor proxy for its underlying market

²¹² See, for example, paragraph A1.31 of Sky's response to the March 2017 WLA Consultation. Sky comments that there is "little or no incentive to upgrade to SFBB" for either it or TalkTalk. Openreach also states that "recent take up of fibre, for example, has been driven by Sky and TalkTalk marketing more strongly after a period of several years when they chose not to" (Openreach response to the March 2017 WLA Consultation, paragraph 357).

²¹³ We have counted cable connections in a BT exchange area if more than 65% of premises in that exchange area can be served by the cable operator. Further details of this calculation, including sensitivity analysis using alternative assumptions, are set out in Annex 5.

power for two reasons. First, at the retail level, BT does still supply SBB (typically over copper access connections), but is migrating its existing customer base to SFBB (i.e. to fibre access connections) over time. BT's retail share of fibre and cable connections in the area where it competes with Virgin Media will therefore increase over the market review period and, at the WLA level will grow further still as retail providers such as Sky, TalkTalk and Vodafone successfully attract customers to SFBB tariffs. BT's current share of wholesale local access connections supporting SFBB is therefore lagging BT's underlying wholesale market power (which stems from its control of connections to all customers other than those on the cable network, and, to a small extent, other networks).

- 4.36 Second, for the reasons set out earlier, we believe that in the absence of regulation, market outcomes would be similar throughout the local access market in the UK excluding the Hull Area. For example, absent regulation, most, if not all, of the customers of providers currently using LLU or VULA purchased from BT, would likely be supplied by BT's retail division.²¹⁴ In the absence of regulation, BT could upgrade its SBB customer base and grow its market share of SFBB even more readily, as Virgin Media has done.
- 4.37 We have also used our forecasts of volume trends at the national level to project BT's share of fibre and cable connections in the cabled area at the end of the review period. If BT's retail customers (and other customers served using the Openreach network) migrate (or are migrated by their retail provider) to fibre access in line with the national average rate, BT's share of fibre and cable wholesale access connections in the cabled area is likely to increase to around 50% by 2020/21 and continue growing, even on the expectation of continued regulation of the WLA market. These variations in BT's share of wholesale connections segmented by broadband speed are summarised in Figure 4.3 below.

²¹⁴ BT's share of WLA connections is today around 80%, yet its share of retail access connections is under 40%. Today, cable connections account for around 20% of the WLA market, despite competition from LLU operators. In 2002 when there was very little LLU-based competition (at the time LLU competition was based on partial LLU, i.e. SMPF rather than full LLU, i.e. MPF), the cable operators, then ntl and Telewest, accounted for 13% of WLA connections. See Table 4.1 of https://www.ofcom.org.uk/data/assets/pdf_file/0022/37057/rwlam161204.pdf This growth of cable connections at the same time as growth in LLU connections, suggests that LLU-competitors have acquired retail customers more from BT than from cable operators. Nonetheless the possibility that competition and marketing by LLU operators has, to some extent, helped maintain the number of customers supplied over Openreach's network is not precluded.

Table 4.3: Variations in BT’s share of broadband enabled wholesale local access connections by type of connection and geographic area

Scenario	Broadband product segment	Geographic area	BT share 2017/18 ²¹⁵	BT share 2020/21
1	All copper, fibre and cable connections ²¹⁶	National	80%	77%
2	All copper, fibre and cable connections	Cable areas	[X] (60%-70%)	[X] (60-70%)
3	All copper, fibre and cable connections	Non-cable areas	Close to 100%	Close to 100%
4	Fibre and cable connections only	National	63%	68%
5	Fibre and cable connections only	Cable areas	[X] (35-45%)	[X] (45-55%)
6	Fibre and cable connections only	Non-cable areas	Close to 100%	Close to 100%

Source: Ofcom analysis using data collected for Connected Nations 2017. For more details of the calculations, assumptions and sensitivity analysis, see Annex 5

- 4.38 Our analysis of variations in BT’s share within different segments of local access connections shows that it already has, or is expected to gain, shares of individual market segments which would themselves be at or around the levels consistent with a presumption of SMP if those segments were identified as relevant markets. Even in the area covered by Virgin Media’s cable network, where BT’s share of the fibre and cable access lines used to provide SFBB services is currently around 40%, we project Openreach’s share to increase to around 50% and growing by 2020/21.²¹⁷ As noted previously, with migration of customers to SFBB, BT’s share of these faster connections would be expected to converge towards its share of all broadband connections, which is currently over 60% in cable areas alone, unless an alternative network achieves significant growth in cable areas.
- 4.39 We therefore disagree with Openreach’s suggestion²¹⁸ that migration to SFBB, in which Virgin Media is currently relatively strong, will imply a significant weakening of BT’s market

²¹⁵ Shares in the UK excluding the Hull Area are consistent with charge control modelling assumptions and relate to 2017/18. Other shares are derived from data collected for Ofcom’s publication “Connected Nations” and relate to 2017. Non-confidential ranges relate to most recent information available from 2017.

²¹⁶ The figures presented will understate BT’s share of all access connections somewhat. This is because, as noted above, BT’s access connections also support voice only and ISDN lines of which BT has a relatively high share. We use shares based on broadband lines here for simplicity and consistency with shares for individual segments defined by broadband speed.

²¹⁷ Based on the assumption that Openreach split of SBB and SFBB is the same in cable areas as on a national basis.

²¹⁸ Openreach response to the March 2017 WLA Consultation, paragraph 90.

power. Rather, we expect the BT share of this segment to grow over time as its existing customer base migrates (or is migrated), and come to reflect more closely its existing market share in wholesale local access connections.

- 4.40 By contrast, while we expect Virgin Media’s share of all access connections (i.e. the WLA market as a whole) to increase somewhat, we expect its share of connections providing SFBB to decline. The share of providers other than BT and Virgin Media is expected to grow but to remain at a low level over this review period. Significant growth of these other providers (in terms of customer acquisition) after the review period could, in time, alter BT or Virgin Media’s share of wholesale access connections, but this growth in premises served (rather than just covered) by other providers remains to be seen.

The strength of the constraint from Virgin Media

- 4.41 Finally, we respond to Openreach’s comments regarding the strength of the price constraint imposed by Virgin Media.²¹⁹ Openreach argues that this constraint is strong primarily on the basis that the characteristics of the services provided by Virgin Media are comparable, or even superior, to its own broadband services.
- 4.42 We agree that BT’s and Virgin Media’s services are comparable, consistent with our inclusion of cable-based services in the same market as services delivered over BT’s copper/fibre network (as discussed in Section 3 of this statement). However, also absent regulation, BT’s prices are also likely to be well above the effectively competitive level (i.e. the price-level for local access consistent with “normal” returns, that is returns at or around the cost of capital). This is consistent with the evidence on pricing and profitability set out below, which shows that, even in the presence of regulation, BT’s returns are above the benchmark cost of capital.
- 4.43 As BT notes, the level of the uniform national price will reflect competition in the competitive area, as well as its absence in the monopoly area. However, in the presence of only a single material competitor in the non-monopoly area, the uniform national price is most unlikely to approximate the effectively competitive level of prices. One reason is that, as described in Section 3, setting a uniform price may be a way of softening competition in the “competitive” area.
- 4.44 In general, the number of firms necessary to generate effective competition will vary from market to market and a case specific assessment needs to be made.²²⁰ Academic studies, competition cases and other market reviews suggest that *at least* three firms are required

²¹⁹ Openreach response to the March 2017 WLA Consultation, paragraphs 118-129.

²²⁰ For example, the main criterion used to identify competitive exchange areas in our review of Wholesale Broadband Access markets is that there should be two or more Principal Operators, in addition to BT, supplying broadband services in the area. This criterion was only decided upon after analysis demonstrated that the presence of two or more competitors was sufficient to lead to significant declines in BT’s market share. Exchanges with only one Principal Operator in addition to BT are included in the same market as monopoly exchanges, where competitive conditions are considered sufficiently homogeneous. *Review of the Wholesale broadband access markets, Statement*, 26 June 2014, paragraphs 4.132 – 4.133 and 4.139 – 4.141. https://www.ofcom.org.uk/data/assets/pdf_file/0021/57810/WBA-Final-statement.pdf

for effective competition though, in some cases, four or more may be needed.²²¹ As an economic policy note prepared for the Dutch NRA concluded:

“there is no “magic number” for the minimum number of competitors necessary for effective competition. One way to approach this is to look at the rules of thumb used by competition authorities. The European Horizontal Merger Guidelines declare markets with an HHI below 2000 as normally non-problematic. Although very roughly, this suggests that between 5 and 6 market players with similar market shares might provide effective competition. The practice of the European Commission shows that 3-to-2 mergers are normally viewed as problematic, whereas 5-to-4 mergers are typically only regarded as problematic in particular circumstances.”²²²

Pricing and profitability

- 4.45 As explained in Annex 2, in a competitive market, individual firms would not be able to raise prices above costs and sustain returns above the cost of capital for a sustained period. The ability to price at a level that keeps profits persistently and significantly above the competitive level is an important indicator of market power.
- 4.46 BT’s provision of many access connections has been subject to charge controls for a number of years. BT has priced up to the cap for MPF (and SMPF, plus the associated line provided via WLR) since the last review.²²³
- 4.47 VULA is currently not subject to a charge control (at least for the part of the connection provided as an overlay to the connection enabled by MPF or WLR), and BT has had pricing flexibility (subject to the specific VULA margin condition).
- 4.48 Overall, BT’s reported profitability in the WLA market is shown in Table 4.4 below.

²²¹ For example, the Tribunal considering BT’s appeal of Ofcom’s 2016 Business Connectivity Market Review heard expert evidence that “mergers from five to four firms are nearly always approved by competition authorities and four to three mergers are sometimes approved, suggesting that between three and four competitors is judged sufficient for effective competition”: First expert report of Chris Osborne, paragraph 4.20. Moreover, even where mergers have been permitted, they have often been subject to conditions intended to preserve competition.

²²² OPTA, 2006, page 10. <http://www.opta.nl/en/news/all-publications/publication/?id=2051>. Quoted in Ofcom, 2013. *Business Connectivity Market Review: Review of retail leased lines, wholesale symmetric broadband origination and wholesale trunk segments*, paragraphs 6.252-254. https://www.ofcom.org.uk/data/assets/pdf_file/0026/57860/sections6-7.pdf.

²²³ In our 2017 NMR Statement, paragraph 4.114, we note that “BT has generally been charging at the regulated caps for WLR, which is consistent with there being a limited constraint from competition”.

Table 4.4 BT's profitability in the WLA market

Return on capital employed	2014/15 (restated for CAR adjustments) ²²⁴	2015/16	2016/17
All WLA services	10.2%	15.0%	15.6%
Copper access services (MPF and SMPF)		11.5%	10.6%
Fibre access services (GEA)		21.6%	24.8%

Source: BT's Regulatory financial statements and information derived from the RFS Additional Financial Information, flat file schedule, supplied in confidence by BT: 2016/17 dated 3 November 2017; 2015/16 dated 11 November 2016.

- 4.49 Table 4.4 shows that BT's profitability on its WLA services, measured by Return on Capital Employed (ROCE), increased from 10.2% in 2014/15 to 15.0% in 2015/16 and 15.6% in 2016/17. In all three years, this was above BT's weighted average cost of capital.²²⁵ For BT's copper access services, ROCE was also above the relevant cost of capital in both 2015/16 and 2016/7, implying that with BT pricing to the cap on these services, the cap was not below any reasonable measure of the "competitive level" of wholesale prices.
- 4.50 Services provided over fibre access connections (i.e. GEA), are currently not capped and BT has flexibility on pricing such services subject to a no margin squeeze condition. On GEA services, ROCE increased from 21.6% in 2015/16 to 24.8% in 2016/17. These returns are also above the benchmark cost of capital. However, accounting returns on GEA services are not necessarily a reliable indicator of profitability given the profile of expenditure and usage on what is a growing service. In other words, in the early years of BT's investment in fibre access, returns on GEA services were below the benchmark cost of capital but, as shown above, have since risen above it.
- 4.51 As we show later in Section 9 and Annex 6, if we look at BT's fibre pricing over the horizon since the original investment to date (and then beyond), returns have been above the cost of capital, taking account of the risk involved with the original investment.²²⁶

²²⁴ We do not report disaggregated figures for 2014/15 as these have not been restated to take account of the conclusions of Ofcom's Cost Attribution Review (CAR). Before restatement, BT's ROCE on all WLA services for 2014/15 was 7.6% and the ROCEs for copper access services and fibre access services were 5.8% and 12.9% respectively. In 2015, Ofcom published two consultation documents as part of its review of BT's cost attribution methodology and published its conclusions in Annex 28 of the 2016 Business Connectivity Market Review Statement.

²²⁵ The BT Group pre-tax nominal cost of capital for 2020/21 is 9.3%, a weighted average of the Openreach copper access rate (7.9%), the other UK telecoms rate (8.9%, appropriate to GEA) and the (higher) rest of BT rate. The rest of BT is made up primarily of BT's Global Services ICT division. In the 2014 Fixed Access Market Review, we determined rates for Openreach copper access of 8.6% and for the rest of BT (then including other UK telecoms) of 10.8%. A separate rate for other UK telecoms was not then determined. In the 2016 Business Connectivity Market Review, we determined rates for copper access of 8.8% and for other UK telecoms of 9.8% and a third, higher, rate for the rest of BT.

²²⁶ For a service with growing demand, accounting returns may be a misleading indicator of profitability. For example, BT's GEA services earned less than the benchmark cost of capital in the early years after launch when volumes were low and, given the initially risky nature of the investment, it is appropriate to look at the expected rate of return over an appropriate lifetime. In Annex 6, we estimate that, at around 15%, Openreach's return on its commercial FTTC investment is above its cost of capital, even with the charge control we are imposing.

- 4.52 Overall, we find BT's ROCE at the WLA level is above the cost of capital and increased over the period to date, particularly for the services not currently charge controlled. Absent regulation (such as the existing charge controls on copper access connections), we would expect BT's returns to be higher still.
- 4.53 BT provides data on its profitability in the product and geographic markets defined in the 2014 FAMR Statement. This means that we have data for WLA services in the UK (excluding the Hull Area) as a whole but not for smaller areas within it. It is however possible to make some qualitative inferences about likely variations in profitability within the UK excluding the Hull Area. We know that the unit costs of access line provision vary with population density, being lowest in the most densely populated areas and highest in the more sparsely populated rural areas. In general, and for this reason, competitive entry has tended to occur first in the more densely populated areas where unit costs are relatively low, with BT retaining a near monopoly in the higher unit cost, more rural, areas – particularly those which it serves only as a result of its Telephony Services Universal Service Obligation. (This obligation requires BT to provide a narrowband connection and services over those connections in the UK excluding the Hull Area.²²⁷)
- 4.54 As BT's wholesale charges are geographically uniform, we would expect variations in unit costs to be reflected in variations in profitability, which is thus likely to be higher than average in the lower-cost areas, which also tend to be the areas where BT faces local access competition from Virgin Media. While BT has lost wholesale connections in the areas covered by the Virgin Media network and this, other things being equal, will have tended to increase BT's unit costs, we expect this to be outweighed by the effect of population density, suggesting that BT's profitability is likely to be higher in the cabled areas than outside it. This outcome reflects the combination of uniform national prices and unit costs which are likely to be lower, on average, in the areas where BT faces competition.
- 4.55 In conclusion, the fact that BT has continued to price up to the cap for wholesale copper access connections is consistent with regulation, rather than competition, constraining BT's pricing. As the object of the charge control is to constrain prices and profitability to a level consistent with cost recovery, an absence of excess profits (or returns only slightly above cost of capital) on such services could not be regarded as evidence that the WLA market is effectively competitive. But, as shown above (in Table 4.1), the presence of increasing returns which are comfortably above the benchmark cost of capital despite a number of WLA services being charge controlled, are consistent with enduring market power.²²⁸

²²⁷ See Condition 1. "Provision of telephony services on request", in Part 2 of the Schedule to Annex A of Of tel, 2003, *Designation of BT and Kingston as universal service providers, and the specific universal service conditions*. http://webarchive.nationalarchives.gov.uk/20080712143755/http://www.ofcom.org.uk/static/archive/oftel/publications/eu_directives/2003/uso0703.pdf.

²²⁸We recognise that price cap regulation is designed to incentivise cost efficiencies, so some level of returns above cost of capital for charge controlled services might be expected if the firm outperforms the regulator's projected efficiency target. But this does not invalidate an inference of market power when it is the charge control, rather than competitive forces, which is constraining the price level (and hence the returns that could be achieved absent regulation).

Barriers to entry and expansion

- 4.56 We consider there are still high entry barriers to constructing a significant scale local access network independent of the incumbent’s network. Entry would require very high levels of investment to install local access connections between end-users’ premises and an entrant’s core network, and would require a considerable period of time. Moreover, the costs associated with such investment are, to a large degree, likely to be sunk. This is because, once built, the physical network cannot be transferred to another location if it is no longer required at the original site and the components of the network either have low resale value or, where they involve recovery of assets, significant costs would be incurred in order to extract and resell them.
- 4.57 The CMA’s guidelines on the assessment of market power (OFT 415) explain why the presence of sunk costs is likely to create a barrier to entry:
- “sunk costs might give an incumbent a strategic advantage over potential entrants. Suppose an incumbent has already made sunk investments necessary to produce in a market while an otherwise identical new entrant has not. In this case, even if the incumbent charges a price at which entry would be profitable (if the price remained the same following entry), entry may not occur. This would be the case if the entrant does not expect the post-entry price to be high enough to justify incurring the sunk costs of entry”.²²⁹
- 4.58 BT and, to a smaller extent, Virgin Media have extensive network infrastructure in the UK excluding the Hull Area. The asymmetry between these network operators, which have already incurred sunk costs in creating these networks, and potential entrants which have not, gives rise to barriers to entry.
- 4.59 Nonetheless, expansion is expected from Virgin Media. Virgin Media is expected to expand its cable coverage from almost half of premises today to over half of premises by the end of the review period.²³⁰ Notwithstanding this expansion by Virgin Media, much of the country will be without an alternative WLA network. BT may also continue to adopt a largely national pricing approach which will dampen the impact of competition from Virgin Media in cable areas.²³¹ In any case, we do not expect that competition from Virgin Media

²²⁹ OFT 415 “*Assessment of market power under competition law*, paragraph 5.10.

²³⁰ In TalkTalk’s response to the March 2017 WLA Consultation, page 7, it said that Virgin Media appears to have scaled back the speed of rollout of Project Lightning and that “it is implausible that Virgin Media will reach anywhere near 60% of UK premises by 2020”. If so, this would tend to confirm the risks associated with investment in new access networks, consistent with the existence of barriers to entry in the WLA market. Openreach, in its response to Ofcom’s “Further consultation on proposed charge control for wholesale standard and superfast broadband”, 31 October 2017, also noted that Virgin Media reported continued slow execution of “Project Lightning” and that increased volumes would have to be delivered in 2018 and 2019 in order to meet Virgin Media’s target. [3<].

²³¹ As discussed in Section 3, national pricing may be an effective device to soften competition when there is a limited number of competitors.

alone would be sufficient to constrain BT in the WLA market to the extent that it has no SMP.

4.60 Entry or expansion by other providers is expected to be on a smaller scale than Virgin Media's plans during the period of this review.²³² This entry shows that, in some circumstances, barriers to entry into the WLA market can be overcome but it does not mean that such barriers are insignificant. This is because:

- The investment will require significant costs to be sunk (in the hundreds of millions of £s) and take several years to complete.
- Investment needs to be made before customers can be won and revenue earned and it will then take time for the entrants to win customers and grow their revenue base.²³³
- The planned investment is geographically limited in scope, and significant parts of the WLA market in the UK excluding the Hull Area (likely to be areas where unit costs are relatively high) will remain served only by BT.
- Even in the areas where investment by new entrants occurs, the result is likely to be a market served by three providers at most.²³⁴ The prospects for subsequent entry will be even more difficult as any fourth or fifth entrant will need to make similarly substantial sunk investments but facing, in each case, an additional existing competitor.

4.61 Whether incentives for such entry are stronger in cable areas, compared to non-cable areas, is difficult to determine a priori. Those areas which are served by cable today are demonstrably commercially viable for an alternative network to serve.²³⁵ However, once an area is already covered by two WLA networks, entry by a third network (not using inputs contingent on regulation of WLA such as DPA) may be less commercially viable in many cases. Conversely, areas served by only one network (e.g. BT's WLA network), may be more attractive as there is only one competitor, rather than two. However, areas with only one provider may be in a situation of monopoly supply because they are higher cost to serve (for example because they are harder to reach and/or have a lower population density).

4.62 Taking account of the above, we do not consider that the threat of entry or expansion by new or existing networks would significantly alter the competitive conditions in the WLA market in this review period, including whether we distinguish between cable and non-cable areas.

²³² Following an announcement in July 2017, <https://www.cityfibre.com/news/cityfibre-fundraise/> [accessed 21 February 2018] CityFibre raised additional equity of £185m to fund its future expansion. In November, it gave an indication of the planned scale of this expansion over the market review period by announcing a plan to roll out full-fibre to 1 million homes in 12 cities over the next four years, in conjunction with Vodafone. Most recently, TalkTalk announced that it is in discussions with Infracapital to provide full-fibre rollout to more than 3 million premises across mid-sized towns and cities in the UK. As the forecasts presented above show, the expected impact of these investments on BT's share of the WLA market in the UK excluding the Hull Area in the market review period is very small, even if their share of coverage increases over the review period.

²³³ In its response to the March 2017 WLA Consultation, Sky refers to "the huge fixed costs of building such a network" and says that "for a network passing 10 million homes or c40% of the UK, the investment takes around [3<] years to pay back", paragraphs A1.57-A1.60.

²³⁴ INCA, in its response to the March 2017 WLA Consultation refers to the other network providers as "a collective third competitor to BT and Virgin Media" (emphasis added).

²³⁵ On a forward-looking basis. This does not mean that all sunk investments made to create the cable network will necessarily be recoverable.

Countervailing buyer power

- 4.63 We also consider that there is likely to be insufficient countervailing buyer power to constrain BT's position as a supplier of WLA.
- 4.64 In general, purchasers may have a degree of buyer power where they purchase large volumes and have a credible threat to switch supplier or to meet requirements through self-supply. In order for the threat to be effective, the volumes that are or can credibly be met from another source of supply need to have a material impact on the supplier's profitability. Practically, this requires volumes to be significant and to represent a material proportion of a supplier's total volumes.
- 4.65 At the wholesale level, absent WLA remedies, BT would be unlikely to offer third-party telecoms providers access, as is currently the approach adopted by Virgin Media, and was also BT's practice before the imposition of regulation requiring it to provide LLU. Even if BT did allow access, other telecoms providers could only credibly threaten to switch if Virgin Media also offered wholesale access, which is unlikely. In addition, switching is likely to be costly for telecoms providers who have already built their networks to connect to BT's and switching would not be possible in areas outside the cable coverage areas.
- 4.66 We note that some retail providers have partnered with alternative local access network investors (such as CityFibre), which represents an opportunity for countervailing buyer power in the areas covered by those alternative networks. However, these investments are targeted at a limited number of UK cities in this review period, and even then, may not be covering the entirety of the city in question. As such, within this review period, we do not consider that retail providers could successfully use the threat of switching to other wholesale providers in such a way as to undermine BT's SMP in WLA, since retail providers will be dependent on BT for WLA if they wish to serve the majority of the country. This is compounded by the fact that Virgin Media does not intend to offer – and as far as we are aware has not offered – WLA services within its cable coverage area.
- 4.67 Therefore, we conclude that BT is unlikely to face significant countervailing buyer power for the period of this review and such absence of buyer power is unlikely to vary between cable and non-cable areas.

External constraints

- 4.68 Our market power assessment aims to take all relevant competitive constraints, whether inside or outside the market as defined, into account. We consider external constraints – i.e. out-of-market products which some customers might regard as substitutes to in-the-market products – and their individual and joint impact on competition for in-the-market products as part of our assessment. External constraints by their nature tend to be relatively weak, but they can, either when taken together and/or in combination with competition within the market, constrain a firm's ability to exercise market power.
- 4.69 In light of responses, we consider two services discussed in Section 3 which may, in principle, be a potential source of external constraint on BT's market power. These are fixed wireless access (FWA) services and mobile broadband services.

- 4.70 In the case of FWA services, we found that take-up by consumers had so far been limited, even in geographic areas where the quality of services provided over fixed access connections tended to be relatively low. This suggested that consumers do not yet regard FWA services as an adequate substitute for services provided over a copper/fibre or cable access connection. We also noted that technological developments mean that higher quality FWA services are likely to be introduced in future, and these might be seen by consumers as a sufficiently good alternative to a fixed access service to be included in the same market. However, even if this happens, most respondents seemed to believe it would not have a significant impact on our market power findings in this review period. For example, Openreach said that it “agrees with Ofcom’s assessment that...such services could become a stronger substitute in the future”.²³⁶
- 4.71 As for mobile substitution, both BT and Virgin Media tended to focus their responses on the technical capabilities of mobile services, which they argued were capable of meeting the demands of some users of fixed broadband services, rather than presenting evidence of actual substitution or of price constraints operating in practice. In addition, both appeared to see mobile substitution as something which might be more significant in future reviews, as with FWA.
- 4.72 Openreach said our “assessment underestimates the constraint from mobile on fixed broadband and its potential growth over time for at least parts of the WLA market serving consumers with lower bandwidth requirements... as the trend towards higher available mobile bandwidth and data usage continues, its competitive constraints on parts of the WLA market should be reviewed carefully”.²³⁷ It also said that “the widespread availability of 4G has brought a major increase in broadband capabilities in the mobile market, providing an alternative to fixed access for a minority of customers, but with the potential for this to grow significantly with upgrades to 4G and the move to 5G”.²³⁸
- 4.73 Virgin Media said that “none of [its evidence] is to suggest that mobile can substitute for all superfast... the evidence suggests that... the speed and incremental cost of relevant data allowances for mobile are surprisingly comparable to superfast, and thus mobile will act as a constraint on superfast – particularly as the performance of mobile continues to improve and/or if there was a sharp increase in superfast pricing”.²³⁹
- 4.74 In Section 3, we explain that, while usage of mobile services is certainly not small scale, for the great majority of customers, mobile services are used in addition to services over a fixed access connection, rather than as a substitute for one. Other evidence set out in Section 3, including responses to our consumer survey, suggests that there is limited willingness to substitute a mobile broadband service for one provided over a fixed access connection. Our analysis of mobile broadband service characteristics and prices suggests

²³⁶ Openreach response to the March 2017 WLA Consultation, paragraph 140.

²³⁷ Openreach response to the March 2017 WLA Consultation, paragraphs 135 and 138.

²³⁸ Openreach response to the March 2017 WLA Consultation, paragraph 92.

²³⁹ Virgin Media response to the March 2017 WLA Consultation, paragraph 77.

that the great majority of fixed broadband customers are unlikely to view these as an adequate substitute.²⁴⁰

- 4.75 It is possible that, as both Virgin Media and Openreach suggest, mobile services may become a stronger substitute in future (with the development of services over 5G wireless networks). However, the timing and extent to which this happens are uncertain. Contrary to the case put by Virgin Media, substitution which only took place if there was a “sharp increase” in retail prices for fixed access should not be taken into account for the purposes of either market definition or SMP analysis.²⁴¹
- 4.76 In light of this, we consider that external constraints from FWA services and mobile services are, by themselves, relatively weak at present. That is, in the absence of regulation but with competition also from cable access, BT would set prices below the profit maximising monopoly level, but these prices are likely to be well above the effectively competitive level. This conclusion is consistent with the evidence set out above that BT’s returns, even in the presence of regulation as well as competition from various sources, are above the benchmark cost of capital and growing.
- 4.77 As market shares, pricing and other evidence indicate that constraints from within the market are also weak, we consider that external constraints will not add sufficiently to the competitive pressure bearing on BT in the WLA market in the current review period.

Conclusions

- 4.78 We conclude that BT will continue to have SMP in the supply of wholesale local access at a fixed location in the UK excluding the Hull Area for the period of this review. This conclusion reflects:
- BT’s market shares, which are high and expected to remain stable at levels consistent with a presumption of dominance throughout the period covered by this review.
 - Even within individual segments of the product market and/or geographic segments, BT’s share of local access connections is, in all but one scenario, well above 50% today, and in the exception where it is below 50% is expected to grow to around that level over the review period.
 - In any case, we consider that shares of connections in product segments which are nascent or growing are likely to lag the true underlying market power which is linked to ownership and control of the access connection to the end customer. Control of the underlying connection is what gives a telecoms provider the opportunity to leverage into different downstream services – be these segmented by broadband speed or otherwise.

²⁴⁰ Section 3, paragraphs 3.95-3.99 and 3.103-3.111.

²⁴¹ Assessment of market power (including the framework of the SSNIP test described in Section 3) should be undertaken from the competitive price level. For present purposes we have taken retail prices to be broadly consistent with the competitive level – since the competition concerns in local access stem from a lack of effective competition at the network (i.e. wholesale) rather than retail level. Consumer switching at prices above the competitive level risks defining the market excessively broadly, an error known as the “Cellophane Fallacy”, and a consequential finding of no SMP in an excessively broad market would also be erroneous.

- The high barriers to entry into the WLA market, arising particularly from the scale of the investment needed to do so, and the fact that a large part of the costs incurred are likely to be sunk costs.
- Evidence that BT's pricing and profitability is not compatible with effective competition in WLA, particularly considering that many existing charges are constrained by a charge control.
- The absence of significant countervailing buyer power.
- The weakness of constraints from services delivered over access networks outside the WLA market (most notably access over mobile or FWA connections at the present time).

5. Approach to remedies

- 5.1 In Sections 6-11 of this volume and in Volumes 2 and 3, we explain each of the remedies we are imposing given our conclusions that BT has SMP in the WLA market in the UK excluding the Hull Area.
- 5.2 Before setting out the detail of these remedies, we explain below:
- the competition concerns that we are seeking to address in this review;
 - the strategic context of this review; and
 - how we have designed our remedies to address our competition concerns.
- 5.3 We then consider:
- how we expect this regulatory framework to evolve in future;
 - the insufficiency of competition law to address our competition concerns; and
 - the implications for this review of our reforms to Openreach.
- 5.4 Stakeholder comments on individual remedies are addressed in Sections 6-11 of this volume and in Volumes 2 and 3.

Competition concerns in the wholesale local access market

- 5.5 In Sections 3 and 4, we set out our competition assessment and conclusion that BT has SMP in the WLA market in UK excluding the Hull Area. BT's SMP in the WLA market gives rise to a number of competition concerns since, absent regulation, BT's SMP would give it the ability and incentive to engage in various forms of conduct that could distort downstream competition and/or harm consumers:
- BT could refuse to supply access and thus restrict competition in the provision of products and services in the relevant downstream markets. This concern is addressed by our general network access remedy, discussed in Section 6, our specific access remedies, discussed in Section 7, and our physical infrastructure access remedy, discussed in Volume 3.
 - BT could set excessive wholesale charges for WLA services or engage in margin squeeze behaviour. The concerns regarding excessive pricing are addressed by our pricing remedies, as discussed in Sections 9 and 10 of this Volume and in Volumes 2 and 3, and particularly our decision to impose charge controls for MPF, 40/10 VULA services, a cap on rental charges for PIA, and basis of charges obligations on SLU charges and electricity services.
 - Where there is no specific charge control, BT could set excessively high prices, or charges that, in combination with downstream prices, amount to a price squeeze, so as to have adverse consequences for end-users of public electronic communications services (also referred to as "margin squeeze"). This concern is addressed by our general network access remedy which requires that charges (in the absence of a charge control or basis of charges obligation) are fair and reasonable, as discussed in Section 6.

- BT could provide access on less favourable terms compared to those obtained by its own downstream businesses. This concern is addressed by our general remedies, discussed in Section 6.
 - BT could target discounts or reductions in its wholesale prices in geographic areas subject to competitive rollout of new networks, potentially distorting competition. This concern is addressed by our no undue discrimination requirement, as discussed in Section 11.
 - BT may not have sufficient incentives to continuously deliver an adequate level of service quality in relation to network access. This concern is addressed by our quality of service remedies, discussed in Section 8 and in our separate Quality of Service Statement.
- 5.6 BT's SMP in WLA could also lead to other adverse effects for consumers, namely a lack of choice of services and weaker incentives for BT (and other providers) to invest and innovate in new technologies including full-fibre, which would make it less likely that consumers would realise the benefits of network competition that we discuss below. By making investment by rivals cheaper, our PIA remedy increases the prospect of new entry and competition to BT, which in turn increases BT's investment incentives.
- 5.7 When considering the structure and form of our remedies in this review, we have used our experience of regulating BT's SMP in this and other markets over time. We have, in particular, taken account of our approach in previous reviews of WLA, together with recent and expected market developments which are described in this statement. We have decided to address the competition concerns created by BT's SMP by implementing a twofold solution. First, our remedies are designed to directly address the competition concerns that arise from BT's SMP. Second, in line with our long-term strategy, our aim is to encourage network competition as a means of addressing the underlying issue of SMP in areas where there is potential for network competition. Together, these objectives are designed to further the interests of citizens and consumers by promoting competition.

Strategic context

Strategic Review of Digital Communications

- 5.8 Our Strategic Review of Digital Communications sets out a ten-year vision for communications services in the UK. This envisages the UK becoming a world leader in the availability and capability of its digital networks, with widespread competing networks delivering choice, innovation and affordable prices to homes and businesses.
- 5.9 Two of the key elements in our strategy are: to promote network competition, including full-fibre direct to homes and businesses; and to focus on improvements in the quality of service delivered by the whole of the telecoms industry, including Openreach. We believe that the emergence of competition from new full-fibre networks should drive innovation, improve quality of service, and lead to better value for consumers.

- 5.10 Since we set out our proposals in March 2017, there has been growing momentum behind investment in new full-fibre networks by BT’s competitors, and a response by BT to increase its rollout of full-fibre.
- 5.11 There have also been important developments at the retail level. Almost four in ten premises (38%) now take a superfast service and this figure is set to increase significantly over the next few years. Demand for services using the connection is growing rapidly, with the total amount of data carried by UK fixed access networks in a month has increased by 52% over the last year.²⁴²

There are potentially large consumer benefits from greater network competition

- 5.12 We consider that there are potentially significant benefits to consumers from competition based on rivals investing in their own networks, compared to competition based on regulated access to BT’s Openreach network and wholesale services. In particular, network competition provides much greater scope for product differentiation and is a more effective spur for innovation and further investment. For example, investing in their own networks gives providers greater control over the reliability and quality of service provided. Competing telecoms providers can strive to win customers and generate higher margins by offering a better service than their competitors, in terms of both speed and reliability. As competitors are able to differentiate on the important attributes of network quality and reliability, the threat of the loss of customers on legacy networks to new network competition is a powerful driver of continued investment in high quality networks, delivering long-term benefits to consumers. By exposing more of the value chain to competition, network competition also provides strong incentives for firms to innovate, to become more efficient and reduce costs.²⁴³
- 5.13 A consideration when promoting network competition is that it may entail the replication of network investments, which could put upward pressure on average costs, but we believe that in this case such effects are likely to be outweighed by the significant benefits to consumers in the longer term from innovation (including innovation to increase efficiency and reduce costs), choice, stronger incentives to price keenly to attract customers, and higher quality of service. Moreover, our PIA remedy directly mitigates the impact on average costs of replication, reducing the cost per home in some cases by up to 50%, from around £500 to £250 (excluding lead-ins).

²⁴² Ofcom, 2017. *Connected Nations*, paragraph 4.60.

https://www.ofcom.org.uk/_data/assets/pdf_file/0016/108511/connected-nations-2017.pdf (Data collected June 2017).

²⁴³ Without network competition, even vigorous competition between service providers will not prevent customers being disadvantaged by inefficient, poor quality or otherwise sub-optimal choices concerning the underlying network.

- 5.14 Historically, we have seen benefits from network competition.²⁴⁴ The degree of network competition from cable networks plays an important role in encouraging incumbents to deploy faster broadband.²⁴⁵ In the early 2000s, one of the factors that drove BT to increase the performance of its broadband service was the availability of cable broadband. Then, following the introduction of LLU, we saw innovation around the electronic equipment deployed and the capacity of broadband connections. Recent research has confirmed that promoting access to LLU led to faster broadband speeds.²⁴⁶ Similarly, BT announced its rollout of superfast broadband shortly after Virgin Media's upgrade to DOCSIS 3.0.²⁴⁷ BT's recent announcement of G.fast investment plans was in the context of Virgin Media at the time offering a maximum service speed of 200 Mbit/s, compared to 80 Mbit/s, which is the current maximum offering on BT's FTTC connections.
- 5.15 While we have seen some benefits from the network competition that already exists between BT and Virgin Media, we consider that a greater degree of network competition – in terms of the number and geographic coverage of competing networks – will drive a material change in outcomes, delivering significant innovation and quality benefits. Competition from Virgin Media has been valuable, but has not been fully effective in constraining BT's SMP in local access. Greater network competition would open up more of the value chain to more effective competition than is the case under current wholesale access remedies. It would allow competition and market forces to play a much stronger role in shaping decisions about what networks to build, what technologies to use, and how to deliver them more cost effectively. It would also promote more aggressive competition to attract and retain customers by offering them the services they want.
- 5.16 Entry may be disruptive, and create a new dynamic in the market, since the best course of action for a new entrant may differ substantially from the incentives facing existing networks. At a time when the migration from copper access to fibre access is gathering pace, we think that there are significant benefits in bringing competition to bear on future network choices and investments. This will help to ensure that choices on the networks built today to deliver the services of the future are not left entirely to BT and to the only other significant local access provider, Virgin Media.

Advantages of a full-fibre network built for broadband

- 5.17 Increased investment in full-fibre networks, in particular, has the potential to deliver significant economic benefits. Compared to fibre networks that still rely partly on a copper connection (originally built for voice services), full-fibre networks are built for broadband and offer the following advantages:
- much higher speeds. Depending on the nature of deployment, they could deliver download speeds of 1 Gbit/s or more;

²⁴⁴ We also note that in other countries where there has been recent significant investment in fibre networks it appears that it has been the competitive dynamic between network providers which has driven investment (Spain and Portugal are both examples of this).

²⁴⁵ 2016 Strategic Review, paragraph 4.11.

²⁴⁶ See Valletti T. 2015, *Unbundling the incumbent: evidence from UK broadband*.

²⁴⁷ 2016 Strategic Review, paragraph 4.11.

- speeds do not deteriorate over distance in the way they do over a network that uses copper (copper networks and fibre-to-the-cabinet deployment), so where services are marketed based on the average speeds available to customers, on networks that include copper, some customers can only get significantly less than the marketed speeds;
- performance (particularly speed) is more stable with full-fibre, especially at peak times, as it does not suffer from electromagnetic interference between lines;
- lower fault rate than copper lines, primarily because they are less affected by water ingress and corrosion; and
- other aspects of network performance.²⁴⁸ This is partly due to the additional electronics in a copper/fibre-to-the-cabinet network, which can contribute to lower network performance compared to full-fibre access networks.

WIK study of benefits of ultrafast network deployment

- 5.18 We commissioned WIK to advise on the possible private and public benefits of ultrafast network deployments, including full-fibre networks.²⁴⁹ That study, which is published alongside this Statement, considers the capabilities of different broadband technologies, finding full-fibre to be the most future-proof technology of those currently available. In particular, full-fibre allows for upgrades of speeds significantly beyond 1 Gbit/s, as well as other quality advantages, as described above.
- 5.19 WIK identifies several emerging new applications across a range of industries that would benefit from the wider availability of ultrafast networks. These include healthcare (e.g. remote diagnostics, which could allow surgeons to operate on patients in a different location), entertainment (particularly improvements in virtual and augmented reality technologies) and transport (such as autonomous cars). The long-term potential for these kinds of applications, and the magnitude of benefits, is inherently very uncertain. However, their development relies on the presence of reliable, high-quality networks with much faster connections speeds than are available over existing copper-based networks.
- 5.20 WIK also finds evidence of existing benefits in countries which have already deployed advanced full-fibre networks. These include direct benefits to consumers and businesses who use full-fibre services, for instance, remote consultations to improve the quality of home care services, and increased use of teleworking which increases productivity. Furthermore, there are also more indirect benefits through spill-over effects that benefit the economy, society and the environment (for example, through the beneficial impact of teleworking on the environment due to less commuting).

²⁴⁸ For example, full-fibre networks may be better in terms of latency, jitter and packet loss. Latency is the measure of the time taken for a packet to travel from one end of the end network to the other. Jitter is the measure of the variation in latency between packets. Packet loss is the measure of how many packets are lost crossing the network.

²⁴⁹ <https://www.ofcom.org.uk/consultations-and-statements/category-1/wholesale-local-access-market-review>.

Frontier Economics study of benefits of broadband networks

- 5.21 For the National Infrastructure Commission, Frontier Economics considered the benefits in the period to 2050 from different forms of broadband infrastructure that could be rolled out in the coming decade in the UK.²⁵⁰
- 5.22 Frontier Economics forecast future uses of broadband. It forecast a “moderate” evolution scenario and an “ambitious” innovation scenario. It segmented households into five categories, with 35% of households in the highest broadband use category (“always on”). In the “moderate” evolution scenario, by 2040, the 35% of households in the “always on” category would have peak use of 470 Mbit/s, and the other categories of household would all have peak demand below 230 Mbit/s. This means that households with the highest use will face constraints at peak times with existing technologies (such as G.fast). However, Frontier Economics finds that in this “moderate” evolution scenario, upgrading existing technologies would deliver broadly similar benefits overall compared to deploying full-fibre, because upgrading of existing networks (such as deploying G.fast) is quicker than deploying full-fibre.
- 5.23 In the “ambitious” innovation scenario, by 2040, the 35% of households in the “always on” category would have peak use of 1.6 Gbit/s, and the 31% in the next highest category (“fully connected”) would have demand over 460 Mbit/s. In this scenario, using incremental technology upgrades of the existing copper access network (such as G.fast) cannot provide the higher bandwidths required, and the economic benefits from full-fibre are almost double those for the scenario involving upgrading existing infrastructure.²⁵¹ The use cases driving these higher speed requirements include premium displays, virtual reality and augmented reality services, and “smart home” devices (such as surveillance, and video monitoring in healthcare).
- 5.24 Frontier Economics says that the inherent uncertainty in how demand could evolve leads to significant risks related to either over-investment or under-investment. These risks are accentuated by the high level of sunk costs involved and the time required to rollout.

Other relevant studies

- 5.25 The European Commission’s (EC) impact assessment for the review of the regulatory framework notes the potential for Very High Capacity (VHC) networks, including those

²⁵⁰ Future benefits of broadband networks, Frontier Economics, 12 December 2017, <https://www.nic.org.uk/wp-content/uploads/Benefits-analysis.pdf>.

The National Infrastructure Commission also commissioned a study on the costs of different broadband infrastructure options between 2017 and 2050, which is here: <https://www.nic.org.uk/publications/costs-digital-communications-infrastructures/> [accessed 21 February 2017]

The National Infrastructure Commission brought the results of the benefits and cost studies together in this infographic: <https://www.nic.org.uk/wp-content/uploads/Cost-and-benefit-analysis-infographic.pdf>

²⁵¹ In the “ambitious” innovation scenario the present value of the estimated economic benefits over the period to 2050 are £34bn for full-fibre, compared to £18bn for upgrading the copper network. This does not take account of the cost of the investment. See Figure 56.

based on full-fibre, to lead to innovation and new business models.²⁵² It claims that better connectivity will allow all sectors of the economy to realise higher productivity, and may give a significant boost to innovation, including through supporting the development and use of the Internet of Things.

- 5.26 An EC Staff Working Document notes that VHC networks by 2025 in schools, transport hubs and other places where people gather, will enable the use of the best products, services and applications and provide the best services to European citizens.²⁵³ Experience of using such networks in turn creates demand for VHC when it becomes available for households.
- 5.27 Similarly, a report by Arthur D Little on behalf of Vodafone has identified a broad range of industries that it argues would benefit from VHC networks, such as healthcare and education.²⁵⁴

Conclusion on the benefits of full-fibre networks

- 5.28 In our view, full-fibre networks have the potential to provide significant benefits to consumers of communications services and citizens in the future. These benefits will be particularly large if demand for speeds and reliability grows rapidly, though the benefits from full-fibre networks do not only relate to higher headline speed. If investment in full-fibre is delayed, consumers may suffer because they are unable to obtain the services they need. If this happens, it may take considerable time for providers to catch-up with consumers' demand because of the time it takes to deploy new networks. Because of this, we want to promote the deployment of full-fibre now. Reflecting our strategy, we have therefore carefully designed the remedies we are imposing in this review with an objective that telecoms providers (including BT and its rivals) have incentives to deploy the networks designed to best meet the demands of the future.

Emerging network competition

- 5.29 As we discuss in Section 9, our approach to price regulation of VULA is to give both BT and its competitors incentives to invest in new networks, while balancing the need to protect competition, and ultimately consumers, in the short term.

²⁵² European Commission, 2016. *Impact Assessment of Review of the regulatory framework for electronic communications*, part 3/3, pages 328-329, http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=17193.

²⁵³ European Commission, 14 September 2016, Commission staff working document, *Connectivity for a Competitive Digital Single Market - Towards a European Gigabit Society*, section 4.3.1, <http://teams/sites/kc/elib/br/Telco%20sector%20notes/ConnectivityforaCompetitiveDigitalSingleMarket-TowardsaEuropeanGigabitSociety-StaffWorkingDocument.pdf>.

²⁵⁴ Arthur D Little 2016, *Creating a Gigabit Society*, page 5, https://www.vodafone.com/content/dam/group/policy/downloads/Vodafone_Group_Call_for_the_Gigabit_SocietyFV.pdf. For example, full-fibre networks could be used to provide digital health services such as remote patient monitoring and remote care & rehabilitation. In education, full-fibre networks could support increased digitisation within the classroom (e.g. to download content on tablets or laptops).

5.30 Investment in new networks by rivals to BT is now emerging. The evidence we have seen suggests that the investment case has improved in recent years to the point where we now see scale deployment plans and it appears to be commercially viable in more geographic areas. This is facilitated by:

- Increasing demand: customers are increasingly demanding more from their broadband access, both in terms of speed and reliability.
- Lower costs: costs of investment based on new duct build have fallen as a result of improvements in network build techniques,²⁵⁵ while our duct and pole access remedies will substantially lower the costs of building new networks.

5.31 These developments provide a backdrop to recent significant interest in network investment from telecoms providers other than BT:

- CityFibre raised additional equity funding of £185m underwritten by Citigroup, and in November announced its plan to roll out full-fibre to one million homes in 12 cities over the next four years with Vodafone as an anchor customer – with the possible extension to up to 5m homes by 2025;²⁵⁶
- Hyperoptic has announced that its fibre network now covers 350,000 premises and that it has raised a further £100m, to cover two million urban homes by 2022 and then 5 million by 2025;²⁵⁷
- KCOM plans to extend its ultrafast network to reach 100% of the Hull Area. In December 2017, its network reached 150,000 premises and it expects to complete coverage to 200,000 premises in 2019 with about 96% of premises served using full-fibre;²⁵⁸
- Gigaclear’s network reaches 60,000 premises in rural areas and it plans to expand to 150,000 premises by 2020;²⁵⁹
- Virgin Media plans to bring its ultrafast coverage up to 17 million premises by 2019, through its £3bn Project Lightning network expansion;²⁶⁰
- TrueSpeed Communications announced plans to invest £75m to roll out full-fibre to 75,000 homes and businesses in South West England;²⁶¹ and

²⁵⁵ For example, micro-trenching and slot-trenching enables narrower digging of trenches to lay micro-ducts which fibre can then be blown into, significantly reducing the time and cost of digging and repairing the carriageway.

²⁵⁶ <https://www.cityfibre.com/news/vodafone-cityfibre-bring-gigabit-speed-fibre-uk/> [accessed 31 January 2018].

²⁵⁷ <https://www.hyperoptic.com/press/posts/hyperoptic-secures-100million-to-accelerate-full-fibre-rollout/> [accessed 31 January 2018].

²⁵⁸ <https://www.kcomplc.com/business-insight/news-and-media/kcom-full-steam-ahead-for-fibre-broadband/> [accessed 16 February 2018].

²⁵⁹ <https://www.ispreview.co.uk/index.php/2017/05/gigaclear-raise-111m-1gbps-rural-broadband-150000-uk-premises.html> [accessed 31 January 2018].

²⁶⁰ <http://www.virginmedia.com/corporate/media-centre/press-releases/virgin-media-announces-largest-uk-fibre-broadband-rollout.html>, 27 April 2016 [accessed 17 January 2018].

²⁶¹ <http://www.truespeed.com/news/2017/truespeed-secure-75-million> [accessed 17 January 2018].

- TalkTalk announced that it is in discussions with Infracapital to provide full-fibre rollout to more than 3 million premises across mid-sized towns and cities in the UK over the next five years.²⁶²
- 5.32 BT is planning to deploy full-fibre networks to up to three million premises by 2020 and has announced its ambition to achieve an FTTP footprint of 10 million by mid the mid-2020s.²⁶³ BT has also announced it will deploy an enhanced FTTC technology called G.fast (which can deliver higher speeds to some, but not all, connections at a particular cabinet) to provide faster speeds to more premises.²⁶⁴
- 5.33 We are at an important juncture in the development of the networks that will serve the needs of the UK in the future. BT’s chosen strategy – which has included incrementally upgrading its existing copper network – may meet customers’ bandwidth needs in the medium term, but there may be limited scope for improvements to the copper network beyond this should bandwidth demand increase further. Competing telecoms providers will therefore have the opportunity and scope to build their own full-fibre networks. The threat of network competition from rivals will in turn increase pressure on BT to ensure it makes investments that serve the needs of customers in the future.

Designing remedies to address BT’s SMP

- 5.34 The key tools we have used to address the competition concerns that we have identified in this market review are network access, pricing and quality of service remedies.

Duct and pole access

- 5.35 A key element of our decisions to promote greater network competition is the imposition of a specific access remedy, known as Physical Infrastructure Access (PIA), which gives other providers access to BT’s duct and pole infrastructure.
- 5.36 Although the costs of deploying new physical infrastructure (such as ducts and poles) are falling, these costs still represent a barrier to large scale network deployment in significant parts of the country. They constitute a large proportion of the overall capital expenditure of an access network, and BT’s ability to reuse its existing physical infrastructure gives it a significant advantage over its competitors.
- 5.37 We believe that an effective PIA remedy will reduce the absolute costs and time required to build full-fibre broadband networks at scale. Lowering the costs of build will have a significant impact to telecoms providers’ ‘build’ vs ‘buy’ decision. Competing providers will only invest in building their own networks if this is more attractive than buying wholesale services from BT, as many do at present.

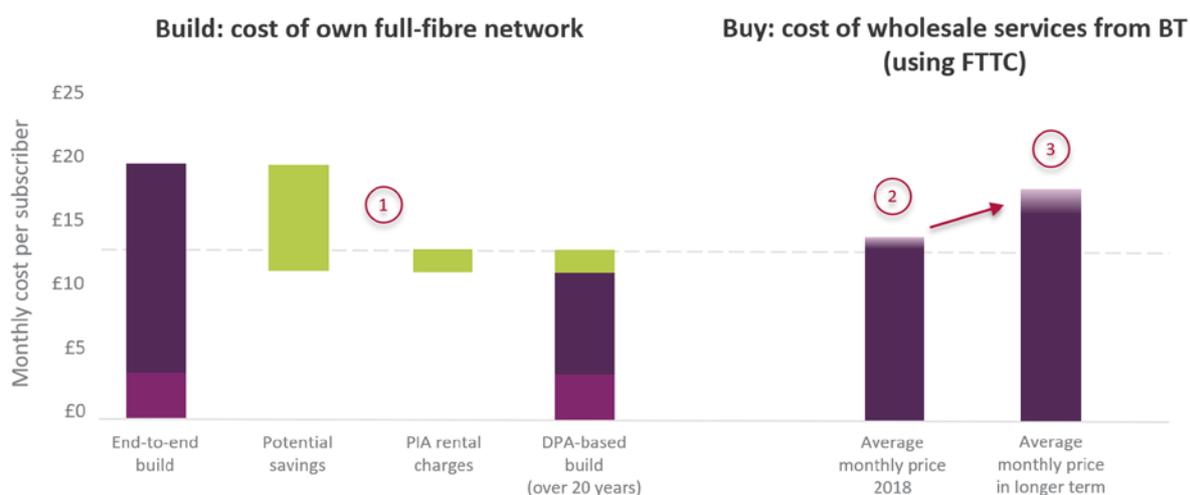
²⁶² <https://www.ispreview.co.uk/index.php/2018/02/isp-talktalk-propose-full-fibre-broadband-3-million-uk-premises.html> [accessed 17 January 2018].

²⁶³ <http://news.openreach.co.uk/pressreleases/london-leads-the-uk-in-major-new-drive-for-ultrafast-broadband-as-openreach-launches-fibre-first-programme-2400491> [accessed 1 February 2018].

²⁶⁴ G.fast is a technology that provides higher bandwidth broadband. BT is trialing G.fast at bandwidth variants including 160 Mbit/s and 330 Mbit/s download.

5.38 Figure 5.1 below illustrates the effect of the package of remedies on the ‘build’ vs ‘buy’ decision. The PIA remedy enables lower build costs for full-fibre while pricing flexibility on higher bandwidth services, along with growing demand for these services, will lead to higher ‘buy’ costs over time. In addition, telecoms providers building their own full-fibre networks will have more control over the quality of services they provide and can benefit from the better reliability and quality compared to networks that use a copper connection. We believe that this shift in the ‘build’ vs ‘buy’ decision will encourage network competition at scale.

Figure 5.1 Illustrative full-fibre investment: ‘build’ vs ‘buy’



- 1 Using Duct and Pole Access results in up-front cost savings of around 50%, before adding back ongoing PIA rental.
- 2 Average monthly price today reflects current mix of different bandwidth services (for example, VULA 80/20 and higher bandwidth services, as well as charge controlled VULA 40/10 product).
- 3 Over time, expectation that average VULA rental price will increase due to: volumes weighting to higher bandwidths and the weakening constraint of VULA 40/10 ‘anchor’.

5.39 Moreover, by avoiding the need for rival networks to build their own ducts, PIA-based network competition entails much lower duplication of fixed costs.

5.40 We set out our PIA remedy in Volume 3.

Network access and other general remedies

5.41 We have decided to reimpose the requirement for BT to provide network access to WLA services to third-party telecoms providers on fair and reasonable terms. We have also imposed a number of other general remedies, by which we mean the remedies designed to support and make effective that network access requirement. We discuss our general remedies in detail in Section 6.

5.42 Most of the general remedies apply to all forms of network access provided by BT in the WLA market. However, as we explain in Section 11, the no undue discrimination condition includes a specific provision relating to VULA other than VULA provided using GEA-FTTP.

This provision is designed to address our competition concern that BT may use geographically targeted price reductions for VULA to deter investment in new networks.

Specific access remedies

- 5.43 Given that we are in a transition between models of competition, we are setting access requirements at multiple points in the value chain. The current model relies primarily on access to LLU and, typically as an overlay to such connections, VULA, whereas in the future we expect that in some parts of the UK the model will be competition between networks, in part relying on access to BT's ducts and poles, delivered by the PIA remedy.
- 5.44 We expect the relative importance of different points of access to evolve over time as competition between network providers grows – PIA will become significantly more important in the future and is important to our goal of promoting investment in competing networks.
- 5.45 Over time, in parts of the UK, this could lead to a change in the business model for those providers who currently use VULA and LLU, as they shift away from relying on those services to competing on the basis of their own local access networks, or connections provided over BT's physical access layer (i.e. PIA). Such network-based competition may also reduce the need for the VULA and LLU access obligations in those areas, with a greater reliance on PIA. In other areas, it may become apparent that the prospects for rival investment are limited, and the need for VULA and LLU access obligations will be greater. While in future it might be possible to apply different regulatory arrangements to these areas, we do not think we are currently in a position to identify these areas, and to do so would risk stifling incentives to invest in these areas. Therefore, for this review period, we have decided that a single approach which applies to all geographic areas in the UK excluding the Hull Area, is appropriate.
- 5.46 Given the time it takes to deploy new networks, we expect the shift to network competition to take some time. We therefore do not expect to see fibre deployment across a significant proportion of the country in the period of this review. In the meantime, and at least for the duration of this review, customers across much of the country will continue to rely on competition based on access to Openreach's network and it will remain important that we keep an appropriate range of access obligations in place. Therefore, while we have designed the remedies imposed in this review to ensure that all operators (including BT and its rivals) have incentives to deploy new networks, we need to continue to regulate access to Openreach's network in the form of VULA and LLU to protect customers from the risk of excessive pricing and protect retail competition, at the same time as promoting the development of competition deeper into the local access network.
- 5.47 We continue to impose specific access remedies on BT in the form of requirements to offer LLU MPF and VULA services, including the relevant ancillary services necessary to enable and support the provision of MPF and VULA, in Section 7.

Price regulation of VULA

- 5.48 As set out above, our improved PIA remedy is designed to substantially address the duct and pole bottleneck element of BT’s network, making it viable in many areas for competitors to roll out their own networks in direct competition with BT’s local access services. We think it is important to take this factor into account when deciding our approach to VULA regulation. Where there is potential for competition it is important to take into account the impact that regulation and associated price signals have on the incentives of competitors to enter and invest in networks. The situation in these potentially competitive areas is more akin to non-regulated parts of the economy, where price signals are part of the normal process encouraging entry and investment.
- 5.49 The challenge we face is to strike an appropriate balance so as to encourage network investment, while protecting consumers and competition in the short term (given that deployment of new networks will take time).²⁶⁵ On the one hand we do not want to crowd out opportunities for network competition in geographic areas where it is economically viable: it must not be too ‘easy’ for competitors to rely on buying access to another’s network when there is the potential to invest in their own. On the other hand, we want to ensure that consumers and competition are sufficiently protected in these areas in the short to medium term, as well as in other geographic areas where network competition is not likely to be economically viable.
- 5.50 Reflecting this balance, we have decided to introduce a charge control for BT’s VULA 40/10 services, consisting of 40/10 GEA rentals and connections and relevant ancillary services, while continuing to allow BT pricing flexibility on higher bandwidth VULA services. We set out our fibre pricing remedies in Section 9.
- 5.51 The charge control on VULA 40/10 services (including the level of charges) is a CPI-X control with X set to align charges to forecast efficient costs of an ongoing FTTC network by the penultimate year of the charge control period (i.e. a cost-based charge control). We explain this choice of glidepath and other details of our charge controls in Volume 2 of this statement.

Price regulation of LLU

- 5.52 The majority of customers on Openreach’s network are on the copper network. The main LLU service (MPF) is also widely used in conjunction with other services to provide fibre services, so MPF will continue to remain important throughout the market review period. However, for partial LLU (SMPF), we expect demand to decline significantly.²⁶⁶ Our approach is to provide a stable basis for competition by continuing with the current regulatory regime, including a charge control on MPF and related ancillary services. In Section 10 we set out our decisions on pricing remedies for LLU, which are important to

²⁶⁵ In developing our approach, we have also taken into account the need to preserve the investment incentives faced by BT, by applying the ‘fair bet’ principle.

²⁶⁶ See Section 7.

our objective of protecting consumers that rely on the current model of competition based on access to Openreach’s network.

- 5.53 For the reasons explained in Section 7 and Section 10, we have lifted the specific access obligation and charge control on SMPF, instead relying on the general access remedies. We have also decided to impose a specific access obligation and a basis of charges condition for BT’s SLU service.

Quality of service

- 5.54 In our Strategic Review we identified the importance of quality of service to consumers and competition. In the longer term we expect the benefits of competing full-fibre networks to significantly improve service quality. In the interim, alongside the introduction of retail automatic compensation and our Service Quality Report, we consider that wholesale regulation of local access should support both our goal of achieving a step change in quality of service, and the effectiveness of the network access remedy detailed above.
- 5.55 Good quality of service at the wholesale level is necessary to ensure effective competition and for customers to have a good quality experience when they buy and use fixed voice and broadband services. In particular, the time it takes to provide a new connection, the rate of faults, and repair times are critical. We believe that because BT has SMP in the wholesale market, it does not have sufficient incentive to set the quality of the service at an appropriate level, or to innovate to improve service quality.
- 5.56 In Section 8, we set out our decision to impose an SMP condition which allows us to set quality of service standards relating to the wholesale access products used to provide standard and superfast broadband services. The quality of service standards that we are imposing are set out in our separate Quality of Service statement published alongside this statement.

Package of remedies protects retail competition and consumers

- 5.57 As set out above, we have identified increased network competition as having the potential to bring significant benefits to citizens and consumers. These benefits are greater because the new networks will be full-fibre networks which have various advantages compared to current networks. While it will clearly take time for networks to be built, in the longer term, the benefits of increased network competition across large parts of the UK could be transformative, leading to significant and durable benefits to consumers.
- 5.58 Some full-fibre deployments by operators other than BT would happen without the package of remedies we are putting in place. However, as described above, we have designed certain remedies in order to encourage such investment by rivals to BT, and the threat of such investment will increase the incentive on BT to invest. This package of remedies is likely to extend the area where investment in new networks is viable.
- 5.59 While we see significant benefits from increased investment and network competition, we recognise that our approach has some costs. But these costs are either low or only arise if the benefits also arise.

5.60 While we could have imposed tighter price regulation of VULA by regulating higher speeds, we are providing protection for consumers with our 40/10 control. We consider that regulation of 40/10 VULA services will constrain the price of higher speeds over the period of this review. However, this constraint may progressively diminish in the future, as discussed in Section 9.

5.61 Other potential costs will scale with the extent of actual rollout by rivals, so these costs are low unless or until that rollout happens, when we expect the significant and enduring benefits from network competition and full-fibre investment to be very substantial:

- Increased network competition involves the replication of the significant fixed costs in building a network, which could put upward pressure on average costs. However, this may be offset by increased network competition being more effective than regulation at driving the industry to be efficient. The PIA remedy helps reduce the scale of fixed cost duplication by allowing new networks to use BT's ducts and poles, significantly lowering the extent of replication of fixed costs.
- We have decided that certain costs incurred by Openreach in relation to the provision of PIA should be recovered across all users of the physical infrastructure. This will put upward pressure on prices. We also recognise that in some cases potential entrants may only find it profitable to build new networks in circumstances where they are not exposed to these costs – a form of entry Openreach which Openreach says is productively inefficient. However, our approach to cost recovery is necessary to promote competition by reducing barriers to investment in competing networks, including ensuring a level playing field with respect to the recovery of these costs. Moreover, the scale of any impact is contingent on the scale of network deployment using the PIA remedy, and so is directly linked to the scale of the benefits that result.
- We are allowing 'mixed usage' of the PIA remedy, so that it can be used to provide other services along with broadband, as this supports investment in the provision of broadband services more generally.²⁶⁷ We recognise that PIA being used to provide some non-WLA services may cause certain spill-over effects on other markets and could have associated costs.
- Preventing BT from targeting reduced wholesale charges in areas where rivals are starting to build new networks may impose a short-term cost on consumers if BT would otherwise have priced lower in those areas. However, absent the threat of competitive entry, there would be little incentive for BT to price lower in those areas, and preventing BT from discriminating in this way will help promote network competition.

5.62 While we acknowledge these costs, we consider the potential for increased network investment and competition will bring significant benefits to citizens and consumers. We therefore consider the package of remedies we have put in place is the best for furthering consumers' interests.

²⁶⁷ 'Mixed-usage' will allow PIA to be used to deploy local access networks offering both broadband and non-broadband services provided the purpose of the network deployment is primarily the delivery of broadband services to homes and businesses, and provided this mixed use enables the investment in the provision of broadband services more generally.

Insufficiency of national and EU competition remedies

- 5.63 Competition law, in particular the rules prohibiting the abuse of a dominant position, remains an important part of the legal framework that BT needs to comply with. Given its position of SMP (which equates to the competition law concept of dominance) BT has a special responsibility not to allow its actions on the market (where conditions of competition are weak) to distort or impair competition. That special responsibility means that courses of action that may be open to its competitors are not available to BT, where such behaviour is capable of distorting competition or otherwise strengthening BT's market share by means other than competition on the merits.
- 5.64 As the concurrent authority for competition law in the electronic communications sector, Ofcom has powers to monitor compliance with competition law and undertake enforcement activity where necessary. However, we consider that national and EU competition law remedies would be insufficient to address the identified competition concerns on their own. First, competition law would focus on tackling the abuse of a dominant position, and would not be as effective as *ex ante* regulation in promoting downstream competition. Second, regulation must remain effective for the review period, and *ex ante* regulation better enables us to do this as it can be tailored to the particular circumstances in the market and services provided. Third, competition law does not provide enough regulatory certainty, which itself can undermine downstream competition where there is upstream SMP – and regulatory certainty is important in encouraging long-term infrastructure investment. In contrast, a benefit of *ex ante* regulation is that all industry stakeholders are clear in advance on the regulation that will apply. Fourth, *ex ante* regulation can facilitate more timely enforcement due to the greater certainty and specificity provided.
- 5.65 On that basis, while competition law enforcement may be used in appropriate circumstances, we do not consider that it would be sufficient to rely on it alone and that *ex ante* regulation is required.

Future regulation of broadband

- 5.66 We recognise that it will take time to build new networks, and hence for our strategy to encourage large-scale investment in full-fibre networks to play out. Over that time, we would expect the constraint imposed by the cost-based 'up to 40 Mbit/s' VULA services on the price of faster VULA services to weaken.
- 5.67 We cannot prejudge what actions we will take in the future, as any pricing decisions in future reviews will be made in light of the circumstances and legal framework applicable at that time. However, we do not expect to extend our charge controls beyond retaining cost-based controls on copper access and 'up to 40 Mbit/s' VULA services, as a matter of course
- 5.68 Rather, with increasing investment by competing providers and improved prospects for network competition, we expect future reviews to consider the case for a shift away from price regulation of VULA. In time, a greater degree of differentiation in our regulatory

approach across the UK is likely to emerge. Our strategy anticipates that different regulation is likely to be needed in different geographic areas.

- 5.69 In places where there is evidence of competitive pressure emerging, we would expect to deregulate. Conversely, for the places where it becomes clear that competition will not emerge, there is an increasing risk of high prices for higher-speed services. In those geographic areas, while we would expect to regulate wholesale prices, we would do so in a manner that takes into account the level of risk at the time the investments were made.
- 5.70 Given the challenges in identifying the criteria for distinguishing between geographic areas that are prospectively competitive, and those which are not, future market reviews will need to consider these criteria carefully based on the facts at the time. In light of this uncertainty, we expect to continue to place weight on the risk of harm to consumers resulting from stifling investment by competing providers. Our starting point will therefore be to err on the side of promoting investment.
- 5.71 We are also working with BT and other network providers to find practical solutions to facilitate the transition to full-fibre networks, while ensuring the transition does not damage consumers' experiences. We recognise the benefit of providing more clarity on regulatory principles, such as the 'fair bet', that should apply to new risky investments, and the application of rules that may affect the move from copper networks and the eventual removal of those networks. The principles that should apply fall outside the scope of this market review, but we will consider changes that take account of competition and the interests of consumers.

The impact of Openreach reform

- 5.72 Another element of our Strategic Review was to secure greater operational and strategic independence for Openreach. On 10 March 2017 BT notified Ofcom of voluntary commitments (Commitments) to reform Openreach under section 89C of the Communications Act 2003 (Notification).²⁶⁸ These Commitments mean Openreach will become a distinct company with its own staff, management, purpose and strategy.
- 5.73 In a July 2017 Statement²⁶⁹ we confirmed our decision to release BT from the undertakings that it offered to Ofcom in 2005 when Openreach was originally created (2005 Undertakings), once the new Commitments are fully in place. We consider that the new arrangements, established by the Notification, provide Openreach with significantly more independence to take its own decisions about the strategic direction and operation of the network, acting with a clear focus on the equal treatment of all its customers, not just the needs of BT Group.
- 5.74 Having received the Notification from BT, we were required by section 89C(4) of the Communications Act 2003 to consider, as soon as reasonably practicable, the impact on SMP conditions set in relation to markets which, in our opinion, will be affected. We said in

²⁶⁸ BT 2017, *Proposals agreed with Ofcom*. <https://www.btplc.com/UKDigitalFuture/Agreed/index.htm>.

²⁶⁹ Ofcom, 2017. *Delivering a more independent Openreach*. https://www.ofcom.org.uk/_data/assets/pdf_file/0020/104474/delivering-independent-openreach.pdf.

our July 2017 Statement that we would consider the effect, if any, of the new arrangements described in BT's Notification on our SMP regulation as part of this market review and other market reviews that are currently underway.

- 5.75 BT said that in the March 2017 Consultation we had not sufficiently considered the impact of BT's Notification on our assessment of the WLA market or on our proposed remedies, and that our assessment did not comply with the requirements of section 89C(4). In particular, BT said that we had not considered the impact of the Notification on our charge control proposals and their implications for investment. BT also said that the Notification made our proposed amendments to the SoR process unnecessary, and that our proposed arrangements for the Equality of Access Board and Equality of Access Office would no longer make sense once the Notification has been implemented.²⁷⁰ Openreach said that we should consider, in a more systematic manner, the impact of the Notification on our market analysis and proposed remedies.²⁷¹
- 5.76 We have considered our competition concerns and proposed remedies in relation to the wholesale local access markets, taking account of BT's Notification and responses to our consultations.
- 5.77 We have found that BT has SMP in the wholesale local access market, and services within that market remain important inputs for telecoms providers downstream. BT and Openreach remain in common ownership and BT retains control over the capital expenditure decisions and pricing of its products that exist outside of Openreach. While the Commitments increase the independence of Openreach and require equal treatment of its customers, BT (as a whole) retains the incentive and ability to favour its downstream divisions. We therefore consider that the SMP regulation will complement BT's Commitments, as it did the 2005 Undertakings that preceded them.
- 5.78 We also think that BT's investment incentives will not be affected by its Commitments such that our charge control proposals will undermine future investment. The implications of our charge control proposals for investment by BT and others are discussed further in Section 9.
- 5.79 As we set in our July 2017 Statement, the changes to the pre-existing functional separation of Openreach addressed by BT's Notification relate primarily to the degree of independence in Openreach's strategic decision-making through the new model of legal separation. BT's Commitments are, like the 2005 Undertakings before them, designed to operate alongside Ofcom's regulation of BT's SMP in individual product markets. That SMP regulation has, as part of the legal and economic context of the relevant market, reflected the existence of the 2005 Undertakings, as well as the functionally separate nature of Openreach and its obligation to supply products on an EOI basis.
- 5.80 Openreach raised a specific concern with regard to Equivalence of Inputs (EOI) obligations. We have addressed this in Section 6. Both BT and Openreach questioned whether our proposed more stringent statement of requirements (SoR) process is necessary under

²⁷⁰ BT Group response to the March 2017 WLA Consultation (non-confidential version), paragraphs 3.60-3.63.

²⁷¹ Openreach response to the March 2017 WLA Consultation, paragraphs 155-164.

Openreach's new status. As discussed in Section 6, we have decided not to proceed with our proposals to align the SoR process with the SoR process set out in the 2016 BCMR, but rather to leave the SoR process in its current form.

- 5.81 In our view, the remedies imposed for the wholesale local access market are appropriate having regard to BT's section 89C Notification which, like the 2005 Undertakings in previous reviews, will complement the SMP regulation that we are imposing on BT. We do not consider that any new SMP regulation is necessary specifically to take account of these arrangements, or that any of our remedies are now unnecessary or require amendment.

6. General remedies

- 6.1 In this section, we set out the general remedies that we have decided to impose on BT. Other than where subject to the specific exemptions that we set out later in this and the next section, these general remedies apply to all forms of network access provided by BT in the WLA market in the UK excluding the Hull Area.
- 6.2 The general remedies require BT to provide network access to services in this market, and also include a series of remedies designed to support and make effective that network access. The remedies we are imposing are designed to address the competition concerns that we have identified in our market analysis associated with a finding of SMP (see Sections 3 and 4).
- 6.3 In addition to the general remedies set out in this section, we are applying specific access remedies to require the provision of certain key services. These are explained in Section 7. We are also applying pricing remedies to certain services, as explained in Sections 9 and 10.
- 6.4 In summary, we are largely imposing the general remedies we proposed in the March 2017 WLA Consultation, which are summarised below in Table 6.1. However, having considered comments and further information gathered from stakeholders, we have decided not to implement our proposed amendments to the SoR process, and instead to maintain the current process.

Table 6.1: Summary of general remedies imposed on BT in the WLA Market in the UK excluding the Hull Area

Remedies imposed
Requirement to provide network access on reasonable request
Requirement to publish and operate a process for requests for new forms of network access *
Requirement not to unduly discriminate and EOI *
Requirement to publish a reference offer
Requirement to notify changes to charges, terms and conditions *
Requirement to notify technical information
Cost accounting
Accounting separation

Note: an asterisk () indicates where implementing details have changed from our March 2017 Consultation*

- 6.5 We set out our detailed decisions in relation to duct and pole access (DPA) in Volume 3. Where any of the general remedies do not apply to DPA, or where we adopt a different approach in respect of DPA to that set out in this section, this is set out in Volume 3.
- 6.6 In relation to the no undue discrimination remedy, in our December 2017 consultation on targeted geographic discounts, we proposed an amendment to the draft SMP condition

prohibiting BT from targeting reduced wholesale charges for FTTC in certain geographic areas. We have decided to include this provision, as discussed in Section 11 below.

- 6.7 Below, for each general remedy, we set out our proposals, a summary of the key stakeholder responses, and our decisions and reasoning.

Requirement to provide network access on reasonable request

Our proposals

- 6.8 We proposed to reimpose the obligation requiring BT to provide network access where a third party reasonably requests it, and to do so on fair and reasonable terms and conditions, as soon as it is reasonably practicable.
- 6.9 We also proposed that this obligation should continue to include a requirement for BT to provide network access at fair and reasonable charges where no charge control applies or where a charge control has expired.
- 6.10 Finally, we proposed that this obligation should include the power for Ofcom to make directions in order that we can secure the supply of services and, where appropriate, fairness and reasonableness in the terms and conditions (and in certain circumstances, also charges) of network access.

Stakeholder responses

- 6.11 Openreach supported our position to retain a requirement that charges for network access should be fair and reasonable where network access is not subject to a charge control, and agreed “with Ofcom’s acknowledgement that fair and reasonable is intended to afford Openreach pricing flexibility”.²⁷²
- 6.12 Openreach also commented that we need to consider reviewing what is defined as network access, especially whether something is an “associated service”²⁷³, before regulation is applied to that service. Openreach also pointed out that the definition of network access may change over time, and as such, it is essential to regularly review this to ensure “unnecessary regulation is neither maintained nor imposed”.²⁷⁴

²⁷² Openreach response to the March 2017 WLA Consultation, paragraphs 170-171.

²⁷³ Network access, and associated facilities, is defined in the Communications Act 2003 (Section 151(3)) as “interconnection of public electronic communications networks, or any services, facilities or arrangements which... are services, facilities or arrangements by means of which a communications provider or person making available associated facilities is able, for the purposes of the provision of an electronic communications service (whether by him or by another), to make use of anything mentioned in subsection (4)”.

²⁷⁴ Openreach response to the March 2017 WLA Consultation, paragraphs 167-9.

- 6.13 Bit Commons stated, more generally, that the general remedies were minimal in nature and argued “specific provisions are needed to establish the status of FTTP” and ensure consumers can have full-fibre affordably.²⁷⁵

Our reasoning and decisions

- 6.14 The level of investment required by a third party to replicate BT’s network and build a similar scale access network (and the time it would take to complete this) is a significant barrier to entry. The obligation requiring BT to provide network access where a third party reasonably requests it²⁷⁶ is therefore vital to promoting and protecting competition in downstream markets. Without such a requirement, BT would have the incentive and the ability to refuse access at the wholesale level or provide access only on less favourable terms, thereby benefiting its own retail divisions and hindering downstream competition, ultimately against the interests of consumers. Therefore, we have decided to reimpose this requirement on BT.
- 6.15 Where we do not impose a basis of charges obligation and no charge control is in force, there is a risk of adverse effects arising from a price distortion if BT fixes and maintains its prices at an excessively high level for services in the WLA market, or lowers retail prices to a level that may result in a margin squeeze.
- 6.16 We have therefore decided to impose an obligation for charges for network access to be fair and reasonable, except where a charge control or a basis of charges obligation is in force. Where there is no charge control or basis of charges obligation, our general position is that we would interpret the fair and reasonable obligation to mean BT should not set prices that result in a margin squeeze. This provision enables us to intervene more quickly where charges are not fair and reasonable than if we relied solely on *ex post* competition law. In some specific cases, we have other concerns that BT could price excessively. In these cases we explain how we would interpret the obligation to set fair and reasonable charges.
- 6.17 Where we do impose a charge control or basis of charges condition, our concerns that BT might apply a margin squeeze are reduced. This is because a control on wholesale charges means BT could only impose a margin squeeze by lowering the retail price, which would cut into its profits, rather than by raising the wholesale price.
- 6.18 In relation to Openreach’s comment that a fair and reasonable charges obligation would provide it pricing flexibility, we think it is important to clarify that a fair and reasonable charges obligation does not always afford Openreach the same level of pricing flexibility in

²⁷⁵ Bit Commons response to the March 2017 WLA Consultation, page 3.

²⁷⁶ A requirement to provide network access also includes any ancillary services as may be reasonably necessary for a third party to use the network access being provided.

all cases – the level of flexibility varies on a case by case basis depending on the particular circumstances.²⁷⁷

- 6.19 In addition, we believe it is appropriate for this condition to include the power for Ofcom to make directions in order to secure the supply of services, and where appropriate, fairness and reasonableness in the terms and conditions (and possibly charges) of network access. Therefore, the condition includes a requirement for BT to comply with any such direction(s).²⁷⁸
- 6.20 In addition to the direction making power, we have also included provision in the relevant SMP condition to allow for Ofcom to consent to exemptions from the network access obligation in appropriate circumstances, for example, to take account of the potential for Openreach to agree to co-investment arrangements with other telecoms providers. One of the main areas of focus in the Strategic Review was reform of Openreach to provide it greater independence. We said this could, among other things, facilitate new models of investment in the industry, such as co-investment (i.e. where Openreach co-invests with telecoms providers other than BT). In its response to the March 2017 WLA Consultation, Openreach asked us to consider the impact of possible co-investment in the future, and the possible need to change the general remedies.²⁷⁹
- 6.21 Having considered Openreach’s comments, we have decided to amend the network access condition to enable us to grant exemptions, which could facilitate future co-investment between Openreach and other telecoms providers.²⁸⁰ If we received a request from Openreach for an exemption, we would consider the specifics of that request at that time, and would consult on any specific exemptions to which we proposed to agree.
- 6.22 In regard to Openreach’s comments about providing clarity on the definition of network access, we believe that the definition of network access is clearly defined, both in the Act and our Access Guidelines.²⁸¹ Moreover, there is flexibility in the Act, notably with section 151(3(b)), to allow us to review and re-evaluate what is network access, if and when required.
- 6.23 In regard to the comments of Bit Commons, we are of the view that the general remedies taken together, along with the specific access and DPA remedies and copper and fibre pricing remedies, address our competition concerns while promoting investment in next generation fixed access, or FTTP.

²⁷⁷ For instance, in some cases, it may be appropriate to specify that fair and reasonable charges should be equal to a particular level of costs, whilst other times it might be more appropriate to allow greater flexibility in determining the charges.

²⁷⁸ Therefore, any contravention of a direction would constitute a contravention of the condition itself, and would be subject to enforcement action (under sections 94-104 of the Act).

²⁷⁹ Openreach response to the March 2017 WLA Consultation, paragraph 188.

²⁸⁰ As discussed below, equivalent provision has been made in the conditions on specific network access, EOI and no undue discrimination.

²⁸¹ Annex 1 - Definitions and examples of access, Oftel, 13 September 2002. *Imposing access obligations under the new EU Directives.*

http://webarchive.nationalarchives.gov.uk/20090508120520/http://www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/acce0902.htm.

Legal tests

- 6.24 For the reasons set out below, we are satisfied that the condition requiring BT to provide network access on reasonable request in the WLA market in the UK excluding the Hull Area meets the various tests set out in the Act.
- 6.25 Section 87(3) of the Act authorises Ofcom to set SMP service conditions requiring the dominant provider to provide network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions. Section 87(9)(b) of the Act authorises SMP services conditions to be imposed on a dominant provider in relation to the recovery of costs and cost orientation regarding the provision of network access, subject to the conditions of section 88 of the Act being satisfied.
- 6.26 In deciding these conditions, we have taken into account the factors set out in section 87(4) of the Act. When considering the imposition of such conditions in a particular case, we must take into account the following six factors set out in section 87(4):
- the technical and economic viability (including the viability of other network access products, whether provided by the dominant provider or another person), having regard to the state of market development, of installing and using facilities that would make the proposed network access unnecessary;
 - the feasibility of the provision of the proposed network access;
 - the investment made by the person initially providing or making available the network or other facility in respect of which an entitlement to network access is proposed (taking account of any public investment made);
 - the need to secure effective competition (including, where it appears to Ofcom to be appropriate, economically efficient infrastructure based competition) in the long term;
 - any rights to intellectual property that are relevant to the proposal; and
 - the desirability of securing that electronic communications services are provided that are available throughout the Member States.
- 6.27 In reaching our decision that BT should be subject to a requirement to provide network access on reasonable request, we have taken all of the above six factors into account. In particular, having considered the economic viability of building access networks within this review period to achieve ubiquitous coverage that would make the provision of network access unnecessary, we consider that the SMP condition is required to secure effective competition, including economically efficient infrastructure based competition, in the long term in each of the wholesale access markets. The requirement for BT to meet only reasonable network access requests also ensures that due account is taken of the feasibility of the proposed network access, and of the investment made by BT initially in providing the network.
- 6.28 We are also required to ensure that the condition satisfies the tests set out in section 88 of the Act as the requirement places controls on network access pricing, insofar as charges

are required to be fair and reasonable. Section 88(1) of the Act requires that Ofcom must not impose pricing conditions unless it appears from the market analysis carried out for the purpose of setting that condition that there is a relevant risk of adverse effects arising from price distortion. As discussed above, in the absence of price regulation requiring prices to be fair and reasonable, BT would have the ability and incentive to either price excessively, or set wholesale and retail prices in a way that could damage downstream competition through a margin squeeze.

- 6.29 Section 88(1)(b) of the Act requires that the pricing condition should be appropriate for the purposes of promoting efficiency, promoting sustainable competition and conferring the greatest possible benefits on the customers of public electronic communications services.
- 6.30 In the cases where we propose a fair and reasonable charges obligation, we consider that this will prevent BT from setting charges that are excessively high or that impact other providers' ability to compete with BT in downstream markets and so will support the aim of promoting improved efficiency.
- 6.31 We also consider that the provision of network access on fair and reasonable terms will promote sustainable competition by ensuring that other telecoms providers can effectively compete downstream. We consider this to be the appropriate approach for the purposes of conferring the greatest benefits on customers of downstream services.
- 6.32 We are also required, under Section 88(2) of the Act, to consider BT's investment. We believe that fair and reasonable charges will allow BT's costs to be taken into account and will also provide for common cost recovery. This condition is therefore an appropriate basis upon which to control BT's prices.
- 6.33 We have considered our duties under section 3 and all the Community requirements set out in section 4 of the Act. The condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefit of consumers by facilitating the development of competition in downstream markets.
- 6.34 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:
- objectively justifiable, in that it facilitates and encourages access to BT's networks and therefore promotes competition to the benefit of consumers;
 - not unduly discriminatory, in that we are proposing to impose the requirement on BT. We have not identified any other telecoms providers as holding a position of SMP in the WLA market in the UK excluding the Hull Area;
 - proportionate, in that it is targeted at addressing the market power that we have found BT holds in the WLA market and does not require it to provide access if it is not technically feasible or reasonable; and
 - transparent, in that the condition is clear in its intention to ensure that BT provides access to its network in order to facilitate effective competition.
- 6.35 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Requests for new forms of network access

Our proposals

- 6.36 In the March 2017 WLA Consultation, we proposed to reimpose a condition regarding the process by which BT must address requests for new forms of network access (known as the Statement of Requirements or SoR process). We considered that this requirement remained an appropriate and proportionate *ex ante* measure to complement the general network access requirement discussed above.
- 6.37 In addition, we proposed alterations to the SoR process, primarily through alignment with the SoR process as outlined in the BCMR 2016. In summary, these were to:
- set prescriptive timescales for each stage of the SoR process;
 - allow for an extension to the prescribed timescales in certain circumstances;
 - require BT to carry out a feasibility study in order to determine whether an SoR request is reasonable, if necessary;
 - require BT to be more transparent in setting out its reasons for rejecting an SoR request; and
 - ensure that BT has a suitable SoR classification tool.

Stakeholder responses

- 6.38 Most comments on our proposed general remedies concerned this remedy. [X] agreed with our analysis, stating that the current process is ineffective and opaque, but disagreed with the proposed clause allowing Openreach to extend timescales without the agreement of the telecoms provider submitting the SoR.²⁸²
- 6.39 [X] also argued that the SoR proposals need to include the confidentiality proposals in the Openreach separation consultation, citing that the current process is “flawed” as the telecoms provider submitting the SoR request has to divulge commercially sensitive information.²⁸³
- 6.40 Vodafone argued that the current process is unsatisfactory, takes too long and has no transparency over the criteria to assess SoRs, and stated it can act as a “significant impediment to innovation”. Vodafone referred to data from the Equality of Access Board in 2016, stating this showed the bias in the number of requests by BT progressed in comparison to requests from other telecoms providers.²⁸⁴
- 6.41 Vodafone also argued that BT still has too much discretion over accepting and rejecting SoRs, that there are no minimum requirements for the SoR guidelines that are set out in

²⁸² [X]. [X] made comments in regard to the SoR process with reference to BT. Given Openreach manage and look after the SoR process, we have interpreted their comments in regard to Openreach.

²⁸³ [X]

²⁸⁴ Vodafone response to the March 2017 Consultation, paragraphs 5.2-5.3.

the SMP conditions, that “reasonable” is not defined in regard to BT conducting feasibility studies, and that BT can refuse SoRs if they are not correctly formatted. Vodafone argued that the basis for Ofcom granting time extensions to BT is unclear, and it is not clear what sanctions Ofcom would impose on BT if it rejected a request for an extension. Vodafone also suggested Ofcom should consider automatic penalties.²⁸⁵

- 6.42 Openreach disagreed with our analysis of the SoR process, arguing that the process works well and that the latest data show a significant improvement in the time taken to review and deliver SoRs. Openreach commented that concern over the treatment of regulatory and commercial SoRs was unfounded as new regulatory requests conformed with the obligation for regulatory SoRs (arguing that we have failed to provide evidence showing otherwise) and the treatment of commercial SoRs was not relevant to how regulatory SoRs are assessed. Openreach further added that it “might not distinguish them [commercial SoRs] from regulatory SoRs where it chooses to apply the regulatory SoR process”.²⁸⁶
- 6.43 Openreach also argued that we had not considered several improvements to the SoR process in our analysis – notably, the new dashboard shared at monthly Copper and Fibre Products Commercial Group (CFPCG) meetings²⁸⁷, where current SoRs in progress and forthcoming SoRs are a fixed agenda items, new processes that are more clearly defined and transparent, and clearer guidelines on which process Openreach and telecoms providers use for each type of change. Openreach objected to our proposals to make the process more rigid, saying this could cause SoRs to be rejected for being underdeveloped. Openreach also submitted that it is unreasonable for it to perform a feasibility study where specific information (which the telecoms providers agree to provide) has not been supplied, that Openreach needs confidential data from telecoms providers to assess Openreach’s costs in developing the service, and that it is fair for Openreach to reject an SoR without performing a feasibility study where no telecoms provider has committed to take up the service.²⁸⁸
- 6.44 Openreach stated there was no evidence to suggest downstream BT divisions were treated favourably, pointing to the fact that Ofcom’s SoR programme²⁸⁹ did not find differences between how BT’s and non-BT telecoms providers’ SoRs were treated, and that the identity of the telecoms provider was not a factor in an SoR’s acceptance.²⁹⁰

²⁸⁵ Vodafone response to the March 2017 WLA Consultation, Annex, paragraph 3.

²⁸⁶ Openreach response to the March 2017 WLA Consultation, paragraphs 175 and 378.

²⁸⁷ The Copper and Fibre Products Commercial Group, or CFPCG, is an industry group (comprising of attendance by Openreach, telecoms providers, the OTA2, and where requested, Ofcom) which provides a focal point for discussion, review and to record agreement or position of commercial and product issues and planned activity on the Openreach Copper and Fibre Services Portfolio including, MPF, SMPF, WLR, GEA-FTTC (including CPE Enablement), GEA-FTTP, FVA, GEA Cablelink and Multicast for GEA, CPS, Wholesale Calls and SLU.

²⁸⁸ Openreach response to the March 2017 WLA Consultation, paragraphs 384-390 and 394.

²⁸⁹ The SoR monitoring programme was a piece of internal work Ofcom conducted, historically analysing the SoR process for SoRs submitted between 2007 and 2013 and then also the whole of 2014. See March 2017 WLA Consultation, paragraph 5.32.

²⁹⁰ Openreach response to the March 2017 WLA Consultation, paragraphs 176 and 180.

- 6.45 Openreach also referred to comments from the 2017 Equality Access Board annual report, which highlighted the improvements Openreach has made in new measures, recognised the complexity and expense of requests, and acknowledged that significantly more SoRs that are delivered are raised by non-BT telecoms providers than by BT.²⁹¹
- 6.46 Finally, Openreach commented that we had not taken into account the continual dialogue with industry, which it views as a form of self-regulation, or the structural reform of Openreach.²⁹²
- 6.47 BT commented that the proposals did not mention the new processes as set out in the separation notification, which are designed to encourage telecoms providers to engage with Openreach more constructively.²⁹³ BT argued, more widely, that we had not accounted for the impact of Openreach's new status.

Our reasoning and decisions

- 6.48 Vertically integrated telecoms providers have the ability to favour their own downstream business over third-party telecoms providers by differentiating on price or terms and conditions. Where a telecoms provider has SMP at the upstream level, such discrimination can harm competition in downstream markets. One form of discrimination is in relation to the handling of requests for new types of network access. This has the potential to distort competition at the retail level by placing third-party telecoms providers at a disadvantage compared with the downstream retail business of the vertically integrated provider with SMP. We believe BT has such an incentive, and ability, in the absence of the SoR process (which provides a fair, reasonable and transparent process), to favour its own retail operations by rejecting requests from competing telecoms providers that would have the potential to result in innovation in network access. This is particularly significant given the impact that we consider network level competition will have on the market in the coming review period.
- 6.49 Section 87(3) of the Act authorises Ofcom to set SMP services conditions requiring the dominant provider to provide network access as it may, from time to time, direct. These conditions may, pursuant to section 87(5) of the Act, include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within the periods and at the times required by or under the conditions.
- 6.50 We have decided that it is necessary to impose a condition regarding the process by which BT must address requests for new forms of network access. We remain of the view that this requirement is still an appropriate and proportionate *ex ante* measure to complement the general network access requirement discussed in the preceding sub-section.

²⁹¹ Openreach response to the March 2017 WLA Consultation, paragraph 179.

²⁹² Openreach response to the March 2017 WLA Consultation, paragraph 181-2.

²⁹³ BT response to the March 2017 WLA Consultation, paragraph 3.62.

- 6.51 As mentioned above, in the March 2017 WLA Consultation, we proposed to make amendments to the SoR process in order to align it for the WLA market with how requests for new forms of network access were imposed in the 2016 BCMR.
- 6.52 Our reasoning for the proposed amendments was based on several factors. First, the findings of an SoR monitoring programme we undertook in 2014-15 found the average time taken to review and reach a decision on an SoR had significantly increased between 2007 and 2014. Second, we stated there was limited transparency to telecoms providers as to why a SoR had been rejected and on what basis the SoR request had been assessed (with Openreach confirming to us that the financial viability of an SoR was a factor when assessing SoRs). Finally, we explained that BT was not distinguishing between regulatory and commercial SoRs, as its current SoR tool could not support such a classification. BT informed us that it was adopting the same approach to both types of SoRs, but we believed there was a risk that BT could be rejecting reasonable regulatory SoR requests purely on a commercial or strategic basis.
- 6.53 We noted that while the number of SoR requests Openreach receives is in decline, we felt that fibre access services were increasingly important and telecoms providers may identify changes to these services, and as such, a more robust process needed to be in place to deal with SoR requests in light of the findings of the monitoring programme. We felt that the more prescriptive timescales proposed provided the robustness that was required.
- 6.54 However, following consideration of stakeholder responses, and information provided by the OTA2²⁹⁴, we have reconsidered our proposals.

Further information gathered since the March 2017 WLA Consultation

- 6.55 Based on data provided by Openreach in response to statutory information requests,²⁹⁵ we note there has been a significant improvement in both the time taken to review SoR requests, and the time to implement them, since 2014:
- The average time taken to accept an SoR has fallen from 22 months in 2014 to 11 months for the period from January 2015 to August 2017 Confidential OR. While we note the progress Openreach has made, we would like to see industry continuing to work to reduce these time periods.

²⁹⁴ The Office of the Telecoms Adjudicator, or OTA2, is an independent organisation tasked by Ofcom to oversee co-operation between telecoms providers and enable a competitive environment in the telecommunications sector. The OTA2's main task is to deal with major or strategic issues affecting the rollout and performance of products provided by Openreach. In the context of the SoR process, the OTA2 chair the monthly CFPCG forum meetings between Openreach and the telecoms providers.

²⁹⁵ Openreach response dated 16 April 2016 to the 2nd WLA s.135 notice and Openreach response dated 26 October 2017 to the 8th WLA s.135 notice.

- The average time taken to cancel an SoR has fallen slightly from eight months to seven months Confidential to OR.²⁹⁶ With regard to this improvement, we understand the current process before cancelling an SoR request involves a thorough review exercise between the requesting telecoms provider and Openreach (for instance, to see if there is a more appropriate SoR already in existence or under development). While we encourage Openreach and industry to continue to seek to improve the process, we think it is important that a comprehensive review process is not undermined by seeking to further reduce timescales.

6.56 In addition, of the 22 SoRs accepted and delivered since 1 January 2016, 20 have been for non-BT telecoms providers Confidential OR, while two were delivered for BT telecoms providers.²⁹⁷ This suggests that non-BT telecoms providers have been able to use the process consistently over this period and does not indicate discrimination against non-BT telecoms providers.

SoR process and the role of the CFPCG

6.57 It is part of the function of the CFPCG to review all existing and new/proposed SoRs at monthly meetings and to seek agreement from telecoms providers on whether they are happy with the progress being made with each SoR request. These form part of the standard agenda items at the monthly CFPCG meetings, providing telecoms providers an opportunity to further raise concern or comments over the progress of an SoR. The CFPCG is an industry group (comprising of attendance by Openreach, telecoms providers, the OTA2, and where requested, Ofcom) which provides a focal point for discussion of SoR matters (among other things).

Improvements by Openreach

6.58 We have also identified improvements by Openreach in the last 12-18 months, including its dashboards, which are presented at the monthly CFPCG meetings and which all telecoms providers have sight of before attending. Since their introduction in April 2017, these have provided additional visibility to telecoms providers and the OTA2 on the progress of SoRs, alongside other existing documentation such as programme plans. Both active and cancelled/rejected SoRs are reviewed in the slide pack along with the SoR dashboard, ensuring that all telecoms providers are kept up to date with recent developments.

6.59 Moreover, we note Openreach's recent consultation with industry signalling its intention to improve communication with telecoms providers. The consultation seeks to establish a process for managing change and seeks industry's feedback on potential processes to

²⁹⁶ We note that since August 2017, there has been a further cancelled SoR, requested by Vodafone, concerning GEA software services and in particular, bandwidth changes. This falls outside our period of analysis (January 2015 to August 2017), but we discuss this further in Volume 2 (WLA Charge Control).

²⁹⁷ Openreach response dated 16 April 2016 to the 2nd WLA s.135 notice and Openreach response dated 26 October 2017 to the 8th WLA s.135 notice.

optimise the effectiveness and transparency of change processes, acknowledging that not all new forms of new network access are suitable for the SoR process.²⁹⁸

Other issues

- 6.60 We also understand that SoRs may be underdeveloped when initially submitted and require further refinement by Openreach, wider industry and the OTA2. This may include requiring further work to identify likely demand for a development in order to allow Openreach to undertake a meaningful feasibility study.
- 6.61 On the issue of the financial and cost assessment thresholds of SoRs, having considered Initial Business Case and Openreach Investment Board documents,²⁹⁹ we have been presented with no evidence of rejected SoRs, and therefore have been unable to verify stakeholders' concerns of SoR financial thresholds being unclear.
- 6.62 Having considered the issue of SoR classification further, we accept there may remain some subjectivity on deciding whether an SoR is regulatory or commercial. Where a telecoms provider feels a regulatory SoR has been treated (or categorised) incorrectly, then there is the opportunity for the telecoms provider to raise its concerns via the CFPCG and OTA, and if the issue is still not resolved, to Ofcom, where we would consider what the appropriate action would be to take.
- 6.63 Based on the further information we have gathered since the March 2017 WLA Consultation, we now consider that there are greater checks on the progress of each SoR, with monthly, three-monthly and six-monthly checkpoints now in place to ensure continued progress of each SoR. Likewise, there are industry guidelines published on the CFPCG section of the Openreach website, outlining to telecoms providers how they can expect their SoR request to be dealt with, as well as several documents detailing the process and timetables for submitting an SoR, documents assisting telecoms providers to think about the impact of their SoR on both Openreach and other telecoms providers (an issue that often causes delays to developing SoRs), a diagram detailing the steps/phases of an SoR and a podcast providing an overview of the SoR process.³⁰⁰
- 6.64 Finally, in regard to Vodafone's comments on the SoR process, whilst the SoR guidelines are not legally binding themselves, they are derived from BT's SMP Condition to provide new network access, which is legally binding, and therefore they do hold legal status courtesy of its SMP Condition. The quantitative and qualitative analysis above has led us to reject Vodafone's and [3<] responses that the process is unsatisfactory, takes too long, is

²⁹⁸ Customer Consultation Processes Improving industry collaboration, effectiveness and transparency, Industry Consultation – Proposals Document Issue 1.0, <https://www.openreach.co.uk/orgp/customerzone/products/industryforums/superfastfibreaccess/downloads/CustomerConsultationProcesses.pdf>.

²⁹⁹ Openreach response dated 26 October 2017 to the 8th WLA s.135 notice. Initial Business Case, or IBCs, and Openreach Investment Board, or OIBs, are the main gateways for approval from Openreach to fund and fully develop an SoR request. These stages are explained further in the CPFAG webpage, on Openreach's website, which are combined under the pictogram stage labelled 'Openreach prioritisation and Business case process' - <https://www.openreach.co.uk/orgp/customerzone/products/newproducts/downloads/Openreach%20product%20SoR%20process.ppt>.

³⁰⁰ <https://www.openreach.co.uk/orgp/customerzone/products/newproducts/newproducts.do>.

ineffective and opaque; moreover, more recent data does not suggest a bias towards BT telecoms providers as compared to non-BT telecoms providers when dealing with requests.

- 6.65 Given these improvements noted above, we do not feel it necessary to define minimum standards; likewise, we do not feel it is necessary for Ofcom to have the ability to grant (or refuse) extensions to SoR requests given the condition does not impose timescales on BT. Whilst BT determines the content and has discretion of the SoR guidelines and process, it must do so on a fair and reasonable basis and not to the detriment or discrimination of any telecoms provider. Moreover, Ofcom retains the power to direct BT to make amendments to the SoR process, under SMP Condition 3.5. In the case of the content of the SoR guidelines and process, Openreach must consult with industry before making changes.

Conclusions

- 6.66 The process, in its current form, requires BT to publish guidelines in relation to requests for new forms of network access (and to respond to these requests in a reasonable amount of time, have clear and transparent criteria to assess requests and to set out clear reasons for rejecting requests) and allows Ofcom to direct BT to make amendments to those guidelines.
- 6.67 In light of the information we now have, our updated analysis on both the SoR process and recent data, Openreach and BT's comments, we have decided not to implement the obligations proposed in our consultation. Instead, we have decided to maintain the current regulations surrounding the SoR process. While recognising the positive steps taken by Openreach recently, we have decided to keep the obligation which provides all telecoms providers with certainty and transparency of how they should engage with Openreach to request new network access in a market where BT has SMP.
- 6.68 We do not think automatic penalties for where we do not grant time extensions for SoR requests, as argued by Vodafone,³⁰¹ would be effective or proportionate given that we now no longer consider prescriptive timescales for SoR requests as necessary.
- 6.69 In regard to [redacted] comments about the SoR process requiring the requesting telecoms provider to share confidential information with Openreach, we consider that for Openreach to process an SoR, it needs certain information to assess the demand and costs of the new service being requested. The SMP Condition, as previously in force from the 2014 FAMR and as drafted in the legal instrument for this market review period, in addition to General Condition 1.2 on all telecoms providers,³⁰² requires Openreach not to utilise such information to the benefit of itself (or BT's own downstream divisions), or

³⁰¹ Vodafone response to the March 2017 WLA Consultation - Annex 1, paragraph 3f.

³⁰² Ofcom, 2015. *Consolidated version of General Conditions as at 28 May 2015*.

https://www.ofcom.org.uk/data/assets/pdf_file/0026/86273/CONSOLIDATED_VERSION_OF_GENERAL_CONDITIONS_AS_AT_28_MAY_2015-1.pdf. As a result of Ofcom's review of the General Conditions, from 1 October 2018, the relevant General Condition for this will become General Condition 1.3 (see Ofcom, 2017. *Review of the General Conditions of Entitled - Revised General Conditions*, Annex 14. https://www.ofcom.org.uk/data/assets/pdf_file/0023/106394/Annex-14-Revised-clean-conditions.pdf).

other telecoms providers. If telecoms providers felt this was not being adhered to, then there is the opportunity to raise this matter with us.

- 6.70 BT urged us to consider the impact of its Notification for the separation of Openreach. As outlined in the previous section, BT is in the process of implementing commitments made to Ofcom which will change the legal structure of Openreach. The objective of the Openreach reform is to provide greater independence in Openreach's strategic decision making, but this does not change the fact that BT will still retain SMP in the WLA market, and therefore retain the ability and incentive to discriminate in favour of its own downstream divisions.
- 6.71 As discussed in more detail in Section 5, we do not consider there is a conflict between the further separation set out in BT's Commitments and our decision to impose a requirement for BT to publish and operate a process for requests for new forms of network access. Whilst we note that the Commitments do increase the independence of Openreach and require equal treatment of its customers, including with regard to the SoR process, BT (as a whole) would still retain the incentive and ability to favour its downstream divisions in the SoR process. We therefore consider, like the Undertakings in previous reviews, that the SMP regulation will complement the commitments set out in BT's section 89C Notification.

Legal tests

- 6.72 For the reasons set out below, we are satisfied that the conditions for BT in the WLA market in the UK excluding the Hull Area meet the relevant tests set out in the Act.
- 6.73 Section 87(3) of the Act authorises the setting of SMP services conditions in relation to the provision of network services and these conditions may, pursuant to section 87(5) of the Act, include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within the periods and at the times required by or under the conditions. We consider that the condition will assist in securing fairness and reasonableness in the way in which requests for network access are made and responded to, as provided for under section 87(5)(a).
- 6.74 In making our decision, we have also taken into account the factors set out in section 87(4) of the Act. In particular, we consider that the SMP condition specifying how BT should handle requests for new network access is required in order to ensure that BT does not discriminate in favour of its own downstream business. Our obligation achieves this by:
- requiring BT to publish guidelines specifying the required content and form of requests for new network access and how they will be handled; and
 - requiring BT to provide sufficient technical information to telecoms providers to allow them to draft product specifications which satisfy the reasonable requirements.
- 6.75 We have considered our duties under section 3 of the Act. We consider that, in ensuring access seekers are able to make requests for new forms of network access based on an agreed SoR process, the condition will further the interests of consumers in relevant markets by the promotion of competition, investment and innovation. In this regard we

have taken particular account of section 3(4)(d) of the Act, which highlights the desirability of encouraging investment and innovation in relevant markets.

- 6.76 We have considered the Community requirements as set out in section 4 of the Act. We consider that the condition will promote competition in relation to the provision of electronic communications networks and encourage the provision of network access for the purpose of securing efficiency and sustainable competition in the markets for electronic communications networks and services.
- 6.77 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:
- objectively justifiable, in that its purpose is to support the provision of access to BT's network and non-discrimination obligations in the processing of requests for new network access;
 - not unduly discriminatory, in that it applies to BT which is the only telecoms provider that we have found to have SMP in the WLA market in the UK excluding the Hull Area;
 - proportionate, in that it sets out the general process for requests for new forms of network access and thus encourages competition at the retail level, while allowing the detail of the process to be agreed between the dominant provider and industry. As this process is unchanged from its current form, this should minimise the regulatory burden for WLA SoRs; and
 - transparent, in that it is clear the intention is to support the provision of access to BT's networks in order to facilitate competition.
- 6.78 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Requirement not to unduly discriminate and Equivalence of Inputs (EOI)

Our proposals

- 6.79 In our March 2017 WLA Consultation we proposed to reimpose the condition prohibiting BT from unduly discriminating in the provision of network access in the WLA market in the UK excluding the Hull Area.
- 6.80 In addition, we proposed an EOI condition should continue to apply to key wholesale services.
- 6.81 In our April 2017 DPA Consultation, we proposed a 'no undue discrimination' condition on BT. We explained that we would interpret this condition as requiring strict equivalence in respect of all processes and sub-products that contribute to the supply and consumption of duct access, unless BT can demonstrate that a difference is justified. Further detail on how the requirement not to unduly discriminate applies to DPA is set out in Volume 3.
- 6.82 In the December 2017 WLA Consultation, we proposed an amendment to the draft SMP condition prohibiting BT from targeting reduced wholesale charges for FTTC in areas where

rivals are starting to build new networks, to address the risk that BT could prevent or reduce competitor network rollout of full-fibre. Stakeholder responses and our decision to include this provision in the no undue discrimination SMP condition are set out in Section 11.

Stakeholder responses

- 6.83 Openreach said we should consider the impact of the reforms to Openreach, and the impact of its separation, stating that it has already started to change the way it operates and intends to have all changes implemented by April 2018. It commented that the Commitments and Openreach reforms would remove the risk of Openreach engaging in strategic discrimination in favour of its own downstream divisions.³⁰³
- 6.84 Openreach also commented that we should consider removing the no undue discrimination and EOI requirements from all products and services, in light of increased competition and Ofcom’s duty to remove the regulatory burden.³⁰⁴
- 6.85 Vodafone, TalkTalk and [S<] all supported the re-imposition of the no undue discrimination obligation and EOI.³⁰⁵
- 6.86 TalkTalk also argued that we have not yet imposed EOI obligations on all services Openreach sells, such as space and power within exchanges, despite Openreach having SMP in relation to these services, which are required for an MPF-based provider to operate. TalkTalk argued we should apply EOI to space and power³⁰⁶ within exchanges.
- 6.87 Scottish Futures Trust argued that we should “ensure Openreach provide sufficient EOI for other service providers to guard against market distortion at the service level”, which, it argued, will be especially important in areas where there is less/limited competition.

Our reasoning and decisions

Reason for imposing non-discrimination obligation

- 6.88 A non-discrimination obligation is intended as a complementary remedy to the network access obligation, primarily to prevent the dominant provider from discriminating in favour of its own downstream divisions in a way that would harm competition and competing telecoms providers. Without such an obligation, the dominant provider has the ability and incentive to provide wholesale network access on terms and conditions that discriminate in favour of its own downstream divisions, thus distorting competition and harming consumers’ interests.

³⁰³ Openreach response to the March 2017 WLA Consultation, paragraphs 160 and 185-186.

³⁰⁴ Openreach response to the March 2017 WLA Consultation, paragraph 187.

³⁰⁵ Vodafone response to the March 2017 WLA Consultation, page 59; TalkTalk response to the March 2017 WLA Consultation, paragraph 5.40-5.41; [S<] response to the March 2017 WLA Consultation, page 6.

³⁰⁶ Scottish Futures Trust response to the March 2017 WLA Consultation, page 5.

Forms of non-discrimination obligations

- 6.89 A non-discrimination obligation can have different forms of implementation:
- Strict non-discrimination, or EOI (i.e. a complete prohibition of discrimination with no discretion) – the dominant provider provides exactly the same services to all telecoms providers (including its own downstream divisions) on the same timescales, terms and conditions (prices, service levels), same systems and by providing the same information.
 - Less strict non-discrimination, or EOO (i.e. more flexibility, certain discriminatory conduct possible³⁰⁷) – the dominant provider provides all wholesale inputs to access seekers in a manner which is sufficiently comparable in terms of functionality and price to what the dominant provider provides to its downstream divisions (but could be using different systems and processes) to avoid harm to downstream competition.
- 6.90 Article 10 of the Access Directive³⁰⁸ provides a basis for imposing both EOI and a less strict interpretation of non-discrimination which only prevents discrimination that is undue.
- 6.91 We believe EOI is the most effective form of non-discrimination, as outlined in Ofcom’s 2004-05 Strategic Review of Telecommunications.³⁰⁹ In principle, EOI delivers advantages over EOO. It generates better incentives on the dominant undertaking to improve the services it offers to its competitors, and it increases transparency. It therefore offers greater potential to address the issue of inequality of access in a sustainable fashion.
- 6.92 EOI also provides greater certainty in ensuring non-discrimination for non-price terms, as it requires BT’s downstream businesses to use the same systems, processes and information as its competitors in relation to the development, provision, maintenance and repair of access services. Non-price discriminatory behaviour is more difficult to detect (and address) through EOO.
- 6.93 Therefore, we believe it is proportionate to impose EOI where that is the current approach, given this will entail low ongoing costs once the initial costs have been incurred. We would also generally consider EOI would be proportionate for new services, as systems and processes can be developed on an EOI basis from the start. However, we recognise EOI may be costly to introduce for some existing services (because of the need to re-engineer existing systems and processes). In cases where EOI does not apply, it may still be appropriate to have non-discrimination obligations, for example, in the form of EOO.

Need for non-discrimination obligations in WLA

- 6.94 The services provided in the WLA market by BT are essential components for competing providers, and for many downstream products and services, for both residential consumers

³⁰⁷ Compliance with this obligation would need to establish whether the discrimination in question was undue. See Ofcom, 2005. *Undue discrimination by SMP providers – How Ofcom will investigate potential contraventions on competition grounds of requirements not to unduly discriminate imposed on SMP providers.* <http://stakeholders.ofcom.org.uk/binaries/consultations/undsmpt/statement/contraventions4.pdf>.

³⁰⁸ As implemented by section 87(6)(a) of the Act.

³⁰⁹ Ofcom, 2004. *Strategic Review of Telecommunications – Phase 2 consultation document*, Section 6. http://stakeholders.ofcom.org.uk/binaries/consultations/telecoms_p2/summary/maincondoc.pdf.

and businesses. This means that the majority of consumers rely on BT's network, even if they do not obtain their telecoms services from BT. Therefore, we believe we need to prohibit BT from engaging in both price and non-price discrimination.

- 6.95 We are concerned that BT, by virtue of its SMP in this market, may be incentivised to provide wholesale network access services on terms and conditions that discriminate in favour of its own downstream divisions. For example, BT could charge competing providers more, or offer the same services on a slower timescale, than its own divisions. Moreover, we believe BT has the ability and incentive to supply services with different levels of quality.³¹⁰ We consider this risk to be especially high where BT provides a range of service variants, such as different GEA speed and installation options, some of which BT's downstream divisions may not use. There is therefore a risk that BT could favour the variants its own downstream divisions consume over those it does not. In this case EOI would not be, or would be less, effective.
- 6.96 We have considered the Notification made to Ofcom, but as discussed in the previous section on our approach to remedies, and above in regard to the SoR process, there remains the scope for BT to discriminate, and for its actions to have a discriminatory effect even if this were not BT's intention (for instance, some volume discounts could favour the largest customer of Openreach, BT Consumer, and potentially be detrimental to other downstream competitors), thereby damaging competition and harming consumer choice. Therefore, it is not appropriate to remove the no undue discrimination from all services. As outlined above in regard to the impact of the separation of Openreach on the SoR process, the Commitments are designed to operate alongside Ofcom's regulation of BT's SMP in individual product markets, and the setting of SMP regulation and Conditions already considers the existence of the Undertakings and the functionally separate nature of Openreach and its obligation to supply products on an EOI basis.

Imposition of EOI

- 6.97 We consider that discriminatory behaviour by BT in the supply of WLA services could undermine competition in downstream markets, to the detriment of consumers. If BT, which has the incentive and ability to do so, were to offer access to its products and do so unfairly, by unduly discriminating in favour of its own downstream business, then there would not be a level playing field for other telecoms providers to compete effectively with BT, as these products are a key (given BT is the dominant provider) input for competitor telecoms providers. Therefore, in light of our concerns about BT's ability and incentive to act in a discriminatory way, the adverse impact this may have on competition, and our reasoning in paragraphs above that EOI is generally likely to be the most effective approach to restrict such discrimination, we have concluded that EOI is the most effective non-discrimination remedy. Moreover, we believe re-imposing the EOI condition on BT, where it already provides access services on an EOI basis, is proportionate. The condition

³¹⁰ For instance, by providing different Service Level Agreements (SLAs) and Service Level Guarantees (SLGs), repairing services on different timescales, creating new variants restricted to the requirements of its downstream division or taking longer to address/avoiding addressing requirements of competitors.

on BT to provide EOI also includes new access services; however, we can consent in writing to the provision of network access on a non-EOI basis to provide flexibility where circumstances warrant it. In addition to excluding services not currently provided on an EOI basis the condition specifically excludes SLU (and DPA as further discussed in Volume 3).

- 6.98 In regard to TalkTalk’s comments about Ofcom not implementing EOI on all of the products Openreach sells, such as space and power in the local exchanges, we believe that the current arrangement³¹¹, as determined by the variations to BT’s Undertakings in 2008,³¹² which considered EOI for space and power, is the simplest and most proportionate solution. These variations establish EOI for some part of the arrangements (e.g. the space reservation process) and everything else is subject to the no undue discrimination obligation.³¹³ Moreover, the level of downstream competition, and the extent of LLU and VULA rollout, shows that the current process is working well. The current arrangement is a proportionate measure for facilitating equality for space and power in the exchange. Imposing a requirement for complete equality for space and power would be extremely complex, expensive, and therefore disproportionate.
- 6.99 In response to Scottish Futures Trust, as set out above, EOI is our preferred approach to imposing non-discrimination obligations on providers with SMP. We have followed this approach in cases where we consider this to be appropriate and proportionate.

Imposition of no undue discrimination obligations

- 6.100 In cases where EOI does not apply, we consider the risk of discriminatory behaviour still arises. As such, we are requiring BT to provide services that are not subject to EOI on a basis that is not unduly discriminatory.
- 6.101 In our guidelines on how we interpret undue discrimination by SMP providers, we explain that the aim of a no undue discrimination condition is to ensure that a vertically integrated SMP operator does not treat itself in a way that benefits itself, its subsidiaries or its partners in such a way as to have a material adverse effect on competition. Furthermore, we explain that undue discrimination:
- 6.102 “describes when an SMP provider does not reflect relevant differences between (or does not reflect relevant similarities in) the circumstances of customers in the transaction conditions it offers, and where such behaviour could harm competition”.³¹⁴

³¹¹ The variation put in place, and current arrangements, are commitments from Openreach to implementing a proactive review process of space availability, audit exchanges where conflicts in requirements for space may occur and establish a process by which allocations of space for BT’s NGN are made.

³¹² Ofcom, 2008. *Variations to BT’s Undertakings under the Enterprise Act 2002 in respect of BT’s NGN, Space and Power and OSS separation – Statement*. https://www.ofcom.org.uk/data/assets/pdf_file/0028/29980/statement071008.pdf.

³¹³ These arrangements will remain in place until BT’s Commitments are withdrawn as part of the separation of Openreach. Once the Undertakings have been revoked and Openreach has been separated, we would expect BT to continue these arrangements given BT will be under a wider obligation of ‘equal treatment’ under the Commitments.

³¹⁴ Ofcom, 2005. *Undue discrimination by SMP providers*. https://www.ofcom.org.uk/data/assets/pdf_file/0021/46038/contraventions4.pdf.

Consistency with EC Recommendations

- 6.103 We have also taken utmost account of the EC’s Costing and Non-discrimination Recommendation in reaching our decision to impose a no undue discrimination condition on BT.³¹⁵ There are three clauses relevant in this regard:
- “that NRAs should ensure that the SMP operator provides wholesale inputs on at least an EOO basis (clause 9);
- that NRAs should ensure that when a non-discrimination obligation is imposed, access seekers can use the relevant systems and processes with the same degree of reliability and performance as the SMP operator’s own downstream retail arm (clause 10); and
- that NRAs should require SMP operators subject to a non-discrimination obligation to provide access seekers with regulated wholesale inputs that allow the access seeker to effectively replicate technically new retail offers of the downstream retail arm of the SMP operator, in particular where EOI is not fully implemented (clause 11).”
- 6.104 We consider that the no undue discrimination obligation which we are re-imposing is consistent with the Costing and Non-discrimination Recommendation. The Costing and Non-discrimination Recommendation (clause 10) makes clear that we should ensure that whatever the systems and processes used by access seekers, the end result provides the same degree of reliability and performance to that enjoyed by the SMP operator’s own downstream retail division.
- 6.105 We note that the Costing and Non-discrimination Recommendation also provides for the application of a technical replicability test, whether undertaken by the SMP operator and provided to the NRA or undertaken by the NRA itself, to ensure that access seekers can technically replicate new retail offers of the downstream business of the SMP operator.
- 6.106 We stated in the 2014 FAMR that, having taken utmost account of the Costing and Non-discrimination Recommendation, it was neither appropriate nor proportionate to impose specific technical replicability requirements on BT. In this review, we conclude that having regard to the other remedies we are implementing to address BT’s SMP – notably EOI – it is not additionally necessary to impose a technical replicability requirement.
- 6.107 We are satisfied that the regulated wholesale inputs, which have been carefully developed to ensure they are fit for purpose, ensure that competitors can technically replicate BT’s fibre-based and copper loop-based retail offerings. Consequently, having taken utmost account of the Costing and Non-discrimination Recommendation in relation to technical replicability, we consider that the additional imposition of a technical replicability test is not appropriate or proportionate. We are satisfied that, where access seekers demand network access in the WLA market in the UK excluding the Hull Area, the necessary

³¹⁵ Commission Recommendation of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (C(2013) 5761). http://ec.europa.eu/smart-regulation/impact/ia_carried_out/docs/ia_2013/c_2013_5761_en.pdf.

provisions are in place to enable them to access regulated wholesale inputs that enable them to technically replicate BT's downstream retail offers.

Legal tests

- 6.108 We are satisfied that the conditions we have decided to impose for no undue discrimination and EOI meet the various tests set out in the Act.
- 6.109 Section 87(6)(a) of the Act authorises the setting of an SMP services condition requiring the dominant provider not to discriminate unduly against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access.
- 6.110 We have considered our duties under section 3 and all the Community requirements set out in section 4 of the Act. In particular, the conditions are aimed at promoting competition and securing efficient and sustainable competition for the maximum benefit of consumers by preventing BT from leveraging its SMP through discriminatory behaviour into related downstream markets.
- 6.111 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:
- objectively justifiable, in that they provide safeguards to ensure competitors, and hence consumers, are not disadvantaged by BT discriminating in favour of its own downstream activities or between competing providers;
 - not unduly discriminatory, in that the no undue-discrimination and EOI conditions will apply to BT which is the only telecoms provider which we have found has SMP in the WLA market in the UK excluding the Hull Area;
 - proportionate, in that it seeks to prevent discrimination that would adversely affect competition and ultimately cause detriment to consumers, and in relation to the requirement on BT to provide services on an EOI basis, that requirement only applies where BT is already providing services on the basis of EOI; and
 - transparent, in that the conditions are clear in what they are intended to achieve.
- 6.112 For the reasons set out above, we consider that the conditions are appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

The EC Recommendations and BEREC Common Position

- 6.113 We have explained above how we have taken into consideration the EC Recommendation on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (EC Recommendation).³¹⁶

³¹⁶ September 2013 EC Recommendation on non-discrimination obligations.

6.114 We have also taken utmost account of the BEREC Common Position,³¹⁷ which in regard to achieving the objective of a level playing field, identifies, among other things, best practice that:³¹⁸

“**BP19** NRAs should impose an obligation on SMP CPs requiring equivalence, and justify the exact form of it, in light of the competition problems they have identified.

BP19a NRAs are best placed to determine the exact application of the form of equivalence on a product-by-product basis. For example, a strict application of EOI is most likely to be justified in those cases where the incremental design and implementation costs of imposing it are very low (because equivalence can be built into the design of new processes) and for certain key legacy services (where the benefits are very high compared to the material costs of retro-fitting EOI into existing business processes). In other cases, EOO would still be a sufficient and proportionate approach to ensure non-discrimination (e.g. when the wholesale product already shares most of the infrastructure and services with the product used by the downstream arm of the SMP operator).”

Ensuring transparency

6.115 Requirements for transparency of charges, terms and conditions in markets in which one operator is dominant are complementary remedies to ensure that third-party providers are able to make effective use of the dominant operator’s network access. We explain below our decisions to reimpose on BT requirements to:

- publish a Reference Offer;
- notify changes to charges, terms and conditions; and
- notify technical information.

Requirement to publish a Reference Offer

Our proposals

6.116 BT is currently required to publish a Reference Offer (RO) in relation to the provision of network access in the WLA market in the UK excluding the Hull Area. The RO must include terms and conditions for provisioning, technical information, SLAs and SLGs, and availability of co-location. BT is also required to publish further information in its RO

³¹⁷ BEREC, 2012. *Common Position on best practice in remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence of a position of significant market power in the relevant market.*

[www.berec.europa.eu/files/document_register_store/2012/12/20121208163628_BoR_\(12\)_127_BEREC_COMMON_POSITION_ON_BEST_PRACTICE_IN_REMEDIES_ON_THE_MARKET_FOR_WHOLESALE.pdf](http://www.berec.europa.eu/files/document_register_store/2012/12/20121208163628_BoR_(12)_127_BEREC_COMMON_POSITION_ON_BEST_PRACTICE_IN_REMEDIES_ON_THE_MARKET_FOR_WHOLESALE.pdf).

³¹⁸ In this respect, the BEREC Common Position identifies the following competition issues which arise frequently: SMP players having an unfair advantage; having unmatchable advantage, by virtue of their economies of scale and scope, especially if derived from a position of incumbency; discriminating in favour of their own group business (or between its own wholesale customers), either on price or non-price issues; and exhibiting obstructive and foot-dragging behaviour.

concerning LLU and VULA network access remedies. We proposed to reimpose this condition.

- 6.117 We proposed to add a requirement for BT’s VULA RO to include SLAs in respect of “completion of the transfer of the service”; “line working at completion of the provisioning process” and “attending fault repair appointments”, with associated proactive SLGs to match the package of minimum SLAs and SLGs which are included in BT’s MPF RO.
- 6.118 We proposed not to reimpose the 2008 SLG Direction, but to include key elements of this direction into the SMP condition on Reference Offers, including a requirement for BT to make SLG payments on a proactive basis.
- 6.119 We also proposed to require BT to publish a RO in regard to DPA.³¹⁹ Stakeholders responses and the detail of our decision on a RO for DPA are discussed in Volume 3.

Stakeholder responses

- 6.120 Vodafone stated it supports remedies which ensure price publication and transparency.³²⁰ [X] and Openreach agreed that BT should be required to publish an RO and agreed the RO should include SLGs and SLAs.³²¹
- 6.121 Vodafone disagreed with our proposal to remove the 2008 SLG Direction, stating that important detail about the SLA and SLG framework cannot be captured within an SMP condition, though agreed that some parts are out of date and can be deleted.³²²
- 6.122 Vodafone and [X] were concerned that certain principles of the 2008 SLG Statement have not been included in our proposed SMP conditions, including our position that it is not appropriate for SLG payments to be linked to forecasting. Vodafone and [X] were also concerned that we did not propose to retain the list of possible methodologies for calculating SLG payments set out in the 2008 SLG Statement as this list is used by industry as a basis for SLG negotiations.³²³
- 6.123 Vodafone also commented that Ofcom should review the DPA SLGs via a Direction if it becomes clear current SLGs are no longer suitable, and stated the condition should include the right for Ofcom to review and approve contested clauses before BT publishes a RO for DPA.³²⁴ Finally, Vodafone stated that BT might change its contracts for SLGs unilaterally.³²⁵

³¹⁹ Ofcom, April 2017. *Wholesale Local Access Market Review - Consultation on Duct and Pole Access remedies*, paragraph 1.25 and Section 6. https://www.ofcom.org.uk/data/assets/pdf_file/0008/101051/duct-pole-access-remedies-consultation.pdf/.

³²⁰ Vodafone response to the March 2017 WLA Consultation, page 59.

³²¹ [X]; Openreach response to the March 2017 WLA Consultation, paragraph 189.

³²² Vodafone response to the March 2017 WLA Consultation, Annex 1 - paragraphs 13-14, Vodafone response to the March 2017 WLA Consultation, page 58.

³²³ Vodafone response to the March 2017 WLA Consultation, Annex 1 – paragraph 13; [X]; [X]

³²⁴ Vodafone response to the March 2017 WLA Consultation, Annex 1 - paragraph 19a.

³²⁵ Vodafone response to the March 2017 WLA Consultation, Annex 1 - paragraph 13b.

- 6.124 TalkTalk claimed that industry often makes reference to the 2008 SLG Directions in negotiating SLG payments, and so Ofcom should either keep them or replicate their obligations in a single, easy-to-reference guidance document. However, TalkTalk did agree to extending the RO requirements on VULA.³²⁶
- 6.125 [X] commented that SLGs cannot be linked to forecasting, and that Ofcom must take a strong position to deny BT “any ability to game their obligations” to the detriment of competition and consumers.³²⁷ [X] said that BT might start linking all SLG payments to forecasting with the removal of the 2008 SLG Directions, and argued that the complex value chain of wholesalers and resellers does not lend itself to accurate forecasting. [X] did, however, acknowledge that the SLA and SLG principles had been carried over in the consultation proposals.³²⁸
- 6.126 Openreach agreed with our proposal not to reimpose the 2008 SLG Direction, citing the OTA2’s role in facilitating SLG/SLA negotiation as being highly effective since the process was set up as part of the 2014 FAMR. It agreed that SLAs/SLGs are an important part of contracts and said it had recently made significant progress on agreeing them with industry, with 17 new or enhanced SLAs/SLGs being introduced since November 2014, when the FAMR’s new process was implemented.³²⁹

Our reasoning and decisions

Reference offers

- 6.127 A requirement to publish a RO has two main purposes:
- to assist transparency for the monitoring of potential anti-competitive behaviour; and
 - to give visibility to the terms and conditions on which other providers will purchase wholesale services.
- 6.128 The RO helps ensure stability (in regard to investment and promoting market entry) in the WLA market, allowing for speedier negotiations, avoiding possible disputes and giving confidence to those purchasing wholesale services that they are being provided on non-discriminatory terms. Without this, market entry might be deterred to the detriment of long-term competition and hence consumers.
- 6.129 Section 87(6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such a manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract. Section 87(6)(d) also permits the setting of SMP services conditions requiring the dominant provider to include specified terms and conditions in the RO. Finally, section 87(6)(e) permits the setting of SMP services conditions requiring the dominant provider to make such modifications to the RO as may be directed from time to time.

³²⁶ TalkTalk response to the March 2017 QoS Consultation, paragraph 5.0.

³²⁷ [X]

³²⁸ [X]

³²⁹ Openreach response to the March 2017 WLA Consultation, paragraphs 190-192.

- 6.130 We remain of the view that it is still important that access seekers have transparency of the terms and conditions on which they purchase wholesale services from BT. We note in this regard that all respondents to our consultation on this issue agreed with the need for an RO requirement.
- 6.131 We believe that the current requirement on BT to publish a RO has been effective in meeting the purposes of the regulation. We have therefore decided to reimpose the current requirement for BT to publish ROs for WLA services.
- 6.132 The condition specifies the information to be included in the RO and how the RO should be published. The published RO must set out (as a minimum):
- a clear description of the services on offer including technical characteristics and operational processes for service establishment, ordering and repair;
 - the locations of points of network access and the technical standards for network access;
 - conditions for access to ancillary and supplementary services associated with the network access including operational support systems and databases etc.;
 - contractual terms and conditions, including dispute resolution and contract negotiation/renegotiation arrangements;
 - charges, terms and payment procedures;
 - service level agreements and service level guarantees; and
 - to the extent that BT uses the service in a different manner to other telecoms providers or uses similar services, BT is required to publish a RO in relation to those services.
- 6.133 We further consider it appropriate to retain, for the purposes of transparency, the existing additional RO requirements for MPF services that we consider BT should be required to provide. These require BT to, among other things, include in an RO details of MPF co-location arrangements (the provision and use of space and services in MDF sites) and what service aspects Service Level Guarantees and Service Level Commitments to cover. To the extent that BT continues to provide SMPF under its general access remedy, we would expect it to be reasonable for similar details to be included in its SMPF RO as its MPF RO.
- 6.134 In Volume 3, we set out the RO requirements that specifically relate to DPA.

SLAs and SLGs

- 6.135 In order to be effective, it is important that the contractual arrangements for the supply of LLU and VULA products and services that telecoms providers buy from BT in the wholesale markets are such that:
- they incentivise the efficient provision of reliable services to BT's wholesale customers;
 - they set out fair and reasonable compensation payments for delays in delivery and repair of such services; and
 - they allow BT and its wholesale customers to monitor effectively the performance of BT's provision and repair regulated wholesale services.
- 6.136 In order to achieve these objectives, contractual arrangements need to include:

- a set of SLAs which reflect the commercial SLAs provided to wholesale customers of fixed line voice and broadband services; and
- a set of SLGs which set out fair and reasonable compensation for delays in the provision and repair of such services.

6.137 For LLU and VULA services, we have decided to impose a regulatory requirement for BT to include SLAs and SLGs in its RO.³³⁰ However, BT and its customers are free to negotiate the terms of these SLAs and SLGs and to incorporate additional terms. These negotiations are facilitated by the OTA2. Condition 8.5 in Annex 33 sets out the list of the minimum set of services to which an SLA/SLG should apply.

6.138 In light of market take-up of SFBB, and also for consistency, we have decided to add a new requirement for BT's VULA RO to include a set of SLAs³³¹ to match the package of minimum SLAs and SLGs which we consider remain appropriate for inclusion in BT's MPF RO. Having observed the growth in demand for SFBB and our expectations for further growth, we consider that it is now appropriate and proportionate to require that BT's VULA RO provides telecoms providers with the same expectations as MPF regarding the minimum set of SLAs with SLGs they should receive from BT. We consider that our proposals make no material change to the status quo as SLAs and service credits for the equivalence management platform are provided for in BT's current contract for VULA.

Removal of 2008 SLG Direction

6.139 The 2008 SLG Directions required BT to amend its network access contracts for the supply of LLU to, among other things, provide for BT to pay compensation for LLU proactively and to pay Equivalence Management Platform (EMP) service credits for LLU proactively. The 2008 SLG Directions also set out certain principles, including statements regarding the appropriateness of linking SLG payments to forecasting as well as a list of possible methodologies for calculating SLG payments.

6.140 These amendments to BT's terms and conditions are now well established in BT's relevant contractual agreements for the supply of regulated wholesale access products.

6.141 We note Vodafone's concern that certain principles from the 2008 SLG Directions might not be captured in all BT's current or future reference offers. We consider that BT's relevant contractual agreements should continue to reflect the amendments to BT's relevant terms and conditions required by the 2008 SLG Directions, unless changes have been agreed subject to negotiation by due process (as discussed further below). Any new contractual agreements will also be subject to negotiation and, as such, are likely to be based on similar principles to those included in existing relevant contractual agreements.

6.142 We note Vodafone's concern that BT might change its contracts for SLGs unilaterally. However, the relevant contractual agreements sets limitations on the circumstances in

³³⁰ For VULA, this takes the form of an SLA/SLG for appointment availability, the completion of provision work, completion of repair work and missed appointments.

³³¹ These are "completion of the transfer of the service", "line working at completion of the provisioning process" and "attending fault repair appointments".

which BT may change, without notice, its SLG contracts. Any other contractual changes can only be made, in accordance with the relevant contractual provisions, following negotiations between BT and other telecoms providers. In making any such changes BT would also be required to comply with its obligation to provide network access on fair and reasonable terms and conditions.

- 6.143 In the 2014 FAMR Statement, we adopted (after consultation with stakeholders) contract negotiation principles and SLA/SLG assessment criteria to be applied to future industry negotiations in relation to SLAs/SLGs facilitated by the OTA2. Where industry negotiations in relation to SLAs/SLGs do not result in an agreement, BT and its customers remain able to refer a dispute to Ofcom.
- 6.144 For these reasons, rather than relying on the 2008 SLG Directions as the source of regulatory obligations on BT, we have decided that it is more appropriate to include certain key elements of those directions in the SMP Reference Offer condition, in particular the requirement to provide for proactive compensation payments to telecoms providers and to include SLAs with SLGs for the availability of BT's Equivalence Management Platform.
- 6.145 We have considered [3<] concern that BT might start linking SLG payments to forecasting with the removal of the 2008 SLG Directions. In our 2008 SLG Statement we stated a general view that it is not appropriate for SLG payments to be linked to forecasting. We also included a specific obligation in the LLU contract for MPF and SMPF, to remove the link between SLG payments and forecasting for late provisions.
- 6.146 We note that BT's current contracts for WLR, MPF and GEA do not link SLG payments to forecasting, except in relation to Appointment Availability for certain telecoms providers. While we recognise the importance of accurate forecasting, we do not believe that linking SLGs to forecasting would be appropriate for any other situation for SLGs for WLR, MPF or GEA, since in relation to areas such as repairs or the contract delivery date, forecasting bears little relevance to BT's ability to respond to changes in demand.
- 6.147 The 2008 SLG Directions required BT to amend its terms and conditions governing the supply of LLU. We considered this was necessary to address the competition concerns we had identified at that time. Since then, as markets have evolved, we have imposed on BT a requirement to provide network access in the form of VULA to enable telecoms providers to access BT's network to provide competitive SFBB services to customers, and (as explained in Section 7) we have now decided to remove the requirement on BT to provide SMPF as a specific form of network access. We therefore consider that it is appropriate to include the elements of the 2008 SLG Directions described above in the SMP condition for GEA, along with MPF. We consider that our decision makes no material change to the status quo as service credits for EMP and the requirement to pay compensation proactively are provided for in BT's current contract for GEA.
- 6.148 Vodafone and [3<] said that the list of possible methodologies for calculating SLG payments set out in the 2008 SLG Directions continues to be used as a basis for negotiations. We note that this list was only included in the main 2008 Statement of the SLG Directions by way of describing the different principles that generally applied in commercial transactions, and was not part of the requirements imposed in the directions

themselves. We continue to consider that in standard commercial circumstances, it is possible to use various methodologies to calculate SLG payments, such as:

- lost/delayed revenue as a result of the failure;
- lost customers;
- compensation paid by telecoms providers to their end-users;
- additional costs of customer service relating to the failure;
- operational costs to the telecoms provider of dealing with Openreach as a result of the failure; and
- damage to reputation.

6.149 We recognise that the methodologies used to calculate SLGs may vary on a case by case basis. As noted above, where industry negotiations do not result in an agreement, BT and its telecoms provider customers are able to raise the matter with us. We also note that providers can make claims for additional losses in addition to those set out in the SLA/SLGs.

6.150 Regarding TalkTalk's concern that the provisions of the 2008 SLG Directions should be included in a single guidance document, the provisions were not intended to be an exhaustive list of principles relating to SLA/SLG negotiations and we do not believe that we will unduly affect negotiations by not including the provisions of the 2008 SLG Directions in a single document.

6.151 We have decided it is not necessary or appropriate to reimpose the 2008 SLG Directions for LLU in the next market review period. Instead, as discussed above, we have decided to include certain key provisions of these Directions in BT's Reference Offer condition for MPF and GEA.

6.152 We consider that the reasons BT's contracts for certain services must provide for proactive compensation payments to telecoms providers remain relevant today. We have therefore included in the SMP conditions a requirement that SLG payments are made on a proactive basis by BT. This is reflected in the definition of "Service Level Guarantees" in the SMP conditions.

6.153 We also consider that the Reference Offer SMP condition requires specific service level commitments on the availability of the relevant operational support systems (by which telecoms providers make requests for service provision, transfers and fault repair as applicable). This is reflected in SMP Condition 8.4.

Legal tests

6.154 For the reasons set out below, we are satisfied that the condition for BT in the WLA market within the UK excluding the Hull Area meets the various tests set out in the Act.

6.155 As explained above, sections 87(6)(c), (d) and (e) authorise the SMP condition we propose to make.

6.156 We consider that the condition meets our statutory obligations and the Community requirements under sections 3 and 4 of the Act.

- 6.157 The requirement to publish a RO will, in combination with a requirement not to unduly discriminate, facilitate service interoperability and allow telecoms providers to make informed decisions about future entry into downstream markets. Further, the obligation will enable purchasers to adjust their downstream offerings in competition with BT, in response to changes in BT's terms and conditions. Finally, the obligation will make it easier for us and other telecoms providers to monitor any instances of discrimination. Therefore, we consider that the condition in particular furthers the interests of consumers in relevant markets by the promotion of competition in line with section 3 of the Act.
- 6.158 We consider that the condition meets the Community requirements set out in section 4 of the Act. In particular, the condition promotes competition and encourages the provision of network access and service interoperability for the purpose of securing efficient and sustainable competition for the maximum benefit of consumers. The publication of an RO means that other telecoms providers will have the necessary information readily available to allow them to make informed decisions about entry into downstream markets.
- 6.159 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:
- objectively justifiable, in that it encourages competition, provides market stability and helps us to monitor discriminatory behaviour through the publication of terms and conditions;
 - not unduly discriminatory, in that it is proposed only for BT which is the only telecoms provider that we have found to have SMP in the WLA market in the UK excluding the Hull Area;
 - proportionate, in that only information that is necessary to allow telecoms providers to make informed decisions about competing in downstream markets is required to be provided; and
 - transparent, in that the condition is clear in its intention that BT publish details of its WLA offerings.
- 6.160 Article 9(4) of the Access Directive requires that where network access obligations are imposed, NRAs shall ensure the publication of a RO containing at least the elements set out in Annex II to that Directive – we are satisfied that this requirement is met.
- 6.161 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Consistency with EC Recommendation and the BEREC Common Position

- 6.162 The EC Recommendation provides that NRAs should require SMP operators to implement SLAs alongside KPIs, which should include SLGs in the case of a breach of the SLA. The EC Recommendation also indicates that payment of financial penalties should, in principle, be made automatic and be sufficiently dissuasive. We have taken into account the EC Recommendation in relation to SLAs and SLGs and our decisions in relation to this issue will be discussed in more detail in our section on the Quality of Service remedies.

6.163 We have also taken utmost account of the BEREC Common Position in reaching our decision.³³² In relation to the objective of to assist transparency for the monitoring of potential anti-competitive behaviour; and giving visibility to the terms and conditions on which other providers will purchase wholesale services, the BEREC Common Position identifies, among other things, as best practice that:³³³

“BP26 NRAs should require SMP operators to provide clarity of terms and conditions of access (including those relating to relevant ancillary services) by publishing a Reference Offer (RO), the key elements of which should be specified or approved by the NRA. All material contractual terms and conditions which are known or knowable at the time of publication should be covered clearly.

BP26a NRAs should require SMP operators to take into account any reasonable views of wholesale customers in their RO, in particular regarding the evolution of the service offered.

BP26b NRAs should require SMP operators to publish the RO (i.e. make it operational) within a reasonable time after NRAs have imposed the obligation to grant access. NRAs should give guidance on the reasonable timeframe on a case by case basis.

BP26c NRAs should require SMP operators to update the RO as necessary, and in a timely manner (see BP22), to reflect relevant changes such as developments in line with market and technology evolution and/or changes to prices, terms and conditions for existing services or technical and operational characteristics. Where NRAs follow a pre-approval process, NRAs should further require SMP operators to inform them before publishing the necessary amendments to the RO.

BP26d Where applicable, NRAs should impose an obligation on SMP operators in relation to the minimum amount of information to be made available in the RO.

BP26e After lifting an obligation to apply a RO, NRAs should ensure that SMP operators provide provisions for the change in the contractual conditions which are in place on the basis of that RO for a transitional period to be determined accordingly.”

³³² BEREC, 2012. *Common Position on best practice in remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence of a position of significant market power in the relevant market.*

[www.berec.europa.eu/files/document_register_store/2012/12/20121208163628_BoR_\(12\)_127_BEREC_COMMON_POSITION_ON_BEST_PRACTICE_IN_REMEDIES_ON_THE_MARKET_FOR_WHOLESALE.pdf](http://www.berec.europa.eu/files/document_register_store/2012/12/20121208163628_BoR_(12)_127_BEREC_COMMON_POSITION_ON_BEST_PRACTICE_IN_REMEDIES_ON_THE_MARKET_FOR_WHOLESALE.pdf).

³³³ In this respect the BEREC Common Position identifies as a competition issue that SMP operators may have an incentive to discriminate in favour of their own downstream operations in relation to the quality of wholesale access products. As a result, access products may not be of reasonable quality and service levels may not be comparable with those provided by the SMP operators to their own downstream businesses.

6.164 In relation to the objective of achieving reasonable quality of access products (operational aspects), the BEREC Common Position identifies, among other things, as best practice that:³³⁴

“**BP32** NRAs should require SMP operators to provide a reasonable defined level of service.

BP32a Service Level Agreements (SLAs) should cover specific service areas. Services areas when SLAs are most likely to be necessary are ordering, delivery, service (availability) and maintenance (repair).

BP32b SLAs should be made available to wholesale operators. To ensure maximum transparency and comparability of the terms provided by SMP operators to alternative operators and their downstream arm, all SLAs could be made available to all relevant wholesale customers (including those from outside a specific Member State). For example, SMP operators could make them available on demand or automatically publish these on their website (as part of their RO).

BP32c NRAs should take oversight for the process of setting SLAs. NRAs should determine the level of their involvement in this process by taking into account specific market circumstances and particular concerns for discriminatory behaviour.

BP33 NRAs should impose a generic requirement on SMP operators to provide Service Level Guarantees (SLGs).

BP33a SLGs should cover all necessary specific service areas. Service areas where SLGs are most likely to be necessary are ordering, delivery, service (availability) and maintenance (repair).

BP33b SLG payments should be made without undue delay and should be proactive in nature. That is, with a pre-established process for the payment and billing of the SLGs among operators and without the need for alternative operators to request the intervention of any third party i.e. NRAs or courts.

BP33c NRAs should take oversight for the process of setting SLGs. NRAs should determine the level of their involvement in this process by taking into account specific market circumstances and particular concerns for discriminatory behaviour.”

6.165 We consider that our decision is consistent with the best practice set out in the BEREC Common Position.

³³⁴ In this respect the BEREC Common Position identifies as a competition issue that SMP operators may have an incentive to discriminate in favour of their own downstream operations in relation to the quality of wholesale access services. As a result, access services may not be of reasonable quality and service levels may not be comparable with those provided by the SMP operators to their own downstream businesses.

Requirement to notify charges, terms and conditions

Our proposals

- 6.166 We proposed to make BT subject to an obligation to notify, in writing (known as an Access Charge Change Notice, or ACCN) changes to its charges for wholesale network access products and services.
- 6.167 Regarding the notice period required for BT to inform its customers of changes, we proposed:
- 90 days for prices, terms and conditions relating to existing WLA services;
 - 28 days for prices, terms and conditions relating to new service introductions; and
 - 28 days for price reductions and 90 days for associated conditions (for example, conditions applied to Special Offers) and the end of temporary price reductions.

Stakeholder responses

- 6.168 Vodafone said it supported remedies ensuring price publication and transparency,³³⁵ though commented that the SMP conditions should limit BTs ability to change material terms without the consent of other telecoms providers.³³⁶
- 6.169 Openreach commented that if it launches a Special Offer (with the required 28 days' notice) but needs to change the terms and conditions of that offer, this requires 90 days' notice. Openreach argued the consequence of this is that it is difficult to amend active Special Offers, even when it might benefit telecoms providers. Openreach stated this makes it more cautious when launching Special Offers, and reduces its incentives to make some Special Offers at all. Therefore, it asked us to consider varying the notification period for changes to terms and conditions of Special Offers to 28 days' notice.³³⁷
- 6.170 Openreach also stated that not being able to easily change non-material terms and conditions, due to having to provide 90 days' notice, can impact the announcement and launch of product developments. Openreach said we should consider allowing BT to change non-material terms and conditions without prior notification.³³⁸
- 6.171 Finally, Openreach stated that the current definition of a Special Offer does not allow it to extend or continue a Special Offer either at the current offer price or a price lower than it, or at a price lower than the standard product price, and that this is detrimental to its customers, and ultimately, end consumers.³³⁹

³³⁵ Vodafone response to the March 2017 WLA Consultation, paragraph 10.

³³⁶ Vodafone response to the March 2017 WLA Consultation – Annex 1, paragraph 10.

³³⁷ Openreach response to the March 2017 WLA Consultation, paragraph 198.

³³⁸ Openreach response to the March 2017 WLA Consultation, paragraph 200.

³³⁹ Openreach response to the March 2017 WLA Consultation, paragraph 199.

Our reasoning and decisions

- 6.172 Notification of changes to charges at the wholesale level has the joint purpose of improving transparency for monitoring possible anti-competitive behaviour and giving advance warning of price changes to competing providers who purchase wholesale access services. The latter purpose ensures that competing providers have sufficient time to plan for such changes, as they may want to restructure the prices of their downstream offerings in response to charge changes at the wholesale level. Notifying changes therefore helps to ensure stability in markets.
- 6.173 While price notification may have a ‘chilling’ effect (where other telecoms providers follow BT’s prices rather than set prices of their own accord), the WLA market in the UK excluding the Hull Area is characterised by a high level of reliance by downstream telecoms providers on BT’s wholesale local access services. Therefore, we believe it is appropriate for BT to be subject to an obligation to notify changes to its charges for wholesale network access services in order to provide the transparency, time to plan for changes and stability needed to facilitate investment and entry.
- 6.174 We also consider it appropriate to require BT to notify changes to terms and conditions in order to ensure transparency and provide advance warning of changes to allow competing providers sufficient time to plan for them. For the same reasons as outlined above, we consider that notifying changes to terms and conditions will lead to greater market stability, without which incentives to invest might be undermined and market entry made more difficult.
- 6.175 Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency. Section 87(6)(d) also permits the setting of SMP services conditions requiring the dominant provider to include specified terms and conditions in the RO.
- 6.176 Regarding the content of the ACCN, we believe it appropriate for it to continue to include:
- a description of the network access in question;
 - a reference as to where the terms and conditions associated with the network access in question can be found in BT’s RO;
 - the date on which the new charges take effect (or the period over which the new charges will apply);
 - the current and proposed charge; and
 - other charges for services that would be directly affected by the proposed charge.

Changes to prices

- 6.177 Changes to prices, terms and conditions for the provision of wholesale inputs in the WLA market (such as VULA and LLU) could have material impacts on consumers. Thus, we have decided to reimpose the current requirement on BT to give advance notice of price changes.

- 6.178 In regard to the timings of the notification, the notification period should allow sufficient time for downstream providers to make necessary changes to their downstream products and services.
- 6.179 In the case where prices are being reduced, we recognise that industry and customers benefit from shorter notification periods. For example, there may be advantages in having a shorter notification period for price reductions that could encourage migration to newer or more efficient services. We therefore consider 28 days to be an appropriate notification period for price reductions for WLA access products and services.
- 6.180 Where Openreach is providing a Special Offer, customers benefit from a shorter notification period to enable them to react faster to the Special Offer, and maintain flexibility to try new services and transition over to the newly priced service, which will benefit consumers through new services and greater availability of choice. We therefore consider 28 days to be an appropriate notification period for Special Offers. We discuss extensions and amendments to Special Offers below.
- 6.181 Where Openreach introduces a new product or service in the WLA market, we consider that the prior notification period should reflect the lesser need for advance notice, since there will not be existing customers for whom wholesale price changes might require revisions to their own pricing or other commercial decisions, and the existing service(s) provide the core set of input services for downstream telecoms providers, and are protected by the longer notification period. We therefore conclude that 28 days remains an appropriate notification period for new products and services.³⁴⁰

Changes to non-prices terms and conditions

- 6.182 We consider that 90 days is an appropriate notification period for existing and new WLA products and services and so are maintaining the obligation that, in general, at least 90 days' notification should be given.
- 6.183 We disagree with Openreach's suggestion that we amend the condition to allow non-material terms and conditions to be changed without prior notification. We do not consider that, where Openreach plans service development and service launches, the requirement to notify changes to terms and conditions would be problematic, as we believe there is sufficient time in the development cycle of a new service to inform its customers of changes to the terms and conditions. Moreover, there would remain a level of subjectivity for us to assess what constituted a non-material change to the terms and conditions. We would also be concerned about having different conditions depending on whether terms and conditions are material or not, as this could lead to a lack of certainty and transparency on which regulation applies to which terms and conditions. Finally, it is unclear to us how a longer notification period to change non-material terms could have a negative impact on end consumers or competition between telecoms providers purchasing

³⁴⁰ Examples of new products or services would be Single Order GEA, or a new speed for VULA. If the price of a new service is increased after it was first introduced, then the 90-day notification period would apply.

these services from Openreach. Therefore, we have decided to retain the current requirement.

Extensions and amendments to Special Offers

- 6.184 We have considered Openreach’s submission that a 90-day notification period has a potentially negative impact on its ability to amend Special Offer non-price terms and conditions, due to the misalignment of 28 days’ notice for launching a Special Offer and/or changing prices, compared to 90 days’ notice to change the terms and conditions of the Special Offer. We can see that this has the potential to make it difficult for Openreach to amend Special Offers in their lifetimes, even when it might be beneficial to customers to do so.³⁴¹ We agree that this could impact Openreach’s incentive to launch Special Offers and so are requiring Openreach to provide only 28 days’ notice where it plans to amend the terms and conditions of a Special Offer.
- 6.185 In regard to Openreach’s comments about the drafting of the SMP condition not allowing them to extend Special Offers, we have amended the wording of the SMP condition to allow Openreach, where it has notified its customers of the price that will apply at the end of the Special Offer, to extend the Special Offer. Where the extension is at the current Special Offer price or below, we are requiring Openreach to provide one working day’s notice. Where Openreach extends the offer at another price that is below the one originally notified as the price to apply when the original Special Offer ended, or where it extends a Special Offer on updated T&Cs, we are requiring 28 days’ notice. For clarity, we have therefore outlined the notification periods in Table 6.2 that will apply for where Special Offers are extended or amended.

Table 6.2: Notification periods on Openreach for amending or extending Special Offers

Amendment to Special Offer	Amendment concerns	Notification period
If Openreach wants to extend a Special Offer at the current SO price or lower price and current T&Cs	Prices and T&Cs	Next working day
If Openreach wants to extend a Special Offer on current T&Cs at a price above the initial Special Offer price but below the standard price	Prices	28 days
If Openreach wants to extend a special offer on updated T&Cs or amend T&Cs of existing Special Offer, irrespective of price	T&Cs	28 days

³⁴¹ Openreach further elaborated in their written response, stating it reduces the incentive to make SOs. Openreach response to the March 2017 WLA Consultation, paragraph 198.

Legal tests

- 6.186 For the reasons set out below, we are satisfied that the conditions for BT in the WLA market in the UK excluding the Hull Area meet the various tests set out in the Act.
- 6.187 Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, for the purpose of securing transparency, all such information in such manner as Ofcom may direct. Section 87(6)(d) also permits the setting of SMP services conditions requiring the dominant provider to include specified terms and conditions in the RO.
- 6.188 We have also considered our duties under the Act, including our general duties under section 3, and all the Community requirements set out in section 4, of the Act. We note, in particular, that the condition is aimed at promoting competition and securing efficient and sustainable competition for the maximum benefit of consumers by ensuring that telecoms providers have the necessary information about changes to terms, conditions and charges sufficiently in advance to allow them to make informed decisions about competing in downstream markets.
- 6.189 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:
- objectively justifiable, in that there are clear benefits from the notification of changes in terms of ensuring that providers are able to make informed decisions within an appropriate timeframe about competing in downstream markets;
 - not unduly discriminatory, in that it applies to BT which is the only telecoms provider that we have found to have SMP in the WLA market in the UK excluding the Hull Area;
 - proportionate, in that only information that other telecoms providers would need to know (in order to adjust for any changes) would have to be notified. Proposed notification periods are the minimum required to allow changes to be reflected in downstream offers which are appropriate to the competitive conditions we find in the WLA market; and
 - transparent, in that the condition is clear in its intention and implementation.
- 6.190 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Requirement to notify technical information

Our proposals and stakeholder responses

- 6.191 We proposed to reimpose the requirement on BT to publish, in advance, changes to technical information. The existing condition requires the notification of technical information within a reasonable period of time, but not less than 90 days in advance of providing new wholesale services or amending existing technical terms and conditions.
- 6.192 No stakeholders commented on this proposal.

Our reasoning and decisions

- 6.193 The aim of this regulation is to provide advance notification of changes to technical characteristics to ensure that competing providers have sufficient time to respond to changes that may affect them. For example, a competing provider may need to introduce new equipment or modify existing equipment or systems to support a new or changed technical interface. Similarly, a competing provider may need to make changes to its network in order to support changes in the points of network access or configuration.
- 6.194 We have decided to reimpose this remedy. This remedy is important in the WLA market in the UK excluding the Hull Area to ensure that providers who compete in downstream markets are able to make effective use of existing or, where applicable, new wholesale services provided by BT. The technical information required by other providers includes:
- new or amended technical characteristics, including information on network configuration (e.g. information about the function and connectivity of points of access, such as the connectivity of exchanges to customers and other exchanges), locations of the points of network access, and technical standards (including any usage restrictions and other security issues);
 - the information provided currently in the Network Information Publication Principles (NIPP) and Access Network Facilities (ANF) agreement; and
 - any other additional information necessary to make use of the WLA services provided.
- 6.195 We believe that 90 days is the minimum time that competing providers would need to make modifications to their network to support changes.
- 6.196 The one exception to this is in relation to amendments to technical specifications that are developed and agreed through NICC Standards Limited.³⁴² NICC is a technical forum for the UK communications sector that develops interoperability standards for public communications networks and services in the UK. NICC specifications are developed by subject matter experts from BT and other telecoms providers and are adopted only with the approval of NICC members. In view of these arrangements, we do not consider it necessary to impose a 90-day notice period where BT proposes to adopt an amended NICC specification, as telecoms providers are likely to already be aware of NICC specifications due to their participation in the forum (and will therefore be satisfied that they have been agreed by industry, and not imposed by BT unilaterally). We do, however, consider that BT should provide notification of changes based on the NICC standard. This is to ensure that published technical information is up to date, as without an obligation to notify changes based on NICC standards, service descriptions for various wholesale services could be out of date or incomplete. Our SMP condition reflects this position.

³⁴² <http://www.niccstandards.org.uk/>.

Legal tests

- 6.197 For the reasons set out below, we are satisfied that the conditions for BT in the WLA market in the UK excluding the Hull Area meet the various tests set out in the Act.
- 6.198 Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information for the purpose of securing transparency. Section 87(6)(d) also permits the setting of SMP services conditions requiring the dominant provider to include specified terms and conditions in the RO.
- 6.199 We have also considered our statutory obligations and the Community requirements under sections 3 and 4 of the Act.
- 6.200 We consider that, by ensuring that other telecoms providers are given sufficient time to make any changes to technical specifications that might affect their businesses, the condition furthers the interests of customers in relevant markets by the promotion of competition in line with section 3 of the Act. Further, we consider that, in line with section 4 of the Act, the condition promotes competition in relation to the provision of electronic communications networks and encourages the provision of network access and service interoperability for the purposes of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers.
- 6.201 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:
- objectively justifiable, in that it enables competing telecoms providers to make full and effective use of network access. The period allows telecoms providers time to react to proposed changes without imposing an unnecessarily long notification period on BT that may restrict its ability to develop and deploy new features or services;
 - not unduly discriminatory, in that it is only imposed on BT, which is the only telecoms provider that we have found to have SMP in the WLA market in the UK excluding the Hull Area;
 - proportionate, in that 90 days is considered the minimum period necessary to allow competing telecoms providers to modify their networks; and
 - transparent, in that it is clear in its intention that BT notify technical information.
- 6.202 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Regulatory Financial Reporting

- 6.203 In the following sub-sections, we set out our decision to impose accounting separation and cost accounting obligations on BT in the WLA market in the UK excluding the Hull Area. We implement these obligations by way of a single SMP condition (SMP Condition 12).

- 6.204 Our accounting separation and cost accounting obligations are underpinned by detailed requirements for regulatory financial reporting which specify what information we require BT to prepare and provide in the WLA market in the UK excluding the Hull Area.³⁴³
- 6.205 In the 2014 Regulatory Financial Reporting Statement³⁴⁴ we set out our conclusions on the regulatory financial reporting policy that should be applied to BT across all regulated markets and the changes to the framework for BT’s regulatory financial reporting. In Annex 2 to the 2014 Regulatory Reporting Statement we set out ‘pro-forma’ SMP conditions which would implement the policy decisions made in that statement. We explained that in order to preserve the integrity and consistency of BT’s Regulatory Financial Reporting, we considered that our starting point should be that the changes we proposed should be implemented across all regulated markets, subject to this being appropriate in light of the market analysis in each review. We noted that there were significant advantages to BT and stakeholders of BT applying one set of accounting rules across all markets and we also noted that BT was broadly supportive of the principle of applying a consistent approach across all markets.³⁴⁵
- 6.206 Consistent with this approach, we have therefore considered whether regulatory financial reporting obligations are appropriate in the WLA market in the UK excluding the Hull Area and, to the extent that they are, whether the ‘pro-forma’ SMP conditions are appropriate in light of our market analysis.
- 6.207 For the reasons explained below and noting the benefits of applying a consistent approach across all markets, our view is that it is appropriate to impose regulatory financial reporting obligations in the WLA market in the UK excluding the Hull Area.
- 6.208 We note that in the 2015 Directions Statement, we set out the necessary directions to give effect to decisions made in the 2014 Regulatory Reporting Statement about changes to BT’s reporting requirements.³⁴⁶ We discuss these further in Annex 8.

Accounting separation

Our proposals

- 6.209 We proposed to reimpose on BT the accounting separation condition in the WLA market in the UK excluding the Hull Area.

³⁴³ Ofcom, 2015. *Directions for Regulatory Financial Reporting – Statement*, Annexes 1-9.

https://www.ofcom.org.uk/_data/assets/pdf_file/0018/59112/statement.pdf.

³⁴⁴ Ofcom, 2014. *Regulatory Financial Reporting - Statement*, (2014 Regulatory Financial Reporting Statement).

https://www.ofcom.org.uk/_data/assets/pdf_file/0025/78460/financialreporting-statement-may14.pdf.

³⁴⁵ 2014 Regulatory Financial Reporting Statement, paragraphs 7.15-7.19.

³⁴⁶ Ofcom, 2015, *Directions for Regulatory Financial Reporting*, pages 82-93.

Stakeholder responses

- 6.210 TalkTalk agreed with our analysis, stating that the Regulatory Financial Statements are “vital” to the effective regulation of Openreach. TalkTalk also agreed that our proposals on BT submitting the regulatory reporting statements by the deadlines defined in the SMP conditions and Directions are appropriate.³⁴⁷
- 6.211 TalkTalk commented that we need to rigorously enforce the timings and deadlines of financial statements once they have been made.³⁴⁸
- 6.212 Vodafone argued that we should consider publishing one set of financial reporting requirements to deal with cross-portfolio matters common to all market reviews, then incorporated into each SMP condition.³⁴⁹

Our reasoning and decisions

- 6.213 Paragraph 3 of Point 1 of the 2005 EC Recommendation on accounting separation and cost accounting systems (2005 EC Recommendation) states that:

“The purpose of imposing an obligation regarding accounting separation is to provide a higher level of detail of information than that derived from the statutory financial statements of the notified operator, to reflect as closely as possible the performance of parts of the notified operator’s business as if they had operated as separate businesses, and in the case of vertically integrated undertakings, to prevent discrimination in favour of their own activities and to prevent unfair cross-subsidy”.³⁵⁰

- 6.214 In the 2014 Regulatory Reporting Statement we considered the purposes of regulatory reporting, which is supported by the imposition of an accounting separation obligation. In that statement we said that regulatory reporting “should provide us with the information necessary to make informed regulatory decisions, monitor compliance with SMP conditions, ensure that those SMP conditions continue to address the underlying competition issues and investigate potential breaches of SMP conditions and anti-competitive practices”.³⁵¹ In addition, we said that it “should provide reasonable confidence to stakeholders that the SMP provider has complied with its SMP conditions and add credibility to the Regulatory Financial Reporting Regime”.³⁵² We consider that our decision to impose an accounting separation obligation, together with a cost accounting obligation (see below), will help to ensure that these regulatory reporting objectives are met.

³⁴⁷ TalkTalk response to the March 2017 WLA Consultation, paragraphs 6.46 and 6.49.

³⁴⁸ TalkTalk response to the March 2017 WLA Consultation, paragraph 6.49.

³⁴⁹ Vodafone response to the March 2017 WLA Consultation, Annex 1, paragraph 16.

³⁵⁰ Commission Recommendation of 19 September 2005 (2005/698/EC) on accounting separation and cost accounting systems under the regulatory framework for electronic communications.

³⁵¹ Ofcom, 2015. *Directions for Regulatory Financial Reporting*, pages 82-93.

³⁵² 2014 Regulatory Financial Reporting Statement, para 2.28.

- 6.215 In order to carry out our duties it is important that financial information is available on the services and markets that we regulate. The availability of this information helps us understand the volumes, revenues, costs and returns of services and in markets, which allows us to monitor the impact and effectiveness of, and (for certain remedies) compliance with, the remedies imposed as part of a market review.
- 6.216 The accounting separation obligation also requires BT to account separately for internal and external sales which allows us and stakeholders to monitor the activities of BT to ensure that, where relevant, it does not discriminate unduly in favour of its own downstream business and to monitor BT's activities in respect of the EOI obligation. In practice, this obligation requires BT to produce a financial statement that reflects the performance of the WLA market in the UK excluding the Hull Area as though it was a separate business. This, combined with the cost accounting obligation, helps us to ensure that costs are not inappropriately loaded onto one set of regulated services to the benefit of BT, where BT uses primarily another set of regulated services.
- 6.217 Under sections 87(7) and 87(8) the dominant provider may be required to maintain a separation for accounting purposes between such different matters relating to network access or the availability of relevant facilities. We believe this obligation is required to monitor the overall impact and effectiveness of the remedies proposed, and especially to monitor BT's activities with regard to its non-discrimination and EOI obligations. The obligation is also necessary to support transparency by providing a greater detail of information on the relevant market than that derived from BT's statutory financial statements and give visibility, and thus reassurance, to stakeholders that BT has complied with its SMP conditions.
- 6.218 In respect of the specific accounting separation requirements we are imposing on BT in these markets, we have modified the condition set out in the 2014 Regulatory Financial Reporting Statement to remove the reference to the Regulatory Accounting Guidelines.³⁵³ This form of condition implements our policy decisions on regulatory financial reporting set out in that statement,³⁵⁴ and will:
- give Ofcom a greater role in the way that BT prepares its regulatory financial statements;
 - improve the presentation of the published regulatory financial statements and supporting documentation;³⁵⁵ and
 - ensure that Ofcom and other stakeholders have the information they need.

³⁵³ As explained in the 2016 BCMR Statement (paragraph 8.175 and Annex 28), we no longer consider that it would be useful to establish high-level guidelines and accounting rules in the Regulatory Accounting Guidelines by way of direction. Where we find concerns about BT's detailed application of cost attribution rules, in line with what we have done in the 2016 BCMR, we will direct BT as to the specific reporting requirements consistent with the Regulatory Accounting Principles arising from each regulatory decision. The wording of our proposed condition reflects our decision not to issue the Regulatory Accounting Guidelines. Each proposed condition therefore requires BT to prepare the RFS in accordance with the SMP conditions, the Regulatory Accounting Principles and the Accounting Methodology Documents.

³⁵⁴ 2014 Regulatory Financial Reporting Statement, page 1.

³⁵⁵ This included a requirement on BT to publish annual reconciliation reports that show the impact of material changes and errors.

- 6.219 In light of the above reasoning, we have decided to reimpose the accounting separation condition on BT in the WLA market in the UK excluding the Hull Area.
- 6.220 In regard to the specific technical comments raised by TalkTalk and Vodafone, and other stakeholders, these are addressed in Annex 8.

Legal tests

- 6.221 For the reasons set out below, we are satisfied that our condition to impose an accounting separation requirement on BT in the WLA market in the UK excluding the Hull Area meets the various tests set out in the Act.
- 6.222 As explained above, sections 87(7) and (8) authorise the SMP condition we are implementing.
- 6.223 We consider that this condition meets our duties under sections 3 and 4 of the Act. In terms of section 3, the imposition of an accounting separation obligation will protect competition in relation to the provision of electronic communications networks and services, ensuring the provision of network access and service interoperability for the purposes of securing efficient and sustainable competition and the maximum benefit for the persons who are customers of telecoms providers. This is because the imposition of the obligation will ensure that other obligations designed to curb potentially damaging leverage of market power, in particular the fair and reasonable charging obligation (where it applies) and the requirement not to unduly discriminate, can be effectively monitored.
- 6.224 We also consider that the accounting separation obligation accords with the Community requirements set out in section 4 of the Act. Specifically, we believe section 4(8) is met, where the obligation has the purpose of securing efficient and sustainable competition in the markets for electronic communications networks and services, by helping to ensure that dominant providers comply with other obligations in particular non-discrimination requirements.
- 6.225 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:
- objectively justifiable, given it relates to the need to ensure competition develops fairly to the benefit of consumers;
 - not unduly discriminatory, as we have only imposed the obligation on BT, as the only telecoms provider that we have found to have SMP in the WLA market in the UK excluding the Hull Area;
 - proportionate, in that it is the least onerous obligation we could apply as a mechanism which enables us and third parties to monitor the effectiveness of pricing remedies; and
 - transparent, in that it is clear the intention is to monitor the impact and effectiveness of the remedies.
- 6.226 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Cost accounting

Our proposals and stakeholder responses

- 6.227 We proposed to reimpose the cost accounting requirement on BT in the WLA market, in the UK excluding the Hull Area.
- 6.228 We received no stakeholder comments on this proposal.

Our reasoning and decisions

- 6.229 Recital 2 of the 2005 EC Recommendation states that the purpose of imposing the accounting separation and cost accounting obligations is “to make transactions between operators more transparent and/or to determine the actual costs of services provided”. Also, paragraph 2 of Point 1 of the 2005 Recommendation states that:
- “The purpose of imposing an obligation to implement a cost accounting system is to ensure that fair, objective and transparent criteria are followed by notified operators in allocating their costs to services in situations where they are subject to obligations for price controls or cost-oriented prices.”³⁵⁶
- 6.230 The imposition of a cost accounting obligation ensures that BT has in place a system of rules that support the attribution of revenues and costs to individual markets and services. It therefore supports the accounting separation obligation, which requires BT to prepare and report financial information relating to individual markets and services, by ensuring that the rules attributing revenues and costs to individual markets and services are fair, objective and transparent. The cost accounting obligation is an important means of ensuring that:
- Ofcom and stakeholders can have confidence in the financial information prepared and provided by BT since the attribution processes and rules supporting that financial information are fair, objective and transparent. Where we do not consider that the attribution process and rules are fair and objective, transparency (via publication of the processes and rules followed by BT) allows us to effectively challenge them.
 - Revenues and costs are attributed to individual markets and services in a consistent manner. This mitigates the risk of double recovery of costs or that costs might be unfairly loaded onto particular services or markets.
 - BT records all information necessary for the purposes listed above at the time that relevant transactions occur, on an ongoing basis. Absent such a requirement, there is a strong possibility that the necessary information would not be available when it is required, and in the necessary form and manner.
- 6.231 Section 87(9) to (11) (subject to section 88) of the Act authorises Ofcom to impose appropriate cost accounting obligations on BT.

³⁵⁶ Commission Recommendation of 19 September 2005 (2005/698/EC) on accounting separation and cost accounting systems under the regulatory framework for electronic communications.

- 6.232 We believe the cost accounting obligation is necessary to ensure the processes and rules used by BT to attribute revenues and costs to individual markets and services are fair, objective and transparent. Therefore, we have decided to impose a cost accounting requirement on BT in the WLA market in the UK excluding the Hull Area.
- 6.233 Regarding the specific form of the cost accounting requirement we are imposing on BT, we are imposing the form of condition as set out in the 2014 Regulatory Financial Reporting Statement, but modified to remove the reference to the Regulatory Accounting Guidelines. The purpose of defining the form (i.e. how BT provides its data to Ofcom) of the Condition is to:
- give Ofcom a greater role in the way that BT prepares its regulatory financial statements;
 - improve the presentation of the published regulatory financial statements and supporting documentation; and
 - ensure that Ofcom and other stakeholders have the information they need.

Legal tests

- 6.234 For the reasons set out below, we are satisfied that the cost accounting requirements for BT in respect of the WLA market in the UK excluding the Hull Area meet the various tests set out in the Act. As explained below, sections 87(9), (10) and (11) authorise the SMP condition we are implementing.
- 6.235 Section 87(9)(c) authorises conditions imposing such rules as we may make for the purposes of matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities about the use of cost accounting systems. These would include conditions enabling Ofcom to require the dominant provider to explain what assumptions it has used in determining costs and charges, for the purposes of setting price controls, rules and obligations imposed in relation to price controls, cost recovery and cost orientation, cost accounting systems and adjusting of prices in accordance with Directions from Ofcom (section 87(10)). Where such conditions are imposed, section 87(11) imposes a duty on us to also set an SMP condition which imposes an obligation:
- to make arrangements for a description to be made available to the public of the cost accounting system used in pursuance of that condition; and
 - to include in that description details of:
 - i) the main categories under which costs are brought into account for the purposes of that system; and
 - ii) the rules applied for the purposes of that system with respect to the allocation of costs.
- 6.236 We consider that the condition fulfils our duty under section 87(11) in that the cost accounting conditions require the publication of a description of the cost accounting system used and the main categories of cost and the cost allocation rules applied.

- 6.237 In setting such conditions, we must also ensure that the network access pricing conditions set out in section 88 are also satisfied.
- 6.238 We consider that imposing a cost accounting obligation is consistent with section 88 and does not undermine the decisions set out in Section 10. We also consider that imposing a cost accounting obligation is necessary for price controls to be effective.
- 6.239 We consider that the condition fulfils our duty under section 87(11) in that the cost accounting obligation requires the publication of a description of the cost accounting system used and the main categories of cost and the cost allocation rules applied.
- 6.240 We have considered our statutory obligations and the Community requirements set out in sections 3 and 4 of the Act. In particular, we consider that imposing the cost accounting obligation is justifiable and proportionate to promote competition in relation to the provision of electronic communications networks and services, and to ensure the provision of network access (including supporting ancillary services) and service interoperability for the purpose of securing efficient and sustainable competition and the maximum benefit for the persons who are customers of telecoms providers. This is because imposing the obligation ensures that other obligations designed to curb the potentially damaging leverage of market power – including the setting of prices at excessive levels – can be effectively monitored and enforced.
- 6.241 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:
- objectively justifiable, in that it is necessary to ensure the appropriate maintenance and provision of accounts in order to monitor BT's activities with regard to the pricing remedies we are implementing. It also relates to the need to ensure competition develops fairly, to the benefit of consumers, by providing transparency of BT's compliance with rules set to address the risk of exploitative or anti-competitive pricing;
 - non-discriminatory, in that BT is the only telecoms provider on which we impose specific pricing remedies, and is the only telecoms provider which we find holds SMP in the WLA market in the UK excluding the Hull Area;
 - proportionate, in that we require only the minimum information necessary to monitor BT's pricing activities; and
 - transparent, in that it is clear in its intention to ensure the appropriate maintenance and provision of accounts for the purposes set out above and the particular accounting separation requirements of BT are clearly documented.
- 6.242 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

7. Specific access remedies

7.1 The general remedies set out in Section 6 apply to all forms of network access provided by BT in the WLA market. Nevertheless, because of the competition concerns associated with BT's SMP in the WLA market as set out in Section 4, we have decided to impose certain specific remedies which we set out in this section. These remedies are designed to ensure that BT provides certain specific forms of access to its network. In the absence of these remedies BT, as a vertically integrated provider, would have the ability and incentive to refuse to supply certain forms of network access. Therefore, the specific access remedies have a role in promoting competition and are designed to benefit consumers through increased choice of providers and ultimately, by reducing prices and improving services.

Summary of decisions

7.2 In summary, we have decided:

- To continue to impose specific access remedies on BT in the form of requirements to offer LLU MPF and VULA services, including the relevant ancillary services necessary to enable and support the provision of MPF and VULA.
- Not to impose a specific access remedy on BT in the form of a requirement to offer LLU SMPF. Instead, SMPF will fall within the scope of the general network access remedy and be subject to fair and reasonable terms, conditions and charges.
- To impose a framework for considering whether to exempt BT from its LLU obligations in relevant geographic areas where it seeks to deploy new technologies that are not compatible with LLU but which bring benefits to consumers.
- To continue to impose an obligation on BT to offer SLU on fair and reasonable terms.
- To impose a Direction requiring BT to impose a contract length of no more than one month for FTTC connections and migrations.

7.3 Our decision in relation to a specific access remedy requiring BT to offer Physical Infrastructure Access (PIA) is set out in Volume 3 of this statement.

Requirement for BT to provide Local Loop Unbundling (LLU)

Background

7.4 LLU is a process by which the incumbent telecoms provider offers access to its local network to other telecoms providers. The LLU access remedy therefore enables a third-party telecoms provider to rent the local access connection from the incumbent and in turn, to deploy its own equipment in order to provide retail services (such as voice and broadband) over the local access connection.

7.5 Since its introduction in 2000, LLU has been imposed as a remedy in successive market reviews. LLU can be in the form of either Metallic Path Facility (MPF) or Shared Metallic Path Facility (SMPF). This enables a telecoms provider to choose to offer either:

- a retail bundle of the exchange line (including voice services over that line) and broadband, as enabled by the LLU MPF service; or
- just to provide a retail broadband service, as enabled by the LLU SMPF service.

- 7.6 LLU affords telecoms providers greater control of their communication services compared to a downstream service such as wholesale broadband access (WBA). LLU gives telecoms providers the ability to innovate and to differentiate some aspects of their services from those provided by the incumbent owner of the WLA infrastructure.
- 7.7 LLU has played an important role in promoting and sustaining competition in the provision of SBB services. At the end of 2016 around 95% of UK premises were served from an exchange where LLU was being used.³⁵⁷ In April 2017 around 40% of all UK broadband lines were provided by third-party telecoms providers using LLU (including those cases where LLU is used in conjunction with GEA-FTTC services).³⁵⁸ In the areas where LLU is used there are now at least two telecoms providers which are competing to provide fixed telecoms services. This has brought benefits to consumers in the form of increased choice of fixed line packages of voice and broadband services and, more recently, TV content, often at lower prices.
- 7.8 As noted earlier in this volume, in recent years we have observed a strong take-up of SFBB supported by an expansion of BT's GEA-FTTC network in the WLA market. In addition to supplying SBB, LLU plays an important role in supporting these GEA-FTTC services as they require a supporting copper line.³⁵⁹ Moreover, despite the growing importance of higher speed services, we still expect that a significant proportion of customers will wish to purchase SBB throughout this review period. In particular, we forecast copper services to decrease from over half of all retail broadband services in 2016/17 to less than one third in 2020/21.³⁶⁰

Our proposals

- 7.9 In our March 2017 WLA Consultation, we highlighted the increasing importance of MPF compared to SMPF.³⁶¹ In the early years of LLU, SMPF was important in promoting competition in broadband services. It offered telecoms providers an opportunity to build a customer base by at first providing broadband-only services and then later, upselling a fixed line and voice service to their customers (either by renting a voice enabled line from BT, via wholesale line rental, WLR, or by taking full control of the line via MPF).

³⁵⁷ Ofcom estimates based on Openreach report to Ofcom, 299 Ofcom Supplement, December 2016.

³⁵⁸ Ofcom estimates based on Openreach reports to Ofcom, 299 Ofcom Supplement, April 2017; Ofcom, 31 August 2017. *Telecommunications market data tables Q1 2017*, page 2,

https://www.ofcom.org.uk/_data/assets/pdf_file/0014/106070/Telecoms-Data-Update-Q1-2017.pdf

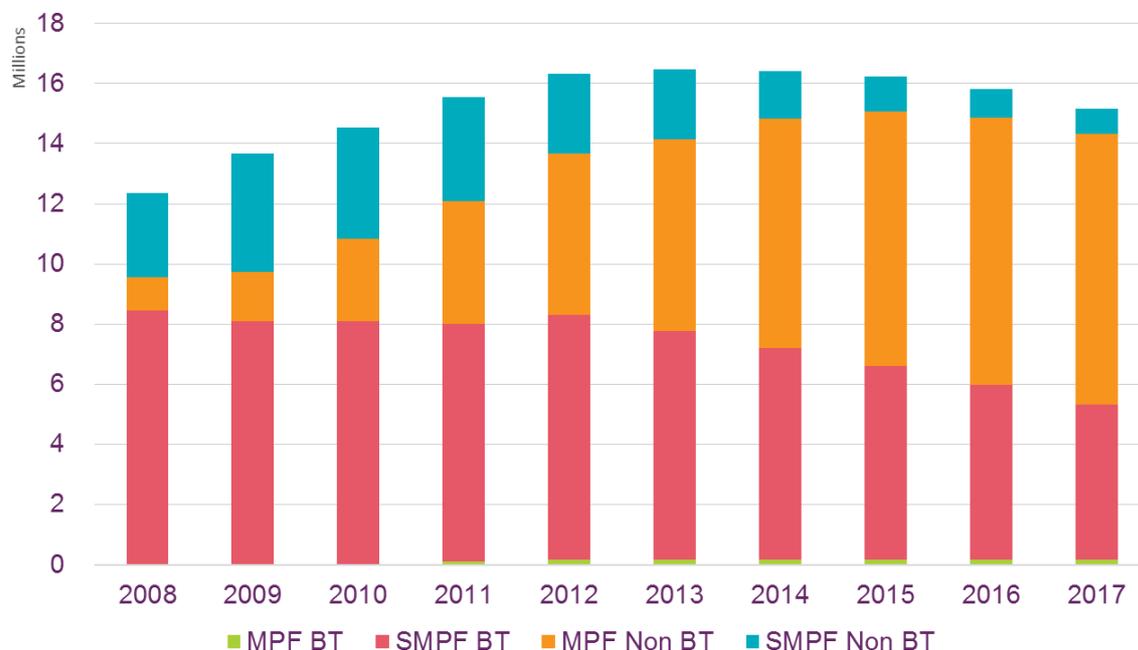
³⁵⁹ In the future, telecoms providers may also start providing superfast broadband with Single Order GEA (SOGEA). SOGEA enables the provision of wholesale superfast broadband without the need for WLR or MPF to support it. SOGEA is currently set to launch in spring 2018.

³⁶⁰ Ofcom forecast.

³⁶¹ Ofcom, March 2017 WLA Consultation, paragraphs 6.9-6.16.

7.10 We further set out that over time, MPF services have become much more important. MPF now represents 92% of LLU lines.³⁶² We have set out the historical volume movements of MPF and SMPF in Figure 7.1 below.

Figure 7.1: Historical volume movements of MPF and SMPF



Source: Openreach reports to Ofcom, 299 Ofcom Supplement, January 2008 to September 2017³⁶³

7.11 In the March 2017 WLA Consultation we observed that this decline in SMPF has continued as investment in LLU has matured. Moreover, we observed that provision of broadband is increasingly shifting to VULA services (mainly GEA-FTTC), suggesting that further new entry at any scale is unlikely using the specific LLU services currently available from BT.

7.12 Based on the relative importance of MPF and SMPF, we therefore proposed that a specific MPF obligation is still required to ensure providers can access the main LLU service, while for SMPF, we considered that the general remedies would be sufficient.

7.13 In the March 2017 WLA Consultation, we also set out the proposed process to allow BT to request, and Ofcom to consent to, a change in BT’s LLU network access obligation. Under certain circumstances, we said that a change in BT’s LLU obligation may be required in order to allow BT to deploy technologies to improve the availability of broadband services for the hardest to reach consumers.³⁶⁴

7.14 We therefore proposed a framework under which we would consider requests from BT to be exempted from its LLU obligations to allow it to deploy such technologies.

³⁶² Openreach report to Ofcom, 299 Ofcom Supplement, September 2017.

³⁶³ Information for year 2013 is based on Openreach’s report, 299 Ofcom Supplement, December 2012.

³⁶⁴ Ofcom, March 2017 WLA Consultation, paragraphs 6.21-6.31.

Stakeholder responses

- 7.15 None of the responses to the March 2017 WLA Consultation disagreed that there should be an access obligation for MPF.
- 7.16 Stakeholder views were mixed concerning our proposal to remove the specific access requirement for BT to provide SMPF. Openreach and TalkTalk both agreed with our proposals, although TalkTalk requested that we closely monitor price changes of SMPF to ensure that BT does not raise prices excessively.³⁶⁵ Stakeholder comments relating to details of the pricing of copper access services are addressed in Section 10.
- 7.17 Other stakeholders argued that we need to continue the specific access requirement for provision of SMPF and to impose a charge control on it. They justified their arguments by highlighting some specific circumstances where SMPF may continue to be important:
- Sky said that [redacted]. Sky also said that some specific services (e.g. some care alarms) have specific requirements. Since Sky's voice service provided via MPF may not support these requirements, it said that in these cases the only choice is to provide voice services via WLR and broadband over SMPF.³⁶⁶
 - Lothian Broadband said that SMPF is still important for promoting competition in rural areas where VULA is not available.³⁶⁷
 - [redacted] claimed that MPF is an unsuitable substitute for some business users who rely on SMPF.³⁶⁸
- 7.18 A number of stakeholders raised points concerning our proposal to allow BT to request an exemption to its LLU obligations in order to deploy new technologies. Openreach supported the proposed framework.³⁶⁹ Sky also welcomed our proposed framework as a positive step, but raised a concern that the overall impact on the network economics of an affected telecoms provider should be considered as part of any decision to allow BT an exemption from its LLU obligations.³⁷⁰ Lothian Broadband and [redacted] raised specific concerns about Long Reach VDSL (LR-VDSL) technology and its suitability.³⁷¹
- 7.19 There were a number of other representations from telecoms providers in relation to our LLU proposals. We have set these out, together with our responses to them, in Annex 7.

³⁶⁵ Openreach response to the March 2017 WLA Consultation, paragraph 204; TalkTalk response to the March 2017 WLA Consultation, pages 17-18.

³⁶⁶ Sky response to the March 2017 WLA Consultation, page 19.

³⁶⁷ Lothian Broadband response to the March 2017 WLA Consultation, page 2.

³⁶⁸ [redacted]

³⁶⁹ Openreach response to the March 2017 WLA Consultation, paragraph 210.

³⁷⁰ Sky response to the March 2017 WLA Consultation, page 20.

³⁷¹ Lothian Broadband response to the March 2017 WLA Consultation, page 5; [redacted]

Our reasoning and decisions

Network access to MPF

- 7.20 Figure 7.1 above shows that MPF is widely used and as such, plays an important role in promoting competition in downstream markets. MPF is essential to third-party telecoms providers providing voice and broadband services to their customers from unbundled exchanges. It is also an important input to the provision of SFBB by BT's competitors that use the Openreach network because GEA-FTTC services require a supporting copper line.
- 7.21 BT however, does not make significant use of MPF to support its retail customer base. Instead, BT's voice services are based predominantly on the use of WLR and it provides its broadband services as an overlay to this (relying on SMPF for SBB and increasingly, GEA-FTTC for the provision of SFBB).³⁷²
- 7.22 In the absence of a specific access obligation on MPF, BT would have an incentive to put its competitors at a disadvantage by not offering MPF services, or by doing so only on unfavourable or discriminatory terms and/or quality of service. It is likely that this would result in consumer harm in the form of service degradation, restricted choice of provider and/or higher prices.
- 7.23 We have therefore decided to retain the specific access obligation on BT in relation to MPF to protect the ability of telecoms providers using the Openreach network to continue to compete with BT downstream in the provision of voice and broadband services. In addition to this key access service, a number of ancillary services are necessary to enable and support the provision of MPF, including tie cables, site access, space and power. Our specific access remedy requires BT to provide these ancillary services.

Removing the obligation to provide SMPF

- 7.24 The views expressed by stakeholders in response to our proposal to remove the obligation to provide SMPF were mixed, with some in favour and others opposed. However, we remain of the view that there is no longer a compelling need for SMPF to promote downstream competition. The vast majority of non-BT lines are provided using MPF and the role of SMPF in supporting retail competition is now far less important than it was. By the end of this review period we forecast that there will be only around 530,000 SMPF lines in use by third-party telecoms providers. This compares to around 870,000 in April 2017 and to around 10 million broadband enabled access lines on the Openreach network used by non-BT retail providers (and more than 15 million when considering all non-BT broadband enabled access lines).³⁷³ We therefore consider that telecoms providers have,

³⁷² Openreach reports received by Ofcom.

³⁷³ Ofcom forecast.

to a considerable degree, already taken advantage of the ladder of investment opportunity provided by SMPF.

- 7.25 Sky, Lothian Broadband and [S<] made arguments for continued SMPF regulation based on specific cases where access to SMPF may still be important.³⁷⁴ We consider that these concerns are sufficiently addressed by other remedies. The vast majority of SMPF lines are consumed internally by BT and so, while Openreach continues to provide SMPF to other parts of BT, its general obligation to provide network access on reasonable request and the no undue discrimination obligation (including EOI) mean that it will be obliged to continue to make SMPF available to other telecoms providers.³⁷⁵
- 7.26 In addition, although we are no longer imposing a charge control, BT's obligation to provide access on fair and reasonable terms, conditions and charges, combined with the no undue discrimination obligation (including EOI), will provide pricing protection for existing SMPF wholesale customers. The fair and reasonable obligation includes charges (where there is no charge control or basis of charges obligation in place) and, in relation to SMPF, we will interpret this obligation as including a requirement not to impose a margin squeeze (see Section 10 for further detail). This requirement not to impose a margin squeeze is consistent with our approach to WLR in the 2017 Narrowband Market Review Statement.³⁷⁶
- 7.27 Therefore, we consider that there are sufficient safeguards to allow stakeholders to continue to use SMPF while BT does, including in those specific cases where SMPF may be particularly important for certain providers. These safeguards will allow time for retail providers to find solutions to any specific issues that may arise during the migration of their customer base from SMPF.
- 7.28 Detailed stakeholder comments relating to specific uses of SMPF are addressed in Annex 7.

Allowing for potential changes to LLU obligations

- 7.29 In our Strategic Review, we said that new technologies may allow improved availability of broadband services for the hardest to reach consumers and that we would support the deployment of such technologies.³⁷⁷
- 7.30 In the March 2017 WLA Consultation, we identified LR-VDSL as one such technology. LR-VDSL deployment formed part of BT's voluntary proposal to meet the Government's commitment to provide all UK residents with broadband download speeds of at least 10Mbps by 2020. In the March 2017 WLA Consultation we proposed a framework through

³⁷⁴ Sky response to the March 2017 WLA Consultation, page 19; Lothian response to the March 2017 WLA Consultation, page 2.

³⁷⁵ Openreach reports to Ofcom, 299 Ofcom Supplement, September 2017.

³⁷⁶ Ofcom, 2017 NMR Statement, page 169.

³⁷⁷ Ofcom, 2016. *Making communications work for everyone – Initial conclusions from the Strategic Review of Digital Communications*, paragraphs 3.40-3.45. https://www.ofcom.org.uk/data/assets/pdf_file/0016/50416/dcr-statement.pdf.

which BT could request, and Ofcom could consider, a change to its LLU obligations in order to deploy LR-VDSL. However, the Government has now rejected BT's proposals.³⁷⁸

- 7.31 Nevertheless, we recognise that in the future BT may seek to deploy new technologies which could impact the provision of LLU by BT. We have therefore decided to include our proposed provision in Condition 2 of the Legal Instruments to enable BT to request, and Ofcom to consent to, a change in BT's LLU obligations.³⁷⁹
- 7.32 Our decision on whether to consent to a change in BT's LLU obligations will be taken on the facts at the relevant time. In deciding whether to consult on and ultimately approve such a request, we would expect to consider the following:
- whether the change of the LLU obligations results in a net benefit for consumers and citizens;
 - the services that are available to telecoms providers as replacement service(s) for their affected LLU service(s); and
 - the process for migration to the replacement service(s), including whether the timeframes proposed for migration and removing LLU are reasonable.
- 7.33 In any request made by BT under this provision, we would expect BT to provide information necessary to allow us to consider the points above. The points above are not intended to be a comprehensive list, but are likely to be important considerations in any decision on whether to accept a proposal to change BT's LLU obligations.
- 7.34 Subject to the facts of the specific case and to the provision of satisfactory information, we would then consult on a proposal if we were minded to agree to BT's request. We would take any decision following a consideration of responses to the public consultation.

Legal tests

- 7.35 We consider that the obligation for BT to provide network access to LLU in the specific form of MPF services, together with such ancillary services as may be reasonably necessary for the use of those services, is appropriate and satisfies the other legal tests set out in the Act.
- 7.36 Section 87(3) of the Act authorises Ofcom to set SMP services conditions requiring the dominant provider to provide such network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.
- 7.37 We have also taken into account the factors set out in section 87(4) of the Act, in particular, the feasibility of BT providing MPF services (demonstrated by their very

³⁷⁸ Department for Digital, Culture, Media & Sport, Press Release, 20 December 2017. *High speed broadband to become a legal right.* <https://www.gov.uk/government/news/high-speed-broadband-to-become-a-legal-right>

³⁷⁹ In the draft Legal Instruments this provision was located in draft Condition 2.1(a). To enable greater flexibility we have decided to insert this wording in the first sentence of 2.1.

widespread existing provision). We consider that this condition will ensure effective competition in the long term.

- 7.38 We have also considered our duties under section 3 and the Community requirements set out in section 4 of the Act. In particular, the condition is aimed at encouraging network access, and thereby promoting and securing efficient and sustainable competition, and the maximum benefit for customers of telecoms providers. It will continue to enable telecoms providers to compete effectively with BT in downstream services, in particular retail tariffs where a bundle of broadband and fixed voice services is important.
- 7.39 We consider that the performance of our general duties in section 3 of the Act will also be secured or furthered by this MPF remedy; namely to further the interests of consumers by promoting competition in markets downstream of WLA.
- 7.40 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:
- Objectively justifiable, in that it relates to the need to ensure that competition is promoted ultimately to the benefit of consumers. MPF services are aimed at promoting competition in the provision of broadband and telephony services. BT does not use MPF to support its downstream customer base, while third-party telecoms providers use MPF as a key service in providing their customers with broadband and voice services. Therefore, removing the condition could result in BT withdrawing the service or otherwise changing it to the detriment of the existing level of downstream competition (limiting the extent to which regulatory intervention addresses BT's SMP).
 - Not unduly discriminatory, in that the condition aims to address BT's SMP in WLA and only BT has such market power in the UK excluding the Hull Area.
 - Proportionate, in that the requirement is necessary, but no greater than necessary, to promote efficient and sustainable competition for the maximum benefit of customers of telecoms providers, also taking account of the fact that BT already supplies this service.
 - Transparent, as it is clear in its intention to require BT to provide MPF services to telecoms providers and its intended operation should also be aided by our explanations in this statement.

Consistency with EC Recommendations and the BEREC Common Position

- 7.41 We consider that our decision to require MPF is consistent with the BEREC Common Position, in particular BP7a which states "NRAs should impose unbundled access to the copper loops at the MDF". In terms of BP9-10 concerning the provision of products telecoms providers can use to reach the point at which LLU is made available (i.e. the exchange), this involves the provision of backhaul from the point of interconnection with LLU services to the telecoms provider's own core network capacity. In that regard, we note that BT is already required to supply leased line products which can be used for such purposes where wholesale competition in leased line provision is otherwise insufficient.
- 7.42 We consider that the requirement to make available the specified ancillary services is consistent with BP16 which states that "NRAs should impose obligations with regard to the

provision of co-location and other associated facilities on a cost-oriented basis under clear rules and terms approved by the regulator to support viability of the access products mentioned above”.

Requirement for BT to provide SLU

Background

- 7.43 Sub-loop unbundling (SLU) is a service offered by BT that allows telecoms providers to deploy their own equipment at a network distribution point (usually the location of the cabinet) and to use BT’s lines from the cabinet to the customer. Telecoms providers can either rent the entire sub-loop (the connection between the cabinet and the customer) or share it with BT.
- 7.44 An obligation to provide SLU was introduced by European regulation in January 2001 and BT issued its Reference Offer at that time.³⁸⁰ We introduced an SLU SMP obligation in the 2004 WLA Statement and re-imposed it in subsequent reviews of the WLA market.³⁸¹ In the 2014 FAMR statement we set out our ‘interim position’ on vectoring and outlined how the use of vectoring technology can disrupt SLU.³⁸² We discuss vectoring, and how it relates to SLU, in more detail below.

Vectoring

- 7.45 Vectoring uses noise cancellation technology to mitigate the effect of the electromagnetic interference that occurs on copper access connections, also known as cross-talk. Cross-talk can have a significant detrimental effect on VDSL speeds.
- 7.46 In order to work optimally, current vectoring technology requires all the copper lines in the cabinet using VDSL to be controlled and vectored by the same system. Otherwise, the presence of non-controlled or ‘alien’ lines can degrade the benefits of the vectoring. To maximise the effectiveness of vectoring, a telecoms provider implementing vectoring would typically seek to control all relevant lines. This may be complicated in an SLU environment where there are two telecoms providers controlling the lines in a single cable.
- 7.47 In the 2014 FAMR statement we set out our interim position on vectoring, pending the development of a solution that allows standardised coordination of vectoring and SLU. This interim position was: first, that where BT has activated vectoring, it would be reasonable for BT to deny a request for SLU if BT could demonstrate that it had taken all reasonable steps to co-ordinate SLU with the vectoring; and second, where a telecoms provider is already buying SLU at a cabinet where BT wishes to deploy vectoring, it would be unlikely to be reasonable for BT to withdraw SLU.³⁸³

³⁸⁰ Regulation (EC) No 2887/2000 of the European Parliament and of the Council of 18 December 2000 on unbundled access to the local loop. <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32000R2887&rid=3>.

³⁸¹ Ofcom, 2004. *Review of the wholesale local access market* (2004 WLA Statement). https://www.ofcom.org.uk/_data/assets/pdf_file/0022/37057/rwlam161204.pdf.

³⁸² Ofcom, 2014 FAMR Statement, paragraphs 12.324 – 12.331.

³⁸³ Ofcom, 2014 FAMR Statement, paragraphs 12.324 – 12.331.

Our proposals and stakeholder responses

- 7.48 In our March 2017 WLA Consultation, we proposed to retain an obligation on BT to provide network access in the form of SLU.
- 7.49 No stakeholders objected to our SLU proposals in their responses to our March 2017 WLA Consultation. Openreach requested further clarification regarding whether the SLU vectoring policy applies to G.fast.³⁸⁴
- 7.50 WarwickNet raised a concern about the pricing of SLU. This point and our decisions concerning the pricing of SLU are discussed in Section 10.

Our reasoning and decisions

- 7.51 We have decided to retain the obligation on BT to provide network access in the form of SLU.
- 7.52 Use of SLU remains very low. Between 1 January 2014 and 1 September 2015 BT received a small number of requests [3<] (between 50 and 100) for SLU with 70% being accepted and agreed. BT stated that as of 11 September 2015, there were fewer than 200 cabinets where SLU had been implemented.³⁸⁵
- 7.53 Nevertheless, SLU is being used successfully by a small number of telecoms providers that are providing services in those areas where BT has not upgraded its local access connections to fibre. These telecoms providers are offering customers (particularly businesses) services which may meet some customers' needs better than those that BT has provided to date in the area.
- 7.54 Moreover, while the SLU service has been developed using significant BT, industry and Ofcom resources, there is likely to be limited additional resource required to support its continuation. We also noted this point in the 2014 FAMR statement.³⁸⁶
- 7.55 We have considered whether the general remedies (the obligation to provide network access on fair and reasonable terms, conditions and charges) would be sufficient to ensure telecoms providers are able to continue to use SLU effectively. However, BT does not use SLU and is exempted from using SLU on an EOI basis as an input to its GEA-FTTC services. As noted above, in areas where BT has not upgraded its local access connections to fibre, services provided by other telecoms providers over SLU may be better meeting customer's needs than BT's existing services. BT may therefore have an incentive to put its competitors at a disadvantage by not offering SLU services, or by doing so only on unfavourable or discriminatory terms.
- 7.56 For these reasons, we are retaining the obligation for BT to offer an SLU service to all telecoms providers who reasonably request such services. BT is required to provide such

³⁸⁴ Openreach response to the March 2017 WLA Consultation, paragraph 222.

³⁸⁵ BT response to s.135 notice dated 8 October 2015. We estimate that SLU volumes have not changed significantly since we gathered this information from BT.

³⁸⁶ Ofcom, 2014 FAMR Statement, paragraph 12.299.

ancillary services as may be reasonably necessary for the use of SLU (including backhaul to the cabinet). This provides telecoms providers with a complementary alternative to BT's wholesale fibre service (VULA) to offer retail packages of SFBB or to deploy to areas where BT has not deployed its own fibre network.

- 7.57 We are not requiring EOI for SLU. It is likely that doing so would require BT to re-engineer existing services and processes, which would be costly. We consider that this cost would be disproportionate given the current and projected low level of use of SLU. We agreed a variation to the Undertakings in 2009 allowing BT to offer retail services using FTTC without using SLU on an EOI basis given the likely cost of implementing EOI.³⁸⁷ We do not consider a change from this approach is appropriate or proportionate.
- 7.58 We are content that vectoring does not make SLU unworkable as a remedy, and no stakeholders raised concerns about the SLU remedy itself with regard to vectoring. While current vectoring technology is generally only available to one telecoms provider per cabinet, this may not be the case as vectoring technology develops. Given the uncertainty over future technological developments, we have chosen to retain our policy on vectoring as set out in the 2014 FAMR statement, which is summarised above.
- 7.59 Regarding the point raised by Openreach about G.fast, our understanding is that vectoring on G.fast is not going to affect existing LLU or VDSL services because they operate on different frequencies. However, a G.fast service will interfere with another G.fast service within a cable bundle of G.fast lines unless their vectoring is managed by a single telecoms provider. In such cases we would adopt the same approach to vectoring as for VDSL (i.e. as described in the preceding paragraph).
- 7.60 In addition, as in the case of LLU, if BT deploys new technologies (such as LR-VDSL) which prevent the provision of broadband services using SLU, we would consider requests to change BT's obligation to provide SLU using the same framework that we set out for LLU above.

Legal tests

- 7.61 Section 87(3) of the Act authorises Ofcom to set SMP services conditions requiring the dominant provider to provide such network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5) of the Act, include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.
- 7.62 In setting this condition, we have also taken account of the factors set out in section 87(4) of the Act, in particular, the barriers that third-party telecoms providers face in building alternative access networks in the absence of regulatory intervention. We consider that while significant levels of network competition may come about in the future, we expect this to take time. SLU has allowed some telecoms providers to provide retail services in

³⁸⁷ Ofcom, 2009. *Variation to BT's Undertakings under the Enterprise Act 2002 related to Fibre-to-the-Cabinet*. https://www.ofcom.org.uk/data/assets/pdf_file/0025/36970/statement.pdf.

focused scenarios, particularly to serve businesses which could otherwise have been underserved. We are re-imposing this obligation on the basis that these telecoms providers will continue to use SLU services where they have already deployed in order to gain a return on their initial investment, thereby maintaining competition in those areas. We have also taken account of the feasibility of BT providing SLU services, noting that it already does so.

- 7.63 We have considered our duties under section 3 and the Community requirements set out in section 4 of the Act. In particular, the obligation to provide network access in the form of SLU promotes and secures efficiency and sustainable competition and the maximum benefit for customers because it enables third-party telecoms providers to compete with BT downstream in the provision of faster broadband services. The limitations of our intervention, in terms of not requiring any significant changes to the existing remedy, are consistent with both securing those ends and securing (and appropriately reflecting) efficient investment.
- 7.64 We consider that the performance of our principal duty in section 3 of the Act (to further the interests of citizens in relation to communications matters and to further the interests of consumers in relevant markets, where appropriate by promoting competition) is also secured and furthered by the SLU obligation through promoting competition in this upstream access market.
- 7.65 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:
- Objectively justifiable, in that the obligation relates to the need to ensure that competition develops ultimately to the benefit of consumers. SLU services are aimed at stimulating competition in the provision of broadband and telephony services and enhancing competition in areas of limited local access competition. Removing the obligation could result in BT withdrawing the service or otherwise changing it to the detriment of the existing level of downstream competition.
 - Not unduly discriminatory, in that the condition aims to address BT's SMP in WLA and only BT has such market power in the UK excluding the Hull Area.
 - Proportionate, in that the obligation is necessary, but no more than necessary, to promote efficiency and sustainable competition and the maximum benefit for customers of telecoms providers, taking into account the fact that BT already supplies this service.
 - Transparent, in that the obligation is clear in its intention to require BT to provide an SLU service and ancillary services to other telecoms providers.

Consistency with the EC recommendations and the BEREC Common Position

- 7.66 We consider that the application of an SLU remedy along with those ancillary services as may reasonably be necessary for the use of SLU is consistent with Recommendation 29 of the NGA Recommendation which states that NRAs should impose an obligation of unbundled access to the copper sub-loop. The same recommendation states that an SLU remedy should be supplemented by backhaul measures "including fibre and Ethernet

backhaul where appropriate”. In this regard, BT is required to provide the necessary ancillary services and in relation to backhaul specifically, it is already required to supply leased lines (in areas where wholesale competition in leased lines is insufficient) which can be used for SLU backhaul. Telecoms providers can, in certain cases, also build their own backhaul.

- 7.67 The Costing and Non-discrimination Recommendation sets out that NRAs should consider, if they believe that a non-discrimination obligation is appropriate, whether it would also be proportionate to impose EOI (Recommendation 7). We note that the considerations an NRA should take into account include the costs (especially whether the competition benefits outweigh the costs of system redesign) and the potentially positive effects on innovation and competition. As set out above, we do not consider it proportionate to require BT to provide SLU on an EOI basis. We consider that the no undue discrimination obligation is consistent with EOO (as set out in Section 6), which Recommendation 9 says should be applied in the absence of EOI. Further, given the requirement for EOO, which includes requirements around comparability of functionality, we do not consider it necessary to put in place further obligations to ensure technical replicability (Recommendations 11-18).
- 7.68 In terms of the BEREC Common Position, we consider that the decision to require SLU is consistent with BP7 and that the requirements to make available the specified ancillary services with associated pricing obligations fulfils BP16.

Requirement for BT to provide VULA

Background

- 7.69 Virtual Unbundled Local Access (VULA) provides a virtual connection over fibre lines (either FTTC or FTTP) that gives telecoms providers use of BT’s fibre local access connections.
- 7.70 We introduced VULA in the 2010 WLA as the remedy by which BT would provide access to its fibre local access connections (FTTC and FTTP). The underlying objective was to support competition and investment in the supply of SFBB. In the 2014 FAMR we re-imposed the requirement for BT to supply a VULA service.³⁸⁸
- 7.71 Since the remedy was first imposed, VULA has had a positive impact for consumers.³⁸⁹ The number of VULA connections has risen significantly since VULA was introduced, with BT reporting more than 8.6 million VULA connections as of September 2017.³⁹⁰ In 2017, third-

³⁸⁸ Ofcom, 2014 FAMR statement, paragraphs 12.97 – 12.98.

³⁸⁹ We note that BT already had in place a product similar to VULA, called Generic Ethernet Access (‘GEA’), prior to the conclusion of the 2010 WLA Review. For simplicity, we use the term VULA in the statement with some limited exceptions where appropriate.

³⁹⁰ BT, 2017. *Results for the second quarter to 30 September 2017*.

<http://www.btplc.com/Sharesandperformance/Quarterlyresults/2017-2018/Q2/Downloads/Newsrelease/q217-release.pdf>.

party telecoms providers accounted for around [8<] of all VULA connections.³⁹¹ VULA has facilitated competition in broadband, by ensuring that retail providers are able to compete effectively for customers that value SFBB.

Our proposals

- 7.72 In our March 2017 Consultation, we proposed that BT be required to supply a VULA service providing access to its local access fibre connections.³⁹²
- 7.73 Additionally, we reviewed the characteristics of VULA first specified in 2010 and proposed that they remain appropriate without modification or addition. We noted that telecoms providers can request new VULA features via BT’s SoR process.
- 7.74 We also stated that we expect VULA to be applicable to services such as G.fast in the future.

Stakeholder responses

- 7.75 All stakeholders agreed with our proposal to have a specific access remedy on VULA and supported our assessment of the characteristics of VULA.
- 7.76 Openreach raised the point that because of constraints from SBB, Virgin Media and the legal separation of BT and Openreach, BT has less ability for strategic behaviour in favour of its downstream division than has previously been the case with regard to the pricing of VULA services.³⁹³ Nevertheless, Openreach did not dispute the need for a VULA remedy in principle.

Our reasoning and decisions

- 7.77 We have decided to reimpose the obligation for BT to supply a VULA service providing access to its fibre network. In the absence of such a requirement, BT would have the incentive and ability to favour its own retail operations, thereby hindering sustainable competition in the corresponding downstream services and ultimately harming the interests of customers. VULA prevents this harm to consumers by enabling telecoms providers to provide retail SFBB services.
- 7.78 We acknowledge that there are certain constraints on the ability of Openreach to undertake strategic behaviour in favour of BT’s retail operations. Nevertheless, we do not consider that, in the absence of regulation, these constraints would be sufficient to guarantee that Openreach would continue to provide access to its fibre network on fair and reasonable terms. In this regard we note that Openreach has joined other stakeholders in stating its agreement with the principle of a VULA remedy. We continue to believe that the VULA remedy remains important for maintaining market competition and bringing benefits to consumers.

³⁹¹ Ofcom estimates.

³⁹² Ofcom, March 2017 WLA Consultation, paragraphs 6.71-6.74.

³⁹³ Openreach response to the March 2017 WLA Consultation, paragraphs 223-225.

- 7.79 We have reviewed the five high-level characteristics, first set out in 2010, that we considered VULA would need to have to ensure telecoms providers have significant flexibility in the services that they could deliver to customers. We have decided that the existing criteria remain appropriate, so that VULA should, as far as possible, have the following characteristics:
- **Local access:** interconnection by the access seeker should occur locally, i.e. at the first feasible aggregation point. In practice we considered this was likely to be in the local serving exchange where the first Ethernet switch was located (fibre exchange).³⁹⁴
 - **Service agnostic access:** VULA, like LLU, should be a generic access service. That is, it should provide service agnostic connectivity, replicating one of the key features of LLU. This means the service should not be confined to supporting particular downstream services.
 - **Uncontended access:** the connection, or capacity, between the consumers' premises and the local serving exchange where interconnection takes place should be dedicated to the customer, i.e. the connection should be uncontended.³⁹⁵
 - **Control of access:** telecoms providers should be given flexibility to allow them to offer differentiated services to consumers. In order to provide different types of services, this freedom of control could potentially involve varying quality of service parameters.
 - **Control of customer premises equipment (CPE):** like the control of access characteristic described above, competing telecoms providers should have the ability to control customer premises equipment, giving them the ability to differentiate how they deliver services to their customers.
- 7.80 Telecoms providers can request new VULA features via the Statement of Requirements (SoR) process.

Legal tests

- 7.81 We consider that the obligation to provide network access by means of VULA, together with such ancillary services as may be reasonably necessary for its use, is appropriate and satisfies the legal tests set out in the Act.
- 7.82 Section 87(3) of the Act authorises Ofcom to set SMP services conditions requiring the dominant provider to provide such network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to, and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions.
- 7.83 In setting this condition, we have also taken into account the factors set out in section 87(4) of the Act. We have taken account of the feasibility of BT providing VULA services,

³⁹⁴ Note that the local serving exchanges for fibre access (FTTC and FTTP) are not necessarily the same local serving exchanges as for copper access. This is because fibre does not have the same distance limitations as copper and therefore a higher level of aggregation is possible.

³⁹⁵ An uncontended service is one in which the bandwidth to each user is dedicated. In other words, the bandwidth is not shared by other users.

which it does through its GEA service. We consider that the condition should help secure effective competition in the long term.

- 7.84 We have considered our duties under section 3 and the Community requirements set out in section 4 of the Act. In particular, the condition is aimed at encouraging network access and thereby promoting and securing efficient and sustainable competition for the maximum benefit of retail customers. VULA will enable other telecoms providers to compete with BT in the provision of retail packages offering faster broadband in those areas where BT has upgraded its local access connections to fibre. We consider that services provided over fibre are likely to be an important element of downstream competition over the forward-looking period of this review.
- 7.85 In that way, we consider that the performance of our principal duty in section 3 of the Act will also be fulfilled, namely to further the interests of citizens in relation to communications matters and to further the interests of consumers in relevant markets, by promoting competition in downstream markets.
- 7.86 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:
- Objectively justifiable, in that it relates to the need to ensure that competition develops ultimately to the benefit of consumers. VULA services are aimed at stimulating competition in the provision of broadband and telephony services. We consider that VULA is currently the primary basis of competition for fibre-based high-speed services and will continue to be an important service for the duration of this review.
 - Not unduly discriminatory, in that the condition aims to address BT's SMP in WLA and only BT has such market power in the UK excluding the Hull Area.
 - Proportionate, in that the requirement is necessary, but no greater than necessary, to promote efficient and sustainable competition for the maximum benefit of retail customers with the rollout of fibre access connections.
 - Transparent, as it is clear in its intention to require BT to provide VULA services to other telecoms providers and its operation should also be aided by our explanations in this statement.
- 7.87 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Consistency with EC Recommendations and the BEREC Common Position

- 7.88 We consider that a VULA remedy is consistent with both the NGA Recommendations and the BEREC Common Position of which we are required to take utmost account.
- 7.89 While not covered by the Articles, Recital 21 of the NGA Recommendation states:
- “NRAs should be able to adopt measures for a transitional period mandating alternative access services which offer the nearest equivalent constituting a substitute to physical unbundling, provided that these are accompanied by the most appropriate safeguards to ensure equivalence of access and effective competition.

In any event, NRAs should in such cases mandate physical unbundling as soon as technically and commercially feasible.”

- 7.90 The BEREC Common Position similarly provides that in the case of FTTC, “NRAs may consider imposing an active remedy providing access at the MPoP³⁹⁶ replicating as much as possible physical unbundling” (BP7c), and in the case of FTTP “Until any alternative technologies allowing physical unbundling at the MPoP become available the NRAs should consider imposing an active remedy providing access at the MPoP replicating as much as possible physical unbundling” (BP6).
- 7.91 We consider that VULA offers the nearest equivalent to physical unbundling over both FTTC and FTTP.
- 7.92 We consider that VULA is consistent with BP25 which states that “NRAs should consider which information on the SMP-operator’s ‘newly’ rolled-out NGA network is essential to competitors and should be available well in advance on a non-discriminatory basis”. The SMP condition in Annex 33 requires BT to provide VULA to third parties with the same commercial information as BT provides VULA to its own downstream divisions, as a result of its EOI obligations.

Minimum contract period for VULA

Background

- 7.93 BT’s VULA services are subject to minimum contract periods. Cancelling a service before the end of a minimum contract period causes a telecoms provider to incur a held-to-term charge from BT. We consider that telecoms providers have the ability and incentive to pass the costs which arise from these held-to-term charges on to consumers, which may reduce consumers’ incentives to switch between telecoms providers. Reducing minimum contract periods is therefore likely to minimise the cost of switching and promote retail competition.
- 7.94 In the 2014 FAMR Statement, we imposed a limit of one month to minimum contract periods for migrations to and from all of BT’s VULA services.³⁹⁷

Our proposals and stakeholder responses

- 7.95 In the March 2017 WLA Consultation, we proposed that the existing minimum contract period limit of one month for VULA migrations should be extended to cover FTTC-based VULA connections. We also proposed that there should not be a restriction on minimum contract periods for VULA connections offering higher speeds than FTTC, such as FTTP.

³⁹⁶ The “Metropolitan Point of Presence” (MPoP) is the point of inter-connection between the access and core networks of a fibre network operator.

³⁹⁷ Ofcom, 2014 FAMR Statement, paragraphs 12.241-247.

- 7.96 Most stakeholders supported our minimum contract period proposals. Vodafone and TalkTalk agreed with our view that limiting the length of minimum contract periods to one month for FTTC-based VULA services would help to promote competition and encourage switching.³⁹⁸ While CityFibre also supported limiting minimum contracts for FTTC-based VULA services, it disagreed that BT should have the freedom to set minimum contract periods for higher speed VULA services.³⁹⁹
- 7.97 Openreach disagreed with our proposed limit to minimum contracts for FTTC-based VULA connection services to one month, stating that:
- there is no evidence in the consultation that Openreach’s minimum contract lengths are driving retail terms and conditions (thus impeding switching at a retail level);
 - there is no evidence to support our assertion that pricing flexibility is no longer required because take-up of superfast broadband is more certain now;
 - pricing flexibility offers Openreach a chance to encourage take up of higher bandwidth services by offering attractive deals to downstream telecoms providers; and
 - it is suitable for Openreach to retain pricing flexibility given the original wholesale costs and investment for GEA have not yet been recovered.⁴⁰⁰
- 7.98 Openreach also sought clarity over whether a minimum contract period of one month would apply to G.fast services in its response to the March 2017 WLA Consultation.
- 7.99 Other representations from telecoms providers in relation to this aspect of our proposals are set these out, together with our responses to them, in Annex 7.

Our reasoning and decisions

- 7.100 Since providing its response to the March 2017 WLA consultation, Openreach has reduced the minimum contract period for GEA-FTTC service connections to one month (effective from 12 October 2017).⁴⁰¹
- 7.101 We nevertheless consider that it is appropriate and proportionate to impose a limit of one month on minimum contract periods for GEA-FTTC services.
- 7.102 In setting a cost-based charge control for VULA, we have accounted for BT’s ability to fully recover connection costs for FTTC-based services through the initial connection charge, while ongoing network costs can be fully recovered through the rental charge (see Volume 2). As such, BT will not need to rely on longer minimum terms and higher held-to-term charges in order to recover its costs. In the absence of a limit to minimum contract periods, Openreach would be able to use extended minimum contract lengths to make an excessive recovery of costs via held-to-term charges. Imposing a limit to minimum contract

³⁹⁸ Vodafone response to the March 2017 WLA Consultation, pages 59-60; TalkTalk response to the March 2017 WLA Consultation, pages 12-13.

³⁹⁹ CityFibre response to the March 2017 WLA Consultation, paragraphs 6.4.18-6.4.19.

⁴⁰⁰ Openreach response to the March 2017 WLA Consultation, pages 58-59.

⁴⁰¹ Openreach, 13 July 2017. *Openreach Access Charge Change Notice*.

<https://www.openreach.co.uk/org/home/products/pricing/notificationDetails.do?data=ThQLPOgdo8c%2FpcQINXj7BVoAzMfOClw%2B7d4ELMHNgDegfWjPPjkaOfO6Hy2qkgEXWgDMx84IjD7t3gQswc2AN5h5II0XiKu8GtuFINk%2FATgP%2FPqHX8N7wMqJrDCqzUjKX9ukq4RSuolZF02%2ByFJag%3D%3D> [accessed 10 November 2017].

periods for FTTC-based VULA services will therefore help to ensure that BT does not over-recover the costs of these services.

- 7.103 Preventing this over-recovery of costs promotes competition by ensuring that excessive charges are not passed downstream to consumers by telecoms providers which use BT's FTTC-based VULA services. We therefore consider that the imperative to prevent over-recovery justifies our imposition of a limit on minimum contract periods for FTTC-based VULA services. Moreover, we remain of the view that, since the limit will reduce the wholesale cost of switching between services, it is also likely to encourage switching at a retail level.
- 7.104 With regard to Openreach's concerns about lacking pricing flexibility, we consider that our decision to allow BT to set minimum contract periods of longer than one month for higher-speed VULA connections means that Openreach will retain a sufficient level of pricing flexibility for its VULA services. We recognise that for higher-speed VULA services, the level of upfront costs for customer connection, rollout and early take-up are more uncertain, and so it may be necessary for BT to recover costs over an extended minimum contract period. This flexibility will also help to encourage take-up of higher-speed services by allowing BT's costs to be recovered over an extended period, rather than via a high upfront connection charge. We clarify that this pricing flexibility extends to BT's G.fast service.
- 7.105 In terms of the implementation of this requirement, SMP Condition 1 of the legal instrument includes a power for Ofcom to direct the terms of network access provided in accordance with that condition. For the reasons set out above, we are using this power to issue a Direction (see Annex 33) limiting the length of the minimum contract period following VULA migrations and VULA FTTC connections to no longer than one month, which BT would need to implement from the final working day of the month following the month in which the Statement is published. The Direction is drafted so as to apply specifically to the following services:
- GEA migrations for all BT provided GEA services;
 - GEA connections for services provided using FTTC (it does not apply to FTTP and G.Fast services), namely:
 - PCP only install for services provided using BT's FTTC deployment;
 - Start of a Stopped Line for services provided using BT's FTTC deployment; and
 - Managed Install for services provided using BT's FTTC deployment.

Legal tests

- 7.106 We consider that the Direction to require BT to impose a contract length of no more than one month on the above services meets the tests set out in the Act.
- 7.107 Section 87(3) of the Act authorises Ofcom to set SMP services conditions requiring the dominant provider to provide network access as Ofcom may from time to time direct. These conditions may, pursuant to section 87(5), include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations in the conditions are complied with

within periods and at times required by or under the conditions. As noted above, we are including a power for Ofcom to direct the terms of access as part of the SMP condition requiring BT to provide VULA on fair and reasonable terms, conditions and charges. We are making this Direction pursuant to that power.

7.108 We consider that the Direction is consistent with our duties under section 3 and all the Community requirements set out in section 4 of the Act. In particular, on the basis of the arguments set out above, the Direction is aimed at promoting competition and securing efficiency and sustainable competition for the maximum benefit of consumers by facilitating switching and so promoting retail competition, again while being consistent with the purpose of securing efficient investment and innovation.

7.109 We consider that the Direction meets the criteria set out in section 49(2) of the Act. In particular, it is:

- Objectively justifiable, in that it will promote competition by preventing BT from over-recovering the cost of supplying VULA services. It is also likely to facilitate switching and promote retail competition for VULA services.
- Not unduly discriminatory, in that the condition applies only to BT, which is the only operator to have SMP in the relevant market of the UK excluding the Hull Area.
- Proportionate, in that, while it will promote competition, the overall impact on BT's incentives to invest, and more generally on take-up of fibre, is likely to be limited and the measure is, therefore, no more intrusive than necessary to achieve its intended goals. In particular, the measure does not extend to FTTP and G.fast connections.
- Transparent, in that it is clear in its requirements and intention, as explained in this statement.

8. Quality of service remedies

- 8.1 In Section 6, we set out our decisions in relation to general remedies on BT in the WLA market, including a requirement on BT to provide network access to third-party telecoms providers on reasonable request and on fair and reasonable terms, conditions and charges.
- 8.2 In this section we explain that we are imposing on BT an SMP condition that allows us to set directions specifying quality of service (QoS) standards and reporting requirements in relation to Openreach's QoS performance for WLA services (the QoS SMP Condition).
- 8.3 Alongside this statement, we are publishing the 2018 QoS Statement which sets out directions specifying QoS standards and our decisions for the imposition, amendment or withdrawal of Key Performance Indicator (KPI) reporting requirements in relation to WLR, MPF and GEA, as part of a wider review of BT's quality of service in fixed networks.⁴⁰²

Our proposals and stakeholder responses

- 8.4 In the March 2017 WLA Consultation⁴⁰³, we proposed to set an SMP condition in the WLA market requiring BT to comply with such conditions in relation to QoS and KPI reporting requirements as Ofcom directs from time to time. In the 2017 NMR Statement, we set a similar SMP condition that allows us to set QoS standards and reporting requirements for Wholesale Line Rental (WLR) services.⁴⁰⁴
- 8.5 Vodafone, Bit Commons, [3<], [3<] and Openreach all agreed with our proposal to set a quality of service SMP condition.
- 8.6 Some of these stakeholders also made comments in relation to our proposed QoS standards and KPI reporting requirements. Stakeholder responses and our final decisions regarding these proposals are included in our 2018 QoS Statement.

Our reasoning and decisions

- 8.7 In the following sub-sections, we consider the effect of our current regulation on Openreach's quality of service performance for MPF and GEA and the aim and effect of our decision to impose a QoS SMP condition on BT. We set out our consideration of MPF and GEA in turn below.

⁴⁰² 2018 QoS Statement, section 10

⁴⁰³ March 2017 QoS Consultation, Section 7

⁴⁰⁴ 2017 NMR Statement, section 10; Note also that this is the approach that we adopted in Ofcom, 2016. *Business Connectivity Market Review Statement*, Annex 35, Condition 7 – Quality of service.
<http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr-2015/statement/final-annex-35.pdf>.

The introduction of QoS standards has stabilised and improved service performance for MPF

- 8.8 In the 2014 FAMR, we found that, over several years (from 2009), there had been a gradual decline in Openreach’s quality of service performance in relation to fault repair and provisioning of WLR and MPF services, and that performance showed significant variations over time.
- 8.9 We consequently decided to set service quality standards for repair and provisions. In particular, we set QoS standards for how quickly Openreach offered an appointment for engineering visits for provisions, and the proportion of installations completed by the agreed date, with a fixed 1% allowance for “matters beyond our (i.e. BT’s) reasonable control” (MBORC). We also set a QoS standard on the proportion of repairs completed within the timeframe specified in the service maintenance level (SML) agreed with the telecoms provider (either one or two days⁴⁰⁵), with a fixed 3% allowance for MBORC (on time repair standard).
- 8.10 In our March 2017 WLA Consultation, we set out a detailed overview of BT’s QoS performance before and after the introduction of the QoS standards using evidence provided by Openreach and, since the 2014 FAMR, mandated through KPI reporting requirements.⁴⁰⁶ In summary, the March 2017 WLA Consultation showed that Openreach’s annual performance has met the standards set in the 2014 FAMR and updated in the October and November 2016 QoS Directions and Consents.⁴⁰⁷ Although its ‘on time’ repair performance met the standard by a much narrower margin than installations, it shows a steady improvement since 2014. The KPIs also demonstrate that, since the introduction of the QoS standards in 2014, BT’s QoS performance has shown less variation over time, such that the performance for repairs and provisions has stabilised since the introduction of the

⁴⁰⁵ The vast majority (>90%) of access lines (for WLR, MPF and GEA-FTTC) are currently provided with a ‘one day’ or a ‘two day’ repair target. The SMLs covered by the regulation are SML1 and SML2. SML1 may also be referred to as ‘two day’ repair. Openreach aims to repair faults within two working days. SML2 may also be referred to as ‘one day’ repair. Openreach aims to fix a fault within one working day, including Saturdays.

⁴⁰⁶ See Section 7 in the March 2017 WLA Consultation. Regarding the provisions of the 2014 FAMR: in the 2014 FAMR Statement we directed BT to report a set of KPIs for WLR, LLU (MPF and SMPF), GEA (FTTC and FTTP), ISDN30 and ISDN2. The reporting requirements included an obligation for BT to publish a sub-set of those KPIs on a publicly accessible website.

⁴⁰⁷ In the October and November 2016 QoS Directions and Consents, we removed the expiry dates for the WLR and MPF standard obligations and enabled them to remain in force until the publication of our decisions in the WLA market review. We also implemented new repair standards based on the SML. At the time of the 2014 FAMR, the majority of WLR lines provided by Openreach were associated with SML1, while the majority of MPF lines were provided with SML2. In 2016 a number of telecoms providers decided to change care level, which would have resulted in a significant proportion of total WLR and MPF lines falling outside the repair standards. To ensure that appropriate standards continued to apply in these markets, we introduced a single standard per care level that covers both MPF and WLR. See Ofcom, 2016. *Quality of Service for WLR and MPF Directions and Consents relating to the minimum standards and KPIs imposed in the 2014 Fixed Access Market Reviews*. https://www.ofcom.org.uk/data/assets/pdf_file/0032/92678/20161017-QoS-Statement_Non-confidential.pdf and https://www.ofcom.org.uk/data/assets/pdf_file/0016/94300/Further-QoS-Statement.pdf

standards.⁴⁰⁸ In our 2018 QoS statement, we set out BT's recent QoS performance which shows that BT has continued to meet the standards since the publication of the March 2017 WLA Consultation.⁴⁰⁹

Aim and effect of regulation for MPF

- 8.11 As described above, the introduction of QoS standards in the 2014 FAMR appears to have stabilised and improved quality of service during this review period for MPF services. This highlights the importance of our intervention imposing QoS standards to support an effective MPF access remedy.
- 8.12 In addition, based on our review of performance from 2009, we remain concerned that Openreach is not sufficiently incentivised (absent regulation) to maintain, or outperform, current performance levels in the absence of regulatory standards. One of the consequences of Openreach's SMP in the WLA market is that BT might not have the incentives to provide the quality of service that telecoms providers and customers require. Inadequate QoS delivered by BT has the potential to undermine the effective functioning of the network access remedy, to the detriment of both customers and downstream competition. Negative effects on customers include slow resolution to a loss of service and frustration resulting from long delays in service provisioning. QoS issues also have the potential to adversely affect telecoms providers and the intensity of competition in retail services. For example, long or uncertain waiting times may discourage switching between telecoms providers and/or between products.
- 8.13 Given these competition concerns, we consider it appropriate to continue to impose QoS remedies for MPF services over the review period. The QoS SMP condition provides the means of setting QoS standards. Because the QoS SMP condition allows us to set QoS standards by direction, it also offers flexibility to adapt to changing market circumstances over the market review period. The October and November 2016 QoS Directions and Consents provide an example of when such flexibility has been necessary in the past, as we had to change the QoS standards set out in the 2014 FAMR to take into account changes in the volume of telecoms providers purchase of repair SMLs 1 and 2 for WLR and MPF.⁴¹⁰

Recent performance for GEA is consistent with MPF performance

- 8.14 In the 2014 FAMR, we did not introduce QoS standards on BT for GEA services. At the time, the deployment and uptake of GEA services was relatively small; in August 2014 there were [3].⁴¹¹ However, we directed BT to report a set of KPIs for GEA (FTTC and FTTP), along with WLR, LLU (MPF and SMPF), ISDN30 and ISDN2. This decision increased the range

⁴⁰⁸ We set out our evidence and analysis in relation to BT's QoS performance for the provisioning and repair of MPF at paragraphs 7.18-7.28 and figures 7.2-7.6 in March 2017 WLA Consultation.

⁴⁰⁹ 2018 QoS Statement, Annex 1.

⁴¹⁰ See Ofcom, 2016. *Quality of Service for WLR and MPF Directions and Consents relating to the minimum standards and KPIs imposed in the 2014 Fixed Access Market Reviews*.

https://www.ofcom.org.uk/data/assets/pdf_file/0032/92678/20161017-QoS-Statement_Non-confidential.pdf and https://www.ofcom.org.uk/data/assets/pdf_file/0016/94300/Further-QoS-Statement.pdf.

⁴¹¹ Data from Openreach mandatory non-discrimination KPIs.

and granularity of the KPIs that BT is required to report to Ofcom allowing us to monitor Openreach's performance more closely and if necessary respond to any trends.

- 8.15 In our March 2017 WLA Consultation, we set out a detailed overview of BT's QoS performance in providing and repairing GEA services over the market review period, using evidence mandated through KPI reporting requirements. In summary, the KPIs provided by Openreach showed that its recent performance for GEA services was consistent with MPF performance. We noted that GEA-FTTP performance since 2014 had typically been more variable than GEA-FTTC although we consider that this is largely due to the low volume of lines compared to other services (e.g. WLR and MPF). We also observed that, had we imposed the same repair standards for GEA-FTTC as we did for MPF, GEA-FTTC performance would have met the 2014/15 and 2015/16 on time repair standards.⁴¹² In our 2018 QoS statement, we provide updates on BT's QoS performance for GEA since the publication of our March 2017 WLA Consultation which shows that Openreach's repair performance for GEA-FTTC has remained stable over the period from March 2017 until December 2017, although MPF has improved slightly during that period.⁴¹³

Aim and effect of regulation for GEA

- 8.16 The KPIs for GEA show that repair times for GEA are generally similar to repair times for MPF services. However, our concern is that, as for MPF, Openreach is not sufficiently incentivised to maintain or substantially exceed current performance levels in the absence of regulation, which has the potential to adversely affect competition and consumers in the same ways that we have described for MPF above. The uptake of GEA services has increased since the last review, such that [X] lines now provide GEA services. In addition, our forecast is for SFBB services (provided using Openreach GEA and Virgin Media's network) to grow substantially over the review period (see Section 3).
- 8.17 Given our competition concerns, and the increasing importance of GEA based services, we consider that inadequate quality of service of GEA may lead to material risks for competition and consumers. There is also a risk that QoS standards applied to WLR and MPF might result in those services being given a higher priority at the expense of GEA services. We therefore consider it appropriate to impose QoS remedies for GEA services over the review period and to provide for flexibility to adapt to changing market circumstances during this time. As described above, the October and November 2016 QoS Directions and Consents provide an example of when such flexibility has been necessary in the past, as we had to change the QoS standards set out in the 2014 FAMR to take account of changes in the volume of telecoms providers purchase of repair SMLs 1 and 2 for WLR and MPF.

⁴¹² We set out our evidence and analysis in relation to BT's QoS performance for the provisioning and repair of GEA at paragraphs 7.29-7.33 and figures 7.7-7.10 in the March 2017 WLA Consultation.

⁴¹³ 2018 QoS Statement, Annex 1.

- 8.18 In our 2018 QoS Statement, we set out our decisions to apply QoS standards to GEA-FTTC and not GEA-FTTP, taking into account that GEA-FTTC represents the majority of GEA lines (about 2% of GEA lines were using GEA-FTTP at the end of 2017).⁴¹⁴

Decision

- 8.19 For the reasons set out above, we have decided to impose on BT a SMP condition in relation to the WLA market requiring BT to comply with all such quality of service requirements in relation to network access as Ofcom may from time to time direct.⁴¹⁵ This condition includes a power for Ofcom to direct BT to comply with quality of service standards and KPI reporting requirements that will allow us to monitor BT's performance (subject to satisfaction of the relevant legal requirements in the Act).

Legal tests

- 8.20 For the reasons set out below, we are satisfied that the SMP conditions for QoS imposed on BT in respect of the WLA market in the UK, excluding the Hull Area, meet the various tests set out in the Act.
- 8.21 Section 87(3) of the Act authorises the setting of SMP services conditions in relation to the provision of network access. Section 87(5) of the Act provides that such conditions may include provision for securing fairness and reasonableness in the way in which requests for network access are made and responded to and for securing that the obligations contained in the conditions are complied with within the periods and at the times required by or under the conditions. In this regard we note Article 12(1) of the Access Directive, which provides that national regulatory authorities may attach to conditions relating to network access obligations covering fairness, reasonableness and timeliness. Section 87(6)(b) of the Act also specifically authorises the setting of SMP services conditions which require a dominant provider to publish, in such a manner as Ofcom may direct, all such information for the purposes of securing transparency.
- 8.22 We consider that the regulation that we have set in relation to quality of service will enable Ofcom to secure that network access is provided within a reasonable period of time and on a fair and reasonable basis.
- 8.23 In reaching our decision, we have taken into account the factors set out in section 87(4) of the Act. In particular, we consider that the imposition of the condition enabling Ofcom to set QoS standards is necessary to ensure an appropriate level of quality of service so as to secure effective competition, including economically efficient infrastructure-based competition, in the long term. Our conditions will also ensure that there can be an

⁴¹⁴ 2018 QoS Statement.

⁴¹⁵ This condition is pursuant to our network access SMP condition. Please see Section 8, where we explain our decision to maintain the requirement on BT to provide network access to third-party telecoms providers on reasonable request and on fair and reasonable terms, conditions and charges in the WLA market; Note also that this is the approach that we adopted in Ofcom, 2016. *Business Connectivity Market Review Statement*, Annex 35, Condition 7 – Quality of service. <http://stakeholders.ofcom.org.uk/binaries/consultations/bcmmr-2015/statement/final-annex-35.pdf>; the QoS SMP Condition is set out in Annex 35, page 29.

appropriate level of transparency in relation to quality of service, in conjunction with the condition requiring BT to publish information as to the quality of its services, as Ofcom may from time to time direct.

8.24 We have considered our duties under section 3 of the Act. We consider that, by ensuring that BT adheres to prescribed QoS standards and transparency requirements in relation to both provisioning and the repair of faults, these regulations will further the interests of citizens in relation to communications matters and further the interests of consumers in relevant markets by promoting competition.

8.25 We have considered the Community requirements set out in section 4 of the Act. We consider that these conditions will promote competition in relation to the provision of electronic communications networks and encourage the provision of network access for the purposes of securing efficient and sustainable competition in the markets for electronic communications networks and services.

SMP condition in relation to QoS standards and KPI reporting requirements

8.26 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:

- objectively justifiable, in that the purpose of the regulation is to ensure mandatory QoS standards in relation to some key services supporting network access. The evidence available to us indicates that, in the absence of other effective incentive mechanisms, regulation is necessary to secure an appropriate level of service by BT and our regulation addresses this;
- not unduly discriminatory, in that it will only apply to BT, which we have identified as the only telecoms provider having SMP in the relevant market in the UK, excluding the Hull Area;
- proportionate, in that we have identified the need for regulation of BT's quality of service. We consider that our decisions are the least onerous means of achieving the desired objective, in that it only requires BT to comply with QoS standards as directed by Ofcom; and
- transparent, in that, its clear intention is to ensure that BT maintains a level of quality of service in relation to a number of key factors of importance to telecoms providers that buy these wholesale inputs.

8.27 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:

- objectively justifiable, in that the purpose of the regulation is to secure an appropriate level of service by BT and to prevent undue discrimination by allowing Ofcom and the industry to monitor BT's performance, particularly the quality of the access services it is providing for various services;
- not unduly discriminatory, in that it will only apply to BT, which we have identified as the only telecoms provider having SMP in the relevant market in the UK, excluding the Hull Area;

- proportionate, in that it only requires BT to provide and publish information as directed by Ofcom where we consider such information is necessary to monitor BT's performance, which is the minimum condition to ensure the desired objective; and
- transparent, in that, its clear intention is to secure that BT offers an appropriate level of service and to prevent undue discrimination by BT in the provision of services to telecoms providers.

8.28 For these reasons, we consider that the regulation is appropriate to address the competition concerns, in line with section 87(1) of the Act. As set out above, we have also published a statement setting out our decisions on the specific QoS standards and transparency requirements that should be imposed on BT. As part of that statement, we set out our reasoning as to why our decisions meet the applicable legal tests.

9. Price regulation of VULA

- 9.1 In Section 7, we set out our decision to impose a specific access obligation on BT to provide access to its fibre connections in the form of virtual unbundled local access (VULA). In this section we set out the price regulation applicable to BT's VULA services, from 1 April 2018.
- 9.2 Our price regulation is intended to address the competition concerns resulting from BT's SMP in the WLA market in the UK excluding the Hull Area. Specifically, on the basis of our market analysis, we have identified a relevant risk of adverse effects arising from a price distortion. The price distortion that we are concerned about is that, absent regulation, BT would have the incentive and ability to set charges for VULA services at an excessive level, with a knock-on impact for retail superfast broadband prices. We are also concerned that BT's SMP could enable it to use VULA services to distort competition in the provision of fibre access by engaging in a margin squeeze.

Summary of decisions

- 9.3 In summary, we have decided to:
- introduce charge controls on BT's VULA 40/10 services, specifically on BT's GEA-FTTC 40/10 rentals and associated ancillary services⁴¹⁶;
 - continue to allow BT pricing flexibility on higher bandwidth VULA services, subject to the requirement that charges are fair and reasonable, which we would interpret as a requirement not to impose a margin squeeze;
 - in cases where the copper bearer associated with the provision of the VULA 40/10 service is not provided via MPF (which is subject to a charge control) e.g. it is provided via WLR or a new approach such as 'single order GEA' (SOGEA), require BT to set charges related to the copper bearer that are fair and reasonable, by which we mean that they should reflect the costs of providing that bearer; and
 - for those premises served with full-fibre where there is no FTTC connection available, require BT to offer GEA-FTTP 40/10 rentals at the same price as the equivalent charge-controlled GEA-FTTC service. This rule will not apply where a premise can access an FTTC connection.
- 9.4 The charge control on BT's GEA-FTTC 40/10 rentals is a CPI-X control with X set to align charges to forecast efficient costs by the penultimate year of the charge control period (i.e. a cost-based charge control). The details of how we have set our charge controls on all VULA services are set out in Volume 2 of this statement.
- 9.5 In light of the above, we have decided that BT will no longer be subject to the detailed VULA Margin Condition that we imposed in 2015.⁴¹⁷

⁴¹⁶ We are also charge controlling some ancillary services that are provided with all GEA variants.

⁴¹⁷ The VULA Margin Condition imposed obligations on BT to provide a sufficient margin between retail and wholesale prices and to provide details to Ofcom of the costs and revenues necessary to demonstrate its compliance, every six months.

Structure of section

- 9.6 This section proceeds as follows. We first set out the objectives by reference to which we proposed to consider VULA pricing remedies in our March 2017 WLA Consultation, and explain why we consider these still hold in light of stakeholder responses. We also explain how we seek to balance these objectives to most effectively address our competition concerns resulting from BT's SMP.
- 9.7 We then set out our more detailed assessment of how VULA price regulation can satisfy each of these objectives, as follows: protecting consumers and retail competition in this review period; preserving BT's investment incentives, taking account of the fair bet on BT's past FTTC investment, as well as future investment in full-fibre broadband; and preserving investment incentives faced by BT's competitors. Based on this assessment, we set out our overall conclusion on VULA pricing remedies.
- 9.8 We also explain in more detail how our VULA price regulation will apply to full-fibre connections, the position in relation to VULA 40/10 where the copper bearer is not provided via MPF, and the position in respect of ancillary services.

Our objectives for price regulation of VULA

Our proposals

- 9.9 As explained in Section 5, an important component of our approach to regulating access to BT's fibre services where necessary, which reflects the strategic context for this review, is to give both BT and its competitors incentives to invest in new networks, while balancing the need to protect competition and ultimately consumers in the short term.
- 9.10 In our March 2017 WLA Consultation, we set out four key objectives by reference to which we proposed to consider VULA pricing remedies.
- **Preserving the investment incentives faced by competitors to BT**, incentivising BT's competitors to build their own networks where viable.
 - **Preserving the investment incentives faced by BT**, by applying the 'fair bet' principle. This recognises that the investing firm needs to benefit from sufficient upside potential from any investment to offset the downside risk of failure.
 - **Protecting customers against the risk of high prices**. Interventions to encourage investment in new infrastructure must take account of the risk that they could result in higher prices for consumers. However, the risk of short-term price rises may be outweighed in the medium to long term by the harm caused by a lack of investment altogether.
 - **Protecting retail competition where necessary, based on access to BT's network**. Where we do not expect network competition to emerge, and during the transitional period before it emerges, the prices charged for access to BT's network must allow rivals to compete.

- 9.11 Reflecting those objectives, we proposed a cost-based charge control on VULA 40/10 services. In cases where the copper bearer is not provided via MPF, we proposed that any charges related to the copper bearer should be fair and reasonable, by which we meant they should reflect the costs of providing that bearer.
- 9.12 We proposed to allow pricing flexibility on the other bandwidth VULA services, subject to the requirement that charges are fair and reasonable. We also proposed to remove the current VULA Margin Condition.

Stakeholder responses

- 9.13 Respondents to our March 2017 WLA Consultation generally agreed with our proposed objectives. BT said that we are right to seek to balance the aims of protecting consumers and retail competition while also encouraging investment.⁴¹⁸ CityFibre said it recognises that we must balance measures that promote longer term goals such as investment in new full-fibre networks with some degree of short-term consumer protection until competition becomes effective.⁴¹⁹ Virgin Media said there is a balance between securing lower prices for consumers in the short term versus maintaining investment incentives to support infrastructure competition and hence service innovation and lower prices in the long term.⁴²⁰
- 9.14 However, many respondents disagreed with how we had applied those objectives, and/or did not agree that our proposals for VULA price regulation struck an appropriate balance between them. BT, CityFibre and Virgin Media considered we would strike a better balance between our objectives by more relaxed regulation of BT's VULA services. In particular, BT argued that a VULA charge control is not required to protect consumers from excessive pricing, and that introducing one would violate the fair bet principle, with negative consequences for future investment and network competition. It said that we should continue to allow pricing flexibility for VULA services, or, at a minimum, increase the level of the VULA 40/10 charge control.⁴²¹
- 9.15 On the other hand, Sky, TalkTalk and others said that we would strike a better balance between our objectives by regulating BT's VULA services more tightly, in particular by applying some form of price regulation to higher VULA bandwidths.
- 9.16 We have carefully considered the detail of all the representations received on this aspect of our proposals in reaching our decisions. We set out the detail of specific responses and our assessment of them in the course of this section, as we present our analysis and explain our decisions.

⁴¹⁸ BT response to the March 2017 WLA Consultation, paragraph 1.2.

⁴¹⁹ CityFibre response to the March 2017 WLA Consultation, paragraph 2.1.2.

⁴²⁰ Virgin Media response to the March 2017 WLA Consultation, paragraph 116.

⁴²¹ BT response to the March 2017 WLA Consultation, page 3.

Conclusion on our objectives

9.17 In light of stakeholder responses, in coming to our decisions about introducing VULA pricing remedies, we have continued to have regard to the same four objectives as in our March 2017 WLA Consultation and in doing so give effect to the policy objectives set out in the regulatory framework.

Balancing our objectives

9.18 As demonstrated by the various views expressed by respondents to our March 2017 Consultation, there can be tension between our different objectives. We describe below how we have considered this and balanced our objectives to achieve an appropriate and proportionate package of remedies for consumers.

9.19 In relation to preserving BT's investment incentives, we are required when setting charge controls to consider the extent of investment by the dominant provider in the matters to which the pricing remedy relates.⁴²² We have considered this issue by reference to the 'fair bet' principle; that is, whether BT has had a fair opportunity to earn a reasonable return on its original FTTC investments, taking account of the risks at the time the investment was made. As discussed below and in Annex 6, we find that BT has had a fair bet on its FTTC investments and so our decision to impose price regulation on BT's VULA 40/10 services is consistent with safeguarding BT's incentives to invest.

9.20 The remaining objectives can suggest alternative approaches to addressing our competition concerns. For example, tighter wholesale price regulation will afford more protection for consumers and the existing model of competition (based on access to BT's WLA services) in the short term, but may undermine incentives for future network investment which is in consumers' long-term interests. In contrast, looser wholesale price regulation might generally be preferred by potential investors in full-fibre networks, but will afford less short-term protection for consumers and the existing model of competition. However, if wholesale price regulation was so loose that it seriously compromised existing retail competitors' market positions, this could also undermine their ability and incentives to invest in new infrastructure.

9.21 We have sought to exercise our judgement on this matter to impose an appropriate and proportionate set of remedies that furthers the interests of consumers in these markets in both the short and long term. Our approach has been informed by the following considerations.

9.22 We seek to support strong incentives for rivals to BT to invest in competing full-fibre networks:

- we place weight on the potential benefits for consumers of rival investment and network competition to BT in the long term, as discussed in Section 5;

⁴²² Section 88(2) of the Communications Act 2003.

- we consider that there is good potential for rival investment and competition to BT in many parts of the UK. Such competition is supported by our PIA remedy;
- we consider that our approach to VULA pricing, now and in the future, will be a significant influence on incentives for competing investment; and
- we consider that our regulation in this review period will be an important signal for investors, notwithstanding the fact that these investors will have a long time horizon.

9.23 We also recognise that such investment will not be forthcoming in all parts of the UK and that even in potentially competitive areas there will be a time lag before there is substantial network deployment. This feeds into our assessment of the relevant risk of adverse effects arising from BT's incentive and ability to set charges for VULA services at an excessive level. Put another way, it means that consumers and competitors that currently rely on BT's wholesale access services could potentially face high prices in this review period (compared to the efficiently incurred costs of supply, taking account of necessary compensation for risk) if we do not impose some degree of control on BT's VULA charges.

9.24 We have considered the balance between consumers' short-term and long-term interests by evaluating what form of controls are necessary to provide adequate protection in this review period, yet provide incentives for investment in competing networks as well as by BT over time. As discussed in this section, we conclude that for this review period:

- copper alternatives and competition from Virgin Media will not adequately protect consumers against the risk of high prices; and
- regulating VULA 40/10 services by way of a cost-based charge control, while continuing the approach of pricing flexibility for other bandwidths, will adequately protect wholesale and retail consumers from excessive prices, although this protection is less than would be the case if we applied charge controls to all VULA services.

9.25 We have evaluated this package of remedies to confirm that it is supportive of investment in competing networks and by BT in this review period and in the long run. In particular:

- Investment in new networks will take time and investors will have a long-term perspective. Our approach of allowing pricing flexibility for higher bandwidth services will increase in importance over time as consumers' demand for higher bandwidth services increases. This provides strong incentives for potential competitors to embark on a long-term programme of rollout.
- We have checked that a charge control on VULA 40/10 services is consistent with substantial full-fibre deployment by some efficient rivals to BT, during the current review period.

9.26 Taken together, we consider that our package of remedies provides adequate protection for competition and consumers in this review period, which is an important time period over which rival network investment can take shape. However, we have not gone beyond the minimum necessary to provide this protection, and pricing flexibility on higher bandwidth services will become even more significant in future, for strengthening the investment case for rival networks.

- 9.27 In what follows, we set out our detailed assessment of VULA price regulation against each of our objectives. Where relevant, we explain how we have taken account of the considerations above, so as to strike an appropriate balance between these objectives.

Protecting consumers against the risk of high prices

- 9.28 We have set out our view in Section 4 that BT will continue to have SMP in the supply of WLA services in the UK excluding the Hull Area, for this review period. This gives rise to a risk that, absent regulation, BT would have the incentive and ability to set charges for VULA services at an excessive level.
- 9.29 In our March 2017 WLA Consultation, we said that this is likely to lead to adverse effects in terms of higher retail prices for SFBB customers. We provisionally concluded that it may be necessary to impose a charge control to protect customers from this risk of high prices.⁴²³

VULA pricing and profitability

- 9.30 Virgin Media said we had not clearly defined or described this objective. It said that this morphs from protecting consumers from higher prices to protecting them from excessive pricing throughout the March 2017 WLA Consultation, and that “as far as we can see, at no point does Ofcom claim that the current prices are ‘excessive’...Ofcom is guarding against a future threat of harm rather than the existence of a current detriment”.⁴²⁴
- 9.31 BT and Virgin Media said we had provided little or no evidence that current VULA prices and returns are excessive. Virgin Media said that, as a period of returns above the cost of capital is essential for any investment to compensate for start-up losses, and for the fact that returns are deferred until the future, we had not made the case that BT’s current Return on Capital Employed (ROCE) on SFBB is a problem that justifies an intervention. It also said that an IRR-based approach⁴²⁵ risks clawing back better than expected returns from a ‘fair bet’ period, fundamentally undermining the very principle of the ‘fair bet’.
- 9.32 Virgin Media also said that a VULA charge control is likely to have a relatively small impact on retail prices, even if price reductions were fully passed through to consumers, and so the absence of such a reduction does not appear to represent “considerably higher prices”. It said a more proportionate approach that guards against future price increases and errs on the side of investment incentives would be to impose a safeguard cap on Openreach’s 40/10 service at today’s prices.⁴²⁶
- 9.33 Our objective here is to protect consumers against the risk of adverse effects of BT setting VULA charges at an excessive level.⁴²⁷ We consider that a likely adverse effect in these circumstances would be high prices for consumers purchasing retail SFBB packages.

⁴²³ See paragraph 8.35, March 2017 WLA Consultation.

⁴²⁴ Virgin Media response to the March 2017 WLA Consultation, paragraphs 45 to 46.

⁴²⁵ IRR refers to internal rate of return.

⁴²⁶ BT response to the March 2017 WLA Consultation, paragraph 2.8. Virgin Media response to the March 2017 WLA Consultation, paragraphs 125-129.

⁴²⁷ Our objective is not narrowly about affordability, as Virgin Media discusses in paragraphs 47-49 of its response.

9.34 We have considered the evidence on BT’s pricing and profitability for VULA services, which can inform our view on this risk. We believe it indicates that, in the absence of a control on the level of VULA charges, BT would have the ability and incentive to set excessively high prices. In this regard, we note that:

- VULA charges have remained constant since they were introduced (in July 2009 for the 40/2 service, and September 2011 for the 40/10 service), while the unit cost of VULA has fallen significantly over time and is projected to fall further during this period.⁴²⁸
- This means that the gap between current VULA 40/10 rental charges and our estimate of the unit cost of providing this service (which is set out in Volume 2) is currently £1.85 per line, and is projected to increase to around £2.41 by 2020/21. We estimate that this is equivalent to consumers paying up to £1.5 billion in higher retail prices compared to cost-based charges, over the course of the review period, if rental charges remained at their current levels.⁴²⁹ This is a significant impact on overall consumer bills.
- As set out in Section 4, BT’s reported profitability for GEA services, measured by ROCE, has also been increasing. It was 24.8% in 2016/17, up from 21.6% in 2015/16 i.e. significantly above the benchmark cost of capital.⁴³⁰

9.35 As BT and Virgin Media noted in their responses, we recognise that accounting returns on GEA services are not necessarily a reliable indicator of profitability, given the profile of expenditure and usage on what is a growing service. Furthermore, BT also needs to earn some returns above the cost of capital to compensate for the additional downside risk associated with its investment in FTTC. However, as set out later in this section and in more detail in Annex 6, we consider that Openreach’s returns over the lifetime of its original risky investment have been above the cost of capital, after taking account of the risk incurred.

9.36 As a result of its SMP in this market and in light of our market analysis we consider that BT would have the ability and incentive to set and maintain excessively high prices for VULA over the period of this review. We therefore consider there is a risk to consumers of high prices for retail SFBB packages, if BT can maintain its current VULA charges or increase them beyond current levels. Furthermore, our estimates above show that the potential scale of this harm is large.

⁴²⁸ For instance, we estimate that the LRIC of GEA-FTTC has fallen by around 45% since the date of the last review in 2014.

⁴²⁹ This is in Net Present Value (NPV) terms. It assumes that wholesale price reductions for 40/10 GEA rentals (including VAT) are fully passed through at the retail level, and downstream SFBB prices for higher GEA bandwidths fall by the same amount as 40/10 GEA prices (due to the constraint imposed by the 40/10 GEA price). It also assumes a reduction in retail prices by Openreach providers is mirrored one-for-one by a fall in retail prices for Virgin Media.

⁴³⁰ BT’s ROCE in 2014/15 was 12.9%, though this figure is before CAR adjustments and so is not on a consistent basis to later figures. Source: BT’s Regulatory financial statements and information derived from the RFS Additional Financial Information, flat file schedule, supplied in confidence by BT: 2016/17 dated 3 November 2017; 2015/16 dated 11 November 2016; 2014/15 dated 14 August 2015.

Constraints on BT's VULA prices

- 9.37 As set out in Section 10, we have decided to set a cost-based charge control for MPF services, which support retail packages of SBB as well as retail SFBB packages when used in conjunction with GEA-FTTC services.
- 9.38 BT and Virgin Media said we have understated the extent to which the risk of excessive VULA prices is mitigated by the constraint from copper-based standard broadband services. BT said we had not demonstrated that market conditions have changed sufficiently to justify a different conclusion to that reached in 2014 on the constraint exerted by SBB. It argued that that SBB remains an important constraint on SFBB, even if the market is moving towards greater fibre take-up.
- 9.39 BT also said we had underestimated the strength of competition from Virgin Media in certain parts of the country, where it is eroding Openreach's share of local access lines and competing strongly in the retail market.⁴³¹
- 9.40 We have therefore considered whether the presence of competitive constraints from copper loop-based services and competition from other access networks (including Virgin Media) are likely to constrain VULA prices to cost-reflective levels during this review period. Given the evidence we have presented above regarding the material and growing gap between VULA 40/10 rental charges and our estimate of the unit cost of providing this service and BT's profitability, the strength of these constraints would need to increase to address our concern in respect of high prices.

Copper constraint

- 9.41 We have assessed the constraint from retail packages of SBB to retail prices for SFBB packages in Annex 5, taking account of stakeholder responses to the March 2017 WLA Consultation. In summary, while we have concluded that copper and fibre-based broadband access form part of the same product market, we find that that these constraints appear to be asymmetric in that demand-side substitution from copper-based to fibre-based services would appear greater than from fibre to copper.⁴³²
- 9.42 Furthermore, there is increasing demand for fibre services. This is underpinned by increasing bandwidth usage, which we consider is likely to continue to increase throughout this review period. Overall take-up of retail packages of SFBB now exceeds take-up of retail packages of SBB, and we expect it to grow to around 70% of all broadband lines by the end of this review period.⁴³³ BT's fibre-based share of the WLA market alone is forecast to be around 40% (see Figure 4.1).

⁴³¹ BT response to the March 2017 WLA Consultation, paragraphs 2.28 and 2.43. Virgin Media response to the March 2017 WLA Consultation, paragraph 56.

⁴³² We note, as explained in Annex 5, that a quantitative hypothetical monopolist test (HMT) used in market definition is not designed to capture all the factors that are relevant to the actual pricing decisions that telecoms providers such as BT face, particularly as BT – unlike a hypothetical monopolist of SFBB – supplies a range of broadband speeds (including SBB), which will affect its pricing incentives.

⁴³³ There is also increasing take-up of SFBB services delivered using higher VULA bandwidths.

- 9.43 This level of migration from copper-based services to fibre-based services is likely to point towards the importance of the copper constraint diminishing over time as SBB becomes an increasingly small minority of downstream WLA services, particularly if this migration is accompanied by a greater attachment to fibre-based services. This creates a risk of the constraint that it imposes on BT's incentive to raise VULA prices diminishing further over the review period.
- 9.44 In light of the asymmetric and diminishing constraint exercised by retail packages of SBB to retail prices for SFBB packages, as well as the increasingly large share of WLA connections that are served using GEA, we do not consider that this constraint will be sufficient to bring down VULA prices closer to the level of efficiently incurred cost during the review period. As such, we believe that BT would still have the ability and incentive to set and maintain VULA prices at an excessive level.
- 9.45 Furthermore, as set out above, the large share of fibre access connections means that the potential magnitude of harm to consumers associated with this risk is very large.

Constraint from Virgin Media and other networks

- 9.46 We have considered the strength of the constraint from services offered by Virgin Media and other networks in Section 4, taking account of stakeholder responses to the March 2017 WLA Consultation.
- 9.47 Virgin Media's network footprint is currently growing, but it will remain geographically limited for at least the period of this review. We also expect provision by other networks to become more important in future. However, given the time it takes to deploy these networks, we do not expect them to become established in a significant portion of the country during this review period. This means that BT will remain the only supplier of WLA services in much of the UK. In our volume forecasts, which take account of Virgin Media's Project Lightning rollout as well as new network rollout by other network providers, BT's overall share of WLA lines remains high and is at around 80% by 2020/21 (see Figure 4.1).
- 9.48 Overall, we have concluded that BT will continue to have SMP in the supply of WLA services in the UK excluding the Hull Area for the period of this review.
- 9.49 While we agree that Virgin Media's presence at the retail level imposes some constraint on BT's VULA prices, we do not consider that this constraint will be sufficient to bring down VULA prices closer to the level of efficiently incurred cost during the review period. As such, we believe that BT would still have the ability and incentive to set and maintain VULA prices at an excessive level.

Overall view on the competition concern and the need for VULA price regulation to protect consumers from higher prices

- 9.50 On the basis of the evidence which we have presented and summarised above, we remain of the view that BT's SMP gives rise to a relevant risk of adverse effects arising from a price distortion. That is, absent price regulation, BT would have the incentive and ability to set

charges for VULA services at an excessive level, and that consumers would be significantly adversely affected by this in the form of high prices for SFBB services.

- 9.51 We disagree with Virgin Media that a safeguard cap would address this concern. While this would limit scope for further price increases, we consider it is likely that BT would price up to this cap (i.e. maintain VULA prices at today's levels), which, as explained above, is higher than the level of efficiently incurred costs, taking account of compensation for risk.
- 9.52 As regards other pricing remedies, such as a requirement to set fair and reasonable or cost-oriented charges, we consider that these remedies would only be effective in addressing the risk of excessive prices if they brought prices closer to the level of efficiently incurred cost. While we could provide guidance to this effect, this would still leave significant uncertainty unless we also specified what this level is i.e. by modelling BT's costs, as we do for a cost-based charge control.⁴³⁴
- 9.53 However, as VULA services are provided over a range of bandwidths, there is a choice about the scope of a cost-based charge control. The following sections therefore consider which VULA services should be subject to a cost-based control to address the risk of excessive pricing by BT. In doing so, reflecting our objectives for the regulation of VULA, we seek to target our price regulation to the minimum intervention necessary to address our competition concerns, while also preserving investment incentives.
- 9.54 Having done this, we then directly assess whether this approach satisfies our investment objectives for the price regulation of VULA.

Charge control on VULA 40/10 services and pricing flexibility for higher VULA bandwidths

Our proposals

- 9.55 In the March 2017 WLA Consultation, we proposed setting a cost-based charge control for VULA 40/10 services while allowing BT continued pricing flexibility on VULA services for other bandwidths. We explained our view that this would be likely to provide adequate protection to downstream competition, and ultimately consumers, given BT's SMP. We said that there will be fairly strong substitutability between retail SFBB services of different speeds, in the period of this review. We noted in particular that BT's internal documents suggest customers seem to be sensitive to pricing, and that volume forecasts suggest limited demand for speeds above 40 Mbit/s.⁴³⁵
- 9.56 On this basis, we said that the risk of harm to retail competition and consumers from excessive prices for higher bandwidth VULA services would be mitigated by the strength of the 40/10 charge control as an anchor, coupled with our fair and reasonable charging condition for other VULA services.

⁴³⁴ We also do not consider that we could benchmark VULA charges against international fibre access charges, as they may not reflect the efficiently incurred cost of providing this service in the UK.

⁴³⁵ March 2017 Consultation, paragraphs 3.47-3.52 and 8.41-8.43.

Stakeholder responses

- 9.57 Several stakeholders (Sky, TalkTalk, Vodafone and [X]) said a charge control only on VULA 40/10 services would not provide sufficient protection for consumers.
- 9.58 Sky acknowledged that charges for higher bandwidth GEA services may fall as a result of a 40/10 GEA charge control, but it said that this constraint will weaken over time. Sky said that we presented little evidence of “fairly strong substitutability” between different GEA speed variants or of limited demand for faster GEA variants. It also said that the evidence we did present was based on current conditions (including existing regulation), whereas our assessment should be forward-looking, anticipating market developments. Sky said that we should set individual cost-based charge controls for 55/10 and 80/20 GEA services, or alternatively apply a safeguard cap to these higher bandwidths, based on the current bandwidth gradient.⁴³⁶
- 9.59 TalkTalk said BT will be able to earn very substantial supernormal returns on higher bandwidth products if 40/10 GEA does not impose a significant competitive constraint on 80/20 GEA by 2021, and so fails to fully to protect consumers from BT’s exercise of its market power on GEA products. It said we should impose a safeguard cap set at 150% of the 40/10 GEA charge control i.e. higher than the existing bandwidth gradient, to preserve some pricing flexibility.⁴³⁷
- 9.60 Vodafone said a charge control on one GEA service will act to some extent to constrain pricing on other GEA services, but the constraining impact is likely to be weak at best, as once customers buy a higher bandwidth service, they do not move back to a lower bandwidth service. Vodafone argued for a broader charge control which captures all GEA services up to 80/20, with safeguard caps to prevent extreme relative price changes within the basket control.⁴³⁸
- 9.61 [X] referred to Figure 3.11 of the March 2017 WLA Consultation, which showed that the price differential between BT’s standard and superfast broadband services had increased over time, and said that there is nothing to prevent a similar pricing differential emerging between 40/10 services and higher speed variants.⁴³⁹
- 9.62 Other stakeholders argued that VULA 40/10 services are close substitutes for higher bandwidth VULA services, and will continue to meet the needs of the majority of users for years to come.

⁴³⁶ Sky response to the March 2017 WLA Consultation, paragraphs 19 to 38.

⁴³⁷ TalkTalk response to the March 2017 WLA Consultation, paragraphs 1.8-1.10 and 2.3-2.16.

⁴³⁸ Vodafone response to the March 2017 WLA Consultation, paragraphs 3.23 and 3.35.

⁴³⁹ [X]

- 9.63 BT said a steep reduction in the price of the 40/10 wholesale product will limit prices which can be charged for higher speed products, meaning current prices for speeds higher than 40 Mbit/s could not be sustained.⁴⁴⁰
- 9.64 Similarly, Openreach said that the pricing premium for the 55/10 product above the 40/10 product is constrained to the current price difference, while the price that customers are willing to pay for the 80/20 product is set as a premium relative to the price for 40/10.⁴⁴¹
- 9.65 CityFibre submitted evidence from a Broadband Internet Access Costs (BIAC) study for the EC, which shows that price premia for both >30 Mbit/s and >100 Mbit/s services across 28 countries declined between 2012 and 2015.⁴⁴² CityFibre also said it is clear that telecoms providers are not expecting that ultrafast broadband (UFBB) pricing can be launched with a significant price premium to the 40/10 SFBB service, and expect that there will be a considerable downward pressure on UFBB pricing over time as the intention is that the service should be attractive and affordable for a large part of the market.⁴⁴³
- 9.66 Virgin Media said that a fall in the price of 40/10 services will tend to lead to a fall in the price of premium services by the same (or a similar) amount.⁴⁴⁴ In a supplementary note on consumers' demand for speeds, Virgin Media said the following:⁴⁴⁵
- in the 2016/17 financial year, more than [redacted] customers downgraded their broadband speed package, and approximately [redacted]% of those were customers who moved from 200 Mbit/s to 50 Mbit/s;
 - Virgin Media removed its 50 Mbit/s SFBB offering in April 2017, [redacted], but reintroduced it in July 2017 [redacted]; and
 - [redacted]
- 9.67 Virgin Media said that an anchor product can be entirely effective even if no provider currently uses it, and that we could apply price controls to the 18/2 product, which is significantly above SBB capabilities and would form a proximate constraint of much of Openreach's VULA volumes.⁴⁴⁶

Our reasoning and decisions

- 9.68 We recognised in our March 2017 WLA Consultation that a charge control for just VULA 40/10 services may allow somewhat increased prices for higher bandwidth VULA services than would be likely if a charge control across all VULA services were imposed. Our aim when proposing a 40/10 charge control was not to constrain higher bandwidth VULA prices to cost; rather, we wanted to ensure that SFBB customers are adequately protected

⁴⁴⁰ BT response to the March 2017 WLA Consultation, paragraph 3.20.

⁴⁴¹ Openreach response to the March 2017 WLA Consultation Volume 2, paragraph 99.

⁴⁴² CityFibre response to the March 2017 WLA Consultation, paragraph 8.3.5.

⁴⁴³ CityFibre response to the March 2017 WLA Consultation, paragraph 8.3.8.

⁴⁴⁴ Virgin Media response to the March 2017 WLA Consultation, paragraph 7.

⁴⁴⁵ [redacted]

⁴⁴⁶ Virgin Media response to the March 2017 WLA Consultation, paragraph 138.

against the risk of high prices for these services, while also promoting competition by preserving investment incentives for competing providers to invest in new networks.

- 9.69 We disagree with Virgin Media that a price control on 18/2 VULA services would provide adequate protection against the risk of high prices. This product was targeted at low-speed ADSL lines, rather than as an alternative to existing SFBB services, and offers significantly slower download speeds than VULA 40/10 services. Openreach has since withdrawn this product from sale to new customers.⁴⁴⁷
- 9.70 We remain of the view that a VULA 40/10 charge control will provide adequate protection against the risk of harm from excessive prices for higher VULA bandwidths over the next review period. This is on the basis that:
- A large proportion of fibre customers will continue to take retail services which are directly served by the charge controlled VULA 40/10 service; and
 - The prices of higher bandwidth VULA services will be indirectly constrained at the retail level, because an increase in the price premium for higher bandwidth services would, if passed through to retail prices, likely lead some consumers to substitute away from these bandwidths to services which use VULA 40/10.
- 9.71 Our updated assessment of these factors, taking account of stakeholder comments and of updated evidence and analysis undertaken since March 2017, is summarised below. We have set out our more detailed analysis in Annex 5.

Take-up forecasts

- 9.72 We have updated our forecast volumes of GEA rentals during this review period, as set out in Figure 9.1. These forecasts have been developed for our charge control modelling (see Annex 10 of Volume 2), and use updated information from telecoms providers.

Figure 9.1: Ofcom forecasts of Openreach GEA lines by bandwidth

Million lines	Internal			External			Total		
	18/19	19/20	20/21	18/19	19/20	20/21	18/19	19/20	20/21
18/2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
40/2	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
40/10	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
55/10	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]
80/20	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]	[X]

⁴⁴⁷ Openreach also offers a 40/2 GEA service, but, as set out in Annex 10, there has been significant migration away from 40/2 rentals. While we recognise that a charge control on this product could constrain prices for other GEA rentals, we consider that the risk of excessive prices is addressed more effectively through a charge control on a service that is currently used more widely by providers.

Source: Ofcom forecasts

- 9.73 Our updated forecasts for external lines suggest that most GEA lines purchased from Openreach by telecoms providers other than BT will continue to be for the 40/10 service (approximately [X] compared with our forecast of 80% in our March 2017 WLA Consultation).
- 9.74 Since our consultation, BT Consumer has upgraded SFBB subscribers whose line can support faster speeds to a headline download speed of 76 Mbit/s, which uses BT's GEA 80/20 service.⁴⁴⁸ This is reflected in our internal forecasts, and means that more than [X]% of BT's fibre subscribers are forecast to be on an 80/20 service by 2020/21. We consider these subscribers are on average likely to have a lower incremental willingness to pay for faster SFBB speeds than those who upgraded themselves, and may therefore be more willing to switch back to slower services if relative prices increased, or for other features of a broadband package.
- 9.75 We have also considered the implications of a piece of consumer research we undertook into residential customers' broadband demand (summer 2017 consumer research⁴⁴⁹), as well as internal research that telecoms providers have undertaken themselves, for likely future demand for SFBB services of different speeds. This assessment is set out in Annex 5. We believe that this information shows that while some customers are likely to derive value from faster speeds, and so would be willing to pay a premium for these services, there is a significant group of consumers for whom basic SFBB speeds are a reasonable option. The picture for businesses appears similar.
- 9.76 Overall, based on our forecasts and other evidence from telecoms providers and consumer research, we consider that higher VULA bandwidths will become more important over the forthcoming review period, and somewhat more so than we thought to be the case at the time of our March 2017 Consultation. However, our GEA rental forecasts show that we can still expect a large proportion of retail subscribers to take a 40/10 service by 2020/21. As we expect competition between retail providers to lead to wholesale charge reductions for VULA 40/10 being passed on to consumers, these customers are therefore directly protected from the risk of excessive pricing by a charge control on VULA 40/10 services.
- 9.77 We now consider the evidence on whether there is likely to be significant scope for high prices for those consumers taking faster SFBB services. This depends to a large extent on the degree to which consumers see different SFBB speeds as substitutable.

Price differentials

- 9.78 Patterns in price changes for services potentially provide useful information on the substitutability of those services. For instance, two services showing the same pattern of

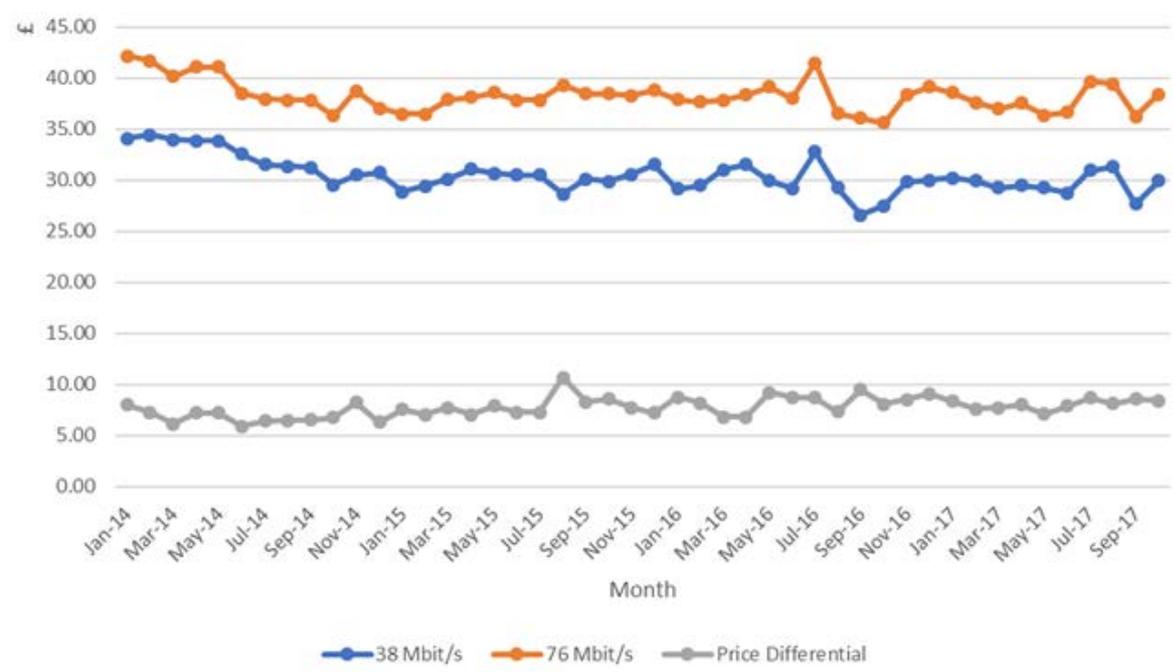
⁴⁴⁸ See http://bt.custhelp.com/app/answers/detail/a_id/56165/~/questions-about-the-bt-infinity-1-speed-upgrade.

⁴⁴⁹ This can be found here: <https://www.ofcom.org.uk/consultations-and-statements/category-1/wholesale-local-access-market-review>.

price changes, for reasons not connected to costs or general price inflation, would be consistent with these services being close substitutes.⁴⁵⁰

9.79 We have compared retail prices for different SFBB dual-play services between 2014 and 2017, to understand the extent to which they move together.⁴⁵¹ As set out in Figure 9.2, we find that, despite variation in the price levels for these packages over the period, average prices for 76 Mbit/s tracked 38 Mbit/s package prices closely, with the two price series producing a correlation coefficient of 0.83.⁴⁵² The price differential has remained broadly constant at around £8 on average with limited variation around this.⁴⁵³

Figure 9.2: Average retail price differential (including VAT) for SFBB packages by speed, January 2014 to October 2017



9.80 We consider that this pattern of prices for retail packages of different SFBB speeds is consistent with these services being substitutable, as argued by BT, CityFibre and Virgin Media above. The differential has remained flat, suggesting little change in the strength of such substitutability since the last review.

9.81 Furthermore, while faster speeds clearly attract price premia on average, there are nevertheless significant overlaps between different providers’ retail prices (as shown in Annex 5, Figure A5.10). These overlapping price bands indicate that headline download speed is not the only package characteristic that is valued by customers i.e. that, for a given price, customers are prepared to trade off lower speeds for other broadband

⁴⁵⁰ See paragraph 3.7 of the OFT’s market definition guidelines.

⁴⁵¹ Our approach is set out in detail in Annex 5. We have focused on 38 Mbit/s and 76 Mbit/s, rather than 52 Mbit/s, services as these speeds are offered more widely by telecoms providers. We consider that this comparison is more informative than the BIAC study referenced by CityFibre, as it is UK-specific and covers a more recent time period.

⁴⁵² This is significant at the 1% level.

⁴⁵³ Regarding [3<] argument at paragraph 9.61, our updated analysis of the price differential between retail packages of SBB and SFBB (set out in Annex 5) also does not suggest a widening in that differential.

package features, such as a higher data allowance, call usage, perceived quality of service, etc. It also suggests that some consumers have had the opportunity to upgrade their broadband speed at no extra price by switching packages. These factors make it more likely that an increase in the price of broadband services of a given speed would trigger a demand response at the retail level.

- 9.82 Overall, we consider that the evidence from telecoms providers’ past and current pricing behaviour is consistent with there being substitutability between retail SFBB services of different speeds, such that providers will take account of prices for 40/10-based services when setting retail prices for packages offering higher speed broadband.

Propensity to upgrade and downgrade

- 9.83 If consumers consider that a 40/10 service is a substitute for faster fibre services, we would expect to find evidence of willingness to downgrade broadband speed as well as upgrade it. Limited evidence of downgrading speed would be consistent with a view of diminishing substitutability if relative prices had increased over that period.
- 9.84 Figure 9.3 sets out, for each telecoms provider for whom we have reliable information, the average proportion of residential customers who upgraded and downgraded between different fibre services offered by their telecoms provider, per quarter, during 2016/17. As far as possible, we have excluded “provider-led migrations” (i.e. instances where consumers’ speed was automatically upgraded by their provider), as we are more interested in the extent to which consumers are themselves willing to substitute between different bandwidths.

Figure 9.3: Average quarterly upgrades and downgrades between basic and faster fibre services, residential customers, 2016/17⁴⁵⁴

	Upgrades from basic to faster SFBB (% of basic SFBB base)	Downgrades from faster to basic SFBB (% of faster SFBB base)	Ratio of upgrade / downgrade proportions
EE	[X]%	[X]%	[X]%
Sky	[X]%	[X]%	[X]%
Virgin Media	[X]%	[X]%	[X]%

Source: EE, Sky, Virgin Media. For Sky and EE, basic fibre is 38 Mbit/s and faster fibre is 76 Mbit/s. For Virgin Media, basic fibre is 50 Mbit/s and faster fibre covers a range of speeds up to 300 Mbit/s.

- 9.85 We also note that Virgin Media removed its 50 Mbit/s SFBB offering in April 2017, just after the period covered by the data above, but reintroduced it in July 2017. [X].⁴⁵⁵
- 9.86 Taken in the round, this data suggests that while consumers are generally more likely to upgrade than downgrade the speed of their SFBB package, consumers on packages with

⁴⁵⁴ See Figure A5.15. Proportions have been calculated as the number of customers upgrading or downgrading away from a given speed per quarter, as a proportion of the number of customers taking that service at the end of the previous quarter.
⁴⁵⁵ [X].

faster speeds are willing to consider moving back to basic SFBB speeds. However, as set out above, the price differential between SFBB tariffs of different speeds appears broadly flat, meaning that it is difficult to infer much about the extent of substitution from faster to slower SFBB services if, in future, the price of higher speed packages rose in relative terms.

- 9.87 In this context, we note that our summer 2017 consumer research provides some insight into the motivations for changing speed. As part of this research, we asked respondents about previous switching behaviour. Across all residential SFBB consumers, only 4% of respondents had downgraded their speed of service in the last 12 months.⁴⁵⁶ Among those on a 50-80 Mbit/s service who had upgraded their speed in the last 12 months, the most common reason for doing so was a need for a faster service (36% of respondents), but the second most common reason was “*For a cheaper price / deal*” (30%). This is consistent with the finding of overlapping price bands, as described in paragraph 9.81, and suggests that a substantial proportion of customers on faster bandwidths would consider downgrading to a package with a 38 Mbit/s (or similar) speed, if the price of their existing service increased.
- 9.88 Our summer 2017 consumer research also tested consumers’ propensity to substitute away from higher bandwidths, in response to price changes.⁴⁵⁷ We asked respondents taking faster SFBB packages (i.e. more than 38 Mbit/s) what they would do if the price of these services increased, while the price of other speeds remained the same. In response to a 10% price increase, around 13% of respondents said that they would switch away from these services (the majority of whom would switch to a slower fixed broadband service).⁴⁵⁸
- 9.89 Overall, we consider our summer 2017 consumer research is consistent with the view that there is some willingness to downgrade speed from higher bandwidths to 40/10 in response to a price increase over faster speeds.

Overall conclusion

- 9.90 The analysis presented above suggests that:
- While there will be continued growth in demand for higher bandwidths over this review period, we still expect a large proportion of fibre subscribers to take a 40/10 service by 2020/21 (paragraphs 9.73-9.78);
 - While consumers are generally more likely to upgrade than downgrade the speed of their package, this is against a background of a broadly flat differential between retail packages of different SFBB speeds over the last review period (paragraphs 9.79-9.87);
 - Our consumer research indicates that some consumers taking retail packages with faster SFBB speeds would switch away from these services to alternatives, including basic SFBB speeds, if the price of these services increased (paragraphs 9.88-9.90).
- 9.91 As such, we remain of the view that imposing a cost-based charge control on VULA 40/10 services will adequately protect consumers against the risk of harm from higher retail

⁴⁵⁶ Summary 2017 consumer research, slide 23. The proportion who had upgraded was much higher.

⁴⁵⁷ As with other surveys, the responses are based on stated rather than actual behaviour, and require respondents to answer hypothetical questions which are sometimes complex.

⁴⁵⁸ The response rate to a 5% price increase was 12%.

prices for SFBB services. It affords direct protection for consumers taking services which rely on VULA 40/10, as we expect competition between retail providers to lead to wholesale charge reductions being passed on to consumers. Furthermore, due to substitutability between fibre services of different speeds, it is also likely to provide a constraint on retail price increases for faster speeds. Competition for higher speed services from Virgin Media adds to the constraint provided by the 40/10 price.

- 9.92 In respect of faster fibre services, we recognise that this approach may allow for somewhat higher retail prices than would be the case if a charge control was imposed for all VULA services, particularly over time. However, as these services become more important, the business case for competitive investment in higher speed services is likely to strengthen, and with that the prospect of greater network competition delivering benefits to consumers. Balancing the need to preserve such investment incentives is an integral aspect of our VULA price regulation, which we discuss in detail below.
- 9.93 We also recognise that this assessment of adverse effects focuses on the risk of higher retail prices to consumers. Even if the retail prices for faster fibre services are constrained by a VULA 40/10 charge control, there may still be concerns about Openreach having incentives to increase higher bandwidth VULA prices, in order to distort retail competition for fibre services. We discuss this risk in the next section.

Protecting retail competition where necessary

Our proposals

- 9.94 In the March 2017 WLA Consultation, we said there is a risk that, absent regulation, BT would refuse to provide access to VULA services or do so on terms and conditions that did not allow downstream competitors to compete effectively, in particular by way of a margin squeeze. We considered that, given the importance of the VULA 40/10 service and the substitutability between SFBB services of different speeds, a VULA 40/10 charge control would significantly mitigate concerns about a margin squeeze in respect of these services.⁴⁵⁹ On this basis, we considered that the detailed compliance arrangements that we introduced in 2015 to guard against a margin squeeze on all VULA services were no longer appropriate. We therefore proposed to discontinue these arrangements.

Stakeholder responses

- 9.95 Sky said that BT is likely to respond to a VULA 40/10 charge control by shifting the focus of competition towards faster services, which BT has a far stronger incentive to sell than its retail competitors because of the additional profits that BT Group would earn from higher Openreach wholesale profits associated with higher speed VULA services. Sky said, “this

⁴⁵⁹ March 2017 WLA Consultation, paragraphs 8.44 to 8.48.

illustrates the key flaw in Ofcom’s argument that it only needs to cap prices of 40/10 GEA because this is the focal point of SFBB competition today and will remain so over the course of the review period”.⁴⁶⁰

- 9.96 Sky argued that we should maintain the existing *ex ante* VULA margin squeeze condition alongside a charge control for all VULA services. It said that the factors leading to the introduction of the VULA margin test in 2014 still prevail today, with consumers still transitioning to services delivered using all variants of Openreach’s VULA services. It said there remains a real risk of BT engaging in a price squeeze by influencing the SFBB retail margin available to competitors, either by lowering retail prices or by including other services in its broadband packages, and that the removal of the VULA margin test could seriously disrupt the ability for efficient operators to compete effectively with BT.⁴⁶¹
- 9.97 TalkTalk said [§]. TalkTalk said BT could undertake a margin squeeze over higher bandwidths to establish a public perception that BT’s rivals offer inferior, low speed products.⁴⁶²
- 9.98 Both Sky and TalkTalk said that reliance on *ex post* competition law will not be sufficient to address the risk of margin squeeze. Furthermore, TalkTalk said that retaining the margin squeeze protection should not impose an excessive regulatory burden on BT, given that the system is already up and running, and both Ofcom and BT have experience of how to operate it in practice. However, TalkTalk also said that maintaining the existing *ex ante* VULA margin squeeze condition is only necessary if we choose not to impose a safeguard cap on higher bandwidth VULA services.
- 9.99 Vodafone said that setting a charge control only for 40/10 GEA services means other telecoms providers will face a far greater commercial risk in respect of higher bandwidth services, which leaves them far less inclined to heavily promote anything above 40/10 with retail price reductions or marketing discounts. Vodafone argued that this risk is compounded by the General Conditions which in effect prevent telecoms providers from passing on wholesale price increases to retail prices mid-contract. In contrast, Vodafone said that BT can promote retail services at all bandwidths with certainty, enabling BT’s retail businesses to cement their strong positions in the retail market and secure a disproportionate share of higher value retail customers.⁴⁶³
- 9.100 In support of this point, Vodafone said that:
- BT already has a high share of superfast customers, with over 60% of all Openreach superfast connections and more than 50% of net additions in the last financial year;
 - BT’s retail businesses no longer use the 40/10 VULA service; and

⁴⁶⁰ Sky response to the March 2017 WLA Consultation, paragraphs 29-33.

⁴⁶¹ Sky response to the March 2017 WLA Consultation, paragraphs 39-44.

⁴⁶² TalkTalk response to the March 2017 WLA Consultation, Section 2.

⁴⁶³ Vodafone response to the March 2017 WLA Consultation, Section 3.

- BT’s legal separation will not address this concern, as BT’s retail businesses can pursue pricing strategies in the knowledge that they are insulated from risk at a Group level.⁴⁶⁴

9.101 On the other hand, BT said there is no evidence that BT has gained a competitive advantage over other retailers using Openreach’s network, noting that cumulative net adds for GEA are now just over 50% non-BT, and that a range of retailers offer low-priced fibre propositions.⁴⁶⁵ Likewise, Virgin Media said we presented no evidence that competition is weak under current wholesale pricing flexibility plus the margin squeeze test.⁴⁶⁶

9.102 Openreach said it is committed to supplying VULA inputs to all its customers on EOI and fair and reasonable terms to allow them to compete effectively, efficiently and profitably across the supply of all broadband services, and does not believe additional protections are required to support fair downstream competition.⁴⁶⁷

Our reasoning and decisions

9.103 We remain of the view that, absent regulation, BT’s SMP in the WLA market could enable it to use VULA services to distort competition in the provision of fibre, by way of a margin squeeze. This gives rise to a risk of additional adverse effects arising from a price distortion.

9.104 In 2015, we addressed this risk by adopting a retail-minus approach to controlling all BT’s VULA prices, because at the time we concluded that BT needed continued pricing flexibility to satisfy the fair bet.⁴⁶⁸ Since the VULA margin condition was the only pricing constraint that applied at the time, we concluded that it was necessary to specify a condition in detail.

9.105 We have explained in the previous section why we still consider, subject to our investment objectives, that introducing a cost-based charge control for VULA 40/10 services is necessary to address the risk of excessive pricing of VULA services by BT. We said in our March 2017 WLA Consultation that we believe this also significantly lowers the risk that BT could distort retail competition for fibre services.

9.106 Furthermore, as set out in Section 6, our general access remedies include a fair and reasonable charges obligation that applies where no charge control or basis of charges obligation is in force, and will therefore apply to all VULA services other than the charge-controlled VULA 40/10 service. We interpret this condition as a requirement not to impose a margin squeeze, providing further protection against the risk of distorted competition.

9.107 However, in light of stakeholder responses, we have considered whether the risk of a margin squeeze is sufficiently great that we should impose additional measures, over and

⁴⁶⁴ Sky (paragraph 32 of its March 2017 WLA Consultation response) also said that efforts to make Openreach more independent have little bearing on incentives, as the promotion of faster SFBB by BT Consumer does not require any coordination (undue or otherwise) with Openreach.

⁴⁶⁵ BT response to the March 2017 WLA Consultation, paragraphs 2.10 – 2.11.

⁴⁶⁶ Virgin Media response to the March 2017 WLA Consultation, paragraph 51.

⁴⁶⁷ Openreach response to the March 2017 WLA Consultation, paragraph 291.

⁴⁶⁸ Ofcom, 2015. *Fixed Access Market Reviews: Approach to the VULA margin, Statement*.

https://www.ofcom.org.uk/_data/assets/pdf_file/0015/72420/vula_margin_final_statement.pdf

above this regulation, to address this concern, including whether we should continue with the *ex ante* VULA Margin Condition that we imposed in 2015.

Margin squeeze for VULA 40/10

- 9.108 In respect of services which use BT’s VULA 40/10 wholesale input, BT could only margin squeeze by reducing the retail prices of these services (or bundling additional elements in its broadband package). This would be more expensive for BT than increasing the wholesale price, as it would forego associated retail revenue from existing subscribers.
- 9.109 Indeed, we said in our 2015 VULA Margin statement that the risk of margin squeeze in retail packages offering SFBB is greater than in retail packages offering SBB because we proposed not to set a cost-based charge control for VULA prices in that review period, meaning BT would have control over both the relevant wholesale and retail prices.⁴⁶⁹
- 9.110 We therefore remain of the view that a cost-based charge control for VULA 40/10 services protects BT’s retail competitors from the risk of a margin squeeze over services delivered using VULA 40/10.

Margin squeeze for higher VULA bandwidths

- 9.111 Stakeholders have argued that BT will have stronger incentives than other providers to promote retail services which use higher VULA bandwidths (e.g. 55/10 and 80/20).
- 9.112 We recognise there may be some risk of a margin squeeze over these bandwidths, as BT could increase wholesale prices for these services while keeping retail prices constant, in order to further increase its share of retail subscribers on packages with higher bandwidths. However, we remain of the view that this risk is significantly mitigated by the introduction of a charge control for VULA 40/10 services, in conjunction with our fair and reasonable charges obligation for higher bandwidths (which, as explained above, we would interpret as a requirement not to impose a margin squeeze). Indeed, we consider that this affords BT less discretion over its VULA pricing than has been the case up to now.
- 9.113 Furthermore, based on the evidence and analysis explained in the previous section, we believe BT’s downstream competitors will rely extensively on GEA 40/10 services over the next review period. Our volume forecasts in Figure 9.1 suggest most lines purchased from Openreach by telecoms providers other than BT will continue to be for the 40/10 service. We recognise that BT’s core retail SFBB offerings offer faster than 40 Mbit/s download speeds, and it has recently upgraded subscribers (whose line can support faster speeds) onto a 76 Mbit/s service. However, we do not agree with Sky that BT can necessarily use provider-led migrations to “shift the focus of competition” to higher bandwidths, particularly as these subscribers are likely to have a lower incremental willingness to pay for faster SFBB speeds than those who upgraded themselves, and may therefore be more willing to switch back to slower services if relative prices increased or for other features of

⁴⁶⁹ Ofcom, *Fixed Access Market Reviews: Approach to the VULA margin*, paragraph 3.62.

a broadband package. As such, retail services based on VULA 40/10 are still likely to be a reasonable option for a large proportion of retail superfast subscribers.

- 9.114 In order to effectively compete in the provision of fibre services, therefore, BT's competitors are not dependent on cost-based access to the higher bandwidth GEA services to the same degree that they were dependent on VULA services overall at the time of imposing the 2015 VULA Margin Condition. We do not believe that not having cost-based access to these bandwidths point towards seriously compromising providers' ability to effectively compete at the retail level. This further mitigates concerns about any margin squeeze over higher bandwidths.
- 9.115 We note Vodafone's view that a charge control would give greater certainty about charges for higher bandwidths, suggesting that they are exposed to the risk of sudden price hikes without one. To the extent that Openreach does increase the price of higher bandwidth VULA services, General Condition 9.6 would allow telecoms providers to increase retail prices within one month i.e. within Openreach's price notification window, somewhat mitigating this commercial risk.⁴⁷⁰ Moreover, this would affect all providers on the Openreach network including BT's retail businesses, which would be subject to the fair and reasonable charges obligation discussed above.
- 9.116 Finally, to the extent that increasing demand for faster services makes these services more important for retail competition in future, this is likely to strengthen incentives for investment by competing providers, and with that the prospect of greater network competition (as explained below). We expect that this will reduce BT's ability to distort competition through VULA prices in the long term.
- 9.117 Overall, given the continued importance of VULA 40/10 services, the protection afforded by our general remedies, and also taking account of our wider objectives, we do not consider that it would be appropriate or proportionate to impose additional price regulation on higher VULA bandwidths (whether a cost-based control or a safeguard cap).
- 9.118 In this context, we disagree with TalkTalk that continuing the *ex ante* VULA Margin compliance arrangements would not be unduly burdensome. Elements of the VULA margin condition – such as the use of a LRIC+ cost standard – were evaluated in a context where the condition was the primary remedy for ensuring effective retail competition in fibre services. Those considerations no longer apply in the presence of a cost-based charge control for VULA 40/10 services, so important elements of the VULA margin condition would need to be revisited and altered if it were to be continued. We do not normally impose detailed margin squeeze obligations in circumstances where there is an applicable charge control, and do not think it proportionate or desirable to impose such a condition in this instance.
- 9.119 We therefore believe that continuing the *ex ante* VULA Margin Condition for the duration of this review would also not be appropriate. We have decided to remove the VULA Margin Condition that currently applies.

⁴⁷⁰ See: <https://www.ofcom.org.uk/advice-for-businesses/contracts#testax>

9.120 As explained above, a residual risk of BT imposing a price squeeze for higher bandwidth variants of VULA can be addressed through our general access remedies. While we would assess any dispute on the relevant facts, our starting point for evaluating cost and margins in this context (i.e. given the availability of a cost-based VULA 40/10 service) would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard.

Preserving the investment incentives faced by BT

9.121 Another important consideration reflected in our objectives is to preserve BT's investment incentives. We are required when setting charge controls to consider the extent of investment by the dominant provider in the matters to which the pricing remedy relates. One aspect of this is whether BT has had a fair bet on its past investment in FTTC. We summarise our conclusion on this below. We also set out below how we will use the same principle for treatment of investment by BT in full-fibre networks.

9.122 We also consider that our remedies are consistent with encouraging BT to undertake further efficient investments given the prospect of increased competition driven by investment in new networks. We explain why we consider BT's rivals have an incentive to invest in the next section.

Fair bet on BT's past FTTC investment

Our proposals

9.123 In our March 2017 WLA Consultation we set out that we sought to preserve the investment incentives faced by BT, by applying the fair bet principle. This recognises that the firm needs to benefit from sufficient upside potential from any investment to offset the downside risk of failure. We explained that the alternative, where BT faces the full cost of failure, but has the rewards of success tightly capped by the regulator, is likely to deter any form of risky investment.⁴⁷¹ To ensure investor confidence and hence future investment, we said that it is important that we honour the fair bet over time.

9.124 We set out our provisional judgement that BT has had a fair opportunity to make a return on its original risky investment and that a charge control in this review period would be consistent with the fair bet. In making our judgement as to whether the fair bet has been met, we considered whether, at the time BT took the decision to invest in fibre, it would have gone ahead with the investment if it had understood the approach to regulation we were proposing to take. We set out that we believed BT would have expected payback on the first tranche of its FTTC investment to occur within the period spanned by this market

⁴⁷¹ A fair bet means that an investor can expect to earn a return that covers its cost of capital. For 'risky' investments, this will only happen where the potential for upside (with returns above the cost of capital) balances the potential for failure (with returns below the cost of capital).

review period, and that setting a charge control at expected payback should in general be sufficient to ensure a fair bet.⁴⁷²

Stakeholder responses

- 9.125 Stakeholders responding to our consultation supported the principle of providing BT with a fair bet, but differed in their views of whether a 40/10 VULA charge control would provide BT with a fair bet. Some, including Sky, TalkTalk, and Vodafone, argued we had provided BT with a fair bet, while others, including BT and Virgin Media, disagreed. BT Group and Openreach made various detailed submissions to the effect that the fair bet has not been satisfied, including on the relevant cost of capital at the time and on the methodology for implementing the fair bet. We consider these detailed submissions in Annex 6.
- 9.126 Furthermore, Sky and TalkTalk said that tighter regulation of BT's GEA products will enhance Openreach's incentives to make further investments, such as in full-fibre, by removing much of the excess profits which it currently makes on FTTC products, and which disincentivise any investments that might undermine those profits.⁴⁷³

Our reasoning and decisions

- 9.127 We are confident in our judgement that we have provided BT with a fair bet on its FTTC investment. In Annex 6, we show that our estimate of Openreach's cumulative rate of return on its commercial FTTC investment is well above a suitable benchmark for the cost of capital at the time of investment, at around 15%, even with a cost-based VULA 40/10 charge control. We show that under the framework developed by Oxera, and proposed by Openreach, Openreach's actual return is sufficiently high to ensure we have provided a fair bet.
- 9.128 Further, we have also had regard to the period of elapsed time over which Openreach has had pricing flexibility. Our judgement is that regulating after around 10 years from the initial investment also points to Openreach having had a fair bet.
- 9.129 Overall, in our judgement, a cost-based charge control for VULA 40/10 services is consistent with providing BT with a fair bet on its FTTC investment. We therefore believe imposing it is consistent with providing BT with incentives for risky investment in the future (such as in large scale full-fibre deployments).
- 9.130 We also agree with Sky and TalkTalk that a charge control on VULA 40/10 services may increase BT's incentives to invest in higher quality services. It will tend to do this to the extent the incremental revenue BT can earn from those higher quality services (relative to 40/10 services) increases, due to the imposition of a cost-based VULA 40/10 charge control.

⁴⁷² March 2017 WLA Consultation, paragraph A8.13.

⁴⁷³ TalkTalk response to the March 2017 WLA Consultation, paragraph 1.3. Sky response to the March 2017 WLA Consultation, paragraph A1.72.

Approach to very high-speed broadband

Our proposals

9.131 In the March 2017 WLA Consultation, we proposed allowing BT flexibility in setting prices for wholesale access services designed to support very high broadband speeds. Regarding future reviews, we said that even if we find it appropriate to charge control higher speed VULA services, we may nevertheless continue to grant pricing flexibility for very high speeds if we thought a charge control would undermine the fair bet on BT’s investments in full-fibre.⁴⁷⁴

Stakeholder responses

9.132 Stakeholders that commented on this issue agreed with our proposals. Vodafone said that, “in recognition of the genuine risk associated with FTTP and the need to attract investment in new fibre links to UK homes and businesses, FTTP services should not be subject to charge controls”.⁴⁷⁵

Our reasoning and decisions

9.133 Consistent with stakeholders’ general agreement with our consultation position, we are not imposing any charge controls on BT’s VULA services designed to support very high speeds. Our general access remedies in respect of these services are set out in Section 5.

9.134 In considering whether to regulate VULA services supporting very high speeds in future, we will continue to have regard to the fair bet principle which we have applied in the context of our VULA price regulation applicable to BT’s FTTC investment. We have not specified the terms under which we would consider BT to have had a fair bet over its future investments in high-speed services. However, as a starting point, our initial thinking is that we would be likely to consider the same factors that we have considered in this review i.e.:

- how much time has elapsed compared to the expected payback period at the time the investment was committed;
- the perceived riskiness of the initial investment;
- the performance of the investment against initial expectations; and
- the level of returns.

9.135 We recognise the benefit of providing more clarity on regulatory principles, such as the ‘fair bet’, that should apply to new risky investments, and the application of rules that may affect the move from copper networks and the eventual removal of those networks. The principles that should apply fall outside the scope of this market review, but we will consider changes that take account of competition and the interests of consumers.

⁴⁷⁴ March 2017 WLA Consultation, paragraphs 8.61-8.62.

⁴⁷⁵ Vodafone response to the March 2017 WLA Consultation, paragraph 2.12. Vodafone also said (paragraph 4.6) we should not initially impose price regulation on copper services above 80 Mbit/s.

Impact of VULA prices on investment incentives faced by competitors to BT

- 9.136 We want to ensure that our approach to price regulation of BT's VULA services preserves investment incentives for BT's competitors to build their own networks where viable.
- 9.137 As in the March 2017 WLA Consultation, we consider that, in general, the tighter we regulate VULA, the more likely it is that we undermine the incentive for telecoms providers to build new networks as opposed to relying predominantly on buying access from BT. We have therefore considered the implications of introducing a cost-based VULA 40/10 charge control for rivals' incentives.
- 9.138 We find that introducing this charge control, combined with continued pricing flexibility on higher bandwidth VULA services, is consistent with rivals having incentives to build new full-fibre networks.

Stakeholder responses

- 9.139 Respondents to this aspect of our consultation differed in their views on the implications of our proposals for the investment incentives of competitors to BT. Some respondents said that higher VULA charges would promote investment in full-fibre by competitors to BT, while others said the opposite, arguing that higher VULA charges lowered their incentives to invest in full-fibre.
- 9.140 While CityFibre said it was not fundamentally opposed to Ofcom moving to a more standard charge control approach for FTTC, it said the particular VULA 40/10 charge control proposed could harm the prospects of full-fibre network rollout. It said that Ofcom should be setting charges based on the costs of a reasonably efficient operator (REO), or using a modified equally efficient operator (MEE0) approach. It said such approaches could adjust for Openreach's larger scale, and be based on the costs implied by the longer-term market share of a competitive entrant. It said the proposed charge control would maintain incentives on retailers to use Openreach's wholesale services, and would reduce the likelihood that retailers will actively commit to the use of competitive full-fibre platforms. As set out in paragraph 9.65, CityFibre also argued that there is little historical or international evidence of a price premium for UFBB services, nor is there sufficient evidence that this will emerge over time.⁴⁷⁶
- 9.141 Virgin Media said that we could have imposed a safeguard cap on VULA 40/10 services at today's prices rather than impose a charge control that resulted in lower charges. It said imposing a charge control would fail to result in new scale investors in infrastructure. It referred to analysis by HSBC which said that with the central charge control profile in our March 2017 WLA Consultation, Virgin Media would have to shrink its plans for Project Lightning by 550,000 homes to retain the same internal rate of return.⁴⁷⁷

⁴⁷⁶ CityFibre response to the March 2017 WLA Consultation, especially paragraphs 2.2.2, 2.4.1, 4.1.25, 8.3.5, 8.6.8, 8.6.9, 3.7 (page 94).

⁴⁷⁷ Virgin Media response to the March 2017 WLA Consultation, especially pages 1, 3 and 5.

- 9.142 Openreach and BT Group said that our proposals would undermine its investment, and that by rival network operators.
- 9.143 In contrast to these responses, TalkTalk said tighter regulation of VULA would increase incentives to invest in full-fibre, because it would enable providers to retain a customer base which they could transfer to a new network when it has been built. TalkTalk said that as well as regulating VULA 40/10 services, we should impose a safeguard cap on the 80/20 service, at a price which would enable Openreach to earn returns above its cost of capital.⁴⁷⁸
- 9.144 TalkTalk also said that while there is considerable potential for competing networks in densely populated areas, it is unlikely that in three years' time there will have been competitive investment in full-fibre in significant proportions of the country, given the lead times required in order to plan, fund, and build full-fibre networks. It said that it was inconceivable that full-fibre by operators other than Virgin Media and BT would cover even 10% of UK households by the end of the review period.⁴⁷⁹
- 9.145 Sky said it had extensively modelled the business case for investing in a full-fibre network, and it considered that there was a realistic prospect that a rival third network would never be built, even with the proposed DPA remedy. In relation to the impact of VULA price regulation on competitive network investment, it made the following points:⁴⁸⁰
- Sky agreed that there was a “causal relationship between lower GEA charges and the business case for FTTP networks”, but it considered that we had overstated the significance of this factor, and had given insufficient weight to other more important factors in the business case for full-fibre which “if anything, necessitate lower GEA charges including for higher speed services”.
 - Specifically, Sky said that being a strong retailer with a large subscriber base was by some distance the single most important factor in the investment case for a new full-fibre network. It said this was best achieved through lower VULA charges as not subjecting certain VULA services to a charge control would weaken retail competition, for the reasons set out in paragraph 9.95.
 - Sky also said that the effect of lower GEA prices on Virgin Media’s investment incentives is even smaller, as it only affects the business case for cable network expansion through retail pricing and competition, where it only has the potential to cause a minor reduction in the profits available to Virgin Media from attracting new subscribers to its expanded network. Sky presented its own estimate of Virgin Media’s payback period on Project Lightning and submitted that a cut in the wholesale VULA price of £2.40, if fully passed through to retail prices, would only extend the payback period by around [X].⁴⁸¹

⁴⁷⁸ TalkTalk response to the March 2017 WLA Consultation, paragraph 1.3 and 1.5

⁴⁷⁹ TalkTalk response to the March 2017 WLA Consultation, paragraph 4.4.

⁴⁸⁰ Sky response to the March 2017 WLA Consultation, especially paragraphs 9, 10 and 11.

⁴⁸¹ Sky response to the March 2017 WLA Consultation, paragraph A1.67.

- Sky also noted that lower wholesale and retail prices on a new full-fibre network do not necessarily lead to lower revenues. This is because lower prices can drive the additional volume and scale that are necessary to make investment in full-fibre networks viable.⁴⁸²

9.146 Virgin Media said that we should be sceptical about claims that lower VULA prices could incentivise competitive investment. It said that there is a lack of empirical support for the “ladder of investment” philosophy.⁴⁸³ It argued it is not clear why lower VULA prices would help competitors to build scale, as lower prices would apply to all Openreach providers (including BT) equally, while there is limited scope for increasing overall superfast penetration.⁴⁸⁴ Virgin Media also said this should be seen in the context of the strengthening of the separation of Openreach from the rest of BT, which we consider to provide significant benefits to current Openreach-based providers.⁴⁸⁵

Our reasoning and decisions

The impact of our approach to VULA pricing on investment incentives for BT’s rivals

9.147 The approach we take to the regulation of VULA services in this review period, and what we say about our likely approach in future reviews, will affect the incentives for telecoms providers to invest now in their own networks.

9.148 In general, our view remains that the tighter we regulate VULA, the more likely it is that we undermine the incentive for telecoms providers to build new networks as opposed to relying predominantly on buying access from BT. As we described in the March 2017 WLA Consultation, there are several reasons for this:⁴⁸⁶

- the cost of buying VULA affects the build or buy cost comparison: the lower the cost of VULA, the less attractive it is to build an alternative network;
- the price of VULA is likely to affect the retail prices that can be charged for services, and therefore the ability to generate margins from services supplied using the new network;
- a benefit of investing in a network is that telecoms providers take far greater control of the services that can be offered and of a large part of the cost stack. Tighter regulation of VULA can reduce the potential for competitors to gain from this; and
- our approach to regulating VULA will also affect the gains that come from being among the first movers. If rivals to those who choose to invest have to rely on less tightly regulated access to Openreach’s network, there will be a greater incentive to invest first.

⁴⁸² Sky response to the March 2017 WLA Consultation, paragraph A1.54.

⁴⁸³ Virgin Media referred to the following research by Maya Bacache, Mark Bourreau and Germain Gaudin, *Dynamic Entry and Investment in New Infrastructures: Empirical Evidence from the Fixed Broadband Industry*, in *Review of Industrial Organisation* 44 (2014), pp. 179-209. This found that the number of service-based unbundled lines had no effects on the number of new access lines owned by entrants.

⁴⁸⁴ Virgin Media response to the March 2017 WLA Consultation, paragraphs 31-33.

⁴⁸⁵ Virgin Media response to the March 2017 WLA Consultation, paragraphs 29.

⁴⁸⁶ March 2017 WLA Consultation, paragraph 4.25.

- 9.149 Some respondents, including existing retailers, argued that tighter, rather than looser, regulation of BT's existing VULA services would strengthen incentives for rivals to build full-fibre networks. For example, Sky argued that BT's retail divisions will have a strong incentive to push higher speed services because BT Group will factor in the extra profit that Openreach earns at the wholesale level from selling higher speed services. The extra profit at the Openreach level is not relevant to the choices of rival retailers, and hence they will have less incentive to market such services. Sky argued that not regulating the higher speeds will therefore undermine the retail market position of rivals, leading to a lower retail market share which will make the business case for full-fibre investment even more difficult for rivals.
- 9.150 We agree that if our regulation were to be so loose that it seriously compromised existing retail competitors' market positions, it could undermine their market position while they build (or sponsor) new network infrastructure. As Sky notes, a key factor affecting the business case of a new network is the take-up on that network. If an existing retailer has a large customer base which could be moved across to a new network, this will strengthen the business case for a new rival network. We also agree that higher VULA charges may put more pressure on the profits of these retailers, particularly if there is not full pass-through of the wholesale charges to the retail level, and that BT may have stronger incentives to promote higher bandwidth services than rival retailers because of profits at the wholesale level.
- 9.151 However, for the reasons discussed in paragraphs 9.111 to 9.115, we do not agree with these respondents that our remedies are liable to seriously compromise their ability to effectively compete at the retail level. In particular, our evidence suggests that BT's downstream competitors will rely extensively on GEA 40/10 services over the next review period. While higher speed services will become more important in the long-run, that prospect is a factor that will incentivise existing retail competitors to invest in self-supply in the interim. Moreover, providers such as Sky and TalkTalk will still have wholesale access to higher speed services, and BT will still be subject to a fair and reasonable charging obligation (which we interpret as a requirement not to impose a margin squeeze).
- 9.152 Overall, while Sky and TalkTalk might prefer to have all VULA services subjected to cost-based regulation, the evidence does not point to a serious loss in their ability to compete arising from our decision not to do so. We therefore believe that our approach of limiting regulation to VULA 40/10 services will tend to stimulate investment rather than hinder it.
- 9.153 Indeed, retaining pricing flexibility for higher speeds will progressively increase the benefits of investment in competing networks in comparison with relying on access to the Openreach network. This may provide an incentive for competitors to BT at the retail level to build their own network or support full-fibre investment by another party. This will be the case even with a strengthening of the independence of Openreach. While we agree with TalkTalk that network building will take time, we consider that greater network competition will bring significant benefits to consumers, such that we should regulate in a way now that enables such competition to emerge (as described in Section 5).

- 9.154 In the event that a VULA 40/10 charge control turns out to constrain higher speeds somewhat less than we currently expect, we think that allowing pricing flexibility on higher bandwidths would still be in consumers' best long run interests. Our focus is to set in place remedies that provide adequate protection for consumers over the period of this review through the charge control on VULA 40/10 services, but which will constrain higher speeds less as those higher speeds become more popular. This approach may leave scope for BT to set somewhat higher wholesale prices for some services than would be the case if we were to regulate across a broader range of VULA bandwidths, but this is an integral part of the investment incentives we seek to provide. In this context our judgement is that the a VULA 40/10 charge control would provide adequate protection for consumers and competition in this review period, and this view is not affected by the potential for higher bandwidth products to turn out to be somewhat more popular than we currently expect.
- 9.155 Sky also argues that lower wholesale and retail prices on a new full-fibre network may not necessarily lead to lower revenues, because lower prices can stimulate volumes. We would expect a new network to set a profit maximising price, taking account of the elasticity of demand. For the reasons given above, we think a new entrant is more likely to be profitable with a higher Openreach price. The lower Openreach's charges, the harder it will be for the rival network to attract consumers for any price it sets.

Charge controlling VULA 40/10 is consistent with efficient investment by BT's rivals

- 9.156 While factors such as take-up on a new network and cost per premises passed are very important for the business case for new full-fibre networks, the average price that can be achieved on the new network is also an important factor influencing the business case. This is likely to be affected by BT's wholesale prices.
- 9.157 One factor that may influence the average price a new network can achieve is that we are allowing continued pricing flexibility on higher speed VULA services, which are likely to become progressively more important in the future than in the short term.
- 9.158 The VULA 40/10 price itself will also be important for rivals' investment incentives. If we were to permit continued pricing flexibility for the VULA 40/10 service, that could boost rivals' incentives to invest in networks to a greater degree than the package of remedies that we are introducing. However, the arrival of new network deployment will take time, and, as set out in paragraph 9.34 above, full pricing flexibility would create significant harm to consumers (i.e. up to £1.5 billion in higher prices over the review period) in the meantime. Furthermore, it is important that retail competition is maintained while new networks are being built, as the current retail competitors' customers will play an important role in delivering the scale that makes a competitor network viable. Accordingly, we do not think it would be in consumers' best interests to pursue full pricing flexibility.
- 9.159 Having said this, our charge control on VULA 40/10 also needs to be at a level that allows new network investment to be viable. We have therefore considered whether our charge control on the VULA 40/10 service is consistent with substantial full-fibre deployment by some efficient rivals to BT during the current review. Our view is that it is consistent. This is based on the following considerations.

9.160 Firstly, our package of remedies significantly improves the business case for rivals rolling out new full-fibre networks by removing some of the barriers to investment caused by BT's SMP. In particular, the DPA remedy has the potential to significantly reduce the absolute costs and time required to build full-fibre networks at scale, as the costs of deploying physical infrastructure (such as ducts and poles) constitute a large proportion of the overall capital expenditure of an access network. Our own estimates suggest that DPA enables significant cost savings of deploying an end-to-end fibre network, reducing the average cost per home in some cases by up to 50%, from around £500 to £250 (excluding lead-ins).

9.161 Secondly, new networks will be full-fibre networks, and are likely to be able to charge a premium compared to the VULA 40/10 service. Consumers increasingly want a service that is reliable and always meets their bandwidth needs. We expect new full-fibre networks to deliver higher reliability as well as support higher speeds. Although that reliability is likely to be an important factor in determining any price premium that consumers are willing to pay, and networks are able to charge, for the purposes of establishing the existence of a significant potential premium we have looked at the speed premium both in the UK and in other countries:

- At the retail level, prices are higher in the UK for higher speeds. Virgin Media charges a £5 premium for each speed tier, including for upgrading from its 'up to 50 Mbit/s' service to its 'up to 100 Mbit/s' service.⁴⁸⁷ In January 2018, BT Consumer launched its 'Ultrafast Fibre 1' and 'Ultrafast Fibre 2' for a small number of premises, which offered speeds of up to 152 Mbit/s and 314 Mbit/s together with a speed guarantee, priced at £54.99 and £59.99 respectively.⁴⁸⁸ Furthermore, as discussed in Annex 5, research evidence on consumers' willingness to pay for faster speeds suggests consumers consider the speed of their service to be an important factor affecting their choice of broadband package.
- The premium can also be seen at the wholesale level though the higher charges Openreach sets for the 80/20 Mbit/s VULA service, for which charges in February 2018 were £2.55 per line per month more than the VULA 40/10 service (excluding VAT). The average VULA rental charge (taking account of the different volumes bought of each speeds) was around £0.90 per month higher than the VULA 40/10 rental charge in 2016/17.
- A speed premium also exists in many other European countries. A comparison of retail prices across European countries found that the average price premium for 30-100 Mbit/s over 12-30 Mbit/s was generally around €3-4 per month while the average price premium for >100 Mbit/s over 30-100 Mbit/s was of the order of €15 per month, though it varied considerably between countries.⁴⁸⁹

⁴⁸⁷ Virgin Media broadband service packages, <http://www.virginmedia.com/shop/broadband/compare.html> [accessed 29 January 2018].

⁴⁸⁸ <https://www.btplc.com/news/index.htm#/pressreleases/bt-consumer-launches-ultrafast-fibre-broadband-with-100mbps-speed-guarantee-2377710>. See also Figure 9.2 above in relation to SFBB services of different speeds.

⁴⁸⁹ Fixed Broadband Prices in Europe 2016, European Commission, 21 September 2017, <https://ec.europa.eu/digital-single-market/en/news/fixed-broadband-prices-europe-2016>. See especially section 2.5 and Figure 15.

- We expect demand for higher speeds to grow over time, and operators will earn additional revenues from selling higher speeds. This is important in the context of an investment that is likely to be assessed over a long-time horizon. CityFibre points to international evidence that the premia for higher speeds may decline over time and not increase. However, the premia to which it refers are still substantial on a per line basis, for example being over €15 per month for 100+ Mbit/s services in 2015, compared to 12-30 Mbit/s services. While such premia may decline if operators change their strategy to be focussed on obtaining higher take-up with very high speeds at lower price premia, we still expect the overall revenue from higher speed services to increase over time, as the proportion of consumers buying higher speeds increases.

9.162 Thirdly, various rivals to BT have already announced deployment plans and/or obtained financing for deployment, as described in Section 5. Many of these announcements have occurred since our March 2017 WLA Consultation, when our base case proposals for the sum of the charges for the VULA 40/10 and MPF services was lower than we are now setting them. Examples of the announcements include:

- CityFibre raised additional equity funding of £185m underwritten by Citigroup, and in November announced its plan to roll out full-fibre to one million homes in 12 cities over the next four years with Vodafone as an anchor customer – with the possible extension to up to 5m homes by 2025;⁴⁹⁰ and
- Hyperoptic has announced that its fibre network now covers 350,000 premises and that it has raised a further £100m, to cover two million urban homes by 2022 and then five million by 2025.⁴⁹¹

9.163 Fourthly, we have seen confidential information on the potential full-fibre plans by some operators and consider this is consistent with a cost-based VULA 40/10 charge control not inhibiting full-fibre investment by efficient rivals to BT. In particular:

- [REDACTED]. This wholesale price can be compared to the regulated rental charges for VULA 40/10+MPF services, which will be around £12 per line per month in 2020/21. [REDACTED].
- [REDACTED]

9.164 Finally, we note the analysis by HSBC to which Virgin Media refers implies that Virgin Media may need to reduce its plans for Project Lightning to retain the same internal rate of return if prices are lower. In information to investors in February 2018, Virgin Media reported its expected unlevered internal rate of return on existing Project Lightning build to be 25-30%.⁴⁹² We are not aware of any statements by Liberty Global since the March

⁴⁹⁰ <https://www.cityfibre.com/news/vodafone-cityfibre-bring-gigabit-speed-fibre-uk/> [accessed 31 January 2018].

⁴⁹¹ <https://www.hyperoptic.com/press/posts/hyperoptic-secures-100million-to-accelerate-full-fibre-rollout/> [accessed 31 January 2018].

⁴⁹² See slide 8 of Liberty Global, 15 February 2018. *Liberty Global plc Investor Call FY 2017*.

<http://www.libertyglobal.com/pdf/presentations/Liberty-Global-Q4-2017-Earnings-Presentation.pdf>. On the investor call, Mike Fries (CEO) said that this return was based on future forecast revenue and “assumes we never build another home in the UK and simply market to the 1 million premises already constructed and already released for marketing”. The conference call is available at <http://www.libertyglobal.com/ir-presentations-webcasts.html>

2017 WLA Consultation specifically indicating that a reduction in VULA 40/10 prices would impact Project Lightning’s footprint.⁴⁹³ Overall, we consider it unlikely there will be any reduction from Virgin Media’s current plans as a result of the charge control.

Conclusion on the impact of VULA prices on investment incentives faced by competitors to BT

9.165 For the reasons set out above, we consider that our charge control on BT’s VULA 40/10 service, and continued pricing flexibility on higher bandwidth VULA services, is consistent with rivals having incentives to build new full-fibre networks, and that this package of remedies therefore protects consumers’ interests.

Overall conclusion on VULA 40/10 charge control

9.166 We have decided that it is appropriate to impose a cost-based charge control for BT’s VULA 40/10 services. We believe that this pricing remedy satisfies our four VULA pricing objectives set out in paragraph 9.10:

- Protecting customers against the risk of high prices. We consider that a cost-based charge control for VULA 40/10 services will adequately address the risk of high prices for retail fibre packages provided using both 40/10 services, as well as services provided using higher bandwidth VULA services (paragraphs 9.28 to 9.93);
- Protecting retail competition where necessary, based on access to BT’s network. We consider that the availability of VULA 40/10 services on charge-controlled terms, coupled with access to higher bandwidth VULA services on fair and reasonable terms, will adequately protect ongoing retail competition in retail packages offering SFBB, and in particular mitigates the risk of a margin squeeze such that the more prescriptive VULA Margin Condition is no longer required (paragraphs 9.94 to 9.120);
- Preserving the investment incentives faced by BT, by applying the fair bet principle. We consider that our charge control on VULA 40/10 services is consistent with BT’s fair bet for these services being met, and therefore supports BT’s ongoing investment incentives. In addition, a charge control on VULA 40/10 services may increase BT’s incentives to invest in higher quality services (paragraphs 9.121 to 9.135)
- Preserving the investment incentives faced by competitors to BT. We consider that the charge control that we have set for VULA 40/10 services is at a level which will support competitive network investment for the duration of the current review (paragraphs 9.136 to 9.165);

9.167 The detail of our VULA 40/10 charge control is covered in Volume 2 of this Statement. In the remainder of this section, we set out some specific aspects of the remedy, along with our reasoning.

⁴⁹³ In Liberty Global’s Q1 2017 investor call, following our March 2017 WLA Consultation, Mike Fries (CEO) said that Project Lightning returns are still incredibly good and still support investment. [3<] Virgin Media’s response to 2nd WLA s.135 notice dated 5 September 2017.

Other issues

9.168 We now consider the following issues:

- Charge control on BT's VULA 40/10 services where provided over full-fibre;
- Provision of GEA on a standalone basis; and
- Ancillary services

Charge control on BT's VULA 40/10 services where provided over full-fibre

Our proposals

9.169 In the March 2017 WLA Consultation, we proposed to require BT to provide its VULA 40/10 service over full-fibre at the same regulated rental charge as when delivered over FTTC. We said that this was necessary to ensure a technology neutral approach.⁴⁹⁴ For the reasons explained below, we have narrowed the application of these proposals in our decision.

Stakeholder responses

9.170 Openreach did not agree with our proposal to require it to provide its VULA 40/10 service over full-fibre at the charge controlled price. In response to our consultation Openreach said that our proposals would directly impact its plans to supply full-fibre to new sites and other locations currently not served by any fibre services.⁴⁹⁵

9.171 Openreach said that our anchor pricing approach would not provide efficient incentives when:

- The efficient costs of supplying an individual connection in a given location via FTTC are higher than the average unit costs of supply modelled by Ofcom; and/or
- Openreach and/or other potential access investors are limited in their ability to extract additional value from the customer for the higher overall functionality provided by the full-fibre line compared to an FTTC line.

9.172 Openreach argued that both these conditions held. It said that our proposed FTTC price did not reflect the efficient forward-looking costs of supplying locations not currently served by fibre. It said our model did not capture any expansion of the network to serve newly constructed housing sites or to drive overall superfast penetration by increasing availability to any other sites outside the scope of assumed network coverage in 2015/16.

9.173 Where full-fibre was deployed in areas already served by FTTC, Openreach said it could see no justification for any regulatory pricing constraints on full-fibre lines.⁴⁹⁶ It said that prices would be constrained by the availability of VULA 40/10 services on FTTC lines and it should

⁴⁹⁴ See paragraphs 3.36-8 of Volume 2 of the March 2017 WLA Consultation.

⁴⁹⁵ Openreach, 2017. *Ofcom's WLA proposals: impacts on full fibre investment decisions* (Full-fibre investment submission). https://www.ofcom.org.uk/data/assets/pdf_file/0020/108713/openreach-additional.pdf

⁴⁹⁶ Openreach, Full-fibre investment submission, paragraphs 29-31.

be free to either offer VULA 40/10 services at a premium on full-fibre lines (to reflect higher value of such services) or to not offer such services at all (e.g. ‘entry level’ full-fibre services might start at higher bandwidths). It said that this would allow it to extract full customer value based on willingness to pay for the higher performance/functionality offered by full-fibre lines relative to the available FTTC services, including in terms of “lower fault rates; greater stability and reliability; better predictability of speeds; and lower latency”.⁴⁹⁷

Our reasoning and decisions

No charge control for VULA 40/10 services over full-fibre when FTTC available

- 9.174 We have adopted an anchor pricing approach to the transition from FTTC to full-fibre. This involves setting a charge control for VULA 40/10 services that can be delivered over FTTC, even if the services are provided over the new technology (which in this case is full-fibre). As described in more detail in Section 4 of Volume 2, we have set the FTTC price based on a bottom-up model, and based on the costs of providing FTTC to areas excluding those areas where FTTC deployment has been subsidised (in part or in whole).
- 9.175 This approach has two advantages. First, it gives the regulated firm an incentive to invest in new technology, when providing services over that new technology (in this case full-fibre) would lower its overall costs and/or would enable it to provide higher quality services for which consumers are willing to pay a premium. Second, it ensures consumers of existing services (in this case FTTC) are not made worse off by the adoption of new technology.
- 9.176 We agree with Openreach that if it offers full-fibre to a premise that also has access to FTTC (which are subject to the VULA 40/10 charge control), then it should not be subject to the 40/10 charge control when the premise is serviced with full-fibre.
- 9.177 This approach ensures the consumer is protected, because the consumer has the option of purchasing VULA 40/10 services over FTTC which will be charge controlled. To the extent consumers are willing to pay for the higher quality services available on the full-fibre network, this approach allows Openreach the flexibility to set higher prices over FTTP, giving it an incentive to invest in full-fibre.
- 9.178 We are therefore narrowing the application of our policy compared to that set out in our March 2017 Consultation. We do not require BT to offer its GEA 40/10 rentals over full-fibre connections at the same price as the equivalent charge-controlled FTTC service for those premises where there is also a VULA 40/10 service offered using FTTC.

Charge control for GEA-FTTP 40/10 rentals when FTTC not available

- 9.179 We next consider premises that are served by full-fibre but where there is no FTTC service offered. As a starting point, we consider that consumers in these areas should not be worse off than consumers in other areas i.e. they should also be protected from the risk of excessive prices. In Annex 14, we have compared the costs in our model for supplying FTTP to new sites with the cost in Openreach’s NGA business case. When the longer asset lives

⁴⁹⁷ Openreach response to the September 2017 WLA Consultation, paragraph 21.

associated with FTTP are taken into account, we find the CCA costs predicted by our model are above the CCA costs implied by Openreach’s FTTP investments. We consider that allowing BT to benefit from this over-recovery is consistent with our anchor technology approach designed to provide incentives for BT to invest in more efficient technology.

9.180 This also implies that Openreach will not face a cost recovery issue in providing FTTP to new premises even when it is subject to the charge control for the 40/10 VULA service. This is before taking account of any additional revenue it may be able to generate from providing the higher speeds that are possible with FTTP. Openreach should therefore have an incentive to invest in networks to serve these premises, and consumers will be protected from excessive prices by our charge controlling the GEA-FTTP 40/10 service (for premises where there is no FTTC service available).

9.181 As also described in Annex 14, we have also included in our 40/10 charge control modelling the costs of deploying FTTC to the [X] copper only premises that are to be provided with FTTP under the “Fibre First” plan that Openreach announced in February 2018. We also set out in Annex 14 why we consider Openreach will have an incentive to deploy to these premises.

Conclusion on requirement to charge control VULA 40/10 service when provided over full-fibre

9.182 For the reasons set out above, we require BT to align its rental charge for its VULA 40/10 service over full-fibre with its FTTC 40/10 rental charge. This requirement does not apply for premises for which BT also offers a 40/10 service using FTTC.

Provision of GEA on a standalone basis

Our proposals

9.183 In the March 2017 WLA Consultation, we proposed that where the copper bearer necessary for the use of a VULA service provided over FTTC is not provided via MPF (i.e. via WLR or a new approach such as single-order GEA (SOGEA)⁴⁹⁸), charges relating to the copper bearer should be fair and reasonable and reflect the costs of providing that bearer.

Stakeholder responses

9.184 TalkTalk considered our approach to the charging for a copper bearer in a SOGEA service to be appropriate.⁴⁹⁹ It said charges for SOGEA should be equal to the price of MPF+GEA, and recommended that we monitor demand for SOGEA and impose a charge control (through an interim review or a direction) if demand becomes a significant proportion of total demand for wholesale fibre services during the review period.⁵⁰⁰

⁴⁹⁸ SOGEA is currently available for trials ahead of wider rollout.

⁴⁹⁹ TalkTalk response to the March 2017 WLA Consultation, paragraph 5.35.

⁵⁰⁰ TalkTalk response to the March 2017 WLA Consultation, paragraphs 5.36-5.37.

9.185 Openreach raised a concern that using the charge controlled MPF product as a starting point for considering the cost-based charges of WLR when supplied as a copper bearer would add complexity to the fair and reasonable charging obligation imposed by the 2017 Narrowband Market Review (NMR).⁵⁰¹

Our reasoning and decisions

9.186 The WLA market is concerned with the infrastructure of access connections and therefore remedies in this market should be, as far as possible, service agnostic in the sense of allowing downstream telecoms providers to differentiate the package of services offered over that connection. Given this, we consider that telecoms providers should be able to purchase VULA without being required to also purchase other services, such as analogue voice or other features provided by BT. In other words, VULA should be available on a standalone basis when reasonably requested.⁵⁰²

9.187 However, VULA services currently provided by Openreach over its FTTC deployment require a copper bearer from the local exchange to the customer. Openreach has achieved this by supplying VULA as an overlay to the existing copper services it has developed (i.e. WLR and MPF). Openreach is in the process of developing SOGEA, where the copper bearer will be included within the VULA service so that it can be purchased without also purchasing WLR or MPF.⁵⁰³ This would be in line with our view that VULA should be available on a standalone basis.

9.188 In the meantime, prior to the widespread deployment of SOGEA, the effectiveness of our decision to charge control VULA 40/10 services could be undermined if Openreach were able to require telecoms providers to purchase VULA with another service (e.g. voice telephony capability) to provide the copper bearer, and to set charges for this copper bearer above the costs of provision.

9.189 In Section 10, we set a cost-based charge control on MPF so that for the case of MPF+GEA 40/10, both the copper bearer and the GEA service would be subject to cost-based charge controls. However, it may not be economic to use MPF in all situations. Existing telecoms providers using MPF have largely invested in their own equipment to provide retail packages including voice and SBB services and are unlikely to undertake further rollout. New entrant telecoms providers are unlikely to invest in exchange-based equipment and rent access connections in the form of MPF as they are likely to focus on providing retail packages offering superfast broadband services. Vodafone, for example, which is expecting to expand its broadband sales significantly from its currently small share, does not use MPF and instead relies on WLR as its copper support to FTTC.⁵⁰⁴

⁵⁰¹ Openreach response to the March 2017 WLA Consultation, Volume 2, paragraphs 110-11.

⁵⁰² This is consistent with our approach first set out in 2010 when the VULA obligation was imposed. Ofcom, 2010. *Review of the wholesale local access market*, paragraphs 8.90-97.

https://www.ofcom.org.uk/_data/assets/pdf_file/0027/37935/wla_statement.pdf.

⁵⁰³ The SOGEA service currently being trialled by Openreach is based on using the test capability in the local exchange. As such, the copper bearer is required from the local exchange to the customer premises.

⁵⁰⁴ Vodafone response to 2nd WLA s.135 notice dated 25 August 2016.

- 9.190 Where the copper bearer is not provided via MPF, but e.g. via WLR or SOGEA, we have decided that any charges related to the copper bearer must be fair and reasonable, which we would interpret as reflecting the costs of providing that bearer. While we will consider Openreach’s approach to pricing on a case-by-case basis, in our view the charge controlled MPF service provides a reasonable starting point for considering the cost-based charges for the copper bearer.
- 9.191 Openreach raised a concern with this approach on the basis that it adds complexity to the fair and reasonable charging obligation imposed on WLR in the 2017 NMR. In the 2017 NMR Statement we removed the charge controls for WLR when used to provide voice services, and imposed a fair and reasonable charging obligation, giving BT more pricing flexibility. In response to Openreach, we emphasise that it does not have to use its existing WLR service as the copper bearer to support its VULA service over FTTC. However, as WLR is currently the only alternative to MPF for providing the copper bearer, we would consider fair and reasonable charges for WLR to be those which reflect the costs of provision, in instances where it is used to provide the copper bearer to support the VULA 40/10 service.
- 9.192 For Openreach to be able to make full use of its pricing flexibility for WLR envisaged in the 2017 NMR, it will therefore need to provide the ability for telecoms providers to use the VULA 40/10 service without needing to also purchase WLR in its present form (or MPF). This may be when SOGEA is launched, but will depend on the effectiveness of SOGEA in allowing telecoms providers to provide retail packages of SFBB without relying on BT’s WLR service (which sits downstream from the WLA market).
- 9.193 In relation to Openreach’s point on complexity in the case of WLR pricing, the position is as follows: WLR is subject to a fair and reasonable charges obligation. Where WLR is used to provide voice services only, or is taken with SMPF or non-charge controlled VULA services (i.e. other than the VULA 40/10 variant), we will interpret the fair and reasonable charges obligation as set out in the 2017 NMR Statement, i.e. that prices which amount to a price squeeze would not be fair and reasonable.
- 9.194 As TalkTalk suggested, we will monitor demand for SOGEA and will act accordingly if competition concerns emerge.

Ancillary services

- 9.195 To make our price regulation work for competing telecoms providers and to promote effective competition, we proposed in our March 2017 WLA Consultation to impose charge controls on certain GEA ancillary services.
- 9.196 Stakeholders did not comment in principle on our proposal to regulate prices for certain ancillary services. As such, we have decided to impose charge controls for relevant ancillaries. We set out the details of our charge control proposals, stakeholder responses and our decisions in Volume 2 of this statement.⁵⁰⁵

⁵⁰⁵ Table 1.3 of Volume 2 sets out a full list of GEA ancillary service charge controls.

Legal tests

9.197 For the reasons set out in Section 5 of Volume 2, we consider that each of the charge controls on GEA rental and ancillary services we have decided to set satisfies the legal tests set out in the Act and is in accordance with our legal duties.

Consistency with the EC Recommendations and the 2012 BEREC Common position

9.198 In the following paragraphs, we set out how we have taken utmost account of the documents described in making our decisions on VULA pricing.

The NGA Recommendation

9.199 The aim of the NGA Recommendation⁵⁰⁶ is “to foster the development of the single market by enhancing legal certainty and promoting investment, competition and innovation in the market for broadband services in particular in the transition to next generation access networks (NGAs)” (Recommendation 1). In relation to the regulation of virtual unbundled access services (which it describes as “alternative access products which offer the nearest equivalent constituting a substitute to physical unbundling”) these should be “accompanied by the most appropriate safeguards to ensure equivalence of access and effective competition” (Recital 21).

9.200 We consider that our decisions (which include imposing a specific cost-based charge control on the wholesale price of VULA 40/10 services, while allowing pricing flexibility on higher bandwidths) are consistent with the aims of the NGA Recommendation, including promoting investment, competition and innovation in the market for broadband services, in particular in the transition to NGA. This is because we consider they are met in the UK context particularly with respect to our focus on balancing the promotion of competition in NGA-based services and NGA investment. We have provided further reasoning in relation to our decisions and these objectives in the rest of this section.

The Costing and Non-discrimination Recommendation

9.201 The Costing and Non-discrimination Recommendation provides further guidance on the regulatory principles established by the NGA Recommendation, in particular the conditions under which regulation of wholesale access prices should, or should not be applied, as set out in paragraph 49.⁵⁰⁷

⁵⁰⁶ Commission Recommendation of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) (2010/572/EU). <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010H0572&from=EN>.

⁵⁰⁷ Commission Recommendation of 11 September 2013 on consistent non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment (C(2013) 5761) (Costing and Non-discrimination recommendation). http://ec.europa.eu/smart-regulation/impact/ia_carried_out/docs/ia_2013/c_2013_5761_en.pdf.

- 9.202 Paragraph 49 provides that, “the NRA should decide not to impose or maintain regulated wholesale access prices ...”, under the condition that the NRA can show, “... a copper anchor ... or ... alternative infrastructures that are not controlled by the SMP operator can exercise a demonstrable retail price constraint.”
- 9.203 We have considered the extent to which the competitive constraint from retail providers using regulated copper services from BT, as well as from retail services provided over other fixed access networks such as Virgin Media’s cable network, are likely to be strong enough to keep wholesale NGA prices (i.e. VULA) at the competitive level over the course of the review period. As set out above, current VULA charges are above the efficiently-incurred unit costs of provision and margins are expected to increase further as unit costs fall. We do not consider that the retail constraints exerted by packages of SBB or packages of SFBB over cable will be sufficient to bring down VULA prices closer to the level of efficiently incurred cost during the review period, such that these unit cost reductions are passed through to consumers. Absent regulation, there is therefore a risk that VULA charges will be excessive, resulting in adverse effects in the form of high retail SFBB prices and associated consumer harm.
- 9.204 We note recital 56 does not envisage that an, “NGA based anchor will be required in the immediate future or before 2020”. However, for the reasons set out above, we consider that over this review period, there is a risk of adverse effects due to BT’s incentive and ability to set VULA charges at an excessive level. The charge control on VULA 40/10 services is being introduced from 1 April 2018 (i.e. not the immediate future after the September 2013 Costing and Non-discrimination Recommendation), and is not designed to align with unit costs until 2019/20.
- 9.205 In light of the above, we have removed obligations relating to the *ex ante* economic replicability test as outlined in paragraph 56. This is explained in more detail from paragraph 9.103 above.

2012 BEREC Common Position on WLA market remedies

- 9.206 The 2012 BEREC Common Position on best practice in remedies on the market for wholesale (physical) network infrastructure access sets out that “Application of this Common Position will assist NRAs to design effective remedies in line with the objectives of the regulatory framework”.⁵⁰⁸ These objectives include, among other things, safeguarding competition and promoting efficient investment and innovation.⁵⁰⁹

⁵⁰⁸ BEREC, 2012. *Revised BEREC common position on best practice in remedies on the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location imposed as a consequence of a position of significant market power in the relevant market*, BoR (12) 127.

[http://www.berec.europa.eu/files/document_register_store/2012/12/20121208163628_BoR_\(12\)_127_BEREC_COMMON_POSITION_ON_BEST_PRACTICE_IN_REMEDIES_ON_THE_MARKET_FOR_WHOLESALE.pdf](http://www.berec.europa.eu/files/document_register_store/2012/12/20121208163628_BoR_(12)_127_BEREC_COMMON_POSITION_ON_BEST_PRACTICE_IN_REMEDIES_ON_THE_MARKET_FOR_WHOLESALE.pdf).

⁵⁰⁹ Article 8, The Common Regulatory Framework comprises the Framework Directive (Directive 2002/21/EC), the Authorisation Directive (Directive 2002/20/EC), the Access Directive (Directive 2002/19/EC), the Universal Service Directive (Directive 2002/22/EC) and the Directive on privacy and electronic communications (Directive 2002/58/EC), as amended by the Better Regulation Directive (Directive 2009/140/EC),
http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2009.337.01.0037.01.ENG&toc=OJ:L:2009:337:TOC.

- 9.207 Under the objective “Fair and coherent access pricing” the BEREC Common Position describes a “Competition issue which arises frequently” as “SMP operators offer pricing schemes / prices not allowing alternative operators to compete on a level playing field and/or enabling a viable business case.” It then sets out several best practices under this objective that are relevant to NGA pricing:
- BP42 says “When determining their price regulation NRAs need to consider that it should incentivise both efficient investment and sustainable competition”; and
 - BP43 states “Where appropriate and proportionate, NRAs should require SMP operators to provide regulated products based on an explicit pricing obligation...ranging from a requirement for prices to be cost-orientated and subject to rate approval through to specific charge controls...”
- 9.208 We consider that our decisions (which include imposing a specific cost-based charge control on the wholesale price of VULA 40/10 services, while allowing pricing flexibility on higher bandwidths), are consistent with BP42 and BP43. Our price regulation of BT’s VULA 40/10 services should promote competition, while pricing flexibility on other, and particularly higher bandwidths, should incentivise investment.
- 9.209 Together, we consider that our decisions are consistent with the aims of the BEREC Common Position including with respect to safeguarding competition and promoting efficient investment and innovation.

10. Price regulation of copper access services, including LLU and SLU

- 10.1 In this section, we set out our decisions in relation to price regulation of copper access services provided by BT, including rental charges for LLU and SLU. These remedies are intended to address competition concerns resulting from BT's SMP in the WLA market in the UK excluding the Hull Area.
- 10.2 In summary, we have decided to:
- Continue to set a charge control on MPF rentals and relevant ancillary services. This follows our decision in Section 7 to retain the requirement on BT to provide network access in the form of MPF.
 - No longer impose a charge control on SMPF rentals. Instead, these services will be subject to the general remedies discussed in Section 6.
 - Impose a basis of charges obligation on SLU services.
 - Impose a basis of charges obligation on electricity services.
- 10.3 The charge control on MPF rentals and ancillary services (including the level of charges) is a CPI-X control with X set to align charges to forecast efficient costs by the penultimate year of the charge control period (cost-based charge control). The details of how we have set the MPF charge control are set out in Volume 2.

Price regulation of MPF

Background

- 10.4 In Section 4, we identify BT as having SMP in the WLA market in the UK excluding the Hull Area. In Section 7, we confirm our decision to impose an obligation on BT to provide network access to LLU in the specific form of MPF and relevant ancillary services. In this section, we consider whether it is appropriate to continue to impose a control on MPF charges for the period of the market review.

Our proposals

- 10.5 In the March 2017 WLA Consultation we proposed to set a cost-based charge control on MPF rentals and relevant ancillary services. These proposals were broadly consistent with our approach to MPF which has been in place since 2005.⁵¹⁰ This approach now supports widespread retail competition, with providers such as TalkTalk and Sky using it to provide retail services (such as voice and broadband) over BT's local access connections.

⁵¹⁰ Ofcom, 2005. *Local loop unbundling: setting the fully unbundled rental charge ceiling and minor amendment to SMP conditions FA6 and FB6.*

https://www.ofcom.org.uk/_data/assets/pdf_file/0025/36691/llu_statement.pdf

Stakeholder responses

- 10.6 The majority of stakeholders agreed with our proposal to impose a cost-based charge control on MPF. Openreach stated its agreement that a CPI-X charge control is appropriate for MPF services.
- 10.7 Virgin Media said that we appeared to accept that SFBB constrains SBB prices (but not vice versa) and argued that, if this is the case, then there is no requirement for cost-based charge controls on both MPF and VULA 40/10 prices. It suggested that there could therefore be a “case for removing the MPF cap”⁵¹¹, although its preference was for a CPI-CPI safeguard cap on the combined MPF+VULA 40/10 price.⁵¹²
- 10.8 There were other stakeholder comments related to our methodology for setting the charge control for MPF. These comments are addressed in Volume 2.

Our reasoning and decision

- 10.9 As we set out in the March 2017 WLA Consultation, in the absence of a charge control on MPF services, BT would have the ability and incentive to exploit its SMP by pricing at an excessive level. This could cause harm to consumers by inhibiting downstream competition as well as leading to excessive prices for retail services that rely on MPF (including packages offering SBB and SFBB).
- 10.10 We have decided to address this concern by continuing to impose a charge control on MPF, which is the service most commonly used by telecoms providers other than BT to provide voice and broadband services on the Openreach network. In November 2017, MPF represented 92% of all LLU lines used by BT’s competitors. We consider that a charge control on MPF is both necessary and proportionate to prevent BT pricing excessively and to provide certainty and transparency with regard to charges over the course of the review period. We also note that our proposal to reimpose a cost-based charge control on MPF was supported by the vast majority of respondents to the March 2017 WLA Consultation.
- 10.11 We consider that imposing a cost-based charge control on MPF is likely to significantly reduce the risk of a margin squeeze on MPF-based retail services. This is because where BT no longer has flexibility over the wholesale price, it is only able to impose a margin squeeze by reducing the retail price, which would lead to a reduction in its profits as a vertically integrated provider.
- 10.12 Furthermore, the general obligation that charges must be fair and reasonable (see Section 6) does not apply where a charge control (or basis of charges obligation) is in force and is not required to address the risk of a margin squeeze on MPF for as long as the charge control is in place.

⁵¹¹ Virgin Media response to the March 2017 WLA Consultation, paragraph 131.

⁵¹² We understand that Virgin Media is not arguing for a CPI-CPI safeguard cap on both the VULA and MPF prices. Virgin Media’s case is that “there is no requirement for *two* separate cost-based remedies in the market” (emphasis added), rather than that there is no requirement for *any* such remedy: Virgin Media response to the March 2017 WLA Consultation, paragraphs 129-131.

- 10.13 Virgin Media argues that, while SBB prices are constrained by SFBB, it is not the case that SFBB prices are constrained by SBB. We discuss the retail substitutability between these products in Annex 5. However, the strength of this substitutability is not relevant to our decision to impose a charge control on MPF, since MPF is the wholesale access service underpinning the provision of retail packages of both SBB and SFBB by at least two major retail competitors to BT.

Legal tests

- 10.14 Our specific decisions in relation to the charge control for MPF is contained in Volume 2. For the reasons set out in Section 5 of Volume 2, we are satisfied that our decisions satisfy the relevant legal tests.

Consistency with the EC recommendations and BEREC common position

- 10.15 We consider that our decision to impose charge controls on MPF services is consistent with the BEREC common position, particularly BP16 which states that “NRAs should impose obligations with regard to the provision of co-location and other associated facilities on a cost-oriented basis under clear rules and terms approved by the regulator to support viability of the access services mentioned above”.
- 10.16 In the case of MPF, we consider that a cost-based charge control reduces the risk of margin squeeze so do not consider it necessary to put in place additional *ex ante* obligations to address this form of conduct. As BP49e explains, “where cost-based access is imposed, this should help address concerns about downstream margin squeeze”.
- 10.17 We note that key elements of the Costing and Non-discrimination Recommendation presuppose the application of charge controls for LLU (for example, its recommendations on the appropriate costing methodology for LLU).⁵¹³ These are addressed in more detail in Volume 2.

Price regulation of SMPF

Background

- 10.18 In Section 7, we set out our decision not to impose a specific access remedy on BT in the form of a requirement to offer SMPF and that instead, SMPF (including any ancillary services not subject to a charge control) will fall within the scope of the general network access remedy and be subject to a fair and reasonable terms and conditions (including charges) obligation, as well as a non-discrimination obligation. In this section, we consider whether in light of this, it is appropriate to continue to impose a control on SMPF rental

⁵¹³ Costing and Non-discrimination Recommendation, page 6, point 45.

charges⁵¹⁴ for the period of the market review or whether instead the general network access remedies are sufficient to address the competition concerns resulting from BT's SMP.⁵¹⁵

- 10.19 SMPF is most commonly used in conjunction with WLR to provide dual-play or triple-play retail services to consumers. In our recent 2017 NMR Statement, we decided to remove cost-based charge controls in the WFAEL market (which includes WLR rental and connection charges) and replace them with a fair and reasonable charging obligation. This allows BT some flexibility to raise WLR charges provided that these charges remain fair and reasonable, i.e. BT does not impose a margin squeeze.

Our proposals

- 10.20 In the March 2017 WLA Consultation, we proposed to remove SMPF from the services that are subject to a charge control. We did so on the basis that any concerns around SMPF pricing in the absence of a charge control would be sufficiently addressed by our proposal for SMPF pricing to be subject to the fair and reasonable charges obligation which is associated with the general network access obligation.

Stakeholder responses

- 10.21 Stakeholder views differed on our proposal not to impose a charge control on SMPF.
- 10.22 Openreach argued that there is no longer any justification for regulating Openreach's charges for SMPF charges and that it has no incentive to impose a margin squeeze for SMPF charges. Openreach said this would be counter-productive to its aim of maximizing profits (subject to regulation), which it argued required it to sell SMPF at prices that would allow telecoms providers to compete effectively and profitably in downstream markets. Openreach further questioned the necessity of maintaining any regulatory remedy as a safeguard, but said that it did not have significant concerns about the effect this would have on its commercial options.⁵¹⁶
- 10.23 Openreach also argued a fair and reasonable charging obligation is not supposed to be a rigid form of regulatory intervention and that there should be no assumption that a fair and reasonable charge must be the same as what might be imposed under a charge control.⁵¹⁷
- 10.24 TalkTalk supported our proposal to deregulate SMPF given the limited use of SMPF by operators other than BT, but remained concerned that BT could use the flexibility to raise SMPF prices substantially. TalkTalk stated that it would be important for us to monitor the

⁵¹⁴ We set out our decision relating to SMPF ancillary services in Annex 23.

⁵¹⁵ The general access remedy requirement for fair and reasonable terms covers ancillary services. Where these services are not covered by a charge control, this includes the requirement for charges to be fair and reasonable.

⁵¹⁶ Openreach response to the March 2017 WLA Consultation, paragraphs 292-297.

⁵¹⁷ Openreach response to the March 2017 WLA Consultation, paragraph 171.

SMPF price closely and be ready to intervene to prevent further increase should prices rise substantially above inflation; either by conducting an interim review or by intervening under BT's overarching duty to set charges on a fair and reasonable basis.

- 10.25 Sky argued that BT has an incentive to raise wholesale prices for those consumers who depend on SMPF, even if that involves increases in retail prices.⁵¹⁸
- 10.26 Sky also argued that competition in retail markets will remain predicated on WLR+SMPF and MPF to a significant degree over the course of the review period and that not imposing a charge control on SMPF will undermine the level playing field between competitors using different wholesale inputs and distort competition.⁵¹⁹
- 10.27 Lothian Broadband Networks said that our proposal to remove the specific network access obligation and charge control on SMPF is a concern to it as it would impact its ability to enter the broadband market.

Our reasoning and decision

- 10.28 In the WLA market in the UK excluding the Hull Area, we consider that there are unlikely to be significant dynamic benefits to be gained by promoting competition based on SMPF. Instead, our regulatory objective is the protection of competition.
- 10.29 In light of the above, and given our decision to no longer impose the specific network access obligation on BT to provide SMPF, we consider it appropriate to permit BT some flexibility in the wholesale pricing of SMPF. On that basis, we have decided to remove SMPF from the services that are subject to a charge control.
- 10.30 While TalkTalk suggests that we should intervene should prices rise substantially in excess of inflation, we note that there is no *a priori* reason in this case why above-inflation rises would mean charges were no longer fair and reasonable.
- 10.31 Nevertheless, we have taken note of the risks to competition of removing the charge control on SMPF. As BT is vertically integrated and competes in downstream markets with other telecoms providers who purchase SMPF, our primary *ex ante* concern in relation to removing the charge control on SMPF is the risk of adverse effects arising from BT fixing and maintaining its SMPF charges at a level that creates a margin squeeze. A margin squeeze would mean that telecoms providers who were as efficient as BT in providing downstream broadband services would not be able to compete with BT effectively. This could undermine existing competition based on SMPF in downstream markets. While BT argues that it has no incentive to impose a margin squeeze, we note both that to do so would be costless for BT Group (as it is vertically integrated) and that such a policy could leave BT's downstream divisions well placed to win broadband customers, including some customers to whom it already provides voice services (i.e. because the customer has taken BT for line rental and a separate provider for broadband).

⁵¹⁸ Sky response to the March 2017 WLA Consultation, paragraph 97.

⁵¹⁹ Sky response to the March 2017 WLA Consultation, paragraph 100.

- 10.32 We also note that in the absence of a cost-based charge control on SMPF, BT would have the ability to raise SMPF charges above their current level (i.e. above LRIC, which was the level of the cap determined in the 2014 FAMR for the end of that review period). This would lead to an increase in the combined cost to telecoms providers of purchasing WLR and SMPF together (WLR+SMPF), which is the form in which SMPF is usually purchased by telecoms providers. However, given the lack of a cost-based charge control on WLR, an SMPF charge control would not constrain wholesale prices of WLR+SMPF as BT could simply raise WLR prices instead. A charge control on SMPF would therefore have little impact in restricting the price of WLR+SMPF when purchased together.
- 10.33 Contrary to Sky's assertion, we believe that prices of retail packages supplied using MPF are likely to act as a constraint on the prices of similar packages based on WLR+SMPF. As most consumers now take broadband and landline services from the same provider and as telecoms providers using the Openreach network can (and, except for BT, mostly do) offer retail services using MPF as the wholesale input, we consider that there are unlikely to be significant benefits from promoting competition in retail broadband markets based on SMPF. Where telecoms providers currently use WLR+SMPF, in most cases they could respond to any significant rise in the combined WLR+SMPF charge by instead using MPF as their wholesale input.⁵²⁰ We also expect the trend of migration from SBB to SFBB to further reduce the demand for SMPF and, as noted earlier, further LLU entry at any scale is unlikely. Hence, the risk of harm arising from above-cost pricing of SMPF is now much reduced and we consider that a charge control is not justified in order to promote competition in retail broadband packages.
- 10.34 However, we are aware that some telecoms providers expect to rely on SMPF to supply at least some of their retail customers over this review period and could face additional costs if forced to migrate earlier than planned. We are also aware that at least one telecoms provider (TalkTalk) provides a competing WBA service using SMPF.⁵²¹ In addition, SMPF is used by some telecoms providers to provide broadband-only services to consumers who purchase their retail line rental and voice services from another provider (typically BT). While providers of bundled broadband services could switch to MPF, broadband-only providers would not have this option.
- 10.35 In light of the risks outlined above, we believe it is appropriate to maintain some *ex ante* constraint on the level of SMPF charges. Such protection will be afforded by the main SMPF charges (i.e. for rentals and most ancillary charges⁵²²) being subject to the fair and reasonable charging obligation associated with the general network access obligation.

⁵²⁰ An illustration of the circumstances in which switching to MPF becomes viable (relative to WLR) was provided in Annex 3 to the 2017 NMR statement. We recognise that various assumptions were made in that analysis (e.g. on customer lifetimes and sufficient capacity in exchanges), but it appeared cost effective to switch from WLR (with wholesale call origination (WCO) from BT) to MPF in response to relatively modest increases in the price of WLR and WCO. In that analysis we recognised that if the price of SMPF were also to increase (as well as that for WLR and WCO), this would provide a further incentive to switch to MPF.

⁵²¹ <https://www.talktalkbusiness.co.uk/partners/wholesale-connectivity/>

⁵²² SMPF soft ceases and SMPF hard ceases will remain subject to charge controls, as will services in the tie cables basket and services in the co-mingling new provides and rentals basket, as these services are used in relation to both MPF and SMPF. See Annex 23.

- 10.36 The fair and reasonable charging obligation, combined with the no undue discrimination obligation (including EOI), should provide protection for existing SMPF wholesale customers in that, if Openreach continues to provide SMPF to other parts of BT, then it will be obliged to make SMPF available on the same terms, conditions and charges to other telecoms providers. We believe that these remedies are a proportionate way of addressing our remaining concerns around SMPF charges.
- 10.37 We are imposing a fair and reasonable charging obligation on BT to address the competition concerns identified above. We are adopting an approach to the evaluation of costs and margins consistent with the margin squeeze test under *ex post* competition law. We impose this *ex ante* obligation on BT to enable us to intervene in the event that BT sets prices which amount to a price squeeze. We consider this is an effective remedy for dealing with a price squeeze competition concern and that the imposition of wholesale charge controls would be a disproportionate intervention for dealing with this risk. This also ensures that the price regulation of SMPF is consistent with that for WLR.⁵²³

Legal tests

- 10.38 In relation to SMPF, we have explained in Section 6 why we consider that the fair and reasonable charging obligation satisfies the relevant legal tests in the Act.

Price regulation of SLU

Our proposals

- 10.39 In the March 2017 WLA Consultation, we proposed a basis of charges condition which would require SLU charges to be reasonably derived from the costs of provision by reference to LLU charges. Specifically, SLU charges must be based on equivalent LLU charges, with any differences between the two reflecting differences in incremental cost, including an appropriate return on capital employed.

Stakeholder responses

- 10.40 Stakeholders who commented on our SLU proposal agreed to imposing a basis of charges obligation on SLU. Openreach noted that our SLU proposal is largely unchanged from the measures imposed under the previous market reviews.⁵²⁴
- 10.41 WarwickNet said that it did not take issue with our reasoning for a basis of charges obligation in theory, but argued that, while LLU rental, connection and migration charges have all fallen since 2005, the equivalent SLU charges have remained unchanged over the same period. It argued that, while LLU and SLU services are not identical, SLU largely shares the same processes and infrastructure of LLU and they therefore would have expected pricing trends to be much more closely aligned than they have been.

⁵²³ As set out in the 2017 NMR statement, paragraphs 8.37-8.50.

⁵²⁴ Openreach response to the March 2017 WLA Consultation, paragraph 197.

10.42 CallFlow similarly argued that, while LLU and SLU are generally regarded as being similar products, SLU prices have generally not moved whereas LLU prices have generally decreased. CallFlow also argued that the current price for providing or ceasing an SLU service means that it is impossible to offer retail packages at prices that are in line with GEA services.

Our reasoning and decision

10.43 As set out in Section 6, we consider that telecoms providers using SLU are doing so to benefit customers by providing services which might not otherwise have been available, such as in areas where BT has not upgraded its local access connections to fibre. In the absence of regulation of SLU charges, BT would have the ability and incentive to exploit its SMP by raising prices to levels which could harm downstream competition and ultimately consumers.

10.44 To limit the price that BT can charge for SLU and address this risk, we have decided to reimpose a basis of charges condition to require SLU charges (including supporting ancillary services) to be reasonably derived from the costs of provision by reference to relevant LLU charges. We consider (as we did in the 2014 FAMR) that where parts of the SLU service or process are the same as services or processes within other services, then we would also expect the costs to be the same. The costs recovered from SLU should only differ from the costs BT recovers from other services that use equivalent components where and to the extent that there is an objective justification for the difference.⁵²⁵ Specifically, SLU charges must be based on equivalent LLU charges, with any differences between the two reflecting differences in incremental cost, including an appropriate return on capital employed.

10.45 Where there are charges for which there is no LLU equivalent, these are to be set on a forward looking (CCA) FAC⁵²⁶ basis (consistent with the control on MPF charges explained in Volume 2, Section 2) on an annual basis such that prices should reflect average costs in any year. The basis of charges condition also requires the amount of common costs recovered to be reasonable, which we consider is consistent with basing charges on BT's FAC.

10.46 We have considered whether to set a cost-based control on SLU charges but have concluded that this would not be proportionate as our objectives can be achieved by a less intrusive form of regulation in this case. A sufficient degree of certainty about prices can still be achieved under a basis of charges condition for SLU and an advantage of this approach is that charges may reflect actual costs during the period covered by this market review more closely than under a charge control.⁵²⁷ Although incentives to reduce costs would be weaker under this approach than with a charge control, we nevertheless consider that the charge control on MPF will provide sufficient incentive for BT to reduce the costs of the network components used for SLU since many of these are also used for

⁵²⁵ We note in this regard Ofcom, 2013. *Cost orientation review*, 'Consistency between price differences and cost differences', paragraph 3.107. <https://www.ofcom.org.uk/consultations-and-statements/category-2/cost-orientation>.

⁵²⁶ Current Cost Accounting Fully Allocated Cost.

⁵²⁷ To the extent that prices reflect actual costs this is likely to be good for allocative efficiency.

MPF. Hence, in our view, a charge control is likely to be disproportionate given the efficiency and competition benefits that a basis of charges obligation would secure in this case and given the low current and expected take-up of SLU.

- 10.47 We note the points put to us by Warwicknet and Callflow regarding some of BT's current and historic charges for SLU services. We are currently considering these points and we will take action if appropriate. We expect BT to comply with this condition and, as with all conditions, we and will consider taking enforcement action should we receive evidence that it has not done so. However, we continue to consider that a basis of charges condition is the most appropriate remedy for these services for the reasons set out above.⁵²⁸
- 10.48 We have therefore decided to impose a basis of charges condition to require SLU charges to be reasonably derived from the costs of provision by reference to relevant LLU charges. Specifically, SLU charges must be based on equivalent LLU charges, with any differences between the two reflecting differences in incremental cost, including an appropriate return on capital employed. Where there are charges for which there is no LLU equivalent, these are to be set on a forward looking (CCA) FAC basis on an annual basis such that prices should reflect average costs in any year. The basis of charges condition also requires the amount of common costs recovered to be reasonable.

Legal tests

- 10.49 Section 87(9)(a) of the Act authorises the setting of SMP services conditions imposing on the dominant provider such price regulation as Ofcom may direct in relation to matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities. Section 87(9)(b) further authorises SMP services conditions imposing such rules as Ofcom makes for the purposes of matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities about the recovery of costs and cost orientation. In each case, in setting such conditions we must be satisfied that the conditions about network access pricing set out in section 88 of the Act are also satisfied.
- 10.50 We consider that the condition satisfies the requirements of section 88(1) of the Act as our analysis indicates that there is a risk of adverse effects arising from price distortion. Moreover, the condition promotes efficiency and sustainable competition and provides the greatest possible benefits to customers by enabling competing providers to buy network access and supporting ancillary services at levels that might be expected in a competitive market. The extent of investment of the dominant operator has been taken into account as set out in section 88(2), as the obligation provides for an appropriate return on the capital employed to be included in the charges.
- 10.51 We have also considered our duties under section 3 and all the Community requirements set out in section 4 of the Act. In particular, the condition is aimed at promoting competition and securing efficiency and sustainable competition for the maximum benefit

⁵²⁸ While WarwickNet and Callflow argued that there are pricing disparities between LLU and SLU, we note that they did not argue against the imposition of a basis of charges condition for this review period.

of consumers by ensuring that charges for wholesale services are set at a level that enables telecoms providers to compete downstream.

10.52 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. We are satisfied that the condition is:

- objectively justifiable, in that the condition will ensure that competing telecoms providers can buy services at charges that will enable them to develop competing services to those of BT in downstream markets to the benefit of consumers;
- not unduly discriminatory, in that no other operator has SMP in the relevant market of the UK excluding the Hull Area;
- proportionate, in that the condition ensures, but does no more than ensure, that BT is unable to exploit its market power, while at the same time allowing BT a fair rate of return that it would expect in competitive markets; and
- transparent, in that it is clear in its intention, in particular to ensure charges that are reasonably derived from the costs of provision by reference to relevant LLU charges.

Consistency with the EC Recommendations

10.53 In accordance with section 4A of the Act, we have also taken due account of all applicable recommendations issued by the European Commission under Article 19(1) of the Framework Directive. We note the Costing and Non-discrimination Recommendation recommends not imposing pricing obligations, including cost orientation, where certain conditions are met (Recommendation 48). These conditions include requirements such as EOI, which could act to constrain prices in a way that makes additional pricing obligations unnecessary. Since, for the reasons set out in Section 6, we do not consider it appropriate to impose an EOI requirement for SLU, our decision to impose a basis of charges obligation is consistent with the Costing and Non-discrimination Recommendation.

10.54 For the reasons set out above, the basis of charges condition is also consistent with the provision in the NGA Recommendation, which says:

“When NRAs impose copper sub-loop unbundling, the SMP operator should be required to complement the existing LLU reference offer with all necessary items. The price of access to all items should be cost-oriented in accordance with Annex I”.⁵²⁹

10.55 In particular, Annex I of the Costing and Non-discrimination Recommendation says, “NRAs should impose cost-based access to all items necessary to allow sub-loop unbundling, including backhaul measures and ancillary remedies, such as non-discriminatory access to facilities for co-location, or in their absence, equivalent co- location”. It further states that “regulated access prices should not be higher than the cost incurred by an efficient operator.”⁵³⁰

⁵²⁹ NGA Recommendation, page 8, point 30.

⁵³⁰ NGA Recommendation, Annex 1, point 5.

Price regulation of electricity services

Background

- 10.56 Telecoms providers buy electricity from BT to provide power to the equipment used for MPF, SMPF and GEA. The price which BT charges telecoms providers for electricity is made up primarily of the wholesale price that BT itself is charged for electricity, with the remainder consisting of charges related to the provision of this electricity to telecoms providers.
- 10.57 BT's charges for electricity have fluctuated, reflecting variations in the prices at which it buys electricity. Table 10.1 illustrates these fluctuations since April 2014.

Table 10.1: Charges for electricity usage per kWh

Operative date	Charge £ Excl. VAT
01/04/2014	0.1237
21/08/2014	0.1182
01/04/2015	0.1288
20/07/2015	0.1227
01/01/2016	0.1145
01/04/2016	0.1215
04/05/2016	0.1174
01/04/2017 (announced)	0.1229

Source: BT price list

Our proposals

- 10.58 In the March 2017 WLA Consultation, we proposed to continue with our 2014 decision to apply a basis of charges condition for electricity services. This condition requires BT to set electricity charges that are derived from its relevant electricity purchase costs plus a small mark-up to reflect its own internal costs related to electricity purchasing and electricity charge setting.

Stakeholder responses

- 10.59 Most stakeholders who responded to our consultation did not comment on our proposals in relation to the price regulation of electricity services.
- 10.60 BT said that it had no issue with our proposals to impose a basis of charges obligation on electricity services.

10.61 Vodafone argued that electricity charges need to be tightly regulated to prevent over-recovery and ensure costs are allocated fairly.⁵³¹ Vodafone argued that it is vital these costs are set on an efficient cost reflective basis and do not allow scope for over-recovery or allow costs to be added without detailed scrutiny.

Our reasoning and decision

- 10.62 The access remedies that we impose enable telecoms providers to locate equipment in BT's exchanges. However, to power this equipment, providers have no option but to buy electricity services from BT and the provision of electricity services in BT's exchanges is not open to competition. This means that BT has both the incentive and ability to charge excessively high prices for electricity services consumed in BT exchanges. We therefore consider that some form of price regulation is required in order to protect downstream competition whenever electricity is used to support WLA services in BT exchanges. Our objective remains that the prices for these services should reflect an efficient level of cost.
- 10.63 In the 2014 FAMR Statement we decided that a basis of charges obligation would be the most effective way to protect consumers from the risk of excessive pricing.⁵³² This required BT to set electricity charges that are derived from its relevant electricity purchase costs plus a small mark-up to reflect its own internal costs related to electricity purchasing and electricity charge setting using a FAC-based approach.
- 10.64 We considered whether it would be appropriate to impose a cost-based charge control instead, but concluded that a such an approach would not be appropriate. This was on the basis of the volatile nature of the wholesale price that BT pays for electricity and a charge control on the very low proportion of costs other than the raw power that contributes to BT's electricity charge would be over-prescriptive and disproportionate.
- 10.65 We continue to consider that a charge control on electricity charges would be inappropriate. The principal reason for this view is the nature of the electricity purchase costs which make up over 90% of BT's electricity charge and which are largely outside BT's control.⁵³³
- 10.66 We agree with Vodafone that electricity charges should be cost-reflective and not allow scope for over-recovery, and we believe a basis of charges obligation is the best way to achieve this. While a charge control would give BT a stronger incentive to reduce electricity costs, in practice it has little ability to do so. To the extent that BT is able to reduce its electricity purchase costs, it already has a commercial incentive to do so, as it pays the same cost for its own power as the cost of power provided to other telecoms providers.⁵³⁴

⁵³¹ Vodafone response to the March 2017 WLA Consultation, paragraph 3.10.

⁵³² Ofcom, 2014 FAMR Statement, Volume 1, paragraphs 13.60-13.65.

⁵³³ Openreach, *Accounting Methodology Document 2017*, page 298.

<http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2017/AMD2016-17.pdf>.

⁵³⁴ 2014 FAMR Statement, paragraph 13.55

- 10.67 Only a very small fraction of the FAC-based electricity-related charges levied by BT (0-10%) do not relate directly to the volume (kWh) of electricity being used. These remaining costs relate to the cost of PSTN lines to carry meter data as well as meter operation and maintenance. There is a very low amount of capital employed (and thus required return on these assets) in the provision of electricity services.⁵³⁵
- 10.68 In these circumstances, the efficiency benefits from setting prices to reflect the actual costs of electricity provision as they arise are likely to outweigh any benefits from stronger cost-reduction incentives under a charge control. Moreover, a charge control on the very small proportion of the charge which does not relate directly to the volume (kWh) of electricity being used would be disproportionate.
- 10.69 We understand that BT buys electricity under fixed price contracts, that it does not make spot market purchases and that it reviews the level of electricity revenues and costs on a quarterly basis. Given this, our approach ensures that over the course of a year BT's revenues from electricity sales are in line with its costs. No additional margin over FAC to allow for uncertainty is needed.
- 10.70 Therefore, our view continues to be that it is appropriate to apply a basis of charges condition that requires BT to set electricity charges that are derived from its relevant electricity purchase costs plus a small mark-up to reflect its own internal costs related to the supply of electricity to other telecoms providers (including meter operation and maintenance costs).

Legal tests

- 10.71 We consider that the basis of charges condition for electricity meets the tests set out in the Act.
- 10.72 Section 87(9)(a) of the Act authorises the setting of SMP services conditions imposing on the dominant provider such price controls as Ofcom may direct in relation to matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities. Section 87(9)(b) further authorises SMP services conditions imposing such rules as Ofcom may make for the purposes of matters connected with the provision of network access to the relevant network, or with the availability of relevant facilities about the recovery of costs and cost orientation. In each case, in setting such conditions, we must be satisfied that the conditions about network access pricing set out in section 88 are also satisfied.
- 10.73 We consider that the condition satisfies the requirements of section 88(1) as our market analysis indicates that there is a risk of adverse effects arising from price distortion in the absence of regulation of BT's electricity charges. Moreover, the condition promotes efficiency and sustainable competition and provides the greatest possible benefits to customers by ensuring that competing providers are able to buy network access and supporting ancillary services with associated electricity charges at levels that might be

⁵³⁵ Almost all of the capital employed relates to net current assets or liabilities arising from timing differences in payment for electricity. A very small percentage relates to the capital employed in meter operation and maintenance

expected in a competitive market. The extent of BT's investment, which is minimal in the case of electricity services as noted above, has been taken into account as required under section 88(2).

10.74 We have also considered our duties under section 3 and all the Community requirements set out in section 4 of the Act. In particular, the condition is aimed at promoting competition and securing efficiency and sustainable competition for the maximum benefit of consumers by ensuring that BT's charges for electricity provided to support network access in the WLA market are set at an appropriate level. For those reasons, we also consider that the condition would be appropriate in order to promote efficiency and sustainable competition and provide the greatest possible benefits to end-users. At the same time, the basis of charges obligation will allow BT the opportunity to recover the efficiently incurred costs of providing the electricity services. As such, we consider that the condition is also consistent with the purpose of securing efficient investment.

10.75 Section 47 requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the proposed condition is:

- objectively justifiable, in that the condition is required to address the risk that electricity charges are likely to be priced above the competitive level in the absence of such a condition;
- not unduly discriminatory, in that we have found that BT is the only operator with SMP in the relevant market of the UK excluding the Hull Area;
- proportionate, in that it will ensure, but do no more than ensure, that BT is unable to exploit its market power, while allowing it the opportunity to recover its efficiently incurred costs in the provision of electricity services; and
- transparent, in that it is clear in its intention, in particular to ensure that BT should set charges for electricity services as set out in this statement.

11. Restriction on BT’s ability to geographically target price reductions

- 11.1 In this section we set out our decision to include a specific provision in the no undue discrimination obligation that restricts BT’s ability to make geographically targeted price reductions to VULA where it is provided using GEA-FTTC or G.fast.⁵³⁶ This provision (SMP Condition 4.4) is designed to address our competition concern that, in the absence of regulation, BT would have the incentive and ability to use geographically targeted price reductions for VULA in the early stages of network rollout by rivals to deter investment in new networks. We set out in Section 5 the potential consumer benefits of greater network competition and the advantages of full-fibre deployment.
- 11.2 In this section, we address stakeholder comments, set out our decisions on our competition concern, and the need for and scope of this remedy. We have also set out in more detail and how we would expect to engage with stakeholders if we proposed to give consent to a particular instance of geographically targeted pricing.

Competition concern and need for this remedy

Our proposals

- 11.3 Some respondents to our March 2017 WLA Consultation suggested that, given the emergence of rollout of new networks over the period of the review, BT might seek to prevent or reduce network competition by reducing its wholesale prices in the areas where other providers are starting to roll out new full-fibre networks.
- 11.4 In our December 2017 WLA Consultation⁵³⁷, in response to this concern, we proposed to add a new clause to our proposed no undue discrimination condition. The clause specifies that we will consider BT to have shown undue discrimination if it charges different rental prices in different geographic areas for VULA, other than VULA provided over GEA-FTTP. In effect, this would require BT to maintain its uniform national pricing approach for Openreach’s GEA-FTTC and G.fast rental services.

⁵³⁶ The provision applies to rental charges for VULA provided using GEA-FTTC and G.Fast. It also applies to rental charges for other services provided in conjunction with VULA over GEA-FTTC or G.Fast for the purposes of providing electronic communications services to end users. For example, it will apply to BT’s SOGEA service once it is launched. The provision does not apply to ancillary services.

⁵³⁷ Ofcom, December 2017. *Wholesale Local Access Market Review: Promoting network competition in superfast and ultrafast broadband*. https://www.ofcom.org.uk/data/assets/pdf_file/0021/108381/consultation-wla-competition-superfast-ultrafast-broadband.pdf.

Stakeholder responses

- 11.5 Several stakeholders agreed with our assessment of the competition concern and our proposal to amend the no undue discrimination condition to address it.⁵³⁸
- 11.6 Vodafone agreed with our assessment of the competition concern, stating that BT would suffer few negative effects from making targeted price reductions in those areas where it faces competition from another network, given its overall network size and the relatively limited geographic areas in which it would need to target price reductions.⁵³⁹ Vodafone and Three suggested that while consumers might benefit from lower prices in the short term, targeted price reductions were ultimately against the interests of consumers as they would deter investment in new infrastructure.⁵⁴⁰
- 11.7 Vodafone fully supported our proposal, and said it was a proportionate and specific measure with a clear compliance standard.⁵⁴¹
- 11.8 TalkTalk strongly supported our proposals, stating that the potential for BT to make targeted price reductions is likely to deter telecoms providers from investing in competing FTTP networks.⁵⁴² TalkTalk also argued that targeted price reductions could reduce the potential for customers to switch to a new network at both the wholesale and retail levels.⁵⁴³ TalkTalk supported the proposal as a proportionate way to address these risks as BT would retain the commercial freedom to respond to competition by reducing prices at a national level.⁵⁴⁴
- 11.9 Telefonica UK and Gigaclear also strongly supported our proposal, stating that it was appropriate for us to ensure that BT's targeted pricing strategies do not undermine competitive infrastructure investment.⁵⁴⁵
- 11.10 Other stakeholders supported our proposals, but had reservations about our assessment of the competition concern. While [S&C] broadly agreed that there was some risk of geographically targeted price reductions, it suggested that BT would face difficulty in pursuing this strategy due to the complexity of maintaining multiple pricing models.⁵⁴⁶
- 11.11 Virgin Media considered that the risk of BT using pricing flexibility to undermine investment is limited because of the risk of reputational damage and regulatory

⁵³⁸ Some stakeholders raised issues relating to services outside of the WLA market and therefore we have not considered them further in the context of this decision.

⁵³⁹ Vodafone response to the December 2017 WLA Consultation, pages 2-3.

⁵⁴⁰ Vodafone response to the December 2017 WLA Consultation, page 3; Three response to the December 2017 Consultation, paragraph 7.

⁵⁴¹ Vodafone response to the December 2017 WLA Consultation, page 3.

⁵⁴² TalkTalk response to the December 2017 WLA Consultation, paragraph 1.2.

⁵⁴³ TalkTalk response to the December 2017 WLA Consultation, paragraph 2.2.

⁵⁴⁴ TalkTalk response to the December 2017 WLA Consultation, paragraphs 3.2 and 3.5-6.

⁵⁴⁵ Telefonica UK response to the December 2017 WLA Consultation; Gigaclear response to the December 2017 WLA Consultation, page 1.

⁵⁴⁶ [S&C]

- penalties.⁵⁴⁷ Virgin Media noted that BT has not altered wholesale prices in response to full-fibre investments announced by Virgin Media, CityFibre or Hyperoptic.⁵⁴⁸
- 11.12 Nevertheless, both [S<] and Virgin Media supported our proposal to amend the no undue discrimination condition.⁵⁴⁹ Virgin Media said that it would not be overly burdensome for BT and it may reassure investors, potentially leading to further fibre investment.⁵⁵⁰
- 11.13 A number of other stakeholders agreed with our proposals, but argued that they did not go far enough to address the competition concern.⁵⁵¹ CityFibre, for example, argued that there are also potential risks to competition from BT’s national pricing of both VULA and FTTP-based services, geographically targeted price reductions in relation to BT’s FTTP services, BT’s charges for connections and other ancillary services as well as rentals, and the use of geographically targeted retail offers.⁵⁵² These and other stakeholder comments on the scope of the provision and alternative remedies are addressed below.
- 11.14 BT and Openreach disagreed with our identification of the competition concern and our proposals, arguing that the condition is disproportionate and unnecessary.⁵⁵³ Openreach said that we had not clearly defined and quantified a competition concern and that we had failed to substantiate its ability to vary pricing between regions as a distinct competition concern.⁵⁵⁴
- 11.15 Openreach disputed our competition assessment, claiming that it was in a weaker position than Virgin Media and new entrants.⁵⁵⁵ Openreach claimed that Virgin Media could potentially introduce geographically targeted retail reductions, which would force Openreach’s wholesale customers to reduce their retail prices, leaving Openreach with no option but to lower national prices or risk under-recovery of costs. Openreach argued that when faced with such competition, setting varied pricing between regions is a legitimate commercial strategy.⁵⁵⁶
- 11.16 Openreach claimed that its ability to pursue geographically targeted price reductions is limited by the requirement for pricing transparency.⁵⁵⁷
- 11.17 Openreach said it was not clear whether we are concerned about geographically targeted price reductions being below the level of efficient costs or the risk that some discounts

⁵⁴⁷ Virgin Media response to the December 2017 WLA Consultation, pages 5-6.

⁵⁴⁸ Virgin Media response to the December 2017 WLA Consultation, page 4.

⁵⁴⁹ [S<]; Virgin Media response to the December 2017 WLA Consultation, page 1.

⁵⁵⁰ Virgin Media response to the December 2017 WLA Consultation, page 1.

⁵⁵¹ Zayo, Independent Networks Co-operative Association (INCA), CityFibre, Three.

⁵⁵² CityFibre response to the December 2017 WLA Consultation, paragraphs 3.1.3-3.14, and 9.1.4.

⁵⁵³ BT response to the December 2017 WLA Consultation, paragraph 1.2 and 1.5; Openreach response to the December 2017 WLA Consultation, paragraphs 4-7.

⁵⁵⁴ Openreach response to the December 2017 WLA Consultation, paragraphs 37 and 113-114.

⁵⁵⁵ Openreach response to the December 2017 WLA Consultation, paragraphs 60-61.

⁵⁵⁶ Openreach response to the December 2017 WLA Consultation, paragraph 54.

⁵⁵⁷ Openreach response to the December 2017 WLA Consultation, paragraph 127.

might result in adverse competitive effects.⁵⁵⁸ Openreach's view is that the ability to price differentiate is not itself a competition concern.

- 11.18 BT argued that existing regulation is sufficient to address concerns on a case-by-case basis, and by imposing a blanket rule, Openreach suggested we would be fettering our discretion.⁵⁵⁹ BT said the proposal would make it impossible for Openreach to respond effectively if fibre retail prices were reduced in certain areas because of network competition and, as a consequence, competition may become skewed in favour of BT's vertically integrated rivals.⁵⁶⁰ This would disadvantage telecoms providers which rely on the Openreach network, including BT's downstream businesses as well as competing retail providers. BT claimed that if its downstream businesses were to try and match the lower retail prices of competitors, there was a risk that it could be found to have imposed a margin squeeze.⁵⁶¹
- 11.19 In addition, Openreach contended that applying for consent would place an unjustifiable burden on it to convince Ofcom that a geographically targeted price reduction should be permitted, when the burden should be on Ofcom to show a reduction is anti-competitive.⁵⁶²
- 11.20 BT and Openreach also argued that competition law would be sufficient to address our competition concern.⁵⁶³ However, Gigaclear, [3] and Vodafone argued the opposite and that relying on competition law will not offer sufficient protection to investors.⁵⁶⁴
- 11.21 Openreach said that the proposal would prevent legitimate pricing practices⁵⁶⁵, harming its ability to compete effectively and dampening its incentives to roll out full-fibre.⁵⁶⁶ It said the remedy would shelter competitors from normal competitive pressures which could allow inefficient operators to successfully enter the market, resulting in inferior services being provided to consumers in the long term.⁵⁶⁷ Openreach also commented on the risk it faces if local entry in areas with a low costs leads to significant drop in volumes and an increase in national average unit costs, resulting in a "downward spiral" of falling volumes and rising costs.⁵⁶⁸

⁵⁵⁸ Openreach response to the December 2017 WLA Consultation, paragraph 39.

⁵⁵⁹ BT response to the December 2017 WLA Consultation, paragraph 1.2; Openreach response to the December 2017 WLA Consultation, paragraph 103(d).

⁵⁶⁰ BT response to the December 2017 WLA Consultation, paragraph 1.5.

⁵⁶¹ BT response to the December 2017 WLA Consultation, paragraphs 2.5-6.

⁵⁶² Openreach response to the December 2017 WLA Consultation, paragraph 108(a).

⁵⁶³ BT response to the December 2017 WLA Consultation, paragraph 1.2; Openreach response to the December 2017 WLA Consultation, paragraphs 122-128.

⁵⁶⁴ Gigaclear response to the December 2017 WLA Consultation page 5; TrueSpeed response to the December 2017 WLA Consultation; Vodafone response to the December 2017 WLA Consultation, page 3.

⁵⁶⁵ Openreach response to the December 2017 WLA Consultation, paragraph 148.

⁵⁶⁶ Openreach response to the December 2017 WLA Consultation, paragraphs 62-65.

⁵⁶⁷ Openreach response to the December 2017 WLA Consultation, paragraph 36.

⁵⁶⁸ Openreach response to the December 2017 WLA Consultation, paragraph 64.

- 11.22 Openreach argued that it would be unfair to require its G.fast service to be subject to the proposed provision, as different phases of rollout will have different costs and it is therefore commercially preferable to set different prices in different areas.⁵⁶⁹ Openreach also stated that it expects geographically differentiated pricing to become increasingly necessary in the future as network competition increases, meaning that “Ofcom could find itself in a position of effectively micro-managing Openreach pricing decisions”.⁵⁷⁰
- 11.23 Drawing an analogy with competition concerns and BT’s voluntary commitment in 2006 when telecoms providers started to roll out networks using LLU infrastructure, Openreach argued this shows there is a more proportionate way to address the concern.⁵⁷¹ Virgin Media, suggesting that our competition concern is overstated, also questioned whether a voluntary commitment would be more appropriate.⁵⁷²
- 11.24 Openreach also noted that we decided against a national pricing obligation in the BCMR on the basis that different costs and competitive conditions mean its ability to compete should not be limited, and a case-by-case investigation would provide sufficient protection.⁵⁷³

Our reasoning and decisions

BT has the incentive and ability to undermine emerging network competition using targeted wholesale price cuts

- 11.25 One of the key elements of our strategy is to promote network competition, including fibre direct to homes and businesses. We believe that the emergence of competition from rival full-fibre networks should drive innovation and further investment including by BT, leading to higher quality and better value services for consumers. In our view, full-fibre networks have the potential to provide significant benefits to consumers of communications services and citizens in the future. This is despite new networks leading to greater replication of fixed costs, which will be reduced to the extent that new networks use the DPA remedy.
- 11.26 The evidence we have seen suggests that the investment case has improved in recent years to the point where we now see scale deployment plans and it now appears to be commercially viable in more geographic areas. We have set out the announcements regarding investment that have occurred since the March 2017 WLA Consultation in Section 5. However, given that investment in new competing networks is at a relatively early stage, leading to rollout during the period of this review, we consider that it is potentially vulnerable to conduct on the part of BT which is capable of undermining and deterring competing investment.
- 11.27 In that context, and given our finding that BT will continue to have significant market power over the period of our review, we have identified a risk that BT would have the

⁵⁶⁹ Openreach response to the December 2017 WLA Consultation, paragraph 62.

⁵⁷⁰ Openreach response to the December 2017 WLA Consultation, paragraph 109.

⁵⁷¹ Openreach response to the December 2017 WLA Consultation, paragraphs 86-91.

⁵⁷² Virgin Media response to the December 2017 WLA Consultation, pages 4 and 7.

⁵⁷³ Openreach response to the December 2017 WLA Consultation, paragraph 80.

incentive and ability to target wholesale price reductions on a geographic basis in a way that is capable of impairing or undermining emerging network competition. In other words, our competition concern is that BT may use geographically targeted price reductions in areas where others are starting to roll out new fibre networks and that this could reduce competition to the detriment of consumers.

- 11.28 This could happen both where BT reduces prices ahead of build occurring (e.g. in response to an announcement of rollout) and where BT reduces prices after rollout has occurred, even if the reduction is intended to be temporary. The impact of such conduct on the potential for the development of network competition may be considerable if responses to new network competition in one geographic area dissuade rivals from investing in competing networks in other areas.
- 11.29 As TalkTalk notes, even the anticipation of targeted price reductions may deter new build entrants from investing. Preventing BT from setting geographically targeted wholesale prices will therefore provide investors with reassurances that BT will not engage in targeted price reductions to stifle competition.
- 11.30 BT would have an incentive to engage in targeted price reductions if its lost profits from lower prices in the short term were outweighed by the gains from preventing wider rollout and stronger competition in the longer term. The potential to discourage wider network competition over a significantly wider area may give BT a greater incentive to engage in targeted price reductions in the areas where rollout initially happens. If wider network rollout is stifled, the payoff for BT from such behaviour could be very large. For the purposes of this *ex ante* regulatory assessment it is not necessary to show that BT has engaged or is engaging in this conduct (and the examples provided by Openreach in its response of encouraging take-up do not indicate any targeting of new entrants⁵⁷⁴). Indeed, many of the announcements of competing investment are recent and will only result in rollout starting during the period of this review. We are concerned to ensure that BT does not respond to these competitive developments in a targeted way given its SMP in the period of this review given the potential for competition to be weakened.
- 11.31 Targeted wholesale price reductions could undermine investment incentives for rivals by reducing the returns available to investors in new fibre networks. This could happen in two ways. First, if targeted price reductions were passed through in retail prices (by BT's downstream businesses and/or Openreach's wholesale customers) this would put new build entrants under pressure to reduce their own retail prices (and their margins) in order to remain competitive in the area of new build. Second, targeted price reductions could make it less likely that broadband retailers would switch their business from Openreach to a new build entrant. Such targeted price reductions by BT could deter rivals from investing in competing networks.

⁵⁷⁴ Openreach provided examples of four geographic discounts: GEA-FTTC Discounted Sim Provide Rental offer; GEA-FTTC Discounted SIM Provide Rental and Connection offer; GEA-FTTC 18/2 offer; and Chelsea exchange closure. See Openreach response to the December 2017 WLA Consultation, paragraph 31.

- 11.32 If BT were able to reduce network competition, its SMP in the WLA market would be sustained and could lead to other adverse effects for consumers. This could include a lack of choice of services and weaker incentives for BT (and other providers) to invest and innovate in new technologies including full-fibre, which would make it less likely that consumers would realise the benefits of network competition.
- 11.33 While Openreach states that it expects geographic pricing to become increasingly necessary in the future as network competition increases, the ability of Openreach to reduce its prices in response to a new build entrant is precisely what we are concerned about. In the longer term, we agree with Openreach that geographic pricing may become more common. We do not envisage that a provision in this form is likely to be necessary in the longer term.⁵⁷⁵

Rationale for *ex ante* regulation

- 11.34 Openreach explained that it was mindful of its obligations under competition law not to unfairly distort or seek to foreclose competition. In this regard, Openreach referred to pricing on a predatory below-cost basis and the concept of pricing not excluding equally efficient operators. It said that our proposal would shelter competitors from normal competitive pressures and allow inefficient entry.
- 11.35 Given our duties and objectives in this review to promote network competition, our concern goes beyond Openreach setting potentially anti-competitive prices within the meaning of competition law and extends to the broader impact that targeted geographic price reductions made in response to full-fibre rollout by competitors may have on investment incentives.
- 11.36 Even if BT responds to competition for new networks through lower prices – and this is not directly motivated by BT’s incentives to choke off additional investment in other areas – this commercial reaction could be sufficient to undermine potential entrants’ incentives to invest in the first place.
- 11.37 We do not agree that the provision will lead to inefficient investment as suggested by Openreach. This is for the following reasons:
- We consider restricting BT from making targeted price reductions for VULA during this review period to be necessary, while we are in the early stages of network rollout. In the longer term, consumers’ interests are likely to be best served by removing such restrictions and allowing BT to respond to competition. New investors will know that they will have to compete with BT without this provision in the longer term. We consider that this significantly mitigates the risk of that they will enter when they are inefficient, especially as the assets have very long lives.
 - We see significant benefits to consumers from greater network competition as discussed in Section 5.

⁵⁷⁵ SMP Condition 4.4 applies the restriction to such charges during the Relevant Years of the review as defined (i.e. 1 April 2018 to 31 March 2021).

- Rivals building new networks will initially face considerable challenges in becoming established. For example, it will take time to build a network and to establish a customer base on that network. While rival networks to BT are becoming established, we consider it appropriate to limit BT's ability to react to this competition in a targeted way, including reactions that might normally be regarded as commercial reactions to entry for operators without SMP.
- 11.38 Given the benefits to consumers from network competition and the challenges new entrants face in becoming established, we consider it unlikely there will be inefficient entry that is against consumers' interests and expect competing networks will result in further service differentiation and innovations, and higher quality of service. Rather, we consider the bigger risk is that there will be insufficient entry to further consumers' interests.
- 11.39 In reaching our decision as to whether it is necessary to impose a specific SMP condition addressing this concern, we have considered whether the other remedies we are imposing in the WLA market and/or competition law would be sufficient to address these concerns. Openreach argued that further regulation was not necessary.
- 11.40 Our charge controls on 40/10 VULA services and MPF set a cap for charges, but not a floor. The charge controls do not apply restrictions on geographic variation. Where the charge controls do not apply, charges must be fair and reasonable. This provides pricing flexibility for BT's higher speed fibre services, which includes its G.fast service. It does not, in itself, stop geographic differences. Therefore, these rules would not prevent reductions in wholesale prices targeted in certain areas. In addition, we do not consider that transparency obligations are sufficient to prevent competing investment from being undermined; Openreach suggests that these obligations will enable competing networks to change their plans before it implements a price reduction. However, we would still have concerns that Openreach could deter competing investment in an area by simply reducing prices (or announcing that it will do so), and consider that such a reduction would undermine any investment in that competing network. This kind of price signalling by Openreach could deter investment elsewhere in the UK.
- 11.41 With regard to the application of competition law, as we have explained above, our regulatory objectives in this review extend to promoting competition, including network-based competition through the rollout of new full-fibre networks, and our remedies are designed to address specific concerns arising from BT's SMP. We do not consider that competition law, which would focus on considering whether BT has abused a dominant position, would be sufficient protection to address our concerns. *Ex ante* regulation can more effectively address the risk of specific types of conduct occurring in the market review period.
- 11.42 The no undue discrimination obligation makes it clear to BT and others what conduct is not permitted. This ensures transparency and promotes regulatory certainty. In contrast, *ex post* enforcement, which may take longer to conclude in the event of enforcement activity, would not provide the same degree of regulatory certainty, which is itself an important factor in any investment decision. This is particularly the case when it may be difficult to determine whether targeted geographic price reductions were designed to pre-empt or

punish entry in one area to dissuade a larger scale entry programme gaining traction. In the context of emerging network investment, *ex post* enforcement action may be too late if competition is deterred in the interim.

Parallels with past concerns over risks for LLU investment

- 11.43 We said in the December 2017 WLA Consultation that there are some parallels to when BT's rivals began investing in copper-based local loop unbundling (LLU) around 2005. Then, as now, a new technology enabled rivals to compete more effectively with BT in the provision of retail telephony and broadband services. Following competitors' initial investments in LLU-based services, BT reduced prices for its wholesale broadband access service in dense exchanges where competition was most likely to emerge.⁵⁷⁶ BT's retail broadband competitors faced the choice of either buying a wholesale broadband service from BT to resell to subscribers, or investing in LLU to have more control over the line and potentially sell wholesale services. At the time, LLU operators were concerned about the threat of unpredictable margin erosion by BT which would foreclose competition based on LLU.⁵⁷⁷ In order to address this concern, BT made a voluntary price floor commitment which did not prevent geographical price reductions but allowed for a lower price floor in areas where costs were lower.
- 11.44 In the present circumstances, we do not consider that such an approach as was adopted in the case of LLU would be appropriate.
- 11.45 First, we do not consider that a voluntary commitment would provide the same level of reassurance to investors which is necessary for network investment. Building a new network requires significant expenditure and time, and it is easier for investors to understand when BT has failed to comply with an SMP condition than with a voluntary commitment.
- 11.46 Second, while the competition concern may have been similar in the case of telecoms providers using LLU to roll out their own networks, BT's incentives are different here. The key point is that when providers were using LLU, while BT may have lost retail customers, it was selling services at the wholesale level. However, with the rollout of new full-fibre networks, BT may lose wholesale as well as retail customers and has an incentive to try and retain customers at both levels of the value chain.
- 11.47 Third, we emphasise that the obligation allows us to grant consent to BT to make geographic price reductions where appropriate in areas without emerging network competition and it does not apply to discounts that Openreach already has in place. By

⁵⁷⁶ Ofcom, 2006. *Review of the wholesale broadband access markets 2006/07*, paragraph 4.157. https://www.ofcom.org.uk/data/assets/pdf_file/0028/28666/wbamr.pdf.

⁵⁷⁷ BT subsequently committed voluntarily not to introduce geographically targeted price reductions. Around the time of the 2006/07 review of the wholesale broadband access markets BT made pricing commitments to the industry and to Ofcom. One of these commitments relates to floors for future broadband pricing, and BT commits to providing a period of stability to LLU by not introducing geographically targeted reductions, below a certain level, to its wholesale broadband prices. These commitments were set out in two letters, dated 10 November 2006, which were sent to Ofcom. These letters, along with Ofcom's response, are available on Ofcom's website. <https://web.archive.org/web/20100329095228/www.ofcom.org.uk/telecoms/ioi/bbpricing>.

allowing for such exemptions, we do not consider that the obligation is disproportionate to address our concern.

- 11.48 Finally, Openreach states that it used discounts at the time to reflect costs and that the commitment enabled it to continue to compete in the way it had been. However, Openreach does not currently have discounts in place to reflect the costs of providing fibre services and thus, the obligation does not prevent it from continuing to compete in the way it currently does. In addition, given Openreach has not previously varied its pricing of fibre services, we consider that the main reason for it to do so now would be on a targeted basis, to undermine and deter competing investment.

Quantified assessment unnecessary

- 11.49 Openreach and CityFibre complained that we had not quantified our competition concern. We consider a qualitative assessment of the costs and benefits is sufficient to justify imposing this condition.
- 11.50 We recognise that there could be some costs associated with our proposals. In particular, there may be circumstances where BT might wish to cut wholesale charges locally simply because that is BT's best commercial option given that entry has occurred. So long as this competition did not itself dissuade entry from occurring in the first place, it would likely have benefits for consumers and therefore we would not normally want to prevent it.
- 11.51 Given that we only envisage restricting BT from having targeted price reductions for VULA in the early stages of network rollout, and that network rollout is likely to be fairly limited over the next three years, we consider any potential for consumer harm from this obligation is temporary and limited.
- 11.52 In contrast, if targeted price reductions did stifle rollout by rivals and hence network competition, the harm to consumers could be very considerable and enduring (as described in Section 5). We consider there is a risk of targeted price reductions having this effect, given Openreach could have the incentive and ability to do this.
- 11.53 BT argued that another potential cost with this obligation is that it could result in inefficient new entry. However, as discussed above, given the challenges facing new rival networks in becoming established, we consider that it is unlikely that this provision would itself contribute to any inefficient entry. Rather, it is designed to prevent targeted action on the part of BT that has the potential to reduce the scope of efficient competitive entry.
- 11.54 Moreover, as discussed below, SMP Condition 4.1 enables Ofcom to consent to conduct that would otherwise fall within the scope of the restriction, mitigating the scope for adverse unintended consequences from this obligation.
- 11.55 We do not consider that quantifying these costs and benefits (which would necessarily be speculative) would add to the assessment that we have set out above.

Charges for other services

- 11.56 CityFibre said that BT has strong incentives to pursue anti-competitive pricing options for FTTP and ancillary services, and the proposal should be extended to cover them.⁵⁷⁸ It mentioned that connection or migration charges are often a significant one-off barrier to consumer switching and we have not explained why the obligation only covers rental charges.⁵⁷⁹ Vodafone also said that ancillary services (e.g. connections, modifications and migrations) should be covered by this remedy.
- 11.57 TrueSpeed also said that [redacted]⁵⁸⁰
- 11.58 [redacted]⁵⁸¹ and Virgin Media⁵⁸² agreed that we should not extend the condition to GEA-FTTP services. Virgin Media said that if BT invested significantly in full-fibre, it would be a long-term decision with risk. For that reason, the likelihood that BT will aggressively price wholesale GEA-FTTP to deter competing networks is low.
- 11.59 Three, Zayo and CityFibre disagreed with our proposal not to extend this condition to GEA-FTTP. Three said BT has a strong incentive to acquire GEA-FTTP wholesale customers by reducing the price differential between GEA-FTTC and GEA-FTTP.⁵⁸³ This is exacerbated by the ability to subsidise targeted GEA-FTTP price reductions with savings from switching off the copper network. Zayo said BT could damage competing providers' case for investment by simply signalling low price levels.⁵⁸⁴
- 11.60 CityFibre suggested that exclusion of GEA-FTTP could result in BT using the pricing of FTTP to foreclose the wholesale market and distort competition.⁵⁸⁵
- 11.61 Consistent with our consultation proposals, we have decided that this measure will not extend to BT's GEA or G.Fast ancillary services (e.g. connections).
- 11.62 We consider that extending the policy to GEA-FTTP services would do little to help investment in new networks by rivals. BT could not target price reductions for GEA-FTTP services where it has not yet deployed full-fibre. In contrast, it could rapidly change prices for existing services on its FTTC network, which it has already deployed in most areas, and for new services such as G.fast, which are quicker to deploy than full-fibre. This obligation will therefore not provide protection to a rival which overbuilds BT's full-fibre network in a certain area with its own fibre.
- 11.63 With regard to ancillary services, we consider that the rental charge is the most important in terms of the potential effect on competition and in terms of competitors' business cases (it is where they will recover the majority of their costs). Consequently, we consider that it is sufficient to apply the remedy to the rental charge alone. While we acknowledge that

⁵⁷⁸ CityFibre response to the December 2017 WLA Consultation, paragraphs 3.1.3-4.

⁵⁷⁹ CityFibre response to the December 2017 WLA Consultation, paragraph 7.4.1.

⁵⁸⁰ [redacted]

⁵⁸¹ [redacted]

⁵⁸² Virgin Media response to the December 2017 WLA Consultation, pages 6-7.

⁵⁸³ Three response to the December 2017 WLA Consultation, paragraph 17.

⁵⁸⁴ Zayo response to the December 2017 WLA Consultation, 4.3.2.

⁵⁸⁵ CityFibre response to the December 2017 WLA Consultation, paragraphs 7.2.4-5.

discounted connection charges may have some impact on competition, given the charge is a one-off and is small compared to the ongoing cost of the rental, we do not consider that any impact on competition or the prospect of it would be significant enough to justify being subject to the remedy.

- 11.64 With regard to GEA-FTTP, we do not consider that BT's FTTP deployment is significant enough for it to be able to foreclose national wholesale FTTP competition (without infringing competition law) as CityFibre suggested.

Our decision to impose an additional provision in the no undue discrimination obligation to address this concern

- 11.65 In order to address the competition concern identified above, we have therefore decided to impose a provision in the SMP conditions to specify that such conduct would amount to undue discrimination in this review period. This makes clear that BT is prohibited from targeting areas of competitive entry by geographically targeting of price reductions for the relevant years of the review (as defined in the legal instruments). In effect, this requires BT to maintain its uniform national pricing approach for Openreach's GEA-FTTC rental charges and G.fast. The benefits of this provision could be undermined if BT were able to target price reductions to services currently used alongside GEA-FTTC and G.fast, i.e. MPF and WLR. The restriction will also therefore apply to MPF and WLR when used in combination with GEA-FTTC and G.fast. It would also apply to SOGEA when launched.⁵⁸⁶
- 11.66 We do not extend the application of this measure to BT's GEA-FTTP services. We consider that extending the policy to GEA-FTTP services would do little to help new network investment by competitors. This is because BT could not quickly change prices for FTTP services as it would itself need to deploy an FTTP network and, in any case, given BT's current limited plans for FTTP it is likely that any overlap with competitor FTTP would be relatively small. In contrast, it could rapidly change prices for existing services and for new services such as G.fast, which are quicker to deploy than FTTP.
- 11.67 We also do not extend the application of this measure to the current discounts which Openreach has in place (as published on Openreach's website). We do not consider that the current discounts give rise to our competition concern and therefore, do not think it appropriate to make BT request consent for them.
- 11.68 Unlike a charge control or price floor (see below), an additional feature of the no undue discrimination measure is simple to implement and monitor in the broader context of pricing flexibility for fibre and full-fibre ultrafast services. It promotes transparency and regulatory certainty in that it will give a clear signal to potential entrants and investors that they will be able to rely on. We consider that it will directly address the potential harm we have identified and reduce the risks faced by potential entrants and therefore improve the prospects for competing network investments.

⁵⁸⁶ We are also aware the Openreach is developing a Single Order variant of G.fast which will also be covered by this obligation.

- 11.69 As part of its argument that the obligation is unlawful, Openreach said it is disproportionate as it prohibits all forms of geographically targeted price reductions (e.g. in areas where there is competition with an established rival network) and excludes the benefits that such differentiation may have on competition. As our discussion below of the process for granting consent sets out, our intention is not to prohibit all instances of geographic price differentiation. In order to address our competition concern, we want to impose a clear rule which gives reassurance and certainty to competing investors, and we are unable to specify now where and when BT’s behaviour would target new network entrants. Consequently, we are imposing a broad measure with the ability to exempt instances of differential pricing which do not give rise to our competition concern. In recognition of Openreach’s comments, we have however changed “will” to “may” in the text of the legal instrument. This also ensures consistency between SMP Conditions 4.1 and 4.4.
- 11.70 We do not consider that this consents process will place an unjustifiable burden on Openreach as the process should be straightforward for BT where its proposed price reduction does not target areas with new network entry.
- 11.71 We agree with BT that it will be more constrained than Virgin Media in how it can compete with new rivals, but we do not agree that our decisions impose disproportionate risk on it. While Openreach claimed that it is in a weaker position than Virgin Media and new entrants, BT is the only telecoms provider which we find to hold SMP in the WLA market in the UK excluding the Hull Area. Furthermore, as explained above, the obligation is not designed to stop BT from pricing differentially to reflect functioning competition from an established competitor network, i.e. Virgin Media. BT should request consent in such circumstances.
- 11.72 We do not believe that the obligation will lead to Openreach under-recovering its costs, but will help to foster competing investment incentives, and in any case our aim is not to safeguard Openreach’s position in the wholesale market, but to ensure that it does not act in a targeted way that potentially reduces competition.
- 11.73 Openreach also argued that the obligation would prevent legitimate pricing practices, affecting its ability to compete effectively and interfering with its right to conduct its business. We consider that the process for granting consent to exemptions as outlined below means that BT will not be constrained in conducting its commercial business; in effect, the only restriction will be on its ability to conduct anti-competitive behaviour to undermine new network entrants by reducing prices in those localised areas. We emphasise that we do not consider conduct by the SMP operator to target areas of new entry as legitimate competition.
- 11.74 With regard to Openreach’s suggestion of a “downward spiral” in terms of falling volumes and rising national costs, we consider that the risk of this is low given the limited areas of competitive rollout in this review period.
- 11.75 In response to Openreach’s argument that the obligation would dampen its incentives to roll out full-fibre, we do not expect the impact of this obligation to be sufficiently material

to have such an effect. CityFibre suggested that BT may actually accelerate its FTTP deployment during the review period.

- 11.76 Openreach is right that we have taken a different approach to the 2016 BCMR to geographic price differentiation. However, while recognising that a national price would not be appropriate in that market because of the different costs and competitive conditions, we highlighted that geographically targeted price reductions may pose a risk to competition if BT used them to respond to local entry by a new entrant. For that market review, we considered that a case-by-case approach would be appropriate, but in the present case, where the network competition is in its much earlier stages, we consider that a specific obligation is more suitable.

Process for granting consent to price reductions

Our proposals

- 11.77 We said in the December 2017 WLA Consultation that we would generally be concerned about BT responding to emerging infrastructure competition on a geographically targeted basis, even where to do so would be in BT's commercial interest and not directly motivated by BT's incentives to undermine and deter competing investment in other areas.⁵⁸⁷
- 11.78 However, we noted that, where there are appropriate circumstances, SMP Condition 4.1 enables Ofcom to consent to conduct that would otherwise fall within the scope of the restriction.⁵⁸⁸

Stakeholder responses

- 11.79 Virgin Media agreed that the flexibility offered by SMP Condition 4.1 helps to ensure Ofcom's proposals are proportionate.⁵⁸⁹
- 11.80 Openreach said that it was not clear under what circumstances Ofcom would grant written consent as provided for by SMP Condition 4.1, or what the timeframe or processes would be for obtaining such consent.⁵⁹⁰
- 11.81 Openreach said that it uses targeted geographic discounts to support wholesale customers, for example "in driving take-up in areas with low utilisation of superfast cabinets".⁵⁹¹ Openreach argued that the provision for Ofcom to give consent would not provide sufficient speed or flexibility.⁵⁹²

⁵⁸⁷ December 2017 WLA Consultation, paragraph 4.10-4.11.

⁵⁸⁸ December 2017 WLA Consultation, paragraph 4.11.

⁵⁸⁹ Virgin Media response to the December 2017 WLA Consultation, page 8.

⁵⁹⁰ Openreach response to the December 2017 WLA Consultation, paragraph 1.

⁵⁹¹ Openreach response to the December 2017 WLA Consultation, paragraph 2.

⁵⁹² Openreach response to the December 2017 WLA Consultation, paragraph 12.

- 11.82 Openreach explained that it has worked with its wholesale customers to find ways to incentivise end customer migration from MPF to GEA-FTTC, which has resulted in a number of special offers.⁵⁹³ It provided details of four discount schemes from 2016 and 2017.⁵⁹⁴
- 11.83 Openreach argued that these offers were not designed to target network competition but, as they involved geographic differentiation of rental charges, the obligation means they would constitute undue discrimination.⁵⁹⁵
- 11.84 CityFibre argued that our proposals left scope for confusion and misinterpretation. CityFibre understood the proposed condition to prohibit “any and all geographically differentiated rental pricing by BT of the VULA-based broadband services, whether temporary, permanent, a discount or any other form of pricing vehicle”, unless Ofcom “issues a separate derogation under Condition 4.1”.⁵⁹⁶

Our reasoning and decisions

- 11.85 As a starting point, Condition 4.4 is phrased so as to capture any form of geographic price differentiation involving GEA-FTTC and G.fast, and services provided in conjunction with them to deliver VULA. However, Condition 4.1 enables Ofcom to consent in writing to geographic price differentiation. In the interests of transparency and greater certainty, the following paragraphs provide some indication of how Ofcom would approach consent to a particular instance of geographically targeted price reductions by Openreach.
- 11.86 As discussed above, the purpose of this provision is to prevent price reductions targeted at areas where others are starting to roll out new networks and our focus in considering proposals presented by Openreach would be limited to that alone. We do not think that a test of whether a reduced wholesale price allows competitors to make a sufficient margin would be appropriate as this could still enable Openreach to reduce prices in a way which would deter investment in new networks, both in those areas where price reductions apply and more widely. Moreover, such an effects-based test would be difficult to administer in a timely manner which would slow down the process and potentially lead to the need for a longer consultation period.
- 11.87 As such, we would envisage granting BT consent for geographic price differentiation that represented commercial behaviour not targeted at such new investment, for example where BT was responding to customer demand, making more efficient use of assets in the network, or engaging in competition with Virgin Media. For example, two of the instances of price reductions Openreach provided in its response were of offers available at around 30,000 cabinets with low take-up of GEA-FTTC and we would expect them to cover a significant portion of the country. As such, it would seem unlikely that they were being used to target new network build. This is likely to be the case for any future examples of discounts that are widely available. Another example was a product trial in a particular area, and the final example related to a single exchange which was being closed. In

⁵⁹³ Openreach response to the December 2017 WLA Consultation, paragraph 30.

⁵⁹⁴ Openreach response to the December 2017 WLA Consultation, paragraph 31 and page 32 (Annex1).

⁵⁹⁵ Openreach response to the December 2017 WLA Consultation, paragraph 32.

⁵⁹⁶ CityFibre response to the December 2017 WLA Consultation, paragraph 3.1.5 and pages 18-19 (Annex B).

substance, therefore, these Openreach discount schemes would have been suitable for consent, had this rule applied at the relevant time, as they do not target new network rollout.

- 11.88 In terms of process, the Act requires that we consult for one month where proposing to give a consent for the purposes of an SMP condition if the proposed consent would have a “significant impact” on the market (section 49A).⁵⁹⁷ We would assess the need to consult on a case-by-case basis reflecting this statutory requirement and our ability to observe whether a pricing measure by BT targeted areas of competitive rollout. Input from relevant stakeholders may be necessary to understand this in some instances, but not others. Early engagement by Openreach will assist with the efficiency of this process. We would not generally expect to consult for any longer than a month and our decision would follow shortly after the consultation period closed (clearly this would depend on the nature and/or extent of responses from telecoms providers).
- 11.89 The process for consenting, where appropriate, would therefore be relatively short. We would also not expect it to place an onerous requirement on Openreach, on the basis that it would need to prepare materials that explain any proposed geographic based discount scheme for its own internal purposes and for telecoms providers. In addition, we note that Openreach is required to give 28 days’ notice of the introduction of any price reduction (including the introduction of a special offer) under Condition 9.4 and so there is already transparency regarding its price changes. Again, timely engagement from Openreach will contribute to the efficiency of this process.
- 11.90 The obligation will be prospective, which means that Openreach will not require consent for the geographic price discounts currently available.

Legal tests

- 11.91 We are satisfied that the condition for BT in the WLA market in the UK excluding the Hull Area meets the various tests in the Act. Section 87(6)(a) of the Act gives Ofcom a power to impose:
- “a condition requiring the dominant provider not to discriminate unduly against particular persons, or against a particular description of persons, in relation to matters connected with network access to the relevant network or with the availability of the relevant facilities”.
- 11.92 This provision implements in domestic law and has the same meaning as Article 10 of the Access Directive, which at Article 10(1) provides that Ofcom may:
- “impose obligations of non-discrimination, in relation to interconnection and/or access”.

⁵⁹⁷ And in certain circumstances it may be necessary to notify the European Commission where proposals are of “EU significance” as defined by section 150A of the Act.

- 11.93 Article 10(2) of the Access Directive, which Openreach cited in its response to the consultation, confirms that in particular, this includes a power to set obligations on the dominant provider which ensure that it applies:
- “equivalent conditions in equivalent circumstances to other undertakings providing equivalent services, and provides services and information to others under the same conditions and of the same quality as it provides for its own services, or those of its subsidiaries or partners”.
- 11.94 This is a non-exhaustive list of the type of non-discrimination obligations that may be applied.
- 11.95 In terms of the scope of Article 10, recital 17 of the Access Directive confirms that:
- “The principle of non-discrimination *ensures that undertakings with market power do not distort competition*, in particular where they are vertically integrated undertakings that supply services to undertakings with whom they compete on downstream markets” (emphasis added).
- 11.96 Targeted discounting is a form of price discrimination. Non-discrimination obligations can have different forms and methods of implementation (as illustrated by Article 10(2) of the Access Directive). We typically impose a non-discrimination obligation as a complementary remedy to the network access obligation, principally to prevent the dominant provider from discriminating in favour of its own downstream divisions and to ensure that competing providers are placed in an equivalent position. Without such an obligation, the dominant provider has the ability and incentive to provide wholesale network access on terms and conditions that discriminate in favour of its own downstream divisions.
- 11.97 Our measure in this statement addresses a different but complementary objective: preventing BT from discriminating in its provision of network access between different geographic areas by way of its prices for rental charges in the WLA market in a way that is capable of impairing or undermining emerging network competition. We consider that such conduct, undertaken by an operator with SMP, can amount to a form of discrimination that reduces (or distorts) competition within the meaning of the Access Directive. Moreover, we consider that selectively targeting price reductions on the basis of new or prospective competitive entry would amount to undue discrimination in the provision of network access.
- 11.98 We have considered our duties under sections 3 and 4 of the Act. Our principal duty when carrying out our functions is to further the interests of citizens in relation to communications matters and consumers in relevant markets, where appropriate by promoting competition. We are required to secure, in carrying out our functions, among other things, the availability throughout the UK of a wide range of electronic communications services (section 3(2)(b) of the Act). Section 3(4) of the Act also sets out list of matters to which we must have regard where they are relevant to the circumstances. In this context, we consider the following matters to be relevant: the desirability of promoting competition in relevant markets (section 3(4)(a)), the desirability of encouraging investment and innovation in relevant markets (section 3(4)(d)), and the desirability of

encouraging the availability and use of high speed data transfer services throughout the UK (section 3(4)(e)).

11.99 The Community requirements in section 4 of the Act reflect the regulatory objectives set out in Article 8 of the Framework Directive. The first and fifth Community requirements in section 4 are also particularly relevant in this context. Section 4(3) of the Act provides that the first Community requirement is a requirement to promote competition. Section 4(7) of the Act provides that the fifth Community requirement is the requirement to encourage the provision of network access for the purpose of securing efficiency and sustainable competition, efficient investment and innovation, and maximum benefits for the ultimate consumers of these services.

11.100 In our view, the condition we have decided to impose is consistent with and will further the fulfilment of those duties.

11.101 Section 47(2) requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent. In our view, the condition is:

- Objectively justifiable: We have identified as a competition concern BT's ability and incentive in the provision of network access to target wholesale price reductions in areas that are subject to emerging competing investment in high speed fibre networks. We have explained that such actions would have the potential to impair or undermine or otherwise reduce competition in BT's favour. Our imposed remedy prevents such behaviour during the period of this review and thereby seeks to ensure that potential competition develops to the ultimate benefit of consumers. We have explained that reliance on competition law and the other remedies we are imposing in this review, including the general no undue discrimination obligation and the transparency requirements, would not be sufficient to address the concern we have identified. We have considered whether a range of other measures might be appropriate to address our competition concern, but have concluded that the condition we have imposed is the appropriate means of addressing this risk.
- Not unduly discriminatory: The remedy is to apply to BT which is the only telecoms provider which we have identified as having SMP in the WLA market in the UK excluding the Hull Area. As a result of its SMP, and in light of the conditions of competition revealed by our market analysis undertaken in this review – notably the emergence of competing investment in new networks – the condition is designed to address the potential for harm arising from targeted pricing behaviour during the period of this review. We have explained the process by which Ofcom can consent to pricing which differs on a geographic basis where such conduct is not targeted at new entry. BT will not, therefore, be disadvantaged in its ability to engage in competition on the merits with Virgin Media, as it claims.
- Proportionate: The condition has been designed to prevent discrimination by BT that has the potential to adversely affect competition and ultimately cause detriment to consumers. We have explained in this section the nature and scale of the risks we are seeking to address by this condition and our reasons for deciding to impose a condition in this form. We have also explained in more detail the process by which we would

consent to pricing that does not target areas of competitive rollout. As such, the remedy specifically targets conduct we have identified as a concern during the period of this review and goes no further than is necessary to fulfil this objective.

- Transparent in relation to what it is intended to achieve: We have explained above that the objective of the measure is to address the specific competition concern of targeted discounting.

11.102 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

The BEREC Common Position

11.103 We have also taken utmost account of the BEREC Common Position. In relation to achieving the objective of a level playing field, the BEREC Common Position identifies the following competition issues which arise frequently⁵⁹⁸:

“Alternative operators may not be able to compete on a level playing field which may result in SMP players:

- having an unfair advantage;
- having unmatchable advantage, by virtue of their economies of scale and scope, especially if derived from a position of incumbency;
- discriminating in favour of their own group business (or between its own wholesale customers), either on price or non-price issues; and/or
- exhibiting obstructive and foot-dragging behaviour.”

11.104 We consider this issue to be sufficiently analogous to the competition concern that we have identified and have taken into account the best practices suggested in the Common Position. In this respect, the BEREC Common Position identifies, amongst other things, as best practice that:

“BP17 NRAs should impose a general obligation of non-discrimination.

BP18 NRAs should further clarify how the non-discrimination obligation is to be interpreted on a case-by-case basis.

BP18a In cases where a general non-discrimination obligation (imposed under BP17) proves not to be sufficient to the particular issues faced by the specific market and/or product, NRAs could attempt to clarify, as far as possible, how a non-discrimination remedy will be interpreted in practice, via identification of forms of behaviour which will be considered to be discriminatory (e.g. providing lines at minor technical quality to alternative operators). NRAs could implement such clarifications in various ways, for example either through explicit wording of the SMP obligation or via explanatory guidance which provides clarity as to the NRAs interpretation of the obligation.”

⁵⁹⁸ BEREC Common position on best practice in remedies on the market for wholesale (physical) network infrastructure access at a fixed location imposed as a consequence of a position of significant market power in the relevant market, pages 9-10.

11.105 We have explained above why we do not consider that reliance alone on the general non-discrimination obligation would be sufficient in light of the concern we are seeking to address. We have decided to include explicit wording in the SMP obligation to clarify that targeted discounts may amount to undue discrimination in the absent of consent.

Other issues raised by stakeholders

Stakeholder responses

11.106 Some stakeholders argued that our proposed restriction on geographic discounting should cover a wider scope, capturing:

- overbuild and BT's deployment of full-fibre;
- retail pricing; and/or
- a price floor for GEA-FTTC and G.fast rental services.

11.107 We consider their comments in turn in the following sub-sections.

Overbuild

Stakeholder responses

11.108 A number of stakeholders were concerned about the possibility of 'overbuild', i.e. BT targeting full-fibre deployment or making network upgrades in areas where rivals are also deploying or planning to deploy full-fibre.

11.109 CityFibre considered that we had not acknowledged the harm to network competition which would come from full-fibre overbuild.⁵⁹⁹ It said that the prospect of overbuild was a substantial risk to full-fibre investment. It said that, as a minimum, BT should not be allowed to overbuild competing full-fibre networks until there was a fit for purpose DPA remedy.⁶⁰⁰ CityFibre also suggested that G.fast could be used tactically to frustrate competitors' plans to roll out FTTP.⁶⁰¹ CityFibre said BT could use G.fast to undermine competition in the short-term and it would then be able to roll out FTTP at a higher price or continue to sweat its existing assets..

11.110 Gigaclear said that full-fibre overbuild by BT undermined the business case for rivals.⁶⁰² It was concerned in particular about the risk in relation to BDUK tenders.⁶⁰³ It said that when BT fails to secure a BDUK tender, it faces incentives to seek to undermine the plans of the tender-winner. It suggested that where an alternative network won such a tender, BT should be prohibited from upgrading networks in that area for up to three years.⁶⁰⁴ It said

⁵⁹⁹ CityFibre response to the December 2017 WLA Consultation, paragraph 8.1.2.

⁶⁰⁰ CityFibre response to the December 2017 WLA Consultation, paragraph 8.1.9.

⁶⁰¹ CityFibre response to the December 2017 WLA Consultation, paragraph 5.1.4.

⁶⁰² Gigaclear response to the December 2017 WLA Consultation, page 1.

⁶⁰³ Gigaclear response to the December 2017 WLA Consultation, page 4.

⁶⁰⁴ Gigaclear response to the December 2017 WLA Consultation, pages 6-7.

this would not create a burden on BT because the only purpose of BT rolling out following a failed bid for state aid would be to strategically undermine a competitor. Gigaclear said that there were cases of where BT appeared to be doing this already and it described specific examples in its submission.⁶⁰⁵

- 11.111 TalkTalk expressed concern about overbuild and said we should monitor BT’s behaviour to ensure no pattern of overbuilding competing full-fibre networks.⁶⁰⁶ It said such behaviour by BT in one area would chill the prospects of full-fibre rollout in other areas and that BT will only have to do this a few times to achieve a larger deterrent effect.⁶⁰⁷ Vodafone said that we should require BT to provide us, on a confidential basis, the details of its rollout plans, enabling us to act appropriately if BT is believed to be targeting competitors.⁶⁰⁸
- 11.112 INCA was concerned that we had not done anything to prevent full-fibre overbuild despite industry concerns.⁶⁰⁹ It said BT has previously overbuilt to deter competing investment and that there was no reason to believe its incentives have diminished.

Our reasoning and decisions

- 11.113 We recognise the risk of BT strategically targeting areas where rivals have built or plan to build networks. Such behaviour could be anti-competitive and against consumers’ interests if it deterred rivals from further rollout. The potential harm to consumers could be very considerable if such behaviour resulted in materially less rollout by rivals; absent competition, there is less choice of services, weaker incentives to invest and innovate and a greater risk of high retail prices and lower levels of quality, as discussed in Section 5.
- 11.114 However, given that we want to promote network competition, we do not consider it is proportionate to impose *ex ante* restrictions on BT rolling out full-fibre or G.fast. On balance, we consider such a condition would not be in consumers’ interests as it could deny consumers the choice of differentiated and higher quality services. Instead, we consider our *ex post* competition powers are the best vehicle for addressing these risks of any anti-competitive behaviour.
- 11.115 In response to CityFibre’s particular concerns about BT being allowed to deploy full-fibre before there is a fit-for-purpose PIA remedy, as set out in Volume 3 our new PIA remedy will come into force shortly after this statement. We set out in Section 7 of Volume 3 the timeline for implementation; while the impact of PIA will not be immediate, we do not believe that BT will be able to change its plans for full-fibre rollout in order to target new build within a significantly shorter timeframe.

⁶⁰⁵ Gigaclear response to the December 2017 WLA Consultation, page 5.

⁶⁰⁶ TalkTalk response to the December 2017 WLA Consultation, paragraph 1.5.

⁶⁰⁷ TalkTalk response to the December 2017 WLA Consultation, paragraph 4.2.

⁶⁰⁸ Vodafone response to the March 2017 WLA Consultation, paragraphs 2.16 and 4.8-4.11.

⁶⁰⁹ INCA response to the December 2017 WLA Consultation, page 1.

- 11.116 In relation to the Gigaclear proposals regarding the bidding for state aid contracts (e.g. BDUK) and the possibility of imposing terms on bidders in the event they fail to win bids, the bidding rules and terms of the BDUK contracts are a matter for Government.

Retail prices

Stakeholder responses

- 11.117 [redacted]⁶¹⁰ and Virgin Media⁶¹¹ agreed with our proposal not to impose any regulation in relation to retail prices.
- 11.118 BT said if its retail divisions lowered retail prices to match those charged by rivals, it might be accused of margin squeezing, which would be perverse if it was caused by the no undue discrimination condition at the wholesale level.⁶¹² BT noted that Virgin Media could compete unimpeded by regulation, and might reduce its retail prices in areas of competing full-fibre deployment.⁶¹³
- 11.119 TalkTalk was concerned that there would be nothing to prevent BT's retail businesses margin squeezing in specific geographic areas.⁶¹⁴ TalkTalk said that when it rolled out its full-fibre network in York, BT's reaction was not to reduce its wholesale prices, but to offer retail discounts to customers specifically in the area it was rolling out, and that these offers locked consumers into long-term contracts.
- 11.120 TalkTalk said that we should prevent BT from reducing retail prices in a way which deters entry, either by mandating national retail prices for superfast broadband or, if that is not possible, by providing clear regulatory guidance.⁶¹⁵ In particular, it said guidance was required to show that action against any potential margin squeeze would be quick and effective. It considered that we should say that the margin squeeze calculations would be conducted using local geographic markets defined in relation to the potential full-fibre competitor networks.
- 11.121 CityFibre was concerned that our proposals would not prevent BT introducing targeted geographic retail offers.⁶¹⁶ CityFibre said that we should have conducted a more detailed analysis of BT's potential for retail pricing initiatives and the likely effect on competition. However, CityFibre stated its preference for wholesale regulation and that it would not advocate the introduction of any retail regulation if we introduced remedies to address the options for exclusionary pricing at the wholesale level.

⁶¹⁰ [redacted]

⁶¹¹ Virgin Media response to the December 2017 WLA Consultation, page 7.

⁶¹² BT response to the December 2017 WLA Consultation, paragraph 1.6.

⁶¹³ BT response to the December 2017 WLA Consultation, paragraph 2.3.

⁶¹⁴ TalkTalk response to the December 2017 WLA Consultation, paragraph 1.3.

⁶¹⁵ TalkTalk response to the December 2017 WLA Consultation, paragraph 4.7.

⁶¹⁶ CityFibre response to the December 2017 WLA Consultation, paragraphs 9.1.3-9.1.4.

Our reasoning and decisions

- 11.122 Where we have not found SMP at the retail level, we cannot introduce additional measures to restrict BT's retail pricing directly. Introducing restrictions on BT's retail pricing would entail a major intervention in retail markets that we do not regulate.
- 11.123 The extent to which BT can reduce retail prices is constrained by the fair and reasonable charges obligation on services that are not charge controlled (so including VULA services with speeds over 40/10), which we have said we will generally interpret to mean BT should not set prices that result in margin squeeze (see Section 6). We would be concerned if the margin on BT's fibre services was such that retail telecoms providers would be unable to offer these services profitably. As a result, our remedies do provide some protection based on *ex ante* regulation in respect of BT's ability to reduce retail prices whenever retail price reductions are not paired with wholesale price reductions.
- 11.124 BT suggested that the obligation might result in situations where it is accused of margin squeezing. However, we consider that if rival networks were to price lower than BT, the geographic extent of this will be relatively small given network rollout in the review period will be limited. In addition, BT is still able to respond to competition and avoid a margin squeeze by reducing its national wholesale price. We also reiterate that BT should request consent to be exempt from the obligation when it believes that its pricing would not give rise to our competition concern.
- 11.125 In general, in assessing whether wholesale VULA charges led to a margin squeeze under the fair and reasonable charges obligation, we would expect to adopt an approach to the evaluation of costs and margins consistent with the margin squeeze test under *ex post* competition law. While we would undertake any assessment on a case-by-case basis, if there were to be retail price reductions in a particular location, we would normally expect to consider whether there was a margin squeeze based on comparing the localised lower prices with the relevant wholesale charges.
- 11.126 We also have powers under *ex post* competition law to investigate a potential margin squeeze in relation to the use of wholesale services that are charge controlled, such as the VULA 40/10 services (where the fair and reasonable obligation does not apply and for as long as the charge control is in force).

Price floor

Stakeholder responses

- 11.127 TalkTalk⁶¹⁷ and Virgin Media⁶¹⁸ agreed with our proposal not to set price floors for BT's wholesale services. Virgin Media said that would increase the risk of regulatory error.

⁶¹⁷ TalkTalk response to the December 2017 WLA Consultation, paragraphs 3.5-6.

⁶¹⁸ Virgin Media response to the December 2017 WLA Consultation, page 8.

Virgin Media also mentioned that the need for a price floor is reduced since G.fast service is a new venture and offers incremental improvement to current broadband services, and BT will want to ensure a return on that investment. [redacted] also said that it appreciates the argument not to set a price floor.⁶¹⁹

11.128 CityFibre⁶²⁰, Zayo⁶²¹ and TrueSpeed⁶²² called for us to introduce a price floor. They said that this is needed to stop BT from setting low national prices in order to undermine and deter competing investment in FTTP. CityFibre also [redacted].⁶²³

Our reasoning and decisions

11.129 We do not wish to unduly restrict BT's pricing flexibility for a new product, for example, by preventing it from being able to experiment with different pricing strategies. We consider that the remedy we are imposing is the least onerous means of addressing our competition concern. For instance, it avoids complex analysis and compliance which would be required by CityFibre's suggestion of *ex ante* price floors based on costs in areas in which BT has rolled out G.fast segmented into cost-based zones.⁶²⁴

11.130 Moreover, as long as the rollout of G.fast is not closely aligned with the rollout of rival networks, BT's pricing strategy will be influenced by incentives that apply to serving a broad range of customers. This will raise the costs of setting artificially lower prices for G.fast merely to target entry during this review period. Our requirement that wholesale G.fast prices should be set without geographic variations will reinforce this.

11.131 We recognise that the potential concerns would be stronger if BT's rollout of G.fast itself appeared to be targeted at areas where rival investment was being developed. At this stage we do not have evidence or expectation that this will be the case.⁶²⁵

⁶¹⁹ [redacted]

⁶²⁰ CityFibre additional submission to the March 2017 WLA Consultation, paragraph 1.1.2.

⁶²¹ Zayo response to the December 2017 WLA Consultation, paragraph 5.1.4.

⁶²² TrueSpeed response to the December 2017 WLA Consultation.

⁶²³ CityFibre response to the December 2017 WLA Consultation, paragraph page 16 (Annex A).

⁶²⁴ Vodafone additional submission to the March 2017 WLA Consultation, page 3.

⁶²⁵ BT has announced it is making G.fast available to 10m customers over this review period, while in the longer term we hope for competing investment to reach a similar number of premises, we envisage a much smaller rollout over this review period.