
Promoting competition and investment in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26

Volume 4: Pricing remedies

Non-confidential version – redacted for publication [X]

CONSULTATION:

Publication date: 8 January 2020 [Updated 28 February 2020]

Closing date for responses: 1 April 2020

Contents

Section

1. Price regulation in Area 2	1
2. Price regulation in Area 3	33
3. Charge control design and implementation	50
4. Inter-exchange connectivity pricing	66
5. PIA charges	71
6. Ancillaries	92
7. Legal tests	103

1. Price regulation in Area 2

1.1 In this section we set out our proposals for price regulation in the Wholesale Local Access (WLA) and Leased lines access (LL access) markets in Area 2. We also set out our proposals for price regulation in the LL access market in High Network Reach (HNR) areas. Table 1.1 summarises our proposals.

Table 1.1: Summary of proposals in Area 2 and the HNR¹

Service	Proposal
WLA services in Area 2	<p>a charge control on MPF and FTTC 40/10 rental charges, inflation-adjusted from 2021 levels</p> <p>pricing flexibility, subject to a fair and reasonable condition, on rental charges for higher bandwidths</p> <p>a charge control on FTTP 40/10 rental charges where a copper based 40/10 service is not available, set at a premium to the FTTC 40/10 price</p>
LL access in Area 2	a charge control on rental and connection charges for leased lines of all bandwidths, inflation-adjusted from 2021 levels
LL access in HNR Areas	a requirement that charges are fair and reasonable

1.2 Where we are proposing charge controls, we set out the detail of these in Section 3. Our proposals for price regulation of ancillary services in these markets is covered in Section 6.

Our objective in Area 2

1.3 For each of WLA and LL Access, there is a risk that, absent regulation, BT would have the incentive and ability to fix and maintain wholesale prices in Area 2 at an excessively high level and/or impose a price squeeze so as to have adverse consequences for end-users, including through weaker retail competition. We propose to impose charge controls or fair and reasonable conditions on the provision of WLA and LL Access to address these risks.

1.4 In developing our proposed pricing remedies for Area 2, we have had regard to our overarching legal duties. Consistent with the approach to remedies set out in Volume 3 Section 1, we propose to exercise our discretion in setting these controls in favour of an

¹ As noted in Volume 3 Section 3, we are also proposing to impose in each relevant fixed telecoms market an obligation for charges for network access to be fair and reasonable, except to the extent that a specific charge control or a basis of charges obligation applies. Our general position is that we would interpret this fair and reasonable obligation to mean that in the Area 2 and HNR markets, BT should not set prices that would equate to a margin squeeze under ex post competition law for existing and new forms of network access.

approach that supports investment in fibre networks through promoting network competition, while protecting consumers from excessive pricing or a loss of retail competition in the short term.²

- 1.5 Our proposals for pricing in Area 2 seek to do this by balancing:
- a) providing access seekers with incentives to build new, competing networks themselves and/or enter into commercial arrangements with alternative network builders as opposed to overly relying on buying wholesale services from Openreach, as well as providing Openreach with the incentive to invest in fibre; and
 - b) protecting consumers from excessive prices and maintaining retail competition in the short term while network competition develops.
- 1.6 These considerations apply to price regulation of both WLA and LL access products. Looking forward, the new networks being built could be service-specific (e.g. a leased line-only network) or multi-service covering both business and residential customers. We are keen to encourage investment in different types of network. We also take into account that regulation of each market affects incentives to invest in networks that support services in both markets.
- 1.7 For each of WLA and LL access, in reaching our proposals we have considered which pricing options are effective to achieve our objective and which of those effective options is the least onerous. Having identified our preferred option, we have checked to ensure that the option does not produce adverse effects which are disproportionate to the aim pursued. We set out this assessment for each of WLA and LL access.

Our approach in recent market reviews

- 1.8 Our approach in recent years has been to set prices that are intended to encourage investment in competing networks, rather than solely by reference to Openreach's costs. By encouraging competitive network build, this approach also sought to encourage Openreach to invest in high speed networks. This approach to pricing was trailed in the DCR (2015), with implementation taking shape in our WLA (2018) and BCMR (2019) decisions.
- 1.9 In the WLA (2018), we introduced a cost-based control on Openreach's prices for its wholesale services up to 40 Mbit/s and allowed pricing flexibility on services with speeds above 40 Mbit/s. We considered that this would support competitive network deployment during the review period, and that pricing flexibility on higher speeds would progressively increase the benefits of investment in competing networks as demand for higher speeds increased. Our WLA (2018) approach also recognised that price regulation would apply in the same way across all areas, whereas investment was unlikely to be forthcoming in all parts of the UK. Further, even in areas where investment was likely there would be a time lag before there would be substantial network deployment. In the BCMR (2019), Ofcom's

² We explain in Volume 1 how this objective meets our legal duties.

decision on LL Access³ services in areas with limited competition (BT Only and BT + 1 areas) was also guided by the aim of promoting network-based competition, while protecting access seekers in the period during which network-based competition developed. The charge controls we imposed were not cost-based. Rather, we held prices flat in nominal terms (CPI-CPI). We expected this approach to lead to modest over-recovery of costs but considered this better than imposing cost-based charge controls which could risk undermining investment.

- 1.10 Evidence suggests that our approach to price regulation is having the desired effect, in that we are seeing competitive network build develop:
- a) Alternative operators have started investing in FTTP and MSNs, with more planned, and leased line competition has continued to develop. We summarise these developments in Annex 6.
 - b) Openreach has abandoned its plan to extend the life of the copper network using G.Fast technology alone, instead committing to rollout FTTP to 4 million homes by March 2021, and has an ambition to rollout to 15 million homes by the mid-2020s. We consider this to be evidence that BT now feels the threat of network competition and is responding to it.

Wholesale local access services

- 1.11 We have considered different approaches to setting charge controls in the WLA Area 2 market, including approaches suggested by stakeholders in response to our March 2019 Consultation. We have assessed how they would perform against our objective of supporting investment in fibre networks through promoting network competition, while protecting consumers from excessive pricing or a loss of retail competition in the short term.
- 1.12 Below, we set out our assessment of the following options:
- a) **Pricing continuity:** keeping price caps the same in real terms, on wholesale services they currently apply to, and not imposing new charge controls on services not currently subject to charge controls.
 - b) **Cost-based controls:** setting price caps on Openreach's wholesale prices across all services in line with costs.
 - c) **'Adaptive regulation':** this would have two parts: (1) cost-based controls before rival fibre rollout has occurred in an area; (2) a price floor (with reference to an entrant's cost) once rival fibre rollout has occurred in an area.
 - d) **A 'copper wedge':** introduce a gap between the price charged to access seekers for services delivered over the copper network and the price received by Openreach, and

³ This was known as CI Access in the BCMR (2019).

use the resulting funds to promote FTTP rollout in competitive and non-competitive areas.

- 1.13 After assessing how each option would perform against our objective and how it might be implemented, we set out our preferred option and provide more detail on that approach. We also set out our assessment of whether that approach is proportionate.

Option 1: Pricing continuity

- 1.14 In this section we set out our views on whether pricing continuity, which would mean keeping price caps the same in real terms on wholesale services they currently apply to and maintaining a fair and reasonable condition on services not currently subject to charge controls, would meet our objective. We first assess the impact pricing continuity would have on network competition and investment. We then assess whether it would protect consumers from excessive pricing or a loss of retail competition.

Impact on network competition and investment

- 1.15 In this section, we assess whether pricing continuity would promote network competition and investment. We discuss:
- a) The impact pricing continuity would have on competitive network investment; and
 - b) The impact pricing continuity would have on Openreach's incentives to invest.

Impact on competitive network investment

- 1.16 Our approach to price regulation in recent market reviews has been based on our view that setting price caps somewhat above Openreach's costs better supports investment in competing networks. We have considered that this means that building (or sponsoring) an alternative network becomes more attractive relative to buying wholesale services from Openreach. We have also considered that higher wholesale prices for Openreach services allow for higher margins on competing services supplied by alternative networks. We remain of this view.
- 1.17 The indications are that this approach is having an effect. Given the level of competitive network investment that is underway, we consider that the current level of price regulation would be consistent with our goal of promoting investment in high speed networks by Openreach and others, and that pricing continuity would allow this momentum to be sustained.
- 1.18 We also consider that pricing continuity would send an important signal to investors that we continue to be committed to setting prices that support investment, and thereby create more stability and certainty over the medium term. Investor reports have demonstrated how these pricing signals contribute to investor confidence and a positive regulatory environment. A departure from this strategy and return to cost-based pricing would undermine the incentive for telecoms providers to build new networks.
- 1.19 In addition, this approach would focus price regulation on the 40/10 product, allowing Openreach continued pricing flexibility on higher bandwidth products. Over time, this

would progressively increase the benefits of investment in competing networks as demand for higher speeds increases. This is because we expect the constraint of the 40/10 product on the prices of higher speed services will gradually fall (albeit not sufficiently to not address the excessive pricing risk we have identified). The threat of higher wholesale prices for higher speed products in future would provide a greater incentive to telecoms providers currently reliant on access to Openreach's network to invest in competing networks now.

1.20 In response to our March 2019 Consultation, in which we proposed to keep price caps the same in real terms, some stakeholders – including competing network builders – agreed that regulating prices to cost would reduce the incentive to either build or seek alternative suppliers to Openreach.⁴ However, other stakeholders argued that we overstated the impact of not controlling Openreach's wholesale prices to cost. Some also argued that tighter, rather than looser, regulation of Openreach's existing WLA services would strengthen incentives for rivals to build fibre networks. The main points made, and our response, are as follows:

- a) Some stakeholders argued that the business case for investing in FTTP networks involves long (often 20 to 30 year) payback periods and that wholesale price regulation over a five-year period would have a small impact on profitability of the business case. We recognise that these are long-term investments, and that we cannot prejudge what actions we will take in the future. However, we think it is clear that our approach to regulating access to Openreach's network (including price regulation) plays an important role in incentivising (or disincentivising) rival network investment. Moreover, following a consistent approach over successive market reviews would send important signals that will influence what telecoms providers currently reliant on access to BT's network expect in terms of future regulation. We are of the view that continuing our commitment to prices that support investment would be an important enabler of rival network investment.⁵
- b) Some stakeholders argued that the impact of price regulation on investment would be diluted as changes to wholesale prices are not fully passed through to retail prices. We acknowledge that changes in wholesale prices may not be fully passed through to retail prices. However, we consider that wholesale prices directly affect incentives for investment without relying on pass-through to retail prices, as they directly affect the

⁴ See for example CityFibre's response to our March 2019 Consultation, paragraph 1.1.3.

⁵ As part of Sky's response to our March 2019 Consultation, Frontier Economics argued that setting wholesale prices above cost would have a limited impact on the investment case for a new entrant. Frontier used a model that Sky had developed to conclude that the IRR would be [x] percentage points higher if prices were [y], which they believed was not significant. Taking the modelling results as stated by Frontier, we disagree that an IRR impact of [x] percentage points would be insignificant, especially if other factors mean that the investment case is finely balanced. More generally, the model does not capture all considerations that are relevant to investment choices and does not capture all ways in which a higher wholesale price might affect the new entry business plan. We therefore do not think that Frontier's evidence shows that our proposals will have limited impact on investment, and in any case we place more weight on evidence on planned and actual build, and what network builders tell us.

relative profitability of building (or sponsoring) a network in comparison to buying services from Openreach. In any event, we consider it reasonable to assume a large proportion will be passed through given the retail market is effectively competitive.⁶

- c) Some stakeholders suggested pricing continuity may not have an impact on post-entry retail prices, as these will be driven by competition. We expect network competition to put downward pressure on prices in the long term. However, until that network competition is established, we would not expect significant reductions in Openreach's wholesale prices for MPF and FTTC 40/10 products (which are currently priced to the level of the cap). This is because the geographic coverage of alternative networks will initially be limited, Openreach traditionally has not varied its wholesale prices geographically, and we are proposing to limit Openreach's ability to respond through targeting discounts geographically (see Annex 15). We consider that prices over this period would be likely to affect telecoms providers' views of how attractive it is to continue relying on Openreach versus considering alternative network providers.
- d) It was argued that financial constraints or industry level capacity constraints such as labour force issues could mean that our regulation would not lead to any more investment. However, we have not seen evidence that build is or is close to being constrained in this way at the moment. In addition, our objective to price regulation is intended to support investment plans that already exist; it is not only about incentivising more investment than has already been planned.
- e) Some stakeholders argued that excessive anchor product prices may undermine investment in FTTP by reducing market shares of the large broadband retailers in the UK that are key targets for competing network operators. We agree that if an existing retailer has a large customer base which it can migrate to a new network, this will strengthen the business case for that network. However, Sky and TalkTalk, two of the stakeholders that made this point, do have a large customer base and already account for around 34% of broadband customers.⁷ As explained below, we do not expect that keeping price caps the same in real terms would result in significant damage to their competitive position such that they would no longer be able to offer a large customer base to new network builders. We therefore are of the view that the threat of higher prices would have a positive, rather than negative impact on competitive network investment.

1.21 In general, we acknowledge that the relationship between prices and network investment is complex. However, the points discussed above do not change our view that there is a significant and positive relationship between higher wholesale prices and network build, or that higher wholesale prices are supportive of investment by competitors.

⁶ In its response to the March 2019 Consultation, Sky used an estimate of between 65% and 85% for the proportion of wholesale charges that are passed through to retail prices. Sky's non-confidential response to Ofcom's consultation, June 2019, page 10.

⁷ See Section 2 of Volume 2.

1.22 In response to our March 2019 Consultation, some stakeholders suggested that wholesale prices would need to be higher than current levels in order to incentivise investment. The fact that there is already significant network deployment planned and underway suggests that this is not the case. Moreover, we have checked that current prices would sit within our own estimates of the range necessary to allow an alternative network operator to profitably offer a range of FTTP services in the market. We discuss this below.

Impact on Openreach's investment incentives

1.23 We believe that the threat of competition supported by keeping the current level of price regulation would act as a strong incentive for Openreach to invest in high speed networks, due to the risk of losing volumes to competitors if it does not. We consider Openreach's current plans to invest in FTTP to be evidence of this.

1.24 Some stakeholders argued that Openreach may have less incentive to invest in comparison to a cost-based charge control, as higher wholesale prices increase the profitability of remaining on FTTC. We agree that higher FTTC prices will increase the relative profitability of remaining on FTTC compared to investing in FTTP, all else equal. However, a key driver of Openreach investment is likely to be the risk of losing a higher proportion of volumes if Openreach chooses not to invest and remain on FTTC. This is supported by the evidence in Annex 6 that Openreach is investing in FTTP in potentially competitive areas. Further, allowing Openreach to set prices somewhat above its costs would provide support for its own plans for extensive rollout of FTTP.

1.25 We are also of the view that pricing flexibility on higher bandwidth broadband services would support Openreach's investment in FTTP. BT has argued that in order to support its investment, we should provide more clarity on the terms on which these services might be regulated in future. We explain below why we think our proposals in this review provide BT with a sound basis to move forward with its FTTP roll out.

Impact on consumers and retail competition

1.26 In potentially competitive areas, we would expect a substantial amount of rival network build to emerge during the review period if we maintain price regulation at its current level, which would play an important and long-term role in protecting consumers and promoting retail competition.

1.27 However, an approach that places weight solely on short-term cost recovery might point to somewhat lower wholesale prices.

1.28 In this section, we assess whether pricing continuity would provide an appropriate level of protection for consumers while competition continues to develop, through a price cap on MPF and 40/10 services, and a fair and reasonable condition on higher bandwidths. Below, we discuss:

- a) Protection of consumers on standard and basic superfast broadband;
- b) Protection of consumers on higher speed services; and
- c) Protection of retail competition based on BT's network.

Protection of consumers on standard and basic superfast broadband

- 1.29 Under pricing continuity, price caps on MPF and FTTC 40/10 would remain at their current levels. Therefore, customers taking these services would be directly protected from excessively high prices and will not be any worse off than under current regulation.
- 1.30 We expect a large proportion of customers to remain on standard broadband and 40/10 throughout the review period. Currently, 66% of customers on the Openreach network take these services.⁸ By 2023/24, telecoms providers expect [X]% of consumers to still be using these services.⁹
- 1.31 While the price caps of MPF and FTTC 40/10 under this approach would not be based on our most recent estimates of BT's costs, we have estimated that prices may not diverge from costs of supplying these services to a large degree. In Annex 16 we set out our estimates of the level of BT's cost recovery from providing MPF and FTTC 40/10 under this approach, taking into account the uncertainty around BT's costs over the review period.

Protection of consumers on higher speed services

- 1.32 Although maintaining price regulation at its current level would allow pricing flexibility on higher bandwidths, we are of the view that the 40/10 price cap would be an effective 'anchor', constraining prices charged for higher bandwidths.
- 1.33 We expect that 40/10 services will continue to be a reasonable substitute for higher speeds over the review period. Our view is based on the following evidence, which is set out in more detail in Volume 2 Section 2:
- a) Current volumes on 80/20 and above have increased since 2017/18 (from [X]% to [Y]% of Openreach connections in 2018/19), and are expected to increase further (to [Z]% by 2023/24). However, this increase has not been driven by a high demand from consumers for the higher bandwidth products, but has instead in large part been driven by provider-led programmes to upgrade customers at little or no additional cost to the customer. In particular, Openreach has incentivised provider-led upgrades by setting very low incremental wholesale prices for higher bandwidth products.¹⁰ This is consistent with the 40/10 providing a strong anchor constraint on higher bandwidth prices.¹¹
 - b) Our analysis of retail prices is consistent with 40/10 continuing to be substitutable with higher bandwidths. At the retail level, packages purchased are differentiated on a number of dimensions, and there is overlap in prices paid by customers for different

⁸ This increases to [Z]% including customers on the broadly comparable 55/10 product. See Volume 2 Section 2.

⁹ This increases to [Z]% including customers on the broadly comparable 55/10 product. See Volume 2 Section 2.

¹⁰ See Volume 2 Section 2.

¹¹ There is a possibility that once customers have been accustomed to higher speeds, they may be more willing to pay a higher price than they would have been willing to pay for an upgrade. However, we consider that subscribers who have been migrated onto higher bandwidths in this way are on average likely to have a lower incremental willingness to pay for faster speeds than those who upgraded themselves, and may be more willing to switch back to slower services if relative prices increased significantly, which is likely to constrain the prices of higher speed services.

speeds. In addition, Sky does not distinguish between 40/10 and 80/20 in its marketing, offering a single “Superfast Fibre” product.^{12, 13}

- c) Research undertaken by stakeholders suggests consumers do not have a high willingness to pay for speeds above 40/10 and that speed is not the most important factor in decisions to switch provider.^{14, 15} In addition, average spend on telecoms has remained roughly flat since 2016 despite availability of higher speeds.¹⁶
- d) Evidence, including pricing for ultrafast services on alternative networks, suggests that most consumers are not willing to pay a significant premium for ultrafast services.¹⁷

1.34 We also note that the likelihood of price increases on higher bandwidth products over this review period is diminished by the following:

- a) Wholesale prices of 80/20 and above will be constrained by the GEA discount contract, which has been signed by [redacted], until 2023.
- b) In the longer term we expect the threat of alternative network build – as a result of our measures to promote competition – to be an increasing constraint on Openreach’s wholesale prices. We also consider that Virgin Media’s presence at the retail level imposes some constraint on BT’s wholesale prices.

1.35 In the round, we are of the view that consumers on higher bandwidth products would be protected from the risk of excessive prices over this review period under the current level of price regulation. We expect the constraint imposed by a 40/10 price cap on high bandwidth services would weaken somewhat over the review period, but not to the extent that it would not protect consumers from excessive prices.

1.36 We recognise that this approach would allow BT some degree of over recovery in the short term. In Annex 16 we set out our estimates of the level of BT’s cost recovery from providing these higher bandwidth products, taking into account the uncertainty around BT’s costs over the review period.

Impact on competition at the retail level

1.37 Under pricing continuity, higher bandwidth products would be subject to a fair and reasonable pricing condition which would allow Openreach pricing flexibility on those

¹² See Section 2, Volume 2.

¹³ In the WLA (2018) we presented the average retail price differential between advertised, new in-contract 40/10 and 80/20 retail prices, which we considered had remained broadly flat since January 2014. See Figure A5.9, Annex 5, WLA (2018). More recent data is consistent with this view. However, as we describe in Section 2, Volume 2, the majority of customers do not pay these prices.

¹⁴ See Section 2, Volume 2.

¹⁵ In its response to our March 2019 Consultation, TalkTalk provided research on future demand for different bandwidths to suggest that the 40/10 product will meet [redacted]% of demand by [redacted]. We recognise that the 40/10 product will not meet the needs of all customers and that the number of customers this applies to will increase over time (this is consistent with the anchor weakening). However, even on TalkTalk’s own research, it still looks like [redacted], which we think is consistent with 40/10 providing an effective anchor.

¹⁶ The Communications Market 2019, Ofcom. Average monthly household spend on telecoms services for fixed voice and data. https://www.ofcom.org.uk/__data/assets/file/0032/155399/telecoms-cmr.csv [accessed 19 December 2019]

¹⁷ See Sections 2 and 6 of Volume 2.

products. This would mean that in theory BT could set high wholesale prices for those products relative to its retail price, leaving competing retailers largely dependent on selling the MPF and 40/10 based products alone.

1.38 We do not consider that this would pose a serious threat to the sustainability of retail competitors over the review period for the following reasons:

- a) Requiring BT to provide network access on fair and reasonable terms would address the risk of price (margin) squeeze, meaning that other retailers will have reasonable access to all products and thus be able to compete for those customers that demand higher bandwidths.¹⁸
- b) It is not clear that a margin squeeze strategy would be successful and may be commercially costly for BT. Setting high prices to other retailers may have some effect by moderating retail competitors' ability to compete for some consumers, but it would be unlikely to seriously damage their ability to compete in the market overall because 40/10 will be likely to remain a reasonable substitute for higher bandwidths, as well as the fact there are switching costs. Therefore, the main effect may be that BT would forego the additional revenues it might otherwise have obtained by pricing its higher bandwidth services attractively in order to encourage other retailers to upgrade their customers bases to buy more higher margin products. Moreover, some proportion of customers that are lost by retail competitors may not be gained by BT Retail but instead lost to the Virgin Media network.
- c) Market evidence is consistent with this assessment. BT has not been subject to price caps on its higher bandwidths, yet its strategy has been to offer discounts on the higher bandwidth products to encourage the largest retailers to sell more of these products, not less. These arrangements envisage discounts on the higher bandwidths to 2023.

Implementation

1.39 Maintaining the same level of price regulation would be compatible with the regulatory framework and straightforward to implement.

Option 2: Cost-based price caps

1.40 In this section we set out our views on whether setting price caps on Openreach's wholesale prices across all WLA services in line with costs would meet our objective. We first assess the impact cost-based price caps would have on network competition and investment. We then assess whether these would protect consumers from excessive pricing or a loss of retail competition.

¹⁸ While we would assess any dispute on the relevant facts, our starting point for evaluating cost and margins in this context would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard.

Impact on competition and investment

- 1.41 We describe above why we believe that there is a positive relationship between the level of wholesale prices and the incentive to invest in competing networks, that current price regulation supports network competition, and that pricing continuity would allow this momentum to continue. Conversely, a return to cost-based price caps would reduce the incentive to invest in competing networks, signal that we are moving away from our approach of setting prices to support investment, and risk undermining current and planned investment.
- 1.42 As cost-based prices would risk disincentivising competitive network investment, this approach would reduce the incentive for Openreach to invest, as it would face less risk of losing volumes to competitors than it would under current price regulation.
- 1.43 On the other hand, a reduction in wholesale prices of FTTC products would also reduce profits Openreach could make on these products, which would increase the relative profitability of investing in FTTP. However, we are of the view that a key driver of BT's investment in fibre will be the threat of losing volumes to competitors. Moreover, the higher prices will contribute to BT's ability to support its fibre investment. We therefore conclude that cost-based price caps would not support investment by BT.

Impact on consumers and retail competition

- 1.44 Cost-based pricing would likely involve a reduction in wholesale prices, which we would expect to feed into retail prices. It would also support retail competition, as low wholesale prices would be guaranteed and it would minimise the risk of margin squeeze. Therefore, we consider that cost-based controls would meet our aim of protecting consumers and maintaining retail competition in the short run.
- 1.45 However, we consider that consumers would be less likely to benefit from network competition and investment in the longer term.

Implementation

- 1.46 Cost-based price caps would be compatible with the regulatory framework and straightforward to implement.

Option 3: Adaptive regulation

- 1.47 In this section we set out our views on whether adaptive regulation would meet our objective. This type of regulation would have two parts: (1) cost-based controls before rival rollout had occurred in an area; (2) a price floor (with reference to an entrant's cost) once rival rollout had occurred in an area. Therefore, with adaptive regulation Openreach's prices would initially be subject to a cost-based cap and then, on an area-by-area basis, Openreach would be required to increase its prices to a minimum (floor) level after rival rollout has occurred.

- 1.48 We first assess the impact adaptive regulation would have on network competition and investment. We then assess whether it would protect consumers from excessive pricing or a loss of retail competition.

Impact on competition and investment

- 1.49 In this section, we assess whether adaptive regulation would promote network competition and investment. We discuss:
- a) The impact adaptive regulation would have on competitive network investment; and
 - b) The impact adaptive regulation would have on Openreach's incentives to invest.

Impact on competitive network investment

- 1.50 Under adaptive regulation, Openreach's wholesale prices would initially be subject to a cost-based cap and then, on an area-by-area basis, Openreach would be required to increase its prices to a minimum (floor) level after rival rollout has occurred. We believe that having cost-based price caps will reduce the incentives for competitive network investment.
- 1.51 We think that the most important driver of competitive network investment will come from the choices that telecoms providers make about their future purchases of wholesale services. Telecoms providers that are currently reliant on Openreach's wholesale services also have the choice of building a network themselves or purchasing wholesale services from an alternative competitive network. These options will be assessed against the counterfactual of continuing to purchase wholesale services from Openreach. Cost-based price caps would make buying from Openreach more attractive, and therefore reduce the incentives for telecoms providers to build a network themselves or to purchase wholesale services from an alternative competitive network.
- 1.52 It has been suggested that requiring Openreach to increase its prices to a minimum (floor) level after rival rollout has occurred will provide the incentive for competitive network investment. However, it is not obvious to us that this will change the incentives on the telecoms providers that are currently reliant on Openreach's wholesale services. This is because if building a network or purchasing wholesale services from an alternative competitive network is better than purchasing cost-based services from Openreach, then these providers should pursue these options regardless of the post build prices.
- 1.53 Network builders who are not currently reliant on Openreach's wholesale services will seek to de-risk their investments by agreeing future volumes on their network with telecoms providers in advance of the completed build. These telecoms providers are likely to be currently reliant on Openreach's wholesale services and therefore the incentives described above are relevant.
- 1.54 It could be argued that these network builders would be prepared to build a network before agreeing future volumes with telecoms providers in the hope of winning business post-build after Openreach's wholesale prices increase (as a result of the price floor).

However, it is not clear to us that this effect would be strong, especially for business models that rely on wholesale customers.

- 1.55 We therefore believe that adaptive regulation would disincentivise competitive network investment.

Impact on Openreach's investment incentives

- 1.56 As we think adaptive regulation would not support competitive network deployment, we also consider that there would be less of an incentive for Openreach to invest in fibre.
- 1.57 We recognise that lower profits on FTTC could increase the relative attractiveness of investing in fibre. However, as discussed above in relation to cost-based price caps, we are of the view that a key driver of BT's investment in fibre will be the threat of losing volumes to competitors.

Impact on consumers and retail competition

- 1.58 In the same way as cost-based price caps, adaptive regulation would likely involve a reduction in wholesale prices in the short run, which we would expect to feed into retail prices.¹⁹ It would also support retail competition for the same reasons described above in relation to cost-based controls. However, we consider that consumers would be less likely to benefit from network competition and investment in the longer term.
- 1.59 Even in the event that competing telecoms providers did invest, the imposition of a price floor could also result in consumer detriment in the longer run if it was set too high. There is a risk that artificially inflating prices could result in consumer detriment due to high prices, as well as discourage FTTP take-up. It could also discourage Openreach from investing in FTTP. We discuss price floors further in Annex 15.

Implementation

- 1.60 Adaptive regulation would be difficult to implement for a number of reasons. First, we would need to decide, for example, how granular each geographic area should be, the appropriate level of competitive network coverage at which to change regulation from a price cap to a price floor, and how often to assess level of rollout and update price regulation accordingly. This approach would then create an administrative burden (assuming competitive rollout did still occur to some extent) due to the need to collect data on the level of competitive rollout in each area more regularly, assess reliability of that data, publish updates, and monitor whether price caps and price floors are adhered to on an area-by-area basis. TalkTalk also suggests that Ofcom would need to calculate the appropriate price floors and caps in a way which allowed for the geographic differences in Openreach's costs and competing networks' likely costs. Therefore, even if we considered adaptive regulation would be likely to achieve our objective, it would not be the least burdensome means of doing so.

¹⁹ However, the impact on retail prices would be uncertain if retailers expected competitive network investment to still happen, as that would mean that in the near future wholesale prices could increase.

- 1.61 We also note that adaptive regulation would involve the imposition of a price floor (with reference to an entrant's costs) in a particular area once rival rollout has occurred. In order for us to be able to impose a price floor as part of the charge control, we would need to be satisfied that the floor is necessary to address the risk that Openreach might engage in excessive pricing or a margin squeeze.

Option 4: Copper wedge

- 1.62 A 'copper wedge' would involve setting price caps on services delivered over the copper network above cost, but only allowing Openreach to keep an amount necessary to recover its costs. The difference between the price charged to access seekers and costs would be taken from Openreach and could be used to promote FTTP rollout in competitive and non-competitive areas in various ways. In this section we first assess the impact a copper wedge would have on network competition and investment. We then assess whether it would protect consumers from excessive pricing or a loss of retail competition.

Impact on competition and investment

- 1.63 In this section, we assess whether a copper wedge would promote network competition and investment. We discuss:
- a) The impact a copper wedge would have on competitive network investment; and
 - b) The impact a copper would have on Openreach's incentives to invest.

Impact on competitive network investment

- 1.64 We describe above why we believe that there is a positive relationship between the level of wholesale prices charged to retail providers and the incentive to invest in competing networks. Therefore, depending on the level of wholesale prices charged to retail providers, a copper wedge could maintain this relationship and support competitive network investment going forwards, in the same way as pricing continuity.

Impact on Openreach's investment incentives

- 1.65 Vodafone argues that a copper wedge would create more incentive on Openreach to invest in FTTP than maintaining the current level of price regulation, as Openreach would earn lower profits on its copper products. It also argues that the resulting funds could be used in various ways to promote fibre rollout in competitive and non-competitive areas.
- 1.66 We believe that the threat of competition would act as an incentive for Openreach to invest in high speed networks in the same way as maintaining the current level of price regulation. However, we do not agree that a copper wedge approach would add to Openreach's incentives to build new networks in comparison to pricing continuity. By keeping Openreach's FTTC revenues at cost, a copper wedge would not allow a direct contribution from its copper services to the costs of rolling out FTTP, whereas allowing Openreach to earn revenues somewhat above its costs would provide direct support for Openreach's own FTTP rollout.

Impact on consumers and retail competition

- 1.67 In potentially competitive areas, a substantial amount of rival network build could emerge during the review period depending on prices charged to retail providers. This would play an important and long-term role in protecting consumers and promoting retail competition.
- 1.68 The impact of a copper wedge on consumers and retail competition in the short run would depend on the price level charged to retail providers. However, prices could be set in a way which protected consumers from excessive prices and maintained retail competition in the short run.

Implementation

- 1.69 As noted above, we consider that a proposed option for regulation is only viable if we have the legal powers required to implement it. Vodafone considers that the copper wedge approach could be compatible with the EU regulatory framework and implemented by way of SMP condition, either as a traditional charge control or as an exceptional measure (which would require European Commission approval).²⁰
- 1.70 We do not think that the copper wedge could be implemented under our power to set price control SMP conditions.²¹ We remain doubtful that an obligation on BT to ringfence a portion of the access price it receives and deploy these funds as Ofcom directs could be properly construed as a price control or a rule about the recovery of costs and cost orientation. Vodafone puts forward a number of potential uses of these funds, including a public education campaign to highlight the benefits of moving to fibre and the award of funds via competitive tender to directly support FTTP roll-out in non-competitive areas. However, the allocation of funds in this way would appear to go beyond the proper scope of the relevant powers; a requirement on BT to ring-fence a proportion of the price it receives from access seekers, and to handover this difference (or relevant parts) in a manner directed by Ofcom would appear to go beyond the scope of a control on BT's prices.
- 1.71 We also have concerns about our power to impose such conditions on BT as an exceptional measure (with European Commission approval).²²
- a) First, we are doubtful that this is an exceptional case. As discussed above, our "non-exceptional" powers²³ allow us to impose SMP conditions that would address the competition problems our market analysis has identified. We can also exercise our discretion in setting these conditions in favour of an approach that is effective in achieving our objective of supporting investment in fibre networks through promoting

²⁰ The Copper Wedge, An Implementation Plan for Vodafone by Towerhouse LLP, 20 June 2019 (Annex to Vodafone's response to the March 2019 consultation)

²¹ Section 87(9) of the Act

²² Section 89(1)(c) of the Act. Our power in this respect is, in exceptional cases, to set conditions "*with respect to the provision of network access*" in addition to the SMP conditions that we otherwise have the power to set.

²³ Sections 87 and 88 of the Act

network competition, while protecting consumers from excessive pricing or a loss of retail competition in the short term. We therefore see no need for recourse to exceptional measures.

- b) Further, we are concerned that the copper wedge proposal conflates two parts of the regulatory framework, which are intentionally separate; SMP conditions designed to address competition problems arising from market power, and the universal service scheme and funding mechanism designed to ensure the provision of a minimum set of services to end-users, including where their needs are not met by the market. The implementation plan prepared for Vodafone highlights that the universal service scheme is focused on the imposition of obligations to provide a retail service. However, we remain unconvinced that it is appropriate to address any perceived gap in these provisions through the use of an exceptional power in a separate part of the framework.

- 1.72 Even if it were possible to implement the copper wedge option, we consider it would be disproportionate. It would carry a high administrative burden and is therefore not the least onerous means of achieving our objective. Using the copper wedge to support network build via competitive tender would require Ofcom to determine how the wedge funds are to be delivered, the minimum criteria which proposals to use the funds must meet, the appropriate allocation method and the appropriate mechanism for ensuring winning participants deliver on their commitments (which is likely to require an ongoing role for Ofcom in assessing delivery and enforcing non-delivery through contractual mechanisms).²⁴

Our preferred approach is pricing continuity

- 1.73 As explained above, we are of the view that maintaining the current level of price regulation would be effective to achieve our objective of supporting investment in fibre networks through promoting network competition, while protecting consumers from excessive pricing or a loss of retail competition in the short term.
- 1.74 Cost-based controls and adaptive regulation would provide more protection to consumers and retail competition in the short-run. However, we consider that these approaches would be unlikely to promote network competition, which would deliver benefits to consumers in the longer term. Tightening price regulation could risk undermining the investment and network competition that is currently emerging. These approaches therefore do not meet our objective. In addition, we consider there to be potential legal issues with the adaptive regulation approach and, even if it were to achieve our objective, it would not be the least onerous means of doing so.
- 1.75 The copper wedge approach could provide some support for network competition, while protecting consumers from excessive pricing or a loss of retail competition in the short

²⁴ Other potential uses of the wedge funds would also involve Ofcom in establishing criteria, payment mechanisms and assessing delivery of outcomes.

term. However, our view is that there are also legal issues associated with this approach and, even if it were possible to implement, it would be disproportionate.

1.76 Our preferred option is therefore to maintain pricing continuity in the WLA market in Area 2. We consider this option would be effective to achieve our objective of supporting network competition through promoting network competition, while protecting consumers against excessive pricing and maintaining retail competition in the short term. We also consider it to be the least onerous effective option. In particular, this option provides appropriate incentives to market players (including regulatory certainty) but leaves competition, rather than regulation, to drive outcomes. As discussed above, the evidence suggests this approach is working. We check below to ensure this our preferred option does not produce adverse effects which are disproportionate to the aims pursued.

1.77 Accordingly, we are proposing that for WLA services in Area 2 currently subject to charge controls, price caps will remain constant in real terms, and that there will be no new charge controls on services currently subject to a fair and reasonable condition. This means that we are proposing:

- a) a charge control on MPF and FTTC 40/10 rental charges, inflation-adjusted from 2021 levels;
- b) pricing flexibility, subject to a fair and reasonable condition, on rental charges for higher bandwidths;
- c) a charge control on FTTP 40/10 rental charges where a copper based 40/10 service is not available, set at a premium to the FTTC 40/10 price.²⁵

1.78 We describe in Volume 3 Section 2 how price regulation will move from copper-based services to FTTP services under our proposed approach to copper switch off. In the following sub-sections, we consider some further points of detail relevant to our preferred approach, before going on reach a provisional conclusion about the proportionality of this approach and whether our proposed SMP conditions meet the applicable legal tests.

Consistency of our proposed approach with entrant costs

1.79 As discussed above, to support rivals' investment incentives, the level of our proposed control on the 40/10 service should be consistent with the viability of new investment. The fact that there is already significant network deployment planned and underway suggests that this would be the case if we maintained this price cap at the same level. However, we have also checked that the 40/10 charges we propose would sit within our own estimates

²⁵ As noted in Volume 3 Section 3, we are also proposing to impose an obligation for charges for network access to be fair and reasonable, except to the extent that a specific charge control or a basis of charges obligation applies. Our general position is that we would interpret this fair and reasonable obligation to mean that in the Area 2 markets, BT should not set prices that would equate to a margin squeeze under ex post competition law for existing and new forms of network access. While we would assess any dispute on the relevant facts, our starting point for evaluating cost and margins in this context would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard.

of the range necessary to allow an alternative network operator to profitably offer a range of FTTP services in the market.

- 1.80 Specifically, we compare estimates of an efficient competitor's costs and revenues if we were to keep the 40/10 price cap constant in real terms:
- a) Using the outputs from our bottom-up fibre cost model, we estimate that the unit cost of supplying FTTP services for an alternative network operator ranges between £8.50 and £12.75. We set out our approach to estimating these costs in Annex 17.
 - b) We have compared these costs against the average revenue per FTTP customer that an alternative network operator might be expected to earn given the level of Openreach's FTTC 40/10 prices we are proposing. As full fibre networks will deliver higher reliability as well as support higher speeds, alternative network operators are likely to be able to charge a modest premium compared to an FTTC 40/10 service.²⁶ We provisionally conclude that this could be around £2 per month on average, implying an average revenue per FTTP customer of around £14 per month (based on an MPF+GEA 40/10 charge of £12 per month at the end of 2020/21).²⁷
- 1.81 Given that the average revenue per FTTP customer is above our cost range estimate, we consider that the current level of price regulation is consistent with our goal of promoting full-fibre investment by rivals to Openreach.

Fibre premium on a 40/10 FTTP equivalent product

- 1.82 As discussed in Section 3 we are proposing to charge control a 40/10 equivalent on BT's FTTP network in areas where a copper based 40/10 service is not available today, and when the charge controls move from copper to fibre under our proposed approach to supporting copper retirement (Volume 3, Section 2).
- 1.83 We propose that this is set at the level of the FTTC 40/10 product plus a premium, which reflects the additional benefits of a FTTP 40/10 product in comparison to the FTTC 40/10 product, both to consumers (e.g. receiving a speed closer to headline speed) and retail providers (e.g. through cost-savings resulting from being able to provide a more reliable service).
- 1.84 We consider that adding the premium is necessary to achieve our objective of supporting investment in fibre networks through promoting investment in competing networks whilst protecting consumers, once regulation shifts to the 40/10 equivalent product on FTTP:
- a) In terms of promoting network competition, the FTTP 40/10 price needs to reflect the higher value of the FTTP product in comparison to the FTTC product, in order to maintain the relative profitability of building a network in comparison to buying from

²⁶ This is in line with evidence described in Volume 2 Section 2 and Volume 2 Section 6 that suggests that most consumers are not willing to pay a large premium for ultrafast services.

²⁷ For modelling purposes, we assume the premium could be between £1.50 and £4 per month on average, implying an average revenue per FTTP customer of £13.50 to £16 per month.

Openreach. If we were to not impose a premium this would be equivalent to the effect of reducing the price cap on the FTTC 40/10 price, which would increase the profitability of buying wholesale services from Openreach.

b) In terms of protecting consumers, although retail prices may increase slightly, this will reflect the added value of the service.²⁸

1.85 In Annex 22 we describe these benefits and estimate that the premium should be set at between £1.50 and £1.85 per line per month.

‘Fair bet’ considerations in relation to Openreach’s investment incentives

1.86 BT has argued that we should specify the terms of the ‘fair bet’ in relation to fibre deployment, in the event that we do regulate those wholesale prices in future. It argued that this would provide clarity that we will take into account the upfront risks before intervening to remove the upside and thereby support BT’s investment.²⁹

1.87 When considering whether and how to regulate prices, Ofcom always seeks to ensure Openreach has a ‘fair bet’ on investments. Openreach routinely undertakes investments that have potential upside and potential downside. If costs are higher than expected Openreach will make less from the investment, if they are lower than expected it will make more from it. The key is that expected returns should be equal to or greater than the expected costs. Ofcom’s long-standing practice is to set its price caps in such a way that where Openreach takes on the risk that things turn out less well than expected, it is also given the ability to pick up the upside (which is not “clawed back” if it occurs). Otherwise, Openreach would not have an incentive to make risky investments, and consumers would not have the benefits of that investment. In most cases, price caps set at or above expected (but uncertain) costs and that provide for an expected return on assets that is above the cost of capital gives Openreach a fair bet.

1.88 There are instances where specific considerations beyond setting prices to reflect expected (but uncertain) costs are required. The main recent example was Ofcom’s approach to setting price regulation on FTTC in the 2018 WLA. In the WLA, Ofcom evaluated whether its proposal to introduce a price cap was consistent with Openreach having had a fair bet, by assessing whether Openreach had had a fair opportunity to earn a reasonable return on its original FTTC investments. This recognised that Openreach had needed to benefit from sufficient upside potential in the long run to offset the downside risk of failure at the time of the investment. The main source of potential failure was the possibility that consumer demand for FTTC would fail to materialise. In that assessment Ofcom found that a conservative estimate of Openreach’s actual return on FTTC was around 15%, which was above the level necessary to provide a fair bet given the upfront risk of failure. One of the reasons that assessment was conservative was because a significant driver of FTTC roll out

²⁸ Under our proposed approach to copper retirement, when regulation moves from copper to fibre, we will only regulate a 40/10 equivalent product on FTTP; we will not regulate an equivalent standard broadband product. We discuss the impact of our proposals in Volume 3 Section 2.

²⁹ BT’s response to our March 2019 Consultation, paragraphs 3.29 to 3.40.

was to avoid potential losses of customer volumes to Virgin, but these volume losses were not taken into account in the counterfactual. As a result, the assessment understated the benefit to Openreach of investing FTTC.

- 1.89 Our proposals in this review provide Openreach with a sound basis to move forward with its FTTP roll out. We are not imposing price regulation of FTTP (other than on a 40/10 equivalent service where a copper based 40/10 service is not available), we are limiting regulation of the copper products to MPF and 40/10, in both cases above accounting costs, and we are facilitating rapid copper switch off. Our approach of supporting Openreach in transitioning consumers from its copper network to its fibre network will significantly reduce the risk that customers will not migrate to its fibre network. In the long run, we expect that in many parts of Area 2 it will be competition, rather than regulation, that will drive market outcomes and Openreach's returns. If circumstances did eventually emerge where we needed to impose price regulation in future, we would take account of the 'fair bet' principle.

Proportionality of our proposed approach

- 1.90 We recognise that achieving our objective of supporting investment in fibre networks through promoting network competition, while sufficiently protecting consumers in the short term involves the use of regulatory judgment. However, we think our proposed approach of maintaining price caps at their current levels in real terms will achieve this objective, and we consider this judgment to be reasonable. We base this on the amount of investment that is already underway; the stability and certainty our proposals will provide to investors over the medium term; estimates of Openreach's cost-recovery; and our view that consumers will continue to be protected from excessive prices over the review period.
- 1.91 As noted above, we consider that this approach is the most effective and least onerous option for achieving our objective. We acknowledge that providing incentives to invest involves some costs to consumers in the short term. However, we consider that the approach we are taking is proportionate since we are targeting this approach to areas where we expect competitive network build to be likely, and therefore where we expect consumers to benefit from this approach over the longer-term.³⁰ We do not consider that a more limited intervention would achieve our objective.
- 1.92 Some stakeholders argued that we had not presented a cost-benefit analysis of our proposals to show how the long-term benefits outweigh what they perceive to be the short-term costs. When choosing the appropriate regulatory approach, our starting point is to ensure we meet our statutory duties. For the reasons we set out, we consider our proposals are proportionate and appropriate in light of our objective, which meets those duties. We are now seeing both Openreach and alternative operators planning and starting to build FTTP networks. If we were to now tighten price regulation, and risk undermining

³⁰ This is the first market review in which we are able to better target measures designed to incentivise competitive network deployment in geographic areas where we expect network build to be likely. This is different to the 2018 WLA and 2019 BCMR, where measures to incentivise competitive network deployment were balanced against the impact on consumers over a larger geographic area.

that investment, we would see this as compromising the interests of consumers over the longer term.

- 1.93 We have not undertaken a formal, detailed, quantitative cost-benefit analysis of the kind proposed by stakeholders. Nevertheless, we consider the long-term benefits of increased network competition supported by our proposals will outweigh any higher prices paid by consumers in the short term. Even a simple illustrative calculation suggests it is likely that consumers will benefit. For example, if over this review period prices were £1.50 higher per line per month, and 5 million premises are passed by new rival networks, the long-term benefits would need to be less than £1.50 per month per home passed for the benefits to outweigh the costs.³¹ We are of the view that this is more than likely since it represents a very substantial injection of additional competition. In addition, this does not take into account the benefits that would arise in the leased lines market, through the promotion of investment in MSNs.
- 1.94 We consider that the benefits of our proposals will not be limited to the long-term gains arising from new network competition alone. The threat of network competition, which is supported by our proposals, is leading Openreach to accelerate its own fibre investment programme, and our pricing proposals are well suited to allowing Openreach to recover the costs of that accelerated roll out.
- 1.95 Therefore, we do not consider that our proposal gives rise to any adverse effects that are disproportionate to our objective.

Legal tests

- 1.96 We are proposing to set SMP conditions on BT in relation to the market for WLA in Area 2 to give effect to the pricing remedies described above. We set out further details of the proposed charge controls in Section 3, and our draft SMP conditions can be found in Volume 5.
- 1.97 As explained above, we consider there to be a risk that, absent regulation, BT might fix and maintain prices at an excessively high level and/or impose a price squeeze in that market so as to have adverse consequences for end users.
- 1.98 As required by section 88 of the Act, we consider that the setting of the draft SMP conditions would be appropriate for the following purposes:
- a) Promoting efficiency – we consider that supporting network competition and investment by Openreach and others promotes efficiency. In addition, in the absence of competitive pressures, we believe that Openreach would have limited incentives to reduce its costs of providing WLA services. Our proposals also encourage Openreach to

³¹ The costs have been calculated by multiplying the number of broadband lines in Area 2 (21.3 million lines), by £1.50 per month for 5 years. The benefits assume 1 million homes will be passed each year for 5 years, and that that the £1.50 benefit per month per home passed will be permanent. All calculations assume a discount rate of 3.5%. If costs were £1.50 higher per broadband line in Area 2, this would amount to total costs to consumers of £1.7billion, which is above our estimates of Openreach's potential over-recovery over both WLA and leased lines services over the review period, which we set out in Annex 16.

achieve greater productive efficiency by allowing it to keep any profits it earns from reducing costs over the review period.

- b) Promoting sustainable competition – the draft conditions are intended to incentivise investment in new networks by both Openreach and rival network operators. As explained above, we expect a substantial amount of network build to emerge during the review period, which will play an important and long-term role in protecting consumers and promoting sustainable retail competition.
- c) Conferring the greatest possible benefits on end users of public electronic communications services - the draft conditions incentivise investment in new, rival networks, which we consider will deliver the greatest possible benefits for end users. Our view is that a tightening of price regulation now would compromise the interests of consumers over the longer term. As discussed above, we think that the long-term benefits to consumers of our proposed approach will be larger than the short-term costs.

1.99 We have also taken account of the extent of BT’s investment in the matters to which the draft conditions relate by encouraging network competition, which provides an incentive for Openreach to invest in fibre; ensuring Openreach can make a reasonable return on its investments; and allowing Openreach to set prices somewhat above its costs which provides financial support for further investment.

1.100 As discussed in Volume 1, we anticipate that the test set out in section 88 of the Act may be amended before we issue our Final Statement, to give effect to Article 74 of the EECC. This requires NRAs, in determining whether price control obligations would be appropriate, to take into account the need to promote competition and long-term end-user interests related to the deployment and take-up of next-generation networks, and in particular of very high capacity networks. NRAs are also required to ensure that any mandated cost recovery methodology or pricing mechanism serves to promote the deployment of new and enhanced networks. We have explained in detail above how we expect our proposed pricing remedies to promote the deployment of new, competing networks, and why we consider this will be for the long-term benefit of consumers. We expect these new networks to be high capacity.

1.101 Article 74 of the EECC also states that, when NRAs consider it appropriate to impose price control obligations on access to existing network elements, they should also take account of the benefits of predictable and stable wholesale prices in ensuring efficient market entry and sufficient incentives for all undertakings to deploy new and enhanced networks. We have explained above why we consider our preferred approach of pricing continuity will deliver these benefits.

1.102 In Section 7, we explain why the setting of these draft SMP conditions would satisfy the test set out in section 47 of the Act.

Leased lines access in Area 2

- 1.103 We have considered different approaches to setting charge controls in relation to LL access, including approaches suggested by stakeholders in response to our March 2019 Consultation. We have assessed how they would perform against our objective of supporting investment in fibre networks through promoting network competition, while protecting consumers from excessive pricing or a loss of retail competition in the short term.
- 1.104 Below, we set out our assessment of the following options:
- a) **Pricing continuity:** keeping price caps on all services the same in real terms.
 - b) **Cost-based controls:** setting price caps in line with costs.
 - c) **'Adaptive regulation':** this would have two parts: (1) cost-based controls before rival fibre rollout has occurred in an area; (2) a price floor (with reference to an entrant's cost) once rival fibre rollout has occurred in an area.
- 1.105 After assessing how each option would perform against our objective, we set out our preferred option. We also set out our assessment of whether that approach is proportionate.³²

Option 1: Pricing continuity

- 1.106 In this section we set out our views on whether pricing continuity, which would mean keeping price caps on all services the same in real terms, would meet our objective. We first assess the impact pricing continuity would have on network competition and investment. We then assess whether it would protect consumers from excessive pricing or a loss of retail competition.

Impact on competition and investment

- 1.107 Pricing continuity would involve setting price caps somewhat above Openreach's costs. We are of the view that this approach would better support investment in competing networks, as discussed in relation to WLA services above. This is because building (or sponsoring) an alternative network becomes more attractive relative to buying wholesale services from Openreach. Higher wholesale prices for Openreach services also allow for higher margins on competing services supplied by alternative networks.
- 1.108 We consider that this approach to pricing for regulated LL Access products would support investment in networks focused on leased lines as well as networks offering both broadband and leased lines:
- a) For telecoms providers focused on providing leased lines, this approach to pricing supports the business case for investment.

³² We do not consider again how each of these options might be implemented; the same considerations apply as set out above in our discussion of these potential options for WLA services in Area 2.

- b) Where operators are looking to deploy MSNs, we have evidence to suggest that leased lines could play an important role in enabling the business case for investment (see Annex 7).
- 1.109 Given the level of competitive network investment that is underway in both leased line-only networks and MSNs, we consider that the current level of price regulation would be consistent with our goal of promoting network competition and investment, and that pricing continuity would allow this momentum to be sustained. We also consider that this approach would send an important signal to investors that we continue to be committed to setting prices that support investment, as discussed above in relation to WLA services.
- 1.110 By continuing to support investment in MSNs, this approach would also encourage Openreach to invest in fibre in the WLA market.

Impact on consumers and retail competition

- 1.111 In potentially competitive areas, we would expect a substantial amount of rival network build to emerge during the review period if we maintained the current level of price regulation. This would play an important and long-term role in protecting consumers.
- 1.112 In this section, we assess whether this approach would also provide an appropriate level of protection for consumers against Openreach charging excessive prices and maintain retail competition in the short term. We discuss:
- a) Protection of consumers on services of 1Gbit/s and below;
 - b) Protection of consumers on VHB services; and
 - c) Protection of retail competition based on BT's network.

Price cap on services of 1Gbit/s and below

- 1.113 In the charge control currently in place, we kept prices constant in nominal terms and we expect that prices will be close to or slightly below costs by the start of the review period (April 2021).
- 1.114 By keeping prices constant in real terms from that point, we have estimated that prices may not diverge from costs of supplying these services to a large degree. We set out our estimates of the level of BT's cost recovery over these services, taking into account this uncertainty in Annex 16.

Price cap on VHB services

- 1.115 VHB services are currently priced above accounting cost and holding price caps constant in real terms is likely to lead to some cost over-recovery in the short term.

- 1.116 We set out our estimates of the level of BT's cost recovery over these services if we maintain constant price caps in real terms, taking into account the uncertainty in prices and volumes, in Annex 16.³³
- 1.117 However, we expect that the availability of PIA, which supports investment in alternative networks, will impose some constraint on Openreach's prices for VHB leased lines over the review period. As explained in Annex 7, we have evidence of significant planned and potential network build, facilitated by the duct and pole access remedy we are imposing. We also have evidence that large customers of Openreach's VHB services are actively considering opportunities to source these from alternative networks (including those not yet built). We expect this increasingly to offer alternatives to customers. In addition, it will increasingly act as a constraint on Openreach's prices.
- 1.118 In terms of the impact on purchasers (or potential purchasers) of VHB services, most are very large businesses or telecoms providers, including mobile network operators who are investing in 5G networks supported by VHB leased lines. In most cases, VHB connectivity is critical to their business, but accounts for a relatively small proportion of their overall costs. Therefore, it seems unlikely that maintaining VHB prices at their current levels over this review period (rather than constraining them to cost) would deter these users from purchasing the services they need while competition emerges. In the case of mobile network operators, providing additional backhaul capacity to support 5G is a strategic priority.

Impact on competition at the retail level

- 1.119 We consider that maintaining prices at current levels would provide adequate protection over the review period and ensure that access seekers are still able to purchase the services they rely on, while competition continues to develop.
- 1.120 Some stakeholders argued that we should impose a fair and reasonable condition as well as a charge control on VHB leased lines, as a flat price control is likely to give Openreach too much pricing flexibility. If the intention behind this proposal is that a fair and reasonable condition would cause Openreach to reduce its prices for VHB services, we disagree that this is necessary. This is because we are of the view that the price cap, together with increasing competitive constraints, would provide adequate protection to consumers over the review period. If the intention is that this would protect from margin squeeze, these services account for a small proportion of the market and as such it is unlikely that a margin squeeze strategy could impact retail competitors' market shares.

Option 2: Cost-based price caps

- 1.121 In this section we set out our views on whether setting price caps in line with costs would meet our objective. We first assess the impact cost-based price caps would have on

³³ There is likely to be some volume growth in VHB services delivered over Openreach's network over the charge control period, however the amount is uncertain.

network competition and investment. We then assess whether they would protect consumers from excessive pricing or a loss of retail competition.

Impact on competition and investment

- 1.122 We are of the view that a return to cost-based price caps would reduce the incentive to invest in competing networks, signal that we are moving away from our approach of setting prices to support network competition and investment, and risk undermining current and planned investment, for the reasons described above in relation to WLA services.
- 1.123 We consider that cost-based price caps for regulated LL Access products in Area 2 would have the following effects:
- a) For telecoms providers focused on providing leased lines, tighter price regulation would make it more attractive for existing and potential purchasers of leased lines to rely on Openreach products than consider alternatives.
 - b) Where operators are looking to deploy MSNs, tighter price regulation would risk undermining the business case for rival network investment.
- 1.124 We consider that a cost-based price cap for VHB services in particular would reduce the opportunity for competitive dynamics to take a stronger role and reduce the potential for competitors to win high value services. Competitive opportunities in this area can be important in supporting investment. Accordingly, a cost-based price cap on these services would risk undermining investment.

Impact on consumers and retail competition

- 1.125 Cost-based pricing would involve a reduction in the prices of leased lines access, in particular for VHB services. It would also support retail competition as low wholesale prices would be guaranteed and the risk of margin squeeze would be minimised.

Option 3: Adaptive regulation

- 1.126 Adaptive regulation would have two parts: (1) cost-based controls before rival fibre rollout has occurred in an area; (2) a price floor (with reference to an entrant's cost) once rival fibre rollout has occurred in an area.
- 1.127 We described our detailed assessment of adaptive regulation above in relation to regulation of WLA services. We are of the view that the same considerations would apply to leased lines. Our views discussed above in relation to cost-based caps on leased lines services also apply in this case. In summary, although adaptive regulation would protect consumers and retail competition based on Openreach's network in the short-run, we consider that this would not support network competition and investment.

Our preferred approach is pricing continuity

- 1.128 As explained above, we are of the view that maintaining the current level of price regulation would be effective to achieve our objective of supporting investment in fibre networks through promoting network competition in leased lines networks and MSNs, while protecting consumers from excessive pricing or a loss of retail competition in the short term.
- 1.129 Cost-based controls and adaptive regulation would provide more protection to consumers and retail competition in the short-run. However, we consider that these approaches would be unlikely to promote network competition, which would deliver benefits to consumers in the longer term, and would risk undermining competitive network investment. These approaches therefore do not meet our objective.
- 1.130 In addition, and as discussed above in the context of WLA services, we consider there to be potential legal issues with the adaptive regulation approach, it would be complex to implement and would create administrative burden (assuming competitive roll-out did still occur to some extent).³⁴
- 1.131 Our preferred option is therefore to maintain pricing continuity in the LL Access market in Area 2. We consider this option would be effective to achieve our objective of supporting investment in fibre networks through promoting network competition, while protecting consumers against excessive pricing and maintaining retail competition in the short term. We also consider it to be the least onerous effective option. We check below to ensure this approach does not produce adverse effects which are disproportionate to the objective.
- 1.132 We therefore propose that for services currently subject to charge controls, price-caps will remain constant in real terms. This means that for LL Access in Area 2, we are proposing a charge control on rental and connection charges for leased lines of all bandwidths, inflation-adjusted from 2021 levels.³⁵

Proportionality of our proposed approach

- 1.133 In the same way as we discussed in relation to WLA services, we recognise that achieving our objective of setting prices of leased lines to support investment in competing networks while sufficiently protecting consumers involves the use of regulatory judgment. However, we think our proposed approach of maintaining price caps at their current levels in real terms will achieve this objective. We base this on the amount of investment that is already underway; the stability and certainty our proposals will provide to investors over the

³⁴ Even if we considered adaptive regulation would be likely to achieve our objective, it would not be the least burdensome means of doing so.

³⁵ As noted in Volume 3 Section 3, we are also proposing to impose an obligation for charges for network access to be fair and reasonable, except to the extent that a specific charge control or a basis of charges obligation applies. Our general position is that we would interpret this fair and reasonable obligation to mean that in the Area 2 markets, BT should not set prices that would equate to a margin squeeze under ex post competition law for existing and new forms of network access. While we would assess any dispute on the relevant facts, our starting point for evaluating cost and margins in this context would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard.

medium term; estimates of Openreach's cost-recovery; and our view that consumers will continue to be protected from excessive prices over the review period.

- 1.134 As noted above, we consider that this approach is the least onerous effective option for achieving our objective. We have also considered whether it would give rise to any adverse effects that are disproportionate to the aim pursued.
- 1.135 In Annex 16, we set out our estimates of Openreach's cost recovery over leased lines over the review period under our proposals.
- 1.136 We are of the view that supporting the emergence of network competition – both in leased lines only networks and MSNs - will result in more effective competition in the provision of leased lines services, delivering significant benefits to consumers in the long term. We have not undertaken a formal, detailed, quantitative cost-benefit analysis. Nevertheless, we consider the long-term benefits of increased network competition supported by our proposals will outweigh any higher prices paid by consumers in the short term.
- 1.137 Moreover, in this case, where investment is in MSNs, this will also deliver significant benefits in the WLA market. In the proportionality assessment undertaken in relation to WLA services above, we illustrate why we think that the benefits of our proposals in the WLA market will more than outweigh the short-term costs of not imposing cost-based price caps. We remain of this view when costs related to our leased line proposals are also included.
- 1.138 Therefore, we do not consider that our proposal gives rise to any adverse effects that are disproportionate to our objective.

Legal tests

- 1.139 We are proposing to set SMP conditions on BT in relation to the market for Leased Line Access in Area 2 to give effect to the pricing remedies described above. We set out further details of the proposed charge controls in Section 3, and our draft SMP conditions can be found in Volume 5.
- 1.140 As explained above, we consider there to be a risk that, absent regulation, BT might fix and maintain prices at an excessively high level and/or impose a price squeeze in that market so as to have adverse consequences for end-users.
- 1.141 As required by section 88 of the Act, we consider that the setting of the draft SMP conditions would be appropriate for the following purposes:
- a) Promoting efficiency – we consider that supporting network competition in leased lines and MSNs promotes efficiency. In addition, in the absence of competitive pressures, we believe that Openreach would have limited incentives to reduce its costs of providing leased lines services. Our proposals also encourage Openreach to achieve greater productive efficiency by allowing it to keep any profits it earns from reducing costs over the review period.

- b) Promoting sustainable competition – the draft conditions are intended to incentivise investment in new leased lines networks and MSNs by both Openreach and rival network operators. As explained above, we expect a substantial amount of network build to emerge during the review period, which will play an important and long-term role in protecting consumers and promoting sustainable retail competition;
 - c) Conferring the greatest possible benefits on end users of public electronic communications services - the draft conditions incentivise investment in new, rival leased lines networks and MSNs, which we consider will deliver the greatest possible benefits for end-users over the long term. Our view is that a tightening of price regulation now would compromise the interests of consumers over the longer term.
- 1.142 We have also taken account of the extent of BT's investment in the matters to which the draft conditions relate by ensuring Openreach can make a reasonable return on its investments.
- 1.143 As discussed in Volume 1, we anticipate that the test set out in section 88 of the Act may be amended before we issue our Final Statement, to give effect to Article 74 of the EECC. This requires NRAs, in determining whether price control obligations would be appropriate, to take into account the need to promote competition and long-term end-user interests related to the deployment and take-up of next-generation networks, and in particular of very high capacity networks. NRAs are also required to ensure that any mandated cost recovery methodology or pricing mechanism serves to promote the deployment of new and enhanced networks. We have explained in detail above how we expect our proposed pricing remedies to promote the deployment of new, competing leased lines networks and MSNs, and why we consider this will be for the long-term benefit of consumers. We expect these new networks to be high capacity networks.
- 1.144 Article 74 of the EECC also states that, when NRAs consider it appropriate to impose price control obligations on access to existing network elements, they should also take account of the benefits of predictable and stable wholesale prices in ensuring efficient market entry and sufficient incentives for all undertakings to deploy new and enhanced networks. We have explained above why we consider our preferred approach of pricing continuity will deliver these benefits.
- 1.145 In Section 7, we explain why the setting of these draft SMP conditions would satisfy the test set out in section 47 of the Act.

Leased lines access in High Network Reach Areas

- 1.146 We provisionally conclude that BT has SMP in LL Access in HNR areas. We consider that there is a risk that, absent regulation, BT would have the incentive and ability to impose a price squeeze so as to have adverse consequences for end-users, through weaker retail competition. However, our provisional SMP finding is finely balanced as we also find that competition is more developed in HNR areas.

- 1.147 In developing our proposed pricing remedies for LL access in the HNR areas, we have had regard to our provisional conclusion on SMP and our overarching legal duties. Consistent with the approach to remedies set out in Section 1 of Volume 3, we propose to exercise our discretion in setting pricing remedies in favour of an approach that supports investment in fibre networks through promoting network competition, while protecting consumers from excessive pricing or a loss of retail competition in the short term.³⁶ As noted above, we are keen to encourage investment in both leased lines only networks and MSNs.
- 1.148 LL Access in HNR areas is currently subject to a fair and reasonable condition. Below we set out how a fair and reasonable condition would perform going forward against our objective.

Assessment of a fair and reasonable obligation on leased line access in HNR areas

Impact on competition and investment

- 1.149 A fair and reasonable condition would oblige Openreach to supply wholesale access products on terms which do not constitute a price squeeze. However, the actual level of such wholesale prices would not be limited, allowing the wholesale prices to be determined in relation to competition at the retail level.
- 1.150 This would be likely to create incentives for investment by rival networks, as the lack of security over wholesale prices would reduce the incentives on access seekers to purchase wholesale access products from Openreach and increase the incentives to purchase from rival operators or to extend their own network.

Impact on consumers and retail competition

- 1.151 We provisionally conclude that BT has SMP in the provision of LL access in HNR Areas, albeit this finding is finely balanced. Although these areas are not effectively competitive, we find competition to be more developed than in other areas. Moreover, the potential for new network deployments, particularly in light of the availability of a PIA remedy, means that the strength of competition in these areas is likely to increase over this review period, with the potential for them to emerge as fully competitive in future review periods. The greater degree of competition in HNR Areas will constrain Openreach's ability to raise prices.
- 1.152 In terms of the impact on retail competition, a fair and reasonable condition would ensure that access seekers would still be able to purchase the services they rely on.³⁷

³⁶ We explain in Volume 1 Section 2 how this objective meets our legal duties.

³⁷ While we would assess any dispute as to whether charges are fair and reasonable on the relevant facts, our starting point for evaluating cost and margins in this context would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard.

Our preferred approach is to maintain a fair and reasonable condition

- 1.153 For the reasons we set out above, we would expect a fair and reasonable charging obligation to preserve investment incentives by allowing prices to be above cost to some degree. The greater degree of competition in HNR Areas would constrain Openreach's ability to raise prices, and the fair and reasonable charging obligation would protect retail competition. We therefore consider that maintaining a fair and reasonable condition would be effective in achieving our objective.
- 1.154 We are therefore proposing that Openreach should be obliged to set charges for LL access in HNR Areas that are fair and reasonable, meaning supply wholesale access products on terms which do not constitute a price squeeze.

Proportionality

- 1.155 We consider that imposing an obligation for charges to be fair and reasonable is proportionate, as it goes no further than is necessary, reflecting the underlying provisional SMP finding. It recognises the existing and greater expected future levels of competition in HNR Areas. We have not identified any adverse effects of a fair and reasonable charges condition that would be disproportionate to the aim pursued.

Legal tests

- 1.156 We are proposing to set SMP conditions on BT in relation to the market for LL Access in the HNRs to give effect to the fair and reasonable condition described above. Our draft SMP conditions can be found in Volume 5.
- 1.157 As explained above, we consider there to be a risk that, absent regulation, BT might impose a price squeeze in each of those markets so as to have adverse consequences for end-users.
- 1.158 As required by section 88 of the Act, we consider that the setting of the draft SMP conditions would be appropriate for the following purposes:
- a) Promoting efficiency – we consider that supporting network competition in leased lines and MSNs promotes efficiency. Our proposals also encourage Openreach to achieve greater productive efficiency by allowing it to keep any profits it earns from reducing costs over the review period.
 - b) Promoting sustainable competition – the draft conditions are intended to incentivise investment in new leased lines networks and MSNs by both Openreach and rival network operators. As explained above, the potential for new network deployments in the HNRs, supported by the availability of a PIA remedy, is likely to increase competition in these areas in future, which will play an important and long-term role in protecting consumers and promoting sustainable retail competition.
 - c) Conferring the greatest possible benefits on end users of public electronic communications services – the draft conditions incentivise investment in new, rival

networks, which we consider will deliver the greatest possible benefits for end-users over the long term.

- 1.159 We have also taken account of BT's investment in the matters to which the draft conditions relate by ensuring Openreach can make a reasonable return on its investments.
- 1.160 As discussed in Volume 1, we anticipate that the test set out in section 88 of the Act may be amended before we issue our Final Statement, to give effect to Article 74 of the EECC. This requires NRAs, in determining whether price control obligations would be appropriate, to take into account the need to promote competition and long-term end-user interests related to the deployment and take-up of next-generation networks, and in particular of very high capacity networks. NRAs are also required to ensure that any mandated cost recovery methodology or pricing mechanism serves to promote the deployment of new and enhanced networks. We have explained above how we expect our proposed remedy to promote the deployment of new, competing networks, and why we consider this will be for the long-term benefit of consumers. We expect these new networks to be high capacity networks.
- 1.161 In Section 7, we explain why the setting of these draft SMP conditions would satisfy the test set out in section 47 of the Act.

Consultation question

Question 1.1: Do you agree with our proposals for charge controlling WLA and LL access services in Area 2? Please set out your reasons and supporting evidence for your response.

2. Price regulation in Area 3

- 2.1 In this section we set out our proposals for setting charge controls in Area 3 in relation to:
- a) Wholesale local access (WLA) markets.
 - b) Leased lines access (LL access) markets including dark-fibre.
- 2.2 Table 2.1 summarises our proposals.

Table 2.1: Summary of proposals in Area 3³⁸

Service	Proposal
WLA services in Area 3	<p>a cost-based charge control on MPF and FTTC rental charges across all bandwidths</p> <p>a RAB charge control to support Openreach's investment in fibre networks whereby MPF and FTTC charges are marked-up to allow the recovery of BT's fibre investment costs where pre-specified investment targets are met</p>
LL access in Area 3	<p>a charge control on rental and connection charges for leased lines of all bandwidths, inflation-adjusted from 2021 levels</p> <p>a cost-based charge control on dark fibre access</p>

- 2.3 Our proposals for setting charge controls in the inter-exchange market are covered in Section 5.
- 2.4 Our proposals for setting charge controls for ancillary services is covered in Section 7.

Our objective in Area 3

The competition problem

- 2.5 Absent regulation, Openreach would have the incentive and ability to fix and maintain prices for WLA and LL Access in Area 3 at an excessively high level and/or impose a price squeeze so as to have adverse consequences for end-users (including through a weakening of retail competition). Additionally, in the absence of competition, Openreach will face weak incentives to deploy new and better networks. As set out in Volume 3 Section 5, we therefore propose to impose charge controls on these services to prevent BT abusing its market power.

³⁸ As noted in Volume 3 Section 3, we are also proposing to impose in each relevant fixed telecoms market an obligation for charges for network access to be fair and reasonable, except to the extent that a specific charge control or a basis of charges obligation applies.

Our objective

- 2.6 In developing these proposed charge controls, we have had regard to our overarching legal duties. Consistent with the approach to remedies set out in Volume 3 Section 1, we propose to exercise our discretion in setting these controls in favour of an approach that sets appropriate incentives for BT to invest in fibre networks, while protecting consumers from excessive pricing (including through a weakening of retail competition).³⁹ We consider this will best serve the interests of consumers, as the roll-out of fibre networks will deliver long term consumer benefits.
- 2.7 We give less weight in Area 3 to setting charge controls that incentivise rival network investment, as we do not believe that there will be material competitive fibre deployment in these areas.
- 2.8 Notwithstanding the above, we have also sought to encourage telecoms providers that rely on access to BT's network to invest as deep into the network as possible.
- 2.9 These considerations apply to both WLA and LL access.
- 2.10 For each of WLA and LL access, we have considered which charge control options are effective to achieve our objective and which of those effective options is the least onerous. Having identified our preferred option, we have checked to ensure that the option does not produce adverse effects which are disproportionate to the aim pursued. We set out this assessment for each of WLA and LL access below.

Wholesale local access services

- 2.11 We have considered three options for charge controlling WLA services:
- a) Maintaining our current approach to regulation, which relies solely on regulating the existing copper services and requiring the costs of fibre investments to be recovered solely from the sale of fibre products; or
 - b) A RAB- approach, in which the costs of fibre investments are recovered from all products, including the existing copper services. The RAB approach might be based on either:
 - i) a forecast approach; or
 - ii) a post-build approach.
- 2.12 In the sub-sections below, we assess each of these options against our objective of setting appropriate incentives for BT to invest in fibre networks, while protecting consumers from excessive pricing.

³⁹ We explain in Volume 1 how this objective meets our legal duties.

Maintaining our current approach to regulation

- 2.13 Where we do not expect significant network competition, our typical approach to setting charge controls is to:
- Impose a cost-based charge control on Openreach's legacy WLA services (MPF and FTTC services).
 - Not impose charge controls on new technologies (such as FTTP) for a period.
- 2.14 Such an approach would prevent Openreach from increasing prices for customers taking legacy services, while providing incentives to invest in new technologies provided this can generate Openreach more profit (compared to continuing to sell legacy services).
- 2.15 However, under this approach and given the characteristics of Area 3 there is a material risk that Openreach would not invest in fibre services. This is because Openreach's incentives to invest in fibre are likely to be influenced by the following factors:
- **Impact on market share:** In Area 2 investing in fibre services can improve Openreach's ability to retain its market share as it will be competing against operators who will be deploying their own fibre networks. In Area 3, Openreach's investment incentives are weaker because it is likely to retain a high market share even if it does not deploy fibre.
 - **Level of costs:** Profitability is likely to be lower in Area 3 because build costs are, on average, higher (since the density of premises is lower) than in Area 2.⁴⁰
 - **Impact on revenues:** Openreach could attempt to increase profits by charging higher prices for fibre services (i.e. earning a fibre premium). However, Openreach's ability to charge more for fibre services will be limited. For example, the current level of broadband prices in the market will likely constrain the level of the fibre premium Openreach could charge: if the price increase from moving from copper services to fibre services is too high then fewer customers are likely to switch.
- 2.16 Additionally, the long-term nature of the FTTP investment may discourage Openreach from investing. Openreach might prefer to invest in shorter-term projects with quicker payback periods that may satisfy shareholder demands and will not rely on needing Ofcom to maintain regulatory commitments over multiple review periods. Openreach may also prefer to defer investment until pent-up demand for fibre services becomes clearer.
- 2.17 We therefore consider that our typical approach to setting charge controls would not provide sufficient incentives for Openreach to deploy fibre networks in Area 3.

⁴⁰ Information provided by Openreach on 19 December 2018.

RAB approach

We consider that a RAB approach could support fibre investment in Area 3

- 2.18 A RAB approach can help us ensure consumers are protected from excessively high prices whilst providing Openreach with incentives to invest in fibre.
- 2.19 In general terms, a RAB approach involves the assets of all the operator's services being entered into a common pool known as the regulatory asset base (or RAB) which is recovered across all of the firm's services. This allows an operator to recover the costs of a particular service (e.g. Service A) through revenues earned from multiple services (e.g. Service A and Service B).
- 2.20 In the present case, adopting a RAB approach could allow Openreach to recover fibre investment costs across a wider range of services, for example, from customers taking existing copper services as well customers who take up the new fibre services. In contrast, under our typical approach, legacy copper prices would be set by reference to the accounting costs of copper, meaning Openreach would need to recover all of the investment costs of deploying the fibre network from fibre customers. For the reasons set out above this may not be profitable. As such, a RAB approach can help secure investment in cases where it might not otherwise occur by providing Openreach with more certainty of cost recovery.
- 2.21 In summary, we consider that a RAB approach would meet our objective of providing sufficient incentives for Openreach to invest in fibre, while providing for prices across the full range of products that are cost reflective.
- 2.22 In adopting a RAB approach, we would seek to allow Openreach to recover enough of the FTTP investment cost from copper services to make the business case for investing profitable. We would also aim to protect consumers taking copper services from the risk of price increases. With this in mind, we are proposing an approach whereby:
- The costs of legacy services such as MPF and FTTC would continue to be entirely recovered from the consumers that purchase the legacy services; and
 - The costs of new fibre services would be shared across consumers that purchase fibre services and consumers that purchase legacy services.

There are various forms of RAB charge controls that could meet our objective

- 2.23 A RAB approach is intended to provide Openreach with incentives to invest in fibre by allowing the costs of the fibre investment to be spread widely across its customer base. Although there are various way of putting this into practice, we consider that the following steps will typically be involved:
- a) Valuing the existing assets that are relevant to the RAB at the start of the control period.
 - b) Estimating the level of investment over the control period.

- c) Setting the terms of cost recovery – which determines how the recovery of the fibre investment will be shared between customers taking fibre services and customers taking legacy copper services.
- d) Ensuring Openreach delivers the investment - for example, assessing Openreach’s delivery of its investment plans in each year in terms of aspects like network coverage and the quality of the services being offered.
- 2.24 In its response to our March 2019 Consultation, Openreach disagreed with our proposals, stating that it would not be incentivised to invest and that our RAB proposals were overly complex. Its preference was to apply the same price caps in non-competitive areas as in potentially competitive areas, i.e. flat prices indexed to CPI and a premium on the new FTTP anchor. Openreach indicated that under these pricing arrangements it would consider making roll-out commitments in Area 3.⁴¹
- 2.25 We consider that Openreach’s suggested approach is one possible variant of a RAB charge control where additional revenue to fund the fibre investment is allowed from the beginning of the control through higher legacy service prices based on a forecast of Openreach’s fibre roll-out. This can be described as a ‘forecast’ approach, which can be contrasted with a ‘post-build’ approach:
- **Forecast approach:** this is a typical CPI-X form of price cap which is set in advance and remains fixed for the duration of the control. The level of the X would be set to allow recovery of the fibre investment costs and based on a commitment from Openreach regarding the level of fibre deployment.
 - **Post-build approach:** this is a CPI-X+K form of price cap where the CPI-X part of the formula is set in advance to allow cost recovery of legacy copper services. The K factor represents the mark-up to allow recovery of fibre investment costs and its application would vary each year depending on whether Openreach achieves pre-specified investment delivery targets.
- 2.26 As set out below, the choice of forecast or post-build approaches will impact both the terms of cost recovery and how we would ensure Openreach delivers an investment (steps c and d above).

Forecast approach

- 2.27 Forecast type approaches to setting price caps are commonly used in other regulated industries that operate with a RAB framework. A forecast approach benefits from being relatively simple and transparent to implement as well as providing customers with a predictable path of prices.
- 2.28 In addition, noting Openreach’s suggestion of a cap indexed with CPI, there could be added advantages of a consistent pricing approach across geographies because there is uncertainty where the boundary between Area 2 and Area 3 will materialise over the course of the review period. Further, although we do not expect widescale competing fibre

⁴¹ Openreach response to the March 2019 consultation. Paragraph 16.

deployment to develop in Area 3, it is possible that some limited investment will occur. In this case, higher prices for copper services from the beginning of the control could have a positive impact on rival network investment.

- 2.29 The main challenge with this approach is confirming that Openreach's investment commitments would be sufficient and ensuring that Openreach delivers its committed investment programme. Our confidence that Openreach will meet its commitments will depend on the nature of those commitments. In order for us to have confidence in a forecast approach, we would need to satisfy ourselves that either Openreach's commitments are robust or we have a way of enforcing any commitment that Openreach makes.

Post-build approach

- 2.30 Under the post-build approach, Openreach only receives the additional revenue through higher MPF and FTTC charges once a certain amount of build has occurred (as measured by some deployment metric e.g. homes passed). The advantage of this approach is that by linking the price caps to investment outcomes, it provides Openreach with direct incentives to deliver the investment. This would also ensure that if investment does not occur customers would not be charged more for legacy services, obviating the need for any separate means of holding Openreach to its commitments.
- 2.31 However, compared to a forecast approach, the cashflows profile under post-build is less certain and under our planned implementation may lead to lower initial prices (because copper prices would rise only after a certain level of fibre deployment has occurred). In this regard, we note BT and Openreach have raised the concern that a post-build-type approach could lead to price instability and may truncate the opportunity to recover fibre costs from copper customers.^{42 43}
- 2.32 A post-build approach is also more complex to set and administer. For example, our current view is that a post-build approach would involve monitoring metrics such as homes passed and adjusting the charge control regularly based on the level of the K factor, e.g. each year. This may result in added uncertainty for Openreach's customers as the price cap level could vary each year depending on how much fibre Openreach builds.
- 2.33 More generally, tying prices directly to specified metrics means that Openreach's direct incentives are to maximise delivery specifically against those metrics at minimum cost. This may not generate the best outcomes for customers, since it is difficult to design metrics that are fully aligned with desired outcomes and the costs of different patterns and magnitudes of delivery are necessarily uncertain.

⁴² BT response to March 2019 consultation, pp. 38-44.

⁴³ Openreach response to March 2019 consultation, pp. 27-29.

Our preference is a forecast approach, but in the absence of sufficient commitments we would use a post-build approach

- 2.34 As noted above, we consider that either of the RAB charge control options could meet our objectives. It is more straightforward and would provide wholesale customers with added certainty on legacy prices during a period when they will be considering migrating many of their customers onto fibre. It would also be less onerous as it involves imposing fewer restrictions on Openreach and reduce the risk that Openreach focusses exclusively on delivering the specified metrics at minimum cost.
- 2.35 Noting that BT/Openreach has suggested CPI indexed prices, in setting the level of any forecast RAB control, we would need to carry out a value-for-money assessment of the scale of fibre rollout against the amount of additional revenue being provided.
- 2.36 Whilst we have a preference for a forecast approach, Openreach has not yet come forward with a firm fibre rollout plan for Area 3. In the absence of deployment commitments, we propose to use a post-build RAB charge control. If Openreach does decide to invest during the control period, a post-build RAB control will provide a facility to allow it to earn sufficient revenue to make the fibre investment profitable.

Proposed design of the post-build RAB charge control

- 2.37 To implement a post-build RAB charge control, there are some key design choices we need to make around the scope and level of that control.
- 2.38 As set out above, in Area 3 we do not expect investment in rival networks to a material extent. As a result, we consider that pricing flexibility for higher bandwidth FTTC services (GEA 55/10 FTTC and GEA 80/20 FTTC services) would harm consumers as it would not lead to significantly more network build and would likely result in higher prices than necessary to allow Openreach to recover its efficient incurred costs for its legacy FTTC network.
- 2.39 In terms of fibre services (FTTP and G.Fast), prior to Openreach fully deploying fibre (and our proposals relating to copper-retirement being triggered), we consider that pricing flexibility will strengthen Openreach's incentives to invest in fibre networks, whilst protecting consumers from excessive prices, since:
- the proposed charge controls on FTTC services will act as a constraint on fibre services.
 - pricing flexibility on fibre services will provide Openreach with slightly sharper incentives to build fibre because it can then capture incremental value from fibre customers.
- 2.40 In summary, we propose:
- a) Pre copper retirement, to set charge controls on MPF and FTTC (across all bandwidths) and allow pricing flexibility on Openreach's fibre services (FTTP and G.Fast).
 - b) to set CPI-X so that MPF and FTTC charges are brought into line with the costs of each service by the end of the charge control period (we discuss the path of prices for each service further in Section 3); and

c) that the costs of investing in FTTP and G.Fast will be recovered across FTTP and G.Fast services and legacy MPF and FTTC services through the K factor.

2.41 We set out details of these design decisions in Annex 18.⁴⁴ Below, we summarise our approach to setting recovery of FTTP and G.Fast costs through the K factor.

Methodology for calculating the fibre network costs to recover from copper services

2.42 When deciding whether to invest in fibre, Openreach will consider the business case over a reasonable payback period to satisfy its investors. The purpose of the RAB charge control is to make Openreach's fibre business case profitable. Hence, the first step is to calculate the shortfall in Openreach's fibre business case over the payback period in Area 3.

2.43 We have used information from Openreach's internal business planning documents and our own modelling of the costs of deploying a fibre network to estimate the net present value of the fibre business case for Area 3 as follows:

Figure 2.1: Methodology for calculating RAB



Fibre build and connection costs

2.44 We use our bottom-up fibre model to calculate the total cost of deploying and connecting a network in Area 3. In calculating build and connection costs, we calibrate our assumptions using actual and forecast data and business plan information from Openreach to ensure their reasonableness. For example, we compare our estimates to data on capex per home passed from Openreach's business plans and information gathered from Openreach's Chief Engineer's model to inform our range for re-use of existing physical infrastructure.

Incremental fibre revenue

2.45 We then deduct our estimate of the additional revenue Openreach will be able to earn from selling fibre services, compared to selling legacy copper services. This will reflect the additional willingness to pay of consumers for the higher speed and reliability of fibre services, as well as the £1.50-£1.85 premium for the 40/10 FTTP anchor when copper is

⁴⁴ As noted in Volume 3 Section 3, we are also proposing to impose an obligation for charges for network access to be fair and reasonable, except to the extent that a specific charge control or a basis of charges obligation applies. We are proposing this to address the risk of a price squeeze in relation to other forms of network access, which in our view arises from BT's vertical integration and significant market power. Our general position is that we would interpret this fair and reasonable obligation to mean that in the WLA Area 3 market, BT should not set prices that would equate to a margin squeeze under ex post competition law for existing and new forms of network access. While we would assess any dispute on the relevant facts, our starting point for evaluating cost and margins in this context would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard.

retired. As discussed in Annex 18, we estimate that customers would be willing to pay on average a premium of £1.50-£4.00 per month for fibre and have assumed that Openreach will price fibre services accordingly.

Net cost savings

- 2.46 We also deduct the anticipated operating cost savings that Openreach could benefit from when it retires its copper network, e.g. lower maintenance, accommodation and power costs. These cost savings will be partially offset by increased operational activity during FTTP deployment and some cannibalisation of leased lines revenues. Based on evidence gathered from Openreach's latest business plan and our own cost modelling, we estimate a net cost savings per line of [X] per month.

Approach to setting recovery of RAB – calculating the K factors

- 2.47 Under the post-build RAB approach, we are proposing that the K factor (in the CPI-X+K control) will be added to MPF and FTTC charges to provide Openreach with the extra revenue needed to allow cost recovery of a fibre investment. Under our proposals the level of 'K' will vary depending on the size of that fibre investment, i.e. the number of premises passed.
- 2.48 We are proposing to apply the K factors for individual 200,000 premises tranches of Openreach's fibre network build. Accordingly, a K factor will be added to MPF and FTTC charges on deploying to 200,000 premises, a separate (higher) K factor will be added on deploying to 400,000 premises, and so on. Therefore, as Openreach expands its fibre network (in tranches of 200,000 premises) MPF and FTTC charges will increase as their contribution to the recovery of fibre costs increases.
- 2.49 On this basis, we have calculated K factors that contribute an additional £0.04-£0.09 per month for each 200,000 homes Openreach passes with its fibre deployment. So, for example, if Openreach built to 1 million premises charges would increase by £0.22-£0.45 per month.

Implementation of the K factor in the charge control

- 2.50 To determine the level of the K factor that will apply for each year of the charge control, we are proposing to set a requirement on Openreach to report the number of homes it passes with fibre in Area 3 each year.
- 2.51 We propose to gather this network coverage information on the 31 October of each year, which will be five months before the start of each charge control year (running from 1 April to 31 March). We consider this will provide a sufficient window of time for Ofcom to carry out all the necessary checks on the coverage information and for Openreach to notify customers of price increases as K factors are applied.

Approach to the charge control post copper retirement

- 2.52 In Volume 3 Section 2, we propose that where Openreach has deployed its ultrafast network to cover 100% of premises within an exchange area⁴⁵, the charge control relating to legacy copper services will be removed and only the charge control on services provided on the fibre network will apply.⁴⁶
- 2.53 Once the First Threshold Notice has been published for an exchange (and stop-sell of copper services is in place), we propose to charge control the FTTP 40/10 service⁴⁷ (and allow price flexibility for higher bandwidth services). Our view is that allowing price flexibility for higher bandwidth FTTP services in non-competitive areas will provide greater scope for Openreach to earn revenues and thereby reduce the mark-up needed on copper services during this charge control period (via the RAB charge control) to fund the fibre investment.
- 2.54 Once the Second Threshold Notice has been published for an exchange: that is the exchange is ultrafast complete, the copper charge control will no longer apply where fibre is available.
- 2.55 In Section 1, we propose to include a 40/10 fibre premium in the FTTP price when the charge control switches from copper-based services to those provided on a fibre network. In Annex 18, we explain how we have estimated the 40/10 fibre premium.
- 2.56 A significant proportion of the 40/10 fibre premium derives from the additional value that we consider customers are likely to place on fibre services relative to copper services. We consider that given this additional value we should also apply a 40/10 fibre premium to the level of the FTTP 40/10 price post-copper retirement.
- 2.57 We propose to use the same 40/10 fibre premium as in potentially competitive areas of between £1.50 - £1.85. We recognise this includes an amount related to downstream operational cost savings which in Area 2 is relevant to preserving rival investment incentives. In Area 3 preserving rival network investment incentives is less of a consideration. However, we note that applying the full 40/10 fibre premium in non-competitive areas will reduce the mark-up on copper services needed to fund the fibre investment. Accordingly, in calculating the proposed K factors we have first subtracted the recovery of fibre investment costs we forecast Openreach will receive through the full 40/10 premium.
- 2.58 Therefore, under our proposals the FTTP 40/10 charge control price will equal the prevailing FTTC 40/10 price plus £1.50 - £1.85.

⁴⁵ In Volume 3 Section 2, we provide details of our proposed approach to transitioning our regulation from copper services to fibre services. We also discuss how we intend to assess 100% coverage in an exchange area, including premises where Openreach is not able to deploy ultrafast services despite all best endeavours.

⁴⁶ This only applies to premises where fibre is available. See Volume 3 Section 2.

⁴⁷ Where fibre is available at the premises.

Role of public subsidies and how these fit with our proposals

- 2.59 We recognise that even under our RAB framework there are some parts of the non-competitive area where it will not be economical for Openreach to deploy fibre and may require some form of government subsidy. In principle, we do not believe that a system of government subsidy will conflict with our RAB approach. We would not allow the proposed RAB charge control to be used to recover costs that have already been paid for through a subsidy.
- 2.60 Depending on the design of the subsidy system we may need to exclude all the costs and revenues from fibre lines that are part subsidised from the RAB. However, until the details of any subsidy system are confirmed we are unable to take a view of precisely how it will be incorporated in the RAB framework.

We consider our proposed approach to be proportionate

- 2.61 When choosing the appropriate regulatory approach, our starting point is to ensure we meet our statutory duties. We have set out our objective above and explained why achieving this objective will meet our duties. We then explained why our proposal for a post-build RAB charge control would be effective in achieving that objective and be the least onerous option for doing so.⁴⁸ As part of assessing proportionality, we have also considered whether our proposed approach would have adverse effects that are disproportionate to our objective.
- 2.62 We note that some stakeholders have raised concerns that competitive investment could take place in some parts of the non-competitive area and that cost-based legacy services together with a RAB approach could stifle that investment.
- 2.63 As set out in Volume 3 Section 7, based on our detailed assessment of the coverage of existing and planned fibre networks as well as identifying areas of potential build, we consider that competition is unlikely to develop to a material degree in the final 30% of the country.
- 2.64 We recognise that during the course of the review period, there will be some instances of build from other telecoms operators in non-competitive areas. However, based on the evidence we have gathered, such as the build plans of rival network operators, we consider that there is unlikely to be a material number of premises in the non-competitive areas that turn out to be potentially competitive.
- 2.65 We note that there are parts of the non-competitive area that are already served by operators such as Gigaclear and B4rn and that they may look to extend their networks during this period.
- 2.66 In accordance with our duties, we believe that such operators should be allowed a fair opportunity to compete in non-competitive areas. This is reflected in our proposed

⁴⁸ Although we consider the forecast approach is less onerous than the post-build approach, as explained above, in the absence of deployment commitments, we do not consider the forecast approach is available to us.

remedies which include a prohibition on Openreach discounting the price of legacy services in specific subparts of the non-competitive areas. However, as we do not expect material commercial deployment in non-competitive areas, we do not consider that it would be appropriate to incentivise rival network build by holding prices above cost (as in potentially competitive areas).

- 2.67 In terms of the option of implementing a RAB charge control, we agree that by construct this reduces Openreach's risk of investing in fibre in non-competitive areas. But this will not remove all commercial opportunities for rival operators. Under the post-build approach set out above, Openreach's copper services will have a cost-based price cap if it does not invest in fibre services. If Openreach does invest in fibre, legacy service prices will increase as the K factors get applied. For rival operators this means that either they will continue to have the opportunity to acquire customers by selling higher quality fibre services, or if Openreach builds fibre, the average price points in the market are likely to rise.
- 2.68 We therefore provisionally concluded that our proposals would not have adverse effects that are disproportionate to the aim pursued. Overall, we consider our proposals to be proportionate and appropriate in light of our objective.

Legal tests

- 2.69 We are proposing to set SMP conditions on BT in relation to the market for WLA in Area 3 to give effect to the proposed pricing remedies described above. We set out further details of the proposed charge control in Section 3 and Annex 18. Our draft SMP conditions can be found in Volume 5.
- 2.70 As explained above, we consider there to be a risk that, absent regulation, BT might fix and maintain prices at an excessively high level and/or impose a price squeeze so as to have adverse consequences for end-users (including through a weakening of retail competition).
- 2.71 As required by section 88 of the Act, we consider that the setting of the draft SMP conditions would be appropriate for the following purposes:

a) Promoting efficiency

- 2.72 We consider that the proposed charge control is appropriate for promoting allocative efficiency, since in the absence of potential competition, BT would have limited incentives to seek to reduce its prices of providing WLA services.
- 2.73 We consider that our proposed charge control encourages BT to increase its productive efficiency. This will be achieved by allowing BT to keep any profits that it earns by reducing its costs over and above the savings envisaged when the charge control is set.
- 2.74 In addition, the proposed charge control has been set to allow BT to earn a reasonable rate of return (cost of capital) where it is efficient.

b) Promoting sustainable competition

- 2.75 We do not consider there to be scope for material network competition in Area 3. Therefore, we have proposed a cost-based charge control. The draft conditions aim to promote and maintain retail competition based on wholesale access to BT's network.
- c) Conferring the greatest possible benefits on end user of public electronic communications services.**
- 2.76 The draft conditions are intended to deliver the best outcome for consumers over the long term by incentivising fibre investment by BT where it would otherwise have weak incentives to deploy a fibre network. The draft conditions also protects end-users from excessive pricing.
- 2.77 We have also taken account of BT's investment in the matters to which the draft conditions relate by modelling BT's forecast costs for legacy services to allow for a reasonable rate of return on its investment (including mitigating the risks of stranded assets by bringing forwards cost recovery). The proposed charge control supports BT's investment in fibre networks where it would otherwise have weak incentives by ensuring that BT receives a sufficient return on its fibre investment.
- 2.78 As discussed in Volume 1, we anticipate that the test set out in section 88 of the Act may be amended before we issue our Final Statement, to give effect to Article 74 of the EECC. This requires NRAs, in determining whether price control obligations would be appropriate, to take into account the need to promote competition and long-term end-user interests related to the deployment and take-up of next- generation networks, and in particular of very high capacity networks. NRAs are also required to ensure that any mandated cost recovery methodology or pricing mechanism serves to promote the deployment of new and enhanced networks. We have explained in detail above how we expect our proposed charge control to promote the deployment of new fibre network, and why we consider this will be for the long-term benefit of consumers. We consider that our proposals promote take-up of fibre since, in their absence, BT would have weak incentives to deploy a fibre network in Area 3 and it is unlikely that new fibre services would be available to customers in that area during the control period.
- 2.79 In Section 7, we explain why the setting of the draft SMP conditions in relation to pricing would satisfy the test set out in section 47 of the Act.

Leased line access services

- 2.80 For LL access services in Area 3 our objective is to protect consumers from the risk of excessive pricing through encouraging telecoms providers that rely on access to BT's network to invest as deep into the network as possible.
- 2.81 Therefore, in considering the appropriate form of controls to impose, we have assessed the options for achieving our objective.

Dark-fibre access

- 2.82 In Volume 3 Section 6, we propose to impose a specific network access remedy in the form of dark fibre in the market for LL access in Area 3. We identify several benefits of dark-fibre over leased line (active) services.
- 2.83 In light of the benefits of dark-fibre access, we propose that it should be the primary focus of our regulation. We believe that in the absence of significant competitive network build, telecom providers will increasingly rely on dark-fibre services to compete with BT.
- 2.84 We are proposing that dark fibre prices are set to cost. Given we do not expect material competitive network build (and therefore we are not seeking to promote rival investment) we do not consider it appropriate to set charges above cost. We consider that setting dark-fibre charges to cost will increase take-up relative to charges being above cost and thereby increase consumer benefits.
- 2.85 We propose to set charges with reference to the cost of the relevant components of BT's underlying passive infrastructure and to allow charges to recover a share of common costs. We set out details of our cost-modelling approach in Annex 19. In Annex 13, we provide our assessment of the costs and benefits of dark-fibre.

Active leased line access services

- 2.86 Since we are proposing to move to dark-fibre as our primary remedy and to require BT to offer dark-fibre access at cost, we do not propose to impose a cost-based charge control on BT's active leased line services. However, we recognise that customers have traditionally been reliant on having network access to BT's leased lines and it will take time for telecom providers to transition to using new dark-fibre services. During this transition period we believe that regulatory protection on those active leased line products will need to continue. Therefore, we propose to impose a safeguard cap on these services.
- 2.87 We consider that maintaining stable prices (in real terms) provides the right balance between providing customer protection from excessive prices while also encouraging take-up of dark-fibre and allowing for a smooth transition as customers increasingly migrate to using dark-fibre from 2021.
- 2.88 Therefore, we propose a CPI-0% control on LL access services.⁴⁹

⁴⁹ We are also proposing to impose an obligation for charges for network access to be fair and reasonable, except to the extent that a specific charge control or a basis of charges obligation applies (see Volume 3 Section 3). We are proposing this to address the risk of a price squeeze in relation to other forms of network access, which in our view arises from BT's vertical integration and significant market power. Our general position is that we would interpret this fair and reasonable obligation to mean that, in the LL access Area 3 market, BT should not set prices that would equate to a margin squeeze under ex post competition law for existing and new forms of network access. While we would assess any dispute on the relevant facts, our starting point for evaluating cost and margins in this context would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard.

We consider our proposed approach to be proportionate

- 2.89 We have explained above why our proposed charge controls would be effective in achieving our objective, and why alternative approaches would either not be effective in achieving our objective or would be more onerous than necessary. We therefore consider that our proposed approach is the least onerous effective option.
- 2.90 As part of assessing proportionality, we have also considered whether our proposed approach would have adverse effects that are disproportionate to our objective. We consider that there are potentially two adverse effects from our proposals.
- 2.91 The first of these relate to undermining BT's cost recovery. We consider that there is a low risk of BT under-recovering its costs for leased lines. We are proposing dark-fibre access is provided at cost (including a share of common costs). In addition, we are proposing a safeguard cap for active LL access services that is above cost.
- 2.92 The second relates to setting our charge controls at levels that undermine investment in fibre networks. However, by virtue of our assessment of areas falling into Area 3 consider there to be limited potential for rival network investment.
- 2.93 We therefore provisionally conclude that our proposals are proportionate and appropriate in light of our objective.

Legal tests

- 2.94 We are proposing to set SMP conditions on BT in relation to the market for LL Access in Area 3 to give effect to the proposed pricing remedies described above. We set out further details of the proposed charge controls in Section 3 and Annex 19. Our draft SMP conditions can be found in Volume 5.
- 2.95 As explained above, we consider there to be a risk that, absent regulation, BT might fix and maintain prices at an excessively high level and/or impose a price squeeze so as to have adverse effects on end-users (including through a weakening of retail competition).
- 2.96 As required by section 88 of the Act, we consider that the setting of the draft SMP conditions in relation to each of the proposed charge controls would be appropriate for the following purposes:
- a) Promoting efficiency**
- 2.97 We consider that each of our proposed charge controls encourage BT to achieve greater productive efficiency by allowing it to keep any profits that it earns from reducing costs over and above the efficiency gains we have assumed in setting the proposed controls.
- 2.98 We also consider that each of our proposed charge controls promote efficiency by, inter alia:
- ensuring BT cannot price excessively;
 - allowing BT to earn a reasonable rate of return if it is efficient;

- providing BT with flexibility to change prices to meet demand conditions by recovering common costs in the most efficient manner across groups of services

2.99 In the case of the proposed charge control for active leased lines, we propose rolling forward the current prices while at the same time proposing a cost-based dark fibre access remedy. We consider that in combination this will send BT a strong incentive to reduce costs over the period and thereby improve productive efficiency.

b) Promoting sustainable competition; and

c) Conferring the greatest possible benefits on end user of public electronic communications services

2.100 We consider that our proposed charge controls are each appropriate to promote sustainable competition and confer the greatest possible benefits on end users of public communications services.

2.101 In relation to the proposed charge control for active leased line services, the control prevents excessive pricing and provides price stability in parallel with the proposed introduction of dark-fibre access remedy at cost. We consider this will provide customer protection as volumes migrate towards dark fibre over time. Overall, we consider our proposed approach will promote and maintain retail competition.

2.102 Setting the dark fibre access product at cost will support downstream competition based on using dark fibre and result in lower downstream prices (compared to setting dark fibre prices above cost).

2.103 We consider that efficiency gains should, in the longer term, be passed onto consumers through reductions in prices and improvements in quality.

2.104 We have also taken account of BT's investment in the matters to which the draft conditions relate by ensuring that each of our proposed charge controls allow BT to recover its efficiently incurred costs and make a reasonable return on its investment. We have also ensured that cost-based dark fibre access does not undermine the case for competitive network investment by limiting the scope of the remedy to Area 3.

2.105 As discussed in Volume 1, we anticipate that the test set out in section 88 of the Act may be amended before we issue our Final Statement, to give effect to Article 74 of the EEC. This requires NRAs, in determining whether price control obligations would be appropriate, to take into account the need to promote competition and long-term end-user interests related to the deployment and take-up of next-generation networks, and in particular of very high capacity networks. NRAs are also required to ensure that any mandated cost recovery methodology or pricing mechanism serves to promote the deployment of new and enhanced networks. We have taken this into account by proposing a set of charge controls that we consider will best promote competition and the take-up of next generation services through wholesale access to BT's network.

2.106 In Section 7, we explain why the setting of the draft SMP conditions in relation to pricing would satisfy the test set out in section 47 of the Act.

Consultation questions

Question 2.1: Do you agree that a RAB based control will achieve our objective in Area 3? Please set out your reasons and supporting evidence for your response.

Question 2.2: Do you agree that is appropriate to impose a post-build RAB charge control in Area 3? Please set out your reasons and supporting evidence for your response.

Question 2.3: Do you have any comments on our proposed design and method for calculating the proposed post-build RAB charge controls? Please set out your reasons and supporting evidence for your response.

Question 2.4: Do you agree with our proposals to charge control LL access services and dark fibre in Area 3? Please set out your reasons and supporting evidence for your response.

3. Charge control design and implementation

- 3.1 In the sections above, we set out our proposed approach to setting charge controls for WLA and leased lines access services.
- 3.2 In Section 4, we set our proposed approach to pricing leased lines in the Inter-exchange connectivity market. Section 5 sets out our proposed controls for PIA services. In Annexes 16, 18 and 19 we set out the details of the baskets and levels of charge controls.
- 3.3 Table 3.1 below summarises our proposed charge controls for the main rental services.

Table 3.1: Summary of proposed charge controls for WLA and leased lines rental services

Controlled services/baskets	Geographic scope	Maximum charge in 2021/22 (annual)	Charge control level
WLA services			
MPF SML1 in Area 2	Area 2	£86.65	CPI-0%
MPF SML1 in Area 3	Area 3	£84.95+K	CPI-CPI+K
FTTC 40/10 in Area 2	Area 2	£61.18	CPI-0%
FTTC all bandwidths in Area 3	Area 3	N/A (basket)	CPI-5.75% to CPI-15.00%
Leased line services			
Leased lines access and inter exchange	Area 2 and Area 3	N/A (basket)	CPI-0%
Dark fibre access tail (single fibre)	Area 3	£701	CPI-7.0%
Dark fibre access tail (dual fibre)	Area 3	£1,402	CPI-7.0%
Dark fibre inter-exchange (single fibre)	BT-only exchanges	£20	CPI-5.8%
Dark fibre inter-exchange (dual fibre)	BT-only exchanges	£40	CPI-5.8%

- 3.4 In this section we set out our proposals for the following elements of our charge controls:
- Duration of our proposed charge controls.
 - Speed of alignment where we are proposing changes to charge levels.
 - Our principles and proposals for basket design (including sub-caps).

- Our proposals for weighting price changes within baskets as part of measuring compliance to controls.
- Specification of our proposed charge controls in relation to MPF and GEA.

3.5 In developing these proposals, we have considered whether the resulting conditions would be appropriate for the purposes of promoting efficiency, promoting sustainable competition and conferring the greatest possible benefits on end-users of public electronic communications services. We have also taken account of the extent of BT's investment.⁵⁰

Duration of all our charge controls

3.6 In determining the duration of charge controls we consider how best to promote efficiency. We have considered what duration of charge control strikes the appropriate balance between dynamic and static efficiency.

3.7 We consider that, all other things equal, a longer charge control period will create stronger incentives for dynamic efficiency compared to a shorter period (since a longer period provides more certainty for investment), but recognise that this has higher potential cost for lost allocative efficiency (at least while BT's prices are out of line with costs).

Our proposal

3.8 Where there is potential for rival network investment (e.g. Area 2) our charge controls are proposed to support that investment and thereby encourage BT to invest (i.e. promote dynamic efficiency). Our regulation of PIA is aimed at supporting rival network investment.

3.9 Where there is limited scope for rival network investment (e.g. Area 3 and IEC from BT only exchanges) our charge controls aim to promote competition through wholesale access to BT's network while also supporting BT's investment in fibre networks.

3.10 We consider that stability and certainty are important for investment decisions (either by rival networks or by BT). Therefore, to provide greater regulatory certainty we propose to set a longer charge control period that we have typically used in previous market reviews.

3.11 We propose to set a 5-year charge control period for all our proposed charge controls.

Speed of aligning charges

3.12 In Section 1, we set out our proposals to set charge controls in Area 2 for MPF, GEA FTTC 40/10 services at CPI+0%. In Section 1, 2 and 4, we set out our proposals to set charge controls on leased lines in Area 2, Area 3 (i.e. Leased lines access (LL access)) and the Inter-exchange connectivity (IEC) market at CPI-0%. The question of how fast to align charges to new levels therefore does not arise.

⁵⁰ Section 88 of the Act. In Sections 1, 2, 4, 5 and 6, we explain in full how our proposed SMP charge control conditions meet the tests set out in section 88 of the Act.

- 3.13 Under our proposals, starting charges from 1 April 2021 will be those taken at the end of the previous charge controls for wholesale local access (WLA) services and leased line services indexed by CPI.

Wholesale local access services in Area 3

- 3.14 In Section 2, we set out our proposals for charge controlling WLA services in Area 3. In that section, we propose a RAB charge control whereby copper services make a contribution to the cost recovery of the fibre network.⁵¹ Our current proposed approach is to set a charge control for MPF and GEA services (across all bandwidths) in Area 3 that is based on the accounting costs for these services, with the potential for the charge control to increase depending on BT's actual investments in FTTP.
- 3.15 In this option we would need to decide an appropriate price path for:
- MPF and GEA 40/10 where charges are currently subject to an existing charge control; and
 - GEA at higher bandwidths that are currently not subject to a charge control.
- 3.16 Furthermore, since we are proposing that charges for MPF and GEA services will contribute to the investment in fibre networks, and the charges will increase as BT invests in FTTP, we need to consider the appropriate path of MPF and GEA prices in light of that factor.

Our framework for deciding at what speed to adjust prices

- 3.17 There are three broad options for closing any gap between prices and forecast unit costs within a charge control:⁵²
- glidepath only: charges gradually reduce over time determined by the X in the CPI-X control;
 - one-off starting charge adjustment (SCA): charges are adjusted to cost at the beginning of the control period. Under this approach, the required annual change in prices in subsequent years will only be as a result of changes in our forecast of costs over time; and
 - combination of one-off SCA and a glidepath: charges are adjusted at the start of the control period to bring them closer to cost, but some of the gap between charges and cost is closed in subsequent years of the charge control by the X.
- 3.18 We have a general preference for glidepaths because we believe they promote both productive and dynamic efficiency. Using a glidepath allows the regulated firm to keep the benefits of unit cost reductions, beyond those forecast when the charge control was set.

⁵¹ We also explain that Openreach has suggested indexed pricing for Area 3 which would be one form of RAB that we call a forecast approach. In the absence of a firm build commitment from Openreach, we are not proposing to proceed on this basis. If we did use indexation, the issue of how fast to align charges to new levels would not arise.

⁵² We have set out our general approach on how to adjust prices to cost in the [BCMR 2016 Statement, April 2016](#), and the [WLA 2018 Statement, March 2018](#).

Consequently, the use of a glidepath gives the regulated firm better incentives to pursue improvements in productive efficiency and/or grow volumes than an SCA.

- 3.19 Glidepaths also avoid discontinuities in charges over time and lead to a more stable and predictable background against which investment and other decisions may be taken. This is a particularly important consideration when we are seeking to provide the right conditions to promote competitive infrastructure investment.
- 3.20 We might use starting charge adjustments for currently controlled services if the risk to economic efficiency or competition from distorted pricing signals is particularly significant or where prices are significantly above or below cost for reasons other than efficiency or volume growth.
- 3.21 Where services are charge controlled for the first time, we have often preferred a starting charge adjustment to cost because we do not have the same productive efficiency concerns.

Our proposals for post build option: MPF and GEA services (all bandwidths) in Area 3

- 3.22 As set out in Section 2, we expect the price of both MPF and FTTC services at the end of the current control period to be above our forecast of unit costs at the start of the forthcoming charge control period.
- 3.23 The gap between prices and forecast unit costs for MPF and GEA (across all bandwidths) at the start of the forthcoming charge control period is primarily as a result of our proposals to:
- a) remove the HON cost adjustment from the charge control for MPF and GEA 40/10 (we decided in WLA 2018 to include this for the current control period); and
 - b) bring GEA charges at higher bandwidths (that are currently not charge controlled) within the charge control.

We propose to adjust price to cost gradually using a glidepath

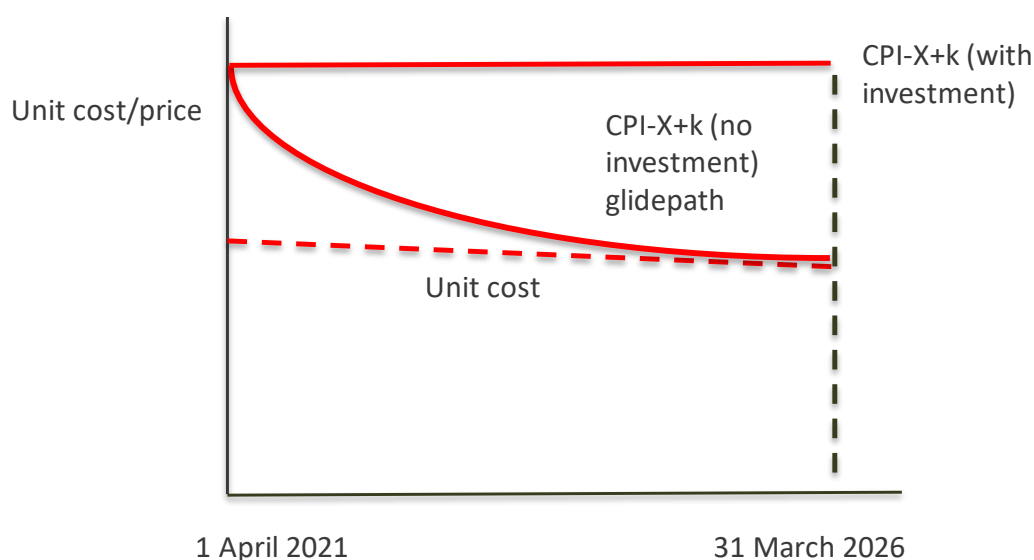
- 3.24 Since prices for GEA services are expected to be above our forecast of unit costs at the start of the charge control period this might point towards us implementing a SCA.
- 3.25 However, as set out in Section 2, we are proposing to support BT's investment in fibre networks by allowing some of the investment costs to be recovered from charges on MPF and GEA FTTC products, with a mark-up applied on those charges when BT invests. We refer to this as the post-build variant of a RAB charge control.
- 3.26 This means as BT invests in fibre networks, MPF and GEA FTTC charges will rise as a result of the contribution they make towards fibre costs.
- 3.27 As a consequence, a SCA could result in an unstable profile of prices. This is because charges would initially fall (as a result of the SCA) and then increase (as BT invests in fibre).

3.28 Our view is that we should look to provide a more stable path of prices. We consider this is consistent with the objectives set out in s88 of the Act since:

- It confers benefits to end-users: We can design a charge control including a SCA that results in BT recovering costs only (since reductions in BT's wholesale prices initially will be off-set by higher prices than otherwise in the future). However, where a price reduction is transitory only (e.g. where a starting charge reduction is removed as BT invests) there is a risk that initial wholesale price reductions may not be passed through to retail customers (and retained as increased margin by retail providers). Therefore, retail customers could be worse off overall since the higher future wholesale charges (that will not be transitory) will be passed on.
- It promotes efficiency: Stable prices are supportive of dynamic efficiency both in relation to BT's investment in fibre networks and rival network investment (to the extent that this will occur in Area 3). As explained above, glidepaths avoid discontinuities in charges over time and lead to a more stable and predictable background against which investment and other decisions may be taken.
- In addition, a significant reduction in wholesale prices could provide poor signals for investment incentives.
- It promotes competition: Since stable prices could support rival network investment (to the extent that this will occur in Area 3) this will promote competition at the network level.

3.29 In light of the above, we propose to use a glidepath to align MPF and GEA charges to efficient cost by the end of charge control period. Figure 3.1 below shows an illustration of the MPF and FTTC price paths with and without investment in fibre (and the subsequent K factor mark-up).

Figure 3.1: Illustration of path of prices



3.30 We recognise that a glidepath approach could allow for additional cost recovery of copper assets in the period 2021-2026 (relative to adopting a SCA). As with our usual framework, we generally use a glidepath when we are moving from one charge control period to the

next to incentivise the firm to make efficiency gains.⁵³ We would not wish to remove any cost over-recovery caused by using a glidepath for MPF and 40/10 FTTC services as it could affect these efficiency incentives and, in any case, we have calculated that there is not a large difference between the price and cost of the MPF and 40/10 FTTC service.

- 3.31 Our proposed glidepath for higher bandwidth GEA services will not lead to additional cost recovery over the expected lifetime of the copper and fibre network. It simply aims to smooth the path of prices by allowing higher cost recovery during this charge control period, and lower cost recovery in future charge control periods (effectively depreciating the assets more quickly). Consequently, our proposed approach will allow for the same total cost recovery over the expected lifetime of the copper and fibre network given the anticipated transition between the copper and fibre network.
- 3.32 We consider that where BT is transitioning between technologies (in this case from a copper-based network to a fibre based network) recovering more cost in earlier periods (where volumes are higher but expected to fall over time) is more akin to how the economic value of the assets change. We therefore believe it is appropriate to allow some additional cost recovery via a glidepath for higher bandwidth services during this charge control period to prevent copper prices increasing in the future as service volumes fall on the copper network and assets become stranded.
- 3.33 To ensure total cost recovery of copper assets over the lifetime of the copper network, we propose to off-set the additional recovery of costs during the control period for higher bandwidth FTTC services⁵⁴ by subtracting it from the cost base used to set charge controls in future periods. In Annex 16, we set out how we are bringing cost recovery forwards by accelerating the depreciation of copper assets. We will calculate any additional recovery associated with using a glidepath for higher bandwidth FTTC services on a consistent basis.

Proposals for dark fibre

Local access dark fibre

- 3.34 We are proposing to require BT to provide cost-based local access dark fibre services in Area 3. This will require BT to introduce a new set of services.
- 3.35 Our proposals for setting the maximum charges for dark fibre access are set out in Annex 19.
- 3.36 Since we are proposing to require BT to offer network access to local access dark fibre services (and charge control these) for the first time, consideration of whether to use a glidepath between a current set of charges to those we propose does not arise.

⁵³ As set out above, in this case, a difference between prices and cost may also be caused by us not including a HoN adjustment when calculating the cost of MPF.

⁵⁴ As set out above, we will be charge controlling higher bandwidth FTTC services in Area 3 for the first time, so there is no risk that offsetting additional cost recovery on these products will undermine efficiency incentives. Conversely, MPF and FTTC 40/10 services have previously been charge controlled.

3.37 Therefore, we propose the charges for these services are set at cost at the start of the control period and align to our forecast of costs over the 5 year charge control period.

Inter-exchange dark fibre

3.38 We propose to require BT to provide a cost-based inter-exchange dark fibre services in BT only exchanges. This maintains the regulatory requirement imposed as part of the BCMR 2019.

3.39 Our proposals for setting the maximum charges for dark fibre access are set out in Annex 19.

3.40 As explained earlier in this section, our general preference when setting charge controls is to adopt a glidepath approach since this promotes dynamic and productive efficiency. However, we are proposing that inter-exchange dark fibre services are set to cost at the start of the control period and align to our forecast of costs over the 5 year control period.

3.41 We are not proposing a glidepath given we are also requiring BT to provide local access dark fibre services (at cost) in Area 3. As set out in Annex 19, a dark fibre access segment will comprise of both a local access dark fibre service (i.e. an access tail) plus an inter-exchange dark fibre service (i.e. main link) where the circuit spans between a customer site and a BT exchange (where this exchange is not the nearest exchange to the customer site).

3.42 Therefore, given the inter-exchange dark fibre service can also be a component relating to dark fibre access segments, we propose a consistent approach to aligning charges with cost for all dark fibre services.

Proposals for PIA

Duct and chambers

3.43 As set out in Section 5, we have updated our estimates of the cost to Openreach of providing access to its ducts and chamber infrastructure. The most material update we have performed is to reflect a change in the approach to allocating costs to different duct services based on more up-to-date data. By only applying the new methodology to post-2018 assets we are phasing in the change in cost allocation over a long time period (the time taken to replace all of the duct assets). One of the benefits of taking this approach is that it smooths the path of prices meaning we only observe a modest difference between price and costs for all services.

3.44 We therefore propose to use a glidepath to cost in the final year of the charge control.

Poles

3.45 In Section 5, we have also recalculated the costs of providing access to Openreach's pole infrastructure. We have been able to obtain much better information on the costs associated with providing access to poles and we have identified some cost items that we do not believe should be in the cost of poles. The changes we have implemented have led

to a material change in the cost of poles in the base year (circa 60%). We then forecast a small change in costs during the period of the charge control.

- 3.46 Given we are estimating such a large decrease in the cost of poles we have considered whether to use an SCA. As set out above, we place a high value on pricing stability, however, even when using a glidepath we would require a material decrease in prices for each year of the charge control (circa 10% per annum).
- 3.47 As is consistent with our framework set out above, for such a large difference between cost and price we are proposing to use an SCA to align charges to cost in the first year of the charge control. In subsequent years, there will be a glidepath to align prices with our forecast of efficient cost in the final year of the control.

Principles for basket design

- 3.48 A charge control basket is defined as the group of services that are subject to a common charge control restriction. Combining services in a single basket means that the price cap (e.g. CPI-X) would apply to the changes in the charges of all the services in the basket weighted by revenue.
- 3.49 In designing our proposed charge control baskets, we have been guided by the following principles:
- Where the services being considered share substantial common costs, a single basket is more conducive to efficient pricing and cost recovery.
 - Where the services being considered face different competitive conditions or where BT does not use the same wholesale inputs as its rivals, placing them in the same charge control basket may give BT an incentive to set charges in a way that adversely affects competition. In this case, we might consider introducing sub-caps or placing the services in separate baskets.
 - Differences in charges for substitutable inputs covered by charge controls should reflect the incremental cost difference. The usual argument for a broad basket, that there are benefits from being able to vary relative prices within the basket to reflect differences in demand elasticities, does not apply to substitutable inputs.

Advantages of broad baskets

- 3.50 A broad basket would give BT the most pricing flexibility to determine the structure of prices to meet the charge control. Where relative prices can be set to reflect the way demand responds to price changes, this pricing flexibility is more likely to result in charges that recover costs, particularly common costs, in an efficient way.
- 3.51 A broad basket also allows BT to respond to changes in demand and costs by changing relative prices and re-optimising charges for new patterns of demand. Subject to sufficient constraint on its pricing at the basket level, BT is better placed to assess demand and set the prices for services at a more granular level.

- 3.52 We consider, however, that such considerations are less directly applicable to migration type services. This is because retail demand for migration services may not be closely linked to the wholesale migration charge; and because migration charges increase switching costs faced by BT's competitors.

Disadvantages of broad baskets

- 3.53 The main disadvantage of broad baskets is that, in some circumstances, the flexibility to set relative charges can be exploited to harm competition. Two sets of circumstances are particularly relevant:
- BT may have an incentive to price in a manner that favours its downstream operations. Where BT and competing operators use different wholesale services to provide the same downstream service, BT may have an incentive to reduce the price of the wholesale service it uses most and increase the price of the wholesale service used by its competitors. Placing both wholesale services in a single charge control basket without further restrictions could give BT the ability to behave in a way that harms competition.
 - There may be differences in the intensity of competition that BT faces in the provision of different services. If competitive conditions differ between services within a single basket, BT may have an incentive to concentrate price cuts on the most competitive services and offset these with increases where competition is weaker.

Addressing the disadvantages

- 3.54 In some cases, it is possible for the competition concerns identified above to be addressed by using more narrowly defined baskets. Each basket could be defined to include only services where there is broadly the same degree of competition, and there could be separate baskets for services that are used predominantly by BT on the one hand, and for services which are mainly used by its competitors, on the other.
- 3.55 Alternatively, or in addition, sub-caps or inertia clauses on particular services within a basket can be used to address these competition concerns. In this way, the potential harm to competition can be mitigated while, at the same time, retaining the pricing flexibility benefits of basket controls.

Our proposals for basket design – Wholesale local access

Wholesale local access services in Area 2

- 3.56 In Section 1, we set out our proposals to set charge controls on MPF and GEA 40/10 rentals in Area 2. In Section 6, we set out our proposals to set charge controls on ancillaries (including connections and migrations) relating to WLA services.
- 3.57 As discussed above, we consider where services share substantial common costs, a broad basket gives BT the most pricing flexibility to determine the structure of prices in a way that responds to demand and recover common costs in an efficient way. This could support

the case for proposing a broad basket including rental and ancillary services (or a sub-set of ancillaries).

- 3.58 However, in the case of ancillary services, we consider that the retail demand may not be closely linked to wholesale ancillary charge (for instance, retailers often waive migration charges or discount connection charges) therefore the ability for BT to recover common costs more efficiently (in response to demand) is less relevant.
- 3.59 Therefore, consistent with our current approach to structuring charge controls we do not propose to combine rental services and ancillary services within a basket.
- 3.60 In relation to MPF and GEA 40/10 rentals, we recognise that a single basket (combining both services) would provide more price flexibility to allow BT to recover common costs more efficiently (than separate controls). However, we consider that a separate control for MPF rentals will provide better customer protection to standard broadband customers since it will ensure that BT does not raise MPF prices as customers transition to higher speed services and rivals becomes more focused on competing for those higher bandwidth services (and less focused on competing for standard broadband customers).
- 3.61 Therefore, we propose to set a single product charge control for each of:
- MPF rentals; and
 - GEA FTTC 40/10 rentals.
- 3.62 As part of our proposals in support of BT's copper-retirement (as set out in Volume 3 Section 2), post-copper retirement we propose to switch our charge control from MPF and GEA FTTC 40/10 rentals to GEA FTTP 40/10. Therefore, we propose a single product charge control for:
- GEA FTTP 40/10 rentals.

Wholesale local access services in Area 3

- 3.63 As explained in Section 2, absent Openreach presenting a credible fibre deployment plan (with commitments) we propose to adopt a post-build RAB charge control. Under that approach, we are proposing to set a charge control for MPF and GEA FTTC rentals across all bandwidths. For the same reasons as explained above, we propose to set a single product control for MPF rentals to provide customer protection to standard broadband customers. Given the significant level of common costs between GEA rental service of different bandwidths, we propose to set a basket control comprising all GEA FTTC bandwidths.
- 3.64 We propose:
- a single product charge control MPF rentals.
 - a basket control for GEA rentals (across all bandwidths).
- 3.65 Post-copper retirement we propose to switch our charge control from MPF and GEA FTTC rentals to GEA FTTP 40/10. Therefore, we propose a single product charge control for:
- GEA FTTP 40/10 rentals.

Our proposals - Leased line services

Ethernet and WDM rentals, connections and Main Link basket

- 3.66 We have traditionally used broader baskets for leased line services (relative to WLA services) that include rentals, connections and specific ancillary services (for example, in the BCMR 2019 we included cablelink and interconnection services). The use of broader baskets reflects the significant level of common cost between services and that business customers (and communications providers) purchasing leased lines are more likely to make their choices based on the cost of a package of services relating to a leased line.
- 3.67 We continue to consider that there are benefits associated with broad baskets, such as giving BT the flexibility to set efficient charging structures, respond to changes in demand and costs and encourage efficient migration. However, as explained in Section 7, we explain our proposals to separate out cablelink services from the main basket.
- 3.68 Therefore, we propose a broad basket of ethernet and WDM services across all bandwidths including rentals, connections and Main Link. We propose this to include volumes for Area 2, Area 3 and IEC market.
- 3.69 We recognise that there are risks from broader baskets where competitive conditions differ between services. This may provide an incentive for BT to concentrate price cuts on the most competitive services and offset these with increases where competition is weaker. In this context, the risk could relate to BT targeting price cuts in Area 2 and off-setting these with price increases in Area 3.
- 3.70 However, we consider BT's ability to increase LL access charges in Area 3 will be constrained by our proposal for cost-based dark fibre access in Area 3 (and indeed cost-based dark fibre IEC from BT only exchanges).
- 3.71 BT's Main Link charge is incurred where a leased line circuit spans across two BT exchanges. This is relevant to both leased lines circuits connecting end-sites (i.e. access segments) and IEC circuits. The Main Link charge is a distance related charge.
- 3.72 Given the importance of Main Link to connectivity spanning BT exchanges we consider that it is important to mitigate the risk of sharp price increases in Main Link charges as a result of its proposed inclusion in a broader leased lines basket (and its relatively low weighting in the basket). To address this competition concern we propose that Main Link charges are subject to CPI-0% sub-cap.
- 3.73 In summary, we propose:
- A leased lines basket for ethernet and WDM services across all bandwidths for connection, rental and Main Link charges.
 - Main Link charges are subject to a CPI-0% sub-cap within the broader basket.

Local access dark fibre and inter-exchange dark fibre services

- 3.74 Since we are proposing to require BT to provide network access to local access dark fibre services (and charge control these) for the first time, a basket approach would be

problematic since there are no volumes to weight the services within a basket. We are proposing dark fibre as our primary remedy for LL access in Area 3 and our view is that single service charge controls will be most supportive of our objectives since it provides the most certainty for access seekers regarding future prices.

3.75 In relation to inter-exchange dark fibre services, there are existing volumes to construct a basket. However, for similar reasons as above, given we are proposing inter-exchange dark fibre our primary remedy (for BT Only exchanges), our view is that single service charge controls will be most supportive of our objectives since it provides the most certainty for access seekers regarding future prices.

3.76 Therefore, we propose single service charge controls for each local access dark fibre service and inter-exchange dark fibre service as identified in Annex 19.

Ancillaries

3.77 We set out our proposals in Section 6.

Weighting price changes within a basket and consideration of additional controls within the basket

3.78 A basket control limits the maximum weighted average increase in prices in any given year. The weighting we use is the amount of revenue earned by each service. When BT sets prices each year we need to consider how these revenue weights should be determined, e.g. whether they should be based on the previous year's revenues or a forecast of the current year revenue weighting.

3.79 We consider there are three broad approaches to set basket weights:

- current year weighting: the weights are set equal to the proportion of current year basket revenues accounted for by each service as a proportion of total current year revenues.
- prior year weighting: basket weights are set equal to the proportions of basket revenues accruing to the relevant services in the year prior to the one in which the price change occurs.
- the "snapshot" approach: similar to the prior year weighting approach, but we change the definition of prior year revenue so that it is calculated as a "snapshot" using actual volumes at a suitably recent point in time multiplied by average price during the 12 months prior to the start of the charge control year.

Current year weighting

3.80 We do not propose to adopt the current year revenue weights approach because it can involve risks of gaming, potential volatility in charges and administrative burden.

3.81 Using forecast current year volume weightings could lead to volatile movements in prices as charges are set, then later adjusted for over- and under-recovery against the controlling percentage for the cap. This is because the demand for some services may be volatile and

forecast volumes are likely to vary from actual volumes, which could have significant impact on whether the price changes meet the basket control.

- 3.82 Additionally, BT or other telecoms providers could try to game the control by producing misleading forecasts for service volumes in a particular year. Although any overcharge would need to be paid back in subsequent years, there could still be cashflow incentives to engage in charge control gaming.
- 3.83 The volatility in wholesale charges caused by the use of forecasts of current year volume weightings could ultimately be harmful to customers. It would create uncertainty for telecoms providers using inputs from BT and limit their ability to plan.

Snapshot approach

- 3.84 We do not propose to use the snapshot approach as we do not consider it would be appropriate for services where revenues and volumes may be volatile. If volumes are volatile the latest volume information is unlikely to be the most representative. In the case of MPF ancillary services there is a significant degree of revenue and volume volatility for some of the basket services, which may persist in the future.
- 3.85 Given the potential for revenue volatility in future years, we do not consider the snapshot approach is appropriate for our ancillary baskets.

Prior year weighting

- 3.86 Using prior year weights enables BT to plan its charges in a given year with confidence that it will meet the overall basket control.
- 3.87 The main disadvantage of a prior year weights approach is that it is vulnerable to a particular form of gaming. This gaming involves targeting price increases on services whose weights in the basket are growing over time, so that the prior year revenue weight understates the effect of the price increase on actual revenues. This risk can be mitigated by using a sub-cap on individual charges in the basket.

Our proposals

- 3.88 We propose to use prior year weightings where we have proposed basket controls since we consider that this will best enable BT to plan its charges in a year to meet the overall basket control.
- 3.89 While we acknowledge that under this approach there is a risk of a specific form of gaming by BT, we also consider that other approaches set out above also suffer from their own gaming risks. Therefore, overall, we consider that the advantages of adopting a prior year weighting approach outweigh the disadvantages compared to the other approaches set out above.

Deficiency and excess provisions

- 3.90 Deficiency and excess provisions set out how any under- or over-recovery in a charge control period should be dealt with. We have included such provisions in previous charge controls and we propose to use them for the individual services and baskets of services that will be subject to charge controls as part of this review. These have two functions:
- Where BT charges below the cap they give the ability to use the deficiency created by setting charges below the charge control requirements within a given year towards the charge control compliance in the following year. Therefore, the deficiency avoids penalising BT for bringing forward a charge reduction or increasing charges less than permitted within the cap.
 - Where BT charges above the cap, it is required to make up the excess the following year by charging less than the cap would otherwise have allowed. We expect any difference to be small and not adversely affect the pricing stability created by our proposed charge controls.
- 3.91 We consider that symmetrical provisions remain appropriate i.e. symmetrical with respect to whether BT charges below the cap or whether the control is exceeded. We also consider that such a provision requiring BT to automatically repay its wholesale customers any over-recovery of revenue from the charge controls fits well with our proposed prior year revenue weights approach. This is because at the start of each control period BT will know (at least to a significant extent) the prior year volumes/revenues, and thus will not be subject to the risk of being unable to recover the allowed revenue of a basket in that period or subsequent ones.
- 3.92 We therefore propose to continue using deficiency and excess provisions for our charge controls. We also propose to continue to require BT to make repayments to other affected telecoms providers (as soon as is reasonably practicable) if it charges in excess of the cap in any given year for any services or basket of services.

Compliance

- 3.93 We propose to require BT to submit spreadsheets to Ofcom each year demonstrating compliance with the proposed basket charge controls. These spreadsheets should be accompanied by a statement from an independent third party (e.g. the auditor of the Regulatory Financial Statements) confirming that the data in the spreadsheets (e.g. that pricing, volume and revenue inputs have been properly extracted from BT's systems and that the calculations are in accordance with the SMP conditions).⁵⁵ This statement will provide assurance that the numbers BT is relying on to demonstrate compliance have been correctly extracted from its systems, save us time in checking BT's data and will help ensure that BT is meeting its obligations under the charge control.

⁵⁵ This assurance will be in the form of agreed upon procedures.

3.94 We also propose to require BT to publish non-confidential versions of these compliance spreadsheets on its website consistent with current practice.⁵⁶

Details relating to the specification of our charge controls

Wholesale local access: rentals for MPF and GEA

MPF rental service specification

3.95 BT offers MPF rental services including two different service maintenance levels (SMLs). These are MPF rental including SML1 (that has a lower price with a 2-day repair time target) and MPF rental including SML2 (a higher priced service with a 1-day repair target).⁵⁷ The majority of MPF lines are on the SML1 variant.

3.96 We propose to impose a charge control on MPF SML1 since we consider that a charge control on SML1 will have greater benefits for downstream competition given the majority of MPF lines use this variant and we consider this will act as a price constraint on MPF rentals with other SML levels.

Single Order Generic Ethernet Access

3.97 VULA services are provided by Openreach using its FTTC deployment in two ways:

- a) By supplying VULA as an overlay to the existing copper services it has developed (i.e. WLR and MPF); or
- b) Via Single Order Generic Ethernet Access (SOGEA) where the copper bearer is included within the VULA service so that it can be purchased without also purchasing WLR or MPF.

3.98 Where the copper bearer is not provided via MPF, but SOGEA, we propose 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 BT'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.

Charge control on GEA FTTP rentals

3.99 In Section 1, we set out our proposals to charge control the GEA 40/10 rental service in Area 2. In Section 2 we set out our proposals to charge control GEA rental services at all bandwidths in Area 3.

⁵⁶ This has previously been a requirement under the regulatory financial reporting condition but we propose to move this requirement to the charge control condition.

⁵⁷ Openreach provides other SML variants that are not included with the MPF rental.

- 3.100 Before copper-retirement, our proposals to charge control GEA rental services relate to services offered over BT's FTTC network. However, GEA services can be provided either using GEA-FTTC in conjunction with copper or using BT's FTTP network.
- 3.101 Where GEA services are provided using FTTP, voice services are provided either via:
- The Fibre Voice Access (FVA) service along with GEA-FTTP; or, in some cases
 - The GEA-FTTP Transition service plus an underlying copper service (WLR or MPF).
- 3.102 Where GEA FTTP is offered and a customer has access to GEA FTTC, we do not propose to charge control the FTTP service (prior to switching our regulation from copper to fibre as part of our proposals to allow for copper retirement as outlined in Volume 3 Section 2).
- 3.103 We consider that the charge controlled FTTC service will provide a constraint on the price of the FTTP service and therefore strikes a balance in relation addressing the risk that FTTP customers face excessive prices while allowing BT pricing flexibility for FTTP services and thereby promoting investment in fibre.
- 3.104 However, in circumstances where GEA FTTC is not available and GEA services are provided using FTTP, a charge control on FTTC services will not provide a price constraint on FTTP services. Therefore, we consider that FTTP services should be charge controlled.
- 3.105 We consider that equivalent services subject to a charge control provided using different technologies should have the same charges. As set out in Section 1, we consider that a GEA service provided over FTTP is not strictly equivalent to a GEA service provided over FTTC. We consider that the FTTP service provides a higher quality service (in terms of lower fault rates and a higher and more stable speed). Where an FTTP service is charge controlled, we consider that this additional value (the 'fibre premium') should be reflected in the price. Annex 22 sets out how we have estimated the 40/10 fibre premium which we propose is between £1.50 to £1.85.
- 3.106 Therefore, in the absence of FTTC GEA being available, we propose to set a charge control on the Fibre Voice Access (FVA) service along with GEA-FTTP; and the GEA-FTTP Transition service plus an underlying copper service (WLR or MPF) at the charge controlled MPF plus GEA FTTC level plus the 40/10 fibre premium.
- 3.107 BT also offers a GEA-FTTP 40/10 "data product variant", a data only service, i.e. without the voice service included. We do not propose to impose a charge control on GEA-FTTP 40/10 data variants because we consider the full-fibre service rentals set out above (which are combined with voice) should impose a sufficient constraint on prices of the data variants.

Consultation question

Question 3.1: Do you agree with our proposals in relation to charge control design and implementation? Please set out your reasons and supporting evidence for your response.

4. Inter-exchange connectivity pricing

- 4.1 In this section, we set out our proposed pricing remedies for inter-exchange connectivity (IEC). These are leased lines that provide connectivity between BT exchanges.

Our objective

- 4.2 As with other leased line services, we believe BT has the ability and the incentive to maintain prices for IEC leased line circuits at an excessively high level and/or impose a price squeeze so as to have adverse consequences for end-users. We therefore propose to impose a charge control on the provision of these services to address these risks.⁵⁸
- 4.3 In developing these proposed charge controls, we have had regard to our overarching legal duties. Consistent with the approach to remedies set out in Volume 3 Section 1, we propose to exercise our discretion in setting these controls in favour of an approach that promotes greater network competition (in locations where we consider there to be potential for this to occur) by setting appropriate incentives for investment. We have also sought to encourage telecoms providers that rely on access to BT's network to invest as deep into the network as possible. We consider this will best serve the interests of consumers, as greater network competition will deliver long term consumer benefits. However, we balance this approach against the need to protect consumers from excessive pricing/price squeeze while competition develops and in locations where it is unlikely to do so.⁵⁹

BT + 1 exchanges

- 4.4 While we have found BT to have SMP at BT+1 exchanges, we consider that there is scope for further investment, in particular using unrestricted PIA, to make it viable for rivals to connect to these exchanges. This is because:
- a) At these exchanges, by definition, one rival competitor is already connected, and therefore there is existing rival investment in these areas.
 - b) Our analysis as part of the BCMR 2019, indicated that the average distance a second rival network would need to extend to connect to an exchange is 1.3km (with a median

⁵⁸ As set out in Volume 3 Section 3, we are also proposing to impose an obligation for charges for network access to be fair and reasonable, except to the extent that a specific charge control or a basis of charges obligation applies. We are proposing this to address the risk of a price squeeze in relation to other forms of network access, which in our view arises from BT's vertical integration and significant market power. Our general position is that we would interpret this fair and reasonable obligation to mean that, in the IEC markets, BT should not set prices that would equate to a margin squeeze under ex post competition law for existing and new forms of network access. While we would assess any dispute on the relevant facts, our starting point for evaluating cost and margins in this context would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard.

⁵⁹ We explain in Volume 1 Section 2 how this objective meets our legal duties.

distance of 334m). Therefore, a rival not currently connected to the exchange may not need to significantly extend its network to develop competing backhaul routes.⁶⁰

- c) Furthermore, BT+1 exchanges are typically located in more urban areas (than BT Only exchanges) where there is potential for competition (and investment). Our geographic analysis indicates that 82.3% of BT+1 exchanges are located in Area 2.
- d) Given the higher density of premises in Area 2, the available revenues from investment are likely to be greater (than at typical BT Only exchanges) since there is greater demand for backhaul circuits.

4.5 We recognise that access seekers will not be able to immediately switch from using leased line services to PIA. We therefore propose to set a charge control for IEC leased lines circuits at BT+1 exchanges at a level that is supportive of promoting network investment while also addressing the risk of excessive pricing/price squeeze during this transition period.

4.6 We propose to set a charge control on IEC leased line circuits at CPI-0%, which reflects the greater potential for competition in these locations. We consider this is consistent with our objectives for the following reasons:

- a) It provides a stable set of prices which we consider is supportive of investment and network competition;
- b) While charges are anticipated to increase above cost over the charge control period, we consider that this is needed to promote network investment. Our view is that relative to a cost-based control our proposals mean that investing in networks becomes more attractive for access seekers relative to buying wholesale services from Openreach.
- c) By proposing a CPI-0% cap we are protecting customers from excessive prices, as they will not increase from current levels in real terms. Moreover, we would expect that as network competition develops this, rather than the charge control, would increasingly act as a constraint on prices.

BT Only exchanges

4.7 We consider that the potential for network competition to BT only exchanges is weak (even with the availability of unrestricted PIA). This is because:

- a) In general, it is likely to be more costly to connect to a BT Only exchange than other exchanges. BT Only exchanges are typically located in rural areas with low residential and business population density.
- b) Our analysis in the BCMR 2019, indicated that the average distance a single rival network would need to extend to connect to an exchange is 5.8km (with a median

⁶⁰ We consider that our analysis in the BCMR 2019 is sufficiently recent to remain valid for our proposals in this consultation.

distance of 2.7km) and the average distance from an exchange to a second rival is over 12km (median 5.9km). These distances are very long, and it is highly unlikely to be economic to extend network to many of these exchanges, even using the unrestricted PIA remedy.

- c) Furthermore, BT Only exchanges are typically located in more rural areas (than other exchanges) where there is limited potential for competition (and investment). Our geographic analysis indicates that 62.2% of BT Only exchanges are located in Area 3.
 - d) Given the lower density of premises in Area 3, the available revenues from investment are likely to be lower (than at other exchanges) since there is lower demand for backhaul circuits.
- 4.8 In Volume 3 Section 6, we propose that BT is required to provide cost-based dark fibre to BT Only exchanges. In Annex 19, we set out our proposed approach to modelling these costs and the proposed set of charges.
- 4.9 We consider that increasingly dark-fibre will be used for IEC to BT Only exchanges and will address the risk of excessive pricing/price squeeze on BT's IEC active circuits at those exchanges. Accordingly, we do not consider it is necessary to set a cost-based charge control relating to IEC active circuits.
- 4.10 Nevertheless, we recognise that there will be a transition period as CPs switch to using dark-fibre services. As a consequence, we consider that it is important to protect customers during the transition period. Our view is that setting a charge control for IEC active circuits at CPI-0% will provide an appropriate level of customer protection. We also consider that proposing to charge control IEC circuits at CPI-0% where a cost-based dark fibre is available will better incentivise migration to dark fibre services. As set out in Volume 3 Section 6, we consider dark fibre a more effective way of addressing our competition concerns than relying on active remedies alone.

We consider our proposed approach to be proportionate

- 4.11 We have explained above why we consider our charge control proposals for each of BT+1 and BT Only exchanges would be effective to achieve our objective, and why alternative options would either not be effective or would go further than necessary. We therefore consider our proposed approach for each of BT+1 and BT Only exchanges to be the least onerous effective option.
- 4.12 As part of assessing proportionality, we have also considered whether our proposed approach would have adverse effects that are disproportionate to our objective. We do not consider this to be the case for either BT+1 or BT Only exchanges.
- 4.13 We therefore provisionally conclude that our proposals are proportionate and appropriate in light of our objective.

Legal tests

- 4.14 We are proposing to set SMP conditions on BT in relation to the markets for BT+1 and BT Only exchanges to give effect to the pricing remedies described above. Further detail in relation to these charge controls can be found in Section 3 and Annex 19. Our draft SMP conditions can be found in Volume 5.
- 4.15 As explained above, we consider there to be a risk that, absent regulation, BT might fix and maintain prices at an excessively high level and/or impose a price squeeze so as to have adverse effects for end-users in each of those markets.
- 4.16 As required by section 88 of the Act, we consider that the setting of the draft SMP conditions would be appropriate for the following purposes:
- a) Promoting efficiency**
- 4.17 We consider that each of our proposed charge controls encourage BT to achieve greater productive efficiency by allowing it to keep any profits that it earns from reducing costs over and above the efficiency gains we have assumed in setting the proposed controls.
- 4.18 We also consider that each of our proposed charge controls promote efficiency by, inter alia:
- ensuring BT cannot price excessively.
 - allowing BT to earn a reasonable rate of return if it is efficient.
 - providing BT with flexibility to change prices to meet demand conditions by recovering common costs in the most efficient manner across groups of services.
- 4.19 In the case of the proposed charge controls for IEC leased lines, we propose rolling forward the current prices while at the same time proposing a cost-based dark fibre IEC remedy from BT Only exchanges. We consider that in combination this will send BT a strong incentive to reduce costs over the period and thereby improve productive efficiency.
- b) Promoting sustainable competition; and**
- c) Conferring the greatest possible benefits on end user of public electronic communications services**
- 4.20 We consider that each of our proposed charge controls are appropriate to promote sustainable competition and confer the greatest possible benefits to end users of public communications services.
- 4.21 Where we consider there to be limited potential for rival network investment, we have proposed charge control for IEC leased line services that prevents excessive pricing and provides price stability in parallel with the proposed dark-fibre IEC remedy at cost. We consider this will provide customer protection as volumes migrate towards dark fibre over time. Setting the dark fibre IEC product at cost will support downstream competition based on using dark fibre and result in lower downstream prices (compared to setting dark fibre prices above cost). We consider that efficiency gains should, in the longer term, be passed onto consumers through reductions in prices and improvements in quality.

- 4.22 Where there is potential for rival network investment (i.e. BT+1 Exchanges), we do not propose a cost-based dark fibre IEC remedy since we consider that this could reduce network investment incentives (and the customer benefits from competing networks). Our charge control for IEC leased line services prevents excessive pricing.
- 4.23 We have also taken account of BT's investment in the matters to which the draft conditions relate by ensuring that our proposed charge controls allow BT to recover its efficiently incurred costs and make a reasonable return on its investment. We have also ensured that cost-based dark fibre IEC service does not undermine the case for competitive network investment by limiting the scope of the remedy to BT Only exchanges.
- 4.24 As discussed in Volume 1, we anticipate that the test set out in section 88 of the Act may be amended before we issue our Final Statement, to give effect to Article 74 of the EECC. This requires NRAs, in determining whether price control obligations would be appropriate, to take into account the need to promote competition and long-term end-user interests related to the deployment and take-up of next-generation networks, and in particular of very high capacity networks. NRAs are also required to ensure that any mandated cost recovery methodology or pricing mechanism serves to promote the deployment of new and enhanced networks. We have taken this into account by proposing a set of charge controls that we consider will best promote competition through investment in rival networks (where there is potential for rival network competition) and through wholesale access to BT's network where there is limited potential for network investment.
- 4.25 In Section 7, we explain why the setting of these draft SMP conditions would satisfy the test set out in section 47 of the Act.

Consultation question

Question 4.1: Do you agree with our proposals for charge controlling in the IEC markets? Please set out your reasons and supporting evidence for your response.

5. PIA charges

Introduction

- 5.1 Physical Infrastructure Access (PIA) services provide communications providers with access to Openreach's Physical Infrastructure, including ducts, footway boxes, and poles, to enable them to build their own communications networks. In this section we set out our proposals for PIA pricing. In formulating these proposals, we took account of our principles for setting PIA prices set out in the 2019 PIMR statement.⁶¹
- 5.2 Our proposed approach to the price regulation of PIA is similar to that set out in the 2018 WLA Market Review and the 2019 PIMR, though we are proposing some minor changes. These include removing charges for particular activities, refining our approach to price calculation and the proposed adoption of a recent Openreach proposal to offer a new combined lead-in service in place of existing services. We are also maintaining our approach to network adjustment charges.
- 5.3 The prospective maximum charges are set out in Tables 5.1 and 5.2 below. These are charges per annum excluding VAT. These proposals are consistent with our general approach to PIA pricing as given in Section 3.

Table 5.1: Proposed maximum rental charges for duct and footway box PIA services

PIA service	Current charge ⁶²	April 2021	Proposed control to 2025/26
Duct services			
Lead-in duct (per connection) ⁶³	£9.25 ⁶⁴	£9.67	CPI + 0.9%
Facility in Spine duct per metre – single bore	£0.28	£0.30	CPI + 1.9%
Facility in Spine duct per metre – 2 bores	£0.18	£0.19	CPI - 2.0%
Facility in Spine duct per metre – 3+ bores	£0.13	£0.14	CPI - 2.0%
Footway box services			
Facility hosting (per manhole entry)	£8.54	£8.87	CPI + 0.4%
Facility hosting (per joint box entry)	£2.05	£2.14	CPI + 0.8%

- 5.4 We propose to reset prices for each pole service on 1 April 2021 and then to apply a separate price control on each service till the end of the period, as set out in the table

⁶¹ Ofcom, June 2019. [Statement: Physical Infrastructure Market Review](#). (2019 PIMR) 7.32-37.

⁶² Openreach. [Product Prices: Physical Infrastructure Pricing](#). [accessed 4 December 2019]

⁶³ This is the proposed price for the new simplified lead in product that we propose should be introduced.

⁶⁴ Openreach's response dated 10 December 2019 to the s.135 notice titled *Promoting competition and investment in fibre networks* dated 2 December 2019.

below. For our reasoning on why a starting charge adjustment is appropriate please see Section 3.

Table 5.2: Proposed maximum rental charges for poles PIA services

PIA service	Current charge ⁶⁵	April 2021	Proposed control to 2025/26
Poles services			
Facility on pole for Multi-end-user attachment	£11.39	£4.02	CPI – 1.6%
Facility on pole for Single-end-user attachment	£4.87	£1.63	CPI – 1.5%
Pole top equipment (manifolds)	£3.53	£1.22	CPI – 1.6%
Cable up a pole (per cable)	£2.30	£0.79	CPI – 1.3%

5.5 In the rest of this section, we:

- a) Set out our objective in setting PIA charges.
- b) Explain our proposed approach to setting PIA rental charges.
- c) Explain our proposed approach to pricing ancillary services (including network adjustments) used to support PIA services.

Our objective for PIA charges

The competition problem

5.6 Given our provisional finding that BT has SMP in the physical infrastructure market, we consider that BT has the incentive and ability to set PIA prices at an excessively high level and/or impose a price squeeze so as to have adverse consequences for end-users. In particular:

- a) There is a risk that BT sets excessive prices to maximise the profit it earns from providing access to its physical infrastructure.
- b) There is a risk that BT sets excessively high prices to increase the overall cost of building a network using PIA, with the intention of preventing or limiting the emergence of further network competition by undermining the investment case for network deployment based on PIA.
- c) The adverse price effects could undermine the effectiveness of the obligation to provide unrestricted PIA, and also result in higher retail prices, all of which is ultimately against the interests of consumers.

⁶⁵ Openreach. [Product Prices: Physical Infrastructure Pricing](#). [accessed 4 December 2019]

5.7 As set out in Volume 3 Section 4, we propose to impose a charge control on PIA rentals to address these competition risks that we have identified.⁶⁶

Our objective

5.8 In developing the proposed charge controls, we have had regard to our overarching legal duties. Consistent with the approach to remedies set out in Volume 3 Section 1, we propose to exercise our discretion in setting these controls in favour of an approach that is aimed at supporting investment in fibre networks.

5.9 Our proposals seek to do this by ensuring that:

- a) Openreach has the opportunity to recover efficiently incurred costs; and
- b) a level playing field exists between Openreach and competing telecoms providers that make use of PIA to provide downstream products.

5.10 Establishing a level playing field between Openreach and rival networks would be important for ensuring that BT and its competitors have appropriate conditions to support their investments. In addition, providing Openreach with the opportunity to recover its efficiently incurred costs would support Openreach's incentives to invest more generally.

We propose a cost-based charge control

5.11 We consider that this approach will provide strong incentives for rival network investment while allowing Openreach to recover the costs of its infrastructure. We also consider that a cost-based charge control supports our aim of ensuring a level playing field between telecoms providers and Openreach when making use of the physical infrastructure.

5.12 We also consider that a cost-based charge control supports our aim of ensuring a level playing field between telecoms providers and Openreach when making use of the physical infrastructure.

Approach to calculating PIA rental charges

5.13 We describe in detail the methodology we have applied to calculate the costs of PIA rental charges in Annex 20.

5.14 Broadly speaking, there are three main steps to the calculation:

⁶⁶ As set out in Volume 3 Section 3, we are also proposing to impose an obligation for charges for network access to be fair and reasonable, except to the extent that a specific charge control or a basis of charges obligation applies. We are proposing this because we are concerned that BT will have the incentive and ability to set excessive prices and/or to impose a price squeeze in relation to new forms of network access in the physical infrastructure market. Our general position is that we would interpret this fair and reasonable obligation to mean that, in the physical infrastructure market: (i) BT should not set prices that result in excessive pricing, and (ii) BT should not set prices that would equate to a margin squeeze under ex post competition law for existing and new forms of network access. While we would assess any dispute on the relevant facts, our starting point for evaluating cost and margins in this context would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard.

- a) **Step 1:** Determine the regulatory cost base.
- b) **Step 2:** Attribute the regulatory cost base between different PIA services.
- c) **Step 3:** Calculate unit costs for each service in each year and then set rental charges as a share of these unit costs.

Determining the regulatory cost base

- 5.15 The regulatory cost base for the relevant infrastructure (assets) being accessed is calculated for each year of the control. The cost base includes operating costs, depreciation (including any holding gains or losses) and a return on capital employed. The cost base comprises of two components:
- Asset cost component – this relates to the cost of the existing physical infrastructure to which access is granted.
 - Network adjustment cost component – this relates to costs associated with necessary adjustments undertaken to make Openreach’s physical infrastructure ready for use, which we have decided Openreach should recover across all users of the physical infrastructure, up to a financial limit. These are essentially asset costs (e.g. costs for the roll out of new duct and/or pole facilities) which Openreach has not yet incurred.
- 5.16 The return on capital employed is calculated using our current estimate of the Openreach Copper WACC (see Annex 21) as we consider this most closely reflects the systematic risk associated with physical infrastructure.
- 5.17 Our approach to estimating the regulatory cost base is broadly similar to that adopted in the WLA 2018 and PIMR 2019. However, there are several changes to our approach that we highlight below.
- a) We propose to use a more robust source of cost data. In the 2018 WLA we did not consider it practicable to use BT’s fully allocated cost information for PIA rental charges. However, over the past 12 months we have worked with BT and Openreach to get a better understanding of how PIA costs are incurred and reported. As a result, Openreach has significantly refined its estimates of the costs of poles. BT has also now developed a scenario of its 2017/18 regulatory accounts where PIA is treated as a separate market.⁶⁷ This scenario provides a view of cost data (on a CCA FAC basis) that is consistent with how BT will report PIA market costs in its RFS from 2019/20 onwards. We have used this scenario to inform our base year costs since we consider this provides a more robust starting point from which to estimate PIA charges going forward.
 - b) We forecast regulatory costs in each year over the control period, to 2025/26. Our previous approach was more “static” in that few of the cost elements were forecast. To

⁶⁷ In practice we use the scenario based on the 2017/18 Restated results in BT’s 2018/19 RFS to be consistent with other data we use for modelling undertaken as part of this consultation.

support our proposed approach, we forecast volumes of PIA assets and investment in PIA assets over the charge control period. In relation to the network adjustment component, we propose to use the same unit costs per home passed as we assumed in the WLA 2018 but have updated our estimates of the number of premises passed by new networks using PIA services. These “extra” network adjustment costs are added to the regulatory cost base in each year and then treated the same as any other “asset” costs with the Asset cost component.

- c) We remove costs associated with repayment works. This adjustment is consistent with the adjustment we make in the Top-Down model and with our approach in the 2019 BCMR Statement in which we directed Openreach to move all capital costs associated with repayment works into the Openreach Residual market.

Attribute the regulatory cost base between different PIA services

- 5.18 BT’s accounting systems do not record costs separately for different PIA services, but rather records these costs at a greater level of aggregation (i.e. all duct assets and all pole assets). Therefore, the regulatory cost base needs to be attributed to different PIA services.
- 5.19 Our starting position is to rely on Openreach’s attribution of costs to different PIA services. However, we note that Openreach’s recent assessment of the attribution, although based on more robust data, was very different to the attribution we used in the WLA 2018. As a result, using Openreach’s latest cost attribution would lead to significant changes in prices for some services, notably for single bore and 3+ bore duct.⁶⁸
- 5.20 As discussed in our 2018 WLA, stakeholders have previously raised concerns about the possibility of future revaluations by BT of its physical infrastructure and the impact of this on the level of PIA charges. In the WLA 2018 we explained that our general policy aim is to avoid abrupt changes and to support stable prices for users.⁶⁹
- 5.21 We consider that BT’s revised attribution of PIA costs raises similar issues to the potential revaluation of the physical infrastructure referred to in the WLA 2018 since a reattribution of costs could result in abrupt changes in PIA charges.
- 5.22 While we acknowledge Openreach’s latest cost attribution, we also consider that previous attributions were a reasonable basis on which to attribute historical sunk costs, some of which date back to 1980. Therefore, we propose to apply the “old” attribution used to set charges in the 2018 WLA to costs associated with assets installed up to 31 March 2018. We

⁶⁸ The data Openreach provided covered the period from 2011/12 and accounted for only about [3<] % of the NRC of duct assets as at 2017/18, attributions prior to that may have been different. We note that costs prior to 2017/18 reflect sunk assets and could be attributed in many ways.

⁶⁹ This approach is consistent with what we said in paragraph 7.38 of the 2018 WLA statement: “Regarding the concerns raised by some respondents about the possibility of BT revaluing its physical infrastructure asset base in future and the impact that this could have on the level of PIA charges, we note that we cannot anticipate the nature of any adjustments that BT could propose. Therefore, we are of the view that any adjustments that BT may submit would have to be considered at that time in the context of our general policy aim to avoid abrupt changes and to support stable prices for users.”

propose to apply Openreach's revised attribution to assets installed after 31 March 2018 since we believe this provides a more robust view of its forward-looking incremental costs.⁷⁰

- 5.23 We consider our approach supports price stability for PIA while also basing cost attributions on the basis on which costs were incurred at the time. This will mean that Openreach will have the opportunity to recover the cost of its sunk assets and its forward-looking costs.

Calculate unit costs for each service and set PIA rental charges as a share of these unit costs

- 5.24 Having attributed costs to each PIA service, we calculate unit costs based on information about relevant volumes, e.g. the cost per metre for a particular type of duct, or the cost per footway box.
- 5.25 PIA charges are then set as a share of these unit costs. This share is based on various assumptions which we consider meet our objective of ensuring a level playing field exists between Openreach and competing telecoms providers, while providing Openreach with an opportunity to recover its efficiently incurred costs.
- 5.26 We recognise that achieving our objective involves the use of regulatory judgement, particularly as there is uncertainty as to how exactly competing telecoms providers will use PIA in their network deployments. However, we are of the view that, taken together, the assumptions we are proposing achieve our objective, and we consider this judgement to be reasonable. We base this on our assessment of how competing telecoms providers might use the physical infrastructure over the medium term, the opportunity to earn revenues related to that usage, and the consequential impact on Openreach's opportunity to earn revenues from its own network.
- 5.27 Below, we set out our proposed assumptions relating to the share of unit costs of physical infrastructure that are recovered from PIA charges.

Duct services

- 5.28 Ducts fall into two categories: spine ducts and lead-in ducts.⁷¹ For pricing purposes, spine ducts are broken down into three services depending on the number of bores on a route – single bore, two bores, and three or more bores.
- 5.29 Lead-in duct is currently priced as a separate service. We explain later in this section that we are proposing to simplify charges by setting a charge control on a consolidated lead-in product (comprising the lead-in duct and other services that are used to serve a single premises). Below, we discuss the lead-in duct component of this consolidated product.

⁷⁰ To allow for this approach, we identify the regulatory costs for duct and footway box services associated with pre- 31 March 2018 assets separately from those associated with post 31 March assets costs.

⁷¹ Spine ducts make up the main body of a physical infrastructure network. Lead-in ducts are the final section of a physical infrastructure network, enabling the connection between the distribution point and the Customer's Premises Equipment.

5.30 The table below shows the share of the unit cost (i.e. the share of the per metre cost) that we propose PIA users pay when using different types of duct. The charges apply to cables or sub-duct of up to 25mm diameter (with cables or sub-ducts using more space than this attracting multiple charges). We explain the basis for these assumptions in more detail in Annex 20.

Table 5.3: Proposed share of duct PIA services

PIA Service	Share of unit costs ⁷²
Lead-in duct	90%
1 bore duct	50%
2 bores ducts	19%
3+ bore ducts	9%

5.31 We consider that these assumptions are appropriate given our objective:

- a) **Lead-in ducts:** In most cases, each lead-in duct connects to a single premises. Therefore, our starting point is that when a competing telecoms provider uses a lead-in duct, it should pay all of the unit cost as it is likely to be the only provider receiving revenue from the premises. ⁷³ However, we recognise that some customers will ultimately churn, and the competing telecoms provider would then no longer generate revenue from the premises. Therefore, we consider that it is appropriate for the share to be less than 100% to ensure a level playing field with Openreach and avoid over-recovery by Openreach. We consider that a share of 90% is appropriate. ⁷⁴
- b) **Single bore spine ducts:** Competing telecoms providers and Openreach can simultaneously use spine duct to provide services to consumers. Where a second telecoms provider uses single bore spine duct then we propose that the costs are shared equally between them, each paying 50%. ⁷⁵ For the purposes of setting a charge control, we think it is reasonable to assume that competing telecoms providers deploying one sub-duct will be able to compete for the same end customers served by that duct in the medium term.
- c) **Spine ducts with two bores, and spine ducts with three or more bores:** These ducts are ultimately used to serve a greater number of premises than single bore spine ducts. In general, the greater the number of bores, the greater the number of premises

⁷² Ofcom analysis, using data from Openreach's response dated 11 October 2019 to the s.135 notice titled Promoting investment and competition in fibre networks dated 27 September 2019; Openreach's response of 13 June 2019 to the s.135 notice titled Promoting competition and investment in fibre networks dated 17 April 2019.

⁷³ We acknowledge that in some cases some lead-in ducts serve two premises (e.g. semi-detached houses) and some lead-in ducts serve two or more premises. However, as a starting point, we think it is reasonable to assume that each lead-in duct serves a single premises.

⁷⁴ We explain this in more detail in Annex 20.

⁷⁵ On average, we would not expect more than one competing telecoms provider to be sharing single bore spine duct with Openreach.

served by that duct.⁷⁶ For the purposes of setting a charge control, we think it is reasonable to assume that competing telecoms providers deploying one sub-duct⁷⁷ will not compete for all end customers served by multi-bore spine duct, and/or that there is greater potential for multiple competing telecoms providers to be sharing these ducts. Therefore, we consider that competing telecoms providers should pay a smaller share of the unit cost of spine ducts with more than one bore (i.e. less than 50%), and that the share for three or more bore duct should be lower than the share for two bore duct. Consistent with this, we are proposing shares based on the PIA pricing methodology used in 2018 WLA and 2019 PIMR. We are of the view that these shares are appropriate given our objective.

Manholes and joint boxes

- 5.32 Manholes and joint boxes are underground chambers, or footway boxes, that act as flexibility points for cables.
- 5.33 The table below sets out the share of the unit cost (i.e. the share of the cost per manhole or joint box) that we propose a PIA user pays to enter (and exit) a manhole or joint box.

Table 5.4: Proposed share of footway services

PIA Service	Share of unit costs
Manholes	3% ⁷⁸
Joint boxes	14% ⁷⁹

- 5.34 Competing telecoms providers and Openreach can simultaneously use manholes and joint boxes to provide services to consumers. For the purposes of setting a charge control, we think it is reasonable to assume that competing telecoms providers installing one sub-duct will not compete for all end customers served by these chambers, and/or that there is greater potential for multiple competing telecoms providers to be sharing these chambers.⁸⁰ Consistent with this, we are proposing shares based on the PIA pricing methodology used in 2018 WLA and 2019 PIMR. We are of the view that these shares are appropriate given our objective.

⁷⁶ In general, in BT's tree and branch network architecture, duct that is closer to the exchange has more bores and carries more cables.

⁷⁷ Where competing telecoms providers install multiple subducts, they will pay multiple charges and thus pay a larger share of the unit cost.

⁷⁸ Ofcom analysis, using data from Openreach's response dated 11 October 2019 to the s.135 notice titled *Promoting investment and competition in fibre networks* dated 27 September 2019; Openreach's response of 13 June 2019 to the s.135 notice titled *Promoting competition and investment in fibre networks* dated 17 April 2019.

⁷⁹ Ofcom analysis, using data from Openreach's response dated 11 October 2019 to the s.135 notice titled *Promoting investment and competition in fibre networks* dated 27 September 2019; Openreach's response of 13 June 2019 to the s.135 notice titled *Promoting competition and investment in fibre networks* dated 17 April 2019.

⁸⁰ In general, manholes will serve more premises than the smaller joint boxes.

Poles

- 5.35 The PIA remedy allows telecoms providers to attach cables and equipment to Openreach’s poles.
- 5.36 In contrast to ducts and footway boxes, the unit cost of a pole is recovered across more than one PIA service, i.e. there are separate charges for each type of attachment.⁸¹ Therefore, as explained in Annex 20, the cost per pole is first attributed between the different attachment types.
- 5.37 PIA users installing a particular type of attachment then pay a share of the attributed unit cost for that type of attachment. The table below sets out the proposed shares for each type of attachment.⁸²

Table 5.5: Proposed share of attributed unit costs

PIA Service	Share of attributed unit cost ⁸³
Single-premises attachments	90%
Multi-premises attachments	63%
Pole top equipment (manifolds)	52%
Cable up a pole (per cable)	56%

- 5.38 We consider that these assumptions are appropriate given our objective:
- a) **Single-premises attachments (dropwires):** Competing telecoms providers and Openreach can simultaneously use poles to attach dropwires to provide services to consumers. However, when a competing telecoms provider connects an end customer, it is likely to be the only provider receiving revenue from that premises. Therefore, consistent with our approach to lead in duct, our starting point is that the competing telecoms provider should pay all of the attributed unit cost as it is likely to be the only provider receiving revenue from the premises. However, as with lead-in ducts, we recognise that some customers will ultimately churn, and the competing telecoms provider would then no longer generate revenue from the premises. Therefore, we consider it appropriate for the share to be less than 100% to ensure a level playing field

⁸¹ There are four different types of attachment: dropwires connecting to a premises (“single-premises attachments”), attaching aerial cables ultimately serving multiple premises (“multi-premises attachments”), running a cable from the ground up to the top of a pole, and attaching equipment to the top of a pole.

⁸² In the case of poles, the attributed unit cost for each type of attachment is based on the attribution of pole costs to each type of attachment, and the current number of Openreach attachments per pole. Using illustrative figures, assume the cost per pole is £100, and 7% is attributed to pole top equipment attachments. If Openreach has 0.5 attachments per pole on average, the attributed unit cost is £14 (i.e. (£100 * 7%) / 0.5). The table then shows what share of the attributed unit cost (£14) PIA users pay to install a pole top equipment attachment.

⁸³ Ofcom analysis, using data from Openreach’s response dated 11 October 2019 to the s.135 notice titled *Promoting investment and competition in fibre networks* dated 27 September 2019; Openreach’s response of 13 June 2019 to the s.135 notice titled *Promoting competition and investment in fibre networks* dated 17 April 2019.

with Openreach and avoid over-recovery by Openreach. We consider that a share of 90% is appropriate, consistent with our proposed approach to lead-in ducts.⁸⁴

- b) **Multi-premises, pole top equipment and cable up a pole attachments:** Competing telecoms providers and Openreach can simultaneously use poles to attach aerial cables, pole top equipment and manifolds to provide services to consumers. However, in contrast to dropwires, both Openreach and the competing telecoms provider are likely to be receiving revenue from customers which these attachments are used to serve. Therefore, similar to spine ducts and chambers, we consider that telecoms providers and Openreach should share these costs. We calculate that share based on the expected number of attachments that Openreach and the competing telecoms provider will have on a pole.⁸⁵

Our proposals to simplify the structure of charges relating to hosting in footway boxes and ducted lead-ins

5.39 We are proposing changes to the structure of footway box and ducted lead-in charges.

Removal of cable coil and in-line splice hosting charges

5.40 PIA allows telecoms providers to install in-line splices / distribution joints and coils of cable in Openreach's footway boxes. These currently attract additional rental charges.

5.41 Under the PIA pricing methodology used in 2018 WLA and 2019 PIMR, rental charges for hosting cable coils and in-line splices are assumed to contribute very little to the recovery of footway box costs. It is the entry and exit rental charges discussed above that are expected to account for the vast majority of PIA users' contribution to footway box costs.⁸⁶ Hosting charges are also based on a number of working assumptions which are difficult to verify.⁸⁷

5.42 These charges add to the complexity of the PIA product, without making a material contribution to cost recovery.

5.43 We propose to remove rental charges for cable coil and in-line splice hosting.⁸⁸ We consider that this simplification will support investment by competing telecoms providers.

5.44 We recognise that charging for hosting could in theory incentivise telecoms providers to make efficient use of space inside footway boxes. However, we consider that this can be achieved through the use of engineering rules (as is already the case to some extent). For

⁸⁴ In Annex 20 we provide further details on this.

⁸⁵ By way of (simplified) illustration, if Openreach's poles have one manifold on average, and PIA users are expected to have one manifold on average, the share of pole unit costs attributed to manifolds which PIA users would pay would be 50%. This approach is consistent with the PIA pricing methodology used in 2018 WLA and 2019 PIMR.

⁸⁶ The methodology used in the 2018 WLA Statement effectively assumed that hosting charges would contribute an amount equivalent to 2% of the contribution from entry and exit charges.

⁸⁷ See 2018 WLA Statement, Annex 25, paragraphs A25.19-A25.23.

⁸⁸ We previously reduced entry and exit charges by 2% to mitigate the risk of any over-recovery as a result of OR charging for both entry/exit and hosting. As a result of our proposal to remove the latter charges we reverse this 2% reduction.

example, Openreach could include a provision in its Reference Offer that requires operators to remove unused equipment if required.

A simplified lead-in service

- 5.45 Lead-in ducts link customer premises to the main, shared, duct network. Lead-in cables are generally pulled from a distribution point (i.e. a joint chamber and / or a footway box) into a spine duct (generally single bore), before passing through the lead-in duct to reach the end-customer premises.
- 5.46 Telecoms providers using a lead-in cable to serve a single premise currently need to purchase a combination of several infrastructure rental services, including lead-in duct (charged per metre), potentially lead-in link duct (charged per metre), and one or more facility hostings (to enter and exit the distribution point and pass through any intermediate footway boxes or chambers).
- 5.47 Each of these services attract a separate charge. The lengths of lead-in ducts, lengths of lead-in link ducts and the number of facility hostings required to serve every premises are not known (because Openreach does not routinely keep records of their underground infrastructure beyond the distribution point). Telecoms providers are therefore required to record information relating to their use of lead-ins and submit this to Openreach. Telecoms providers are required to capture information (for each customer premises) relating to:
- a) Length of Lead-in ducts used
 - b) Length of Lead-in Links used (and related cable sharing)
 - c) Number of Facility Hosting (i.e. number of ingress/egress from any chamber in the route)
- 5.48 Telecoms providers find this a significant administrative overhead and have sought a simpler approach for Lead-in products.
- 5.49 To simplify recording for telecoms providers and provide greater predictability in charges, Openreach has proposed to offer a flat, aggregated price for a “Simplified Underground PIA Lead-in” product, i.e. a consolidated, fixed price lead-in rental service that would apply from the telecoms provider’s optical distribution point all the way to the building entry point of the end-customer premises. This would replace the existing services, i.e. the lead-in duct, the lead-in link duct, and the facility hosting(s). The pricing of the proposed fixed-price service is based on an estimated weighted-average usage of the existing three service components.
- 5.50 The introduction of this service will remove the current complex and burdensome process for telecoms providers and reduce administrative overheads such as verification and record-keeping. It will remove operational costs for telecoms providers and Openreach and provide a much greater degree of certainty for telecoms providers in developing the investment case for FTTP build in a particular area. We understand the proposal has received strong support from telecoms providers, on the condition that on average they do not pay more than for the current pricing for underground lead-ins.

- 5.51 Given that Openreach is proposing to make a material change to the existing lead-in products which we currently charge control, we are proposing to change the approach we took in the 2019 PIMR where each lead-in service attracts a separate charge to one that is based on Openreach's approach.
- 5.52 In setting prices for the new service, Openreach has estimated the average quantities of lead-in ducts, lead-in links and facility hosting components that are used to provide a connection. These averages were based on approximately [X] new site premises across the UK where lead-in measurements were recorded on Openreach's inventory systems.⁸⁹
- 5.53 Openreach's proposed price of £9.25⁹⁰ per-lead-in per-annum is derived by using published pricing for the various components (lead-in duct, lead-in link duct and facility hosting) and assumes that:
- a) the lead-in link ducts and chambers are shared by up to 3 cables;
 - b) there are [X] facility hostings per chamber in the route (i.e. ingress/egress from any chamber in the route).
- These assumptions are also based on information from the above-mentioned sample of new premises from their inventory systems.⁹¹
- 5.54 Openreach confirmed it believed "that this information can reasonably be applied to all sites across the UK because the sample size of [X] is a very large and statistically significant sample, and represents a spread across a wide range of geographies ... In addition, the analysis is based on the only significant recorded Lead-in information that we have access to ... and therefore represents the best Lead-in information available to us".⁹²
- 5.55 We have reviewed Openreach's approach and consider it to be reasonable. Therefore, we are proposing to impose a charge control on the new simplified lead-in service.

Consultation on directions to change lead-in charges to the new consolidated service in the 2019 Physical Infrastructure and 2018 WLA markets.

- 5.56 Given that by introducing the proposed lead-in service Openreach is making a material change comprising the introduction of a new service wholly in substitution for the existing lead-in services, we are, in parallel with the main forward-looking consultation, consulting on a change to the current charge controls to move the regulated charge from the various current constituent lead-in services to this new consolidated service. The closing date for this consultation is the same as for the main consultation. For the avoidance of doubt our proposal is also to base future lead-in prices on this new consolidated lead-in service.

⁸⁹ Openreach's response dated 10 December 2019 to the s.135 notice titled *Promoting competition and investment in fibre networks* dated 2 December 2019.

⁹⁰ This price has been calculated using prices for other PIA services as at December 2019.

⁹¹ Openreach's response dated 10 December 2019 to the s.135 notice titled *Promoting competition and investment in fibre networks* dated 2 December 2019.

⁹² Openreach's response dated 10 December 2019 to the s.135 notice titled *Promoting competition and investment in fibre networks* dated 2 December 2019.

5.57 The draft legal directions covering this proposed change are contained in Volume 5 and apply to both the existing physical infrastructure market and the wholesale local access market. The charge we are proposing in the draft directions for the lead-in service is, as derived above, £9.25⁹³ for 2019/20.

Summary of our proposed PIA rental charges

5.58 Using the methodology outlined above we have calculated unit costs for each of the existing PIA rental services and the associated maximum charges in each year of the charge control period.

5.59 We propose to set maximum charges that will apply for the duration of the review period.

5.60 We propose that the maximum charge is updated each year to allow for changes in the underlying costs due to inflationary pressure over the review period. As in our other recent charge controls, we propose to use the Consumer Price Index to measure inflation.

5.61 For duct and footway box services our calculations indicate that maximum charges in 2020/21, the start of the new control period, will not be that dissimilar to those when the current charge control period ends, in March 2021. After that we expect costs to increase at slightly different rates for different services. Therefore, we are proposing a set of simple CPI-X controls for each service as shown in Table 5.6.

Table 5.6: Proposed maximum rental charges for duct and footway box PIA services

PIA service	Current charge ⁹⁴	April 2021	Proposed control to 2025/26
Duct services			
Lead-in duct (per connection) ⁹⁵	£9.25	£9.67	CPI + 0.9%
Facility in Spine duct per metre – single bore	£0.28	£0.30	CPI + 1.9%
Facility in Spine duct per metre – 2 bores	£0.18	£0.19	CPI – 2.0%
Facility in Spine duct per metre – 3+ bores	£0.13	£0.14	CPI – 2.0%
Footway box services			
Facility hosting (per manhole entry)	£8.54	£8.87	CPI + 0.4%
Facility hosting (per joint box entry)	£2.05	£2.14	CPI + 0.8%

5.62 Although the maximum charges we estimated for 2021/22 were comparable to those we expect to be in place in March 2021 this masks several changes, some of which have

⁹³ This is the proposed price for the new simplified lead in product that we propose should be introduced.

⁹⁴ Openreach. *Product Prices: Physical Infrastructure Pricing*. [accessed 4 December 2019]

⁹⁵ As noted elsewhere this is the price for the simplified lead in product that we are proposing. It is based on Openreach's proposals which in turn used input prices for other PIA services that were in place as at December 2019. Under the current regulations Openreach can increase prices by CPI each year to March 2021.

increased costs compared to those made in our previous assessments and some of which have decreased costs. For example:

- a) The WACC has reduced from 7.9% to 7.1%. This reduces the return on capital employed, which, for duct and footway box services, is a considerable proportion of the cost base.
- b) Openreach's capital expenditure on duct in recent years has increased and is higher than depreciation. This appears to be largely the result of the increase in contract rates that we noted in 2018 WLAMR.⁹⁶ As capex is higher than depreciation this tends to increase the capital base and hence costs.
- c) However, this increase is largely offset by our proposal, noted above, to remove the costs of repayment works.
- d) There have been some changes to the way that Openreach now records its volumes.

5.63 We apply the same, low, volume growth to all PIA duct and footway services. We have undertaken various sensitivities on the extra costs associated with Network Adjustments. We believe that for duct and footway services these are unlikely to have a material impact on maximum prices in 2025/26.

5.64 Single bore spine duct maximum prices are expected to rise faster than those for other services as a result of applying Openreach's revised attribution base to costs associated with post March 2018 assets. This attributes more costs to single bore duct than in previous assessments. A further reason for 2 bore duct (and to a less extent 3+ bore duct) charges decreasing is increased utilisation data provided by Openreach.

5.65 The change in the composite lead-in price is lower than that for single bore duct due to our proposal to reduce the price of the lead-in component by 10%. In Annex 20 we provide further details on this.

5.66 Similarly, footway services charges are affected by our proposal to remove the 2% reduction we previously applied to mitigate the potential over-recovery due to ancillary footway services.

5.67 For poles services our calculations indicate that maximum charges at the start of the new control period will be much lower than those we expect to be in place at the end of the current charge control period that ends on 31 March 2021. We therefore propose to reset prices for each pole service on 1 April 2021 and then to apply a separate price control on each service till the end of the period.

⁹⁶ See paragraphs A19.153 to A19.156 of Annex 19 of the 2018 WLA Market Review.

Table 5.7: Proposed maximum rental charges for poles PIA services

PIA service	Current charge ⁹⁷	April 2021	Proposed control to 2025/26
Poles service			
Facility on pole for Multi-end-user attachment	£11.39	£4.02	CPI – 1.6%
Facility on pole for Single-end-user attachment	£4.87	£1.63	CPI – 1.5%
Pole top equipment (manifolds)	£3.53	£1.22	CPI – 1.6%
Cable up a pole (per cable)	£2.30	£0.79	CPI - 1.3%

- 5.68 The main reason for the reduction in poles costs is that, following work we have undertaken with Openreach, the estimated unit cost of installing a pole is now much lower. A key reason is that these estimates now exclude the cost of re-cabling activities when a pole is replaced: these were included in our previous assessments. In addition, using the “PIA market” scenario approach described reduced operating costs, mainly by applying a more consistent approach to the treatment of overhead costs and indirect capital expenditure.
- 5.69 Similar to lead-in ducts, charges for Single-end-user attachments are affected by our proposal to reduce the price of a lead-in by 10%, to take into account potential customer churn. In Annex 20 we provide further details on this.
- 5.70 The controls we are proposing for poles services maximum charges are generally lower than those for duct and footway boxes services. That is largely because operating costs form a much greater proportion of poles costs and we forecast cost savings on these. Our volume growth forecasts for poles are higher than for duct and footway boxes though still very low.
- 5.71 We provide further details on the calculations we have undertaken in Annex 20.

Legal tests

- 5.72 We are proposing to set SMP conditions on BT in relation to the market for Physical Infrastructure Access to give effect to the pricing remedies described above. Our draft SMP conditions can be found in Volume 5.
- 5.73 As explained above, we consider there to be a risk that, absent regulation, BT might fix and maintain prices at an excessively high level and/or impose a price squeeze in that market so as to have adverse consequences for end-users.
- 5.74 As required by section 88 of the Act, we consider that the setting of the draft SMP conditions would be appropriate for the following purposes:

⁹⁷ Openreach. [Product Prices: Physical Infrastructure Pricing](#). [accessed 4 December 2019]

- a) Promoting efficiency – the form of control also encourages Openreach to increase its productive efficiency, as it allows Openreach to keep any profits it earns within the defined period by reducing its costs compared to those envisaged in setting the control, while protecting consumers from excessive prices (i.e. allocative efficiency).⁹⁸
 - b) Promoting sustainable competition – as set out above we consider that our approach to PIA rental charges will further promote sustainable competition in that it provides potential investors with increased certainty as to the level of rental charges they will face. Providing investors with greater certainty that the level of PIA rental charges will not be excessive or allow for the imposition of a price facilitates the building of credible business cases for deploying a network using PIA
 - c) Conferring the greatest possible benefits on end user of public electronic communications services - we consider that there are significant benefits to other telecoms to deploying fibre networks at scale and encouraging such entry and expansion provides the greatest possible benefits to end-users.
- 5.75 We have also taken account of the extent of BT’s investment as our approach provides for an appropriate return on the capital employed to be included in the charges.
- 5.76 As discussed in Volume 1, we anticipate that the test set out in section 88 of the Act may be amended before we issue our Final Statement, to give effect to Article 74 of the EECC. This requires NRAs, in determining whether price control obligations would be appropriate, to take into account the need to promote competition and long-term end-user interests related to the deployment and take-up of next- generation networks, and in particular of very high capacity networks. NRAs are also required to ensure that any mandated cost recovery methodology or pricing mechanism serves to promote the deployment of new and enhanced networks. We have explained in detail above how we expect our proposed pricing remedies to promote the deployment of new, competing leased lines networks and MSNs, and why we consider this will be for the long-term benefit of consumers.
- 5.77 Article 74 of the EECC also states that, when NRAs consider it appropriate to impose price control obligations on access to existing network elements, they should also take account of the benefits of predictable and stable wholesale prices in ensuring efficient market entry and sufficient incentives for all undertakings to deploy new and enhanced networks. We have explained above why we consider our preferred approach of pricing continuity will deliver these benefits.
- 5.78 In Section 7, we explain why the setting of these draft SMP conditions would satisfy the test set out in section 47 of the Act (and how the directions we are proposing in relation to the WLA 2018 and PIMR 2019 satisfy section 49 of the Act).

⁹⁸ The benefits of any cost savings would potentially accrue to the regulated company in the short run and this would give BT incentives to make those efficiency savings. In the longer run, these cost savings could be passed to consumers through reductions in prices, either as a result of competition or through subsequent charge controls. In our view, this form of price regulation is also preferable to a rate of return type of control.

Ancillaries

- 5.79 In addition to the charges for rental services we have proposed above, PIA has a range of associated ancillary activities. These broadly fall into the following categories:
- a) **Activities related to network adjustments.** This is where Openreach makes adjustments to its network where this is necessary for its physical infrastructure to be available to telecoms providers for the purpose of deploying their own networks, for example, repairing existing faulty infrastructure.
 - b) **Productisation activities or order processing activities.** This could be accessing network records or validating communications providers' plans.
 - c) **Other miscellaneous activities** related to using PIA, such as engineer accreditation activities or survey activities requiring input from Openreach.

Ancillary activities relevant to network adjustments

- 5.80 In Volume 3 Section 4, we propose that BT is required to make adjustments to its physical infrastructure network in certain circumstances.
- 5.81 Openreach adjusts its network to support BT's own use of the physical infrastructure. The existing infrastructure as it stands today is the outcome of cumulative decisions to install the original infrastructure (for example, at the time the copper local access network was deployed) and make subsequent adjustments to enable it to continue to be used – whether for the maintenance of existing networks or to facilitate the deployment of new networks (for example, to accommodate the fibre supporting FTTC broadband services or leased lines).
- 5.82 To a large extent Openreach pools the costs of infrastructure build and network adjustments required to accommodate the deployment and maintenance of BT's networks, and recovers them across all users of the physical infrastructure via depreciation and return on capital employed on all products which use the physical infrastructure. This reflects the view that the physical infrastructure is a shared asset used to provide a range of downstream services.
- 5.83 Our view is that if PIA users faced the full up-front costs of network adjustments and recovered these across their own customer base this is likely to render the remedy ineffective as a basis for promoting the deployment of competing networks at scale. This is because BT's ability to recover the costs of network adjustments over all users of the infrastructure reduces the risk associated with an investment. Even if the investment ultimately fails to generate the incremental revenues required to cover the incremental costs of the investment, the costs of network adjustments can still be recovered from products in markets in which BT has SMP. Competing telecoms providers do not benefit from the same ability to recover costs from services in which they have SMP when recovering costs of the network adjustments they require, and therefore face greater risk relative to BT.

- 5.84 We consider that it is important that Openreach recovers the costs of network adjustments related to PIA users in the same way as network adjustments in support of BT's own use. We therefore propose that Openreach should recover the costs of network adjustments over all users of the physical infrastructure, in the same way as it does for BT. As such, network adjustment costs will be shared across all Openreach's services (including PIA rentals) that use the physical infrastructure.
- 5.85 We consider that this supports our objective of ensuring a level playing field between telecoms providers using PIA services and Openreach that make use of the physical infrastructure to provide downstream products for the following reasons:
- a) It avoids the risk that telecoms providers are charged more than the incremental cost of network adjustments associated with their network deployments. For example, telecoms providers would not be required to pay the cost of infrastructure adjustments which increase the capacity available to Openreach or other third parties, nor would they be required to pay the cost of network adjustments which Openreach would have needed to undertake anyway.
 - b) It reduces Openreach's ability to exploit any flexibility it has to increase the costs of network adjustments to competing telecoms providers.
 - c) It promotes investment by reducing the upfront costs of network deployment, and reducing the uncertainty that competing telecoms providers face over the level of expenditure required to make the physical infrastructure useable.

Proposals for setting a financial limit on network adjustments

- 5.86 We acknowledge that there are risks with our proposal. Although we can estimate the cost of network adjustments that would be required as a result of PIA, the incidence of network adjustments is uncertain and variable, and may be higher than we expect. The higher the cost and incidence of these adjustments, the greater the risk of promoting investment where the benefits to consumers are outweighed by the costs of deployment
- 5.87 To mitigate this risk, we are proposing that a financial limit should apply to the costs of network adjustments. Any costs incurred above the financial limit should then be recovered directly from the telecoms provider requesting the network adjustment, through ancillary charges.
- 5.88 We are proposing that the financial limit should remain at £4,750 (per km of spine duct), the same level as in the PIMR 2019 and WLA 2018. We have considered whether there are any specific reasons in the context of this review for departing from this approach but consider that a financial limit of £4,750 is appropriate to cover in scope adjustments.
- 5.89 We propose that adjustments relating to overhead lead-ins are not subject to a financial limit. This is consistent with our decision in the 2018 WLA. Specifically, the costs associated with the following network adjustments are not included for the purposes of determining whether the financial limit has been exceeded.
- a) Network adjustment costs related to the provision of capacity for dropwires: and

- b) Network adjustment for making poles (used for providing dropwires) usable which are currently not usable because damaged, decayed or defective.
- 5.90 We propose that these costs are pooled and recovered across all users of the infrastructure.
- 5.91 Therefore, we propose to cap ancillary charges related to network adjustments undertaken to provide capacity on poles or to make poles useable for dropwires at zero, reflecting our decision that the costs of these network adjustments should be recovered from all users of the infrastructure without limitation.
- 5.92 For ancillary charges related to all other network adjustments, we propose to allow Openreach to charge only the amount that exceeds the financial limit.⁹⁹ This reflects our proposal that the costs of network adjustments should be recovered from all users of the infrastructure up to the financial limit.
- 5.93 We propose that a basis of charges approach should be used to calculate network adjustments costs, including when being calculated for the purposes of applying the financial limit.

Productisation costs

- 5.94 In previous decisions, our calculation of PIA charges included a costs incurred by Openreach to set up and manage PIA services, and to process individual PIA orders (productisation costs).¹⁰⁰ However, as the base year cost data that we are using in this consultation now includes any such productisation costs¹⁰¹ we no longer assess these as a separate cost component.
- 5.95 We propose that productisation costs incurred in the future when telecoms providers use PIA should be pooled with those that are incurred when BT uses the infrastructure and recovered over all users of the infrastructure. We consider that this approach is unlikely to promote inefficient investment as most productisation costs are not incremental to the decision of a particular telecoms provider to invest but are costs that are necessary to create an effective PIA remedy overall.
- 5.96 Moreover, our proposal to spread these costs over all users of infrastructure reduces Openreach's ability to exploit any flexibility it may have to increase the costs to competing telecoms providers by incurring higher productisation costs.

Other ancillary activities

- 5.97 All other ancillary activities are currently set on a 'basis of charges approach'. This means that ancillary activity charges should be calculated based on their cost of provision, i.e. should be based on a forward looking long run incremental cost approach, allowing an

⁹⁹ See 5.88.

¹⁰⁰ 2019 PIMR, Section 6.

¹⁰¹ Openreach's response of 4 June 2019 to the s.135 titled *Promoting competition and investment in fibre networks* dated 17 April 2019.

appropriate mark-up for the recovery of common costs, including an appropriate return on capital employed.

5.98 We propose that the same approach should continue going forward.

Legal tests

5.99 We are proposing to set SMP conditions on BT in relation to the market for Physical Infrastructure Access to give effect to the pricing remedies described above. Our draft SMP conditions can be found in Volume 5.

5.100 As explained above, we consider there to be a risk that, absent regulation, BT might fix and maintain prices at an excessively high level and/or impose a price squeeze in that market so as to have adverse consequences for end-users.

5.101 As required by section 88 of the Act, we consider that the setting of the draft SMP conditions would be appropriate for the following purposes:

5.102 Promoting efficiency – if telecoms providers have to pay the full cost incurred in undertaking any network adjustments this could deter efficient investment, as it does not reflect the benefits to BT and other telecoms providers, now and in the future.

5.103 Promoting sustainable competition – if efficient investment is deterred, there may be some cases where competitive network investment will not take place because the telecoms provider does not value the required network adjustment enough to pay the full cost, but all parties that benefit (now and in the future) would be prepared to share the cost if faced with that decision. Therefore, sharing the cost of network adjustments can unlock competitive network investment that would not otherwise take place. Moreover, we consider that the limit on the amount Openreach has to recover in this way mitigates the risk that the cost of network adjustments is higher than we anticipate, and therefore mitigates the risk that the costs of new entry outweigh the gains.

5.104 Conferring the greatest possible benefits on end user of public electronic communications services - we consider that there are significant benefits to other telecoms to deploying fibre networks at scale and encouraging such entry and expansion provides the greatest possible benefits to end-users.

5.105 We have also taken account of the extent of BT's investment as the PIA as the charge controls we are proposing provide for Openreach to recover the relevant costs. Also, our approach provides for an appropriate return on the capital employed to be included in the charges.

5.106 The proposed Condition 6 requires BT to ensure that its charges for PIA services (not within the scope of the PIA charge control) are reasonably derived from the costs of provision based on a forward looking long run incremental cost approach, allowing an appropriate mark up for the recovery of common costs, including an appropriate return on capital employed. We consider that this requirement promotes efficiency and sustainable competition and provides the greatest possible benefits to end-users by enabling

competing providers to buy network access at levels that might be expected in a competitive market.

- 5.107 The extent of investment of the dominant operator has been taken into account as the approach provides for an appropriate return on the capital employed to be included in the charges.
- 5.108 As discussed in Volume 1, we anticipate that the test set out in section 88 of the Act may be amended before we issue our Final Statement, to give effect to Article 74 of the EECC. This requires NRAs, in determining whether price control obligations would be appropriate, to take into account the need to promote competition and long-term end-user interests related to the deployment and take-up of next-generation networks, and in particular of very high capacity networks. NRAs are also required to ensure that any mandated cost recovery methodology or pricing mechanism serves to promote the deployment of new and enhanced networks. We have explained in detail above how we expect our proposed pricing remedies to promote the deployment of new, competing leased lines networks and MSNs, and why we consider this will be for the long-term benefit of consumers.
- 5.109 Article 74 of the EECC also states that, when NRAs consider it appropriate to impose price control obligations on access to existing network elements, they should also take account of the benefits of predictable and stable wholesale prices in ensuring efficient market entry and sufficient incentives for all undertakings to deploy new and enhanced networks. We have explained above why we consider our preferred approach of pricing continuity will deliver these benefits.
- 5.110 In Section 7, we explain why the setting of these draft SMP conditions would satisfy the test set out in section 47 of the Act.

Consultation questions

Question 5.1: Do you agree with our proposals relating to calculating PIA rental charges? Please set out your reasons and supporting evidence for your response.

Question 5.2: Do you agree with the above proposal to introduce the PIA simplified underground lead-in service and the associated timings? Please set out your reasons and supporting evidence for your response.

6. Ancillaries

6.1 As set out in Volume 3 Section 4 (PIA specific remedies) and Volume 3 Section 5 (WLA and Leased line specific remedies), we are proposing to require the provision of such ancillary services as are reasonably necessary for the use of network access remedies in the physical infrastructure, WLA, Leased lines access and IEC markets.

6.2 In this section, we set out our proposals for pricing ancillaries.

Table 6.1: Our proposals for pricing ancillary services

Market	Ancillaries basket/service	Ancillary services/detail	Control for review period
Physical infrastructure ¹⁰²	Accommodation, Cablelink, Power	(see cross-market section below)	(see cross-market section below)
	Any new ancillaries used for PIA that are not subject to a cap		Basis of charges obligation for each new ancillary
	Network adjustment ancillaries	For charges above the financial limit of £4,750	Basis of charges obligation
Leased lines access in Area 2 and Area 3 IEC	Accommodation, Cablelink, Power, Site and Database Access	(see cross-market section below)	(see cross-market section below)
	Excess Construction Charges	Direct ECCs e.g. blown fibre, internal cabling, survey fees	CPI-0% <i>Sub-cap on each charge: CPI+5%</i>
		Contractor ECCs	Basis of charges obligation
	Ethernet Time Related Charges	Individual Ethernet TRCs including Right When Tested (RWT) and Dark fibre cessation	CPI-0% for each Ethernet TRC
	Other ancillaries ¹⁰³	All other ancillaries excluding the leased lines ancillaries listed above	CPI-0% for each charge
Leased Lines access in HNR areas	All Leased Lines ancillaries listed above		Fair and reasonable

¹⁰² We propose an obligation to provide PIA Site Access and PIA Database Access as a specific requirement set out in Volume 3 Section 4 but there are no associated charges for these ancillaries.

¹⁰³ Referred to as Exempt ancillary services in the Draft Legal Conditions.

WLA Areas 2 and 3	Accommodation, Cablelink (excluding GEA Cablelink), Power	(see cross-market section below)	(see cross-market section below)
	Co-mingling New Provides and Rentals	(see cross-market section below)	(see cross-market section below)
	MPF Single Migration		CPI-0%
	MPF Bulk Migration		CPI-0%
	MPF New Provides		CPI-0%
	MPF Soft Cease		£0
	Hard Ceases		CPI-0%
	Special Fault Investigations		CPI-0%
	WLA Time Related Charges		CPI-0% for each WLA TRC
	LLU Tie Cables		CPI-0%
	MPF Standard Line Test		CPI-0%
	Cancellation of MPF orders		CPI-0%
	Amend MPF orders		CPI-0%
	PCP Only Install		CPI-0%
	Start of Stopped Line		CPI-0%
	FVA with GEA (FTTP) Connection		CPI-0%
	GEA (FTTP) Connection (where there is no existing connection of any type – Area 2 only)	Our proposals relating to FTTP connections are set out in more detail below.	CPI-0%
	GEA (FTTC and FTTP) CP to CP Migrations		CPI-0%
	GEA (FTTC and FTTP) Ceases		£0
	1 Gbit/s GEA Cablelink		CPI-0% for connection charge Rentals at £0
	10 Gbit/s GEA Cablelink		CPI-0% for connection charge Rentals at £0
	VLAN moves applied to GEA Cablelink		CPI-0%
	GEA Bandwidth modify		CPI-0%

	GEA Cancel/Amend/Modify – CRD		CPI-0%
	GEA Cancel/Amend/Modify – Regrading		CPI-0%
	Superfast Visit Assure		CPI-0%
Cross-market Physical Infrastructure, Area 2, Area 3 and IEC	Cablelink ¹⁰⁴	External Cablelink Internal Cablelink	CPI-0%
	Accommodation ¹⁰⁵	Co-location and co-mingling for PIA, MPF, VULA, and leased lines ¹⁰⁶	CPI-0%
	Power/electricity		Basis of charges

Our proposed approach to setting ancillary charge controls

6.6 Absent regulation in each of the physical infrastructure, WLA, leased lines access and IEC markets, there is a risk that BT would have the incentive and ability to fix and maintain prices for ancillary services at an excessively high level and/or impose a price squeeze so as to have adverse consequences for end-users.

WLA and LL Access in Area 2 and Area 3, IEC markets

Cost-based approach

- 6.7 For most ancillaries, we propose to impose cost-based charge controls to address the risk of excessive pricing. ¹⁰⁷
- 6.8 As part of the previous WLA, BCMR and PIMR reviews, we examined ancillary costs and charges. We implemented CPI-X controls to specific ancillaries in order to bring the charges in line with costs. ¹⁰⁸
- 6.9 Therefore, we believe that the prices of ancillary services in aggregate will be close to cost by the end of the current charge control period ending in March 2021. We also consider that subsequent changes in costs are likely to track inflation relatively closely.

¹⁰⁴ We also propose an interconnection obligation as set out in Volume 3 Section 5.

¹⁰⁵ We also propose an obligation on BT to provide PIA Site Access and PIA database access.

¹⁰⁶ See the [Openreach Product site for PIA](https://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=BXz41J6zPgN4Eur3lf4yDkmrHjN3v60VLJJITHqZbd8IMnGHsqdC0vzO163bjmh34D91D7M0q8u%2FIISgtIFAKw%3D%3D), shows the PIA Co-mingling ancillary is purchased as Access Locate which is charged as if it were LLU Co-mingling, <https://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=BXz41J6zPgN4Eur3lf4yDkmrHjN3v60VLJJITHqZbd8IMnGHsqdC0vzO163bjmh34D91D7M0q8u%2FIISgtIFAKw%3D%3D>. This shows that accommodation is a cross-market ancillary.

¹⁰⁷ Ancillaries are charge controlled variously in baskets or as single services, as listed in Table 6.1.

¹⁰⁸ In this context, ancillaries related to PIA are specifically those repurposed from the WLA and BCMR markets e.g. accommodation services are the same for leased lines, WLA, and PIA.

- 6.10 For the majority of ancillaries, we propose to set a cost-based control by implementing a CPI-0% control on charges. Our view is that will allow BT to recover its costs over time and prevent excessive pricing.
- 6.11 Given the detailed cost modelling conducted as part of recent reviews has largely brought ancillaries into line with costs, we do not consider that further cost modelling would make a material difference to the alignment of charges to costs relative to our proposed approach over the review period.¹⁰⁹
- 6.12 We note that one of the key cost components for ancillaries is labour costs. Therefore, as a cross-check to our proposals, we have forecast labour costs over the next five years. We forecast labour costs to increase over the next five years on average by 1.16% above CPI.¹¹⁰ However, we consider that the difference in labour costs and inflation will be largely offset by the expected marginal efficiencies over the review period.

National prices

- 6.13 Where BT has an obligation to provide the same ancillary service in different geographic markets, we are proposing to set the same charge control in each market; essentially setting a national price, rather than setting different prices in different geographic markets. This is because:
- We consider there to be practical difficulties in separating out costs between different geographic areas and where costs are common across markets;
 - We expect that the cost components relevant to ancillaries (e.g. labour rates, power, and accommodation) to be at broadly the same levels in each of our proposed geographic areas and markets.
 - We do not consider that any reasonable variation in charges between geographic areas would further our overall objectives.

High Network Reach areas

Fair and reasonable requirement

- 6.14 Our proposed approach to setting charges for ancillaries in the market for leased lines access in HNR areas is different, reflecting the different degree of competition in these markets. Although these areas are not effectively competitive, we find competition to be more developed than in other areas. Moreover, the potential for new network deployments, particularly in light of the availability of a PIA remedy, means that the strength of competition in these areas is likely to increase over this review period, with the potential for them to emerge as fully competitive in future review periods.
- 6.15 Accordingly, consistent with our approach to setting charges for the main services in this market we propose to impose a fair and reasonable charging obligation that obliges

¹⁰⁹ We consider that further cost modelling would not overcome some inherent complications in BT's cost allocation. This supports our view that further cost modelling would not lead to costs being more accurate or reliable.

¹¹⁰ We have forecast labour costs in the opex inflation model in Annex 16.

Openreach to supply the relevant ancillaries on terms which do not constitute a price squeeze. Our view is that the greater degree of competition in HNR Areas will constrain Openreach's ability to raise ancillary prices, and the fair and reasonable charging obligation will protect retail competition.

Basis of charges obligations

- 6.16 In certain cases, we are proposing to apply a basis of charges obligation. This will require BT to demonstrate that its charges are reasonably derived from the costs of provision, allowing for an appropriate mark-up for common costs. This may be where components of the ancillary cost are outside BT's direct control or if the services are new and have no historical cost information.
- 6.17 We consider that in these circumstances a basis of charges condition provides appropriate protection against the risk of excessive pricing, whilst ensuring cost recovery.
- 6.18 We propose to continue the basis of charges obligations that have been set in previous reviews for the following services.

PIA ancillaries

- 6.19 In Section 5, we set out proposals relating to the basis of charges obligation in relation to network adjustments and new ancillaries.

Electricity

- 6.20 Electricity supply is used for all forms of network access. In the WLA 2018 Statement, we imposed a basis of charges obligation for electricity supply.¹¹¹
- 6.21 We propose to continue this obligation which 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 relevant administration of electricity activities. We continue to consider that a price cap on electricity charges would be inappropriate. The principal reason for this view is that electricity purchase costs which make up over 90% of BT's electricity charge are largely outside BT's control (and therefore a CPI-X control would risk significant under or over recovery of costs).

Contractor Excess Construction Charges

- 6.22 The basis of charges obligation for Contractor ECCs is explained below.

Our approach to baskets

- 6.23 In Section 3, we set out our principles and approach to basket design.

¹¹¹ WLA 2018 Statement, Volume 1, paragraph 10.56.

- 6.24 For most services we propose to maintain the current basket design for ancillaries. We indicate in Table 6.1 above the proposed groupings of ancillary services i.e. in baskets or as single services.
- 6.25 Below we discuss our proposals relating to Cablelink services; and cross-market ancillary services.

Cross-market ancillary services

- 6.26 As set out in Volume 3, we are proposing to require the provision of ancillary services as are reasonably necessary for the use of network access remedies in the physical infrastructure, WLA, Leased lines access and IEC markets.¹¹²
- 6.27 In Section 3 of Volume 3, we consider that it would be inappropriate for the same ancillary (e.g. power) to have different charges for different forms of network access. We also note, for example, that BT already prices Access Locate, an accommodation service provided for leased lines, the same as LLU Accommodation, an accommodation service provided for WLA.¹¹³
- 6.28 We propose that where the same ancillary service is provided for different forms of network access the same charge (or set of charges) should apply.
- 6.29 As set out in Table 6.1, we have identified three types of cross-market ancillary services, where we propose the following:
- a Cablelink basket (described below) subject to a CPI-0% control;
 - an accommodation basket subject to a CPI-0% control; and
 - power (electricity) subject to a basis of charges requirement.
- 6.30 We propose that BT is required to report these ancillaries in aggregate i.e. across all the SMP markets in which they are sold. This will be set out in further detail in a future regulatory reporting consultation.

Cablelink services

- 6.31 Our current approach for Cablelink services¹¹⁴ which was set in the BCMR 2019 Statement is to charge control them within the main service basket (the 1 Gbit/s basket) and to apply a sub-cap on these services within the basket. Our reasons for taking this approach included the expectation that Cablelink shared some common costs with Ethernet services.
- 6.32 We have reviewed our BCMR 2019 approach. Having done so, our expectation now is that Cablelink services are likely to be used for PIA and dark fibre as an interconnection service to complement accommodation services purchased through passive access remedies. Therefore, we do not consider Cablelink to be an exclusively Ethernet leased lines ancillary

¹¹² Sections 4, 5, and 6.

¹¹³ [Openreach Price list for Access Locate](#) indicates the charge is as 2.1.1 LLU which is the [LLU Accommodation Price list](#). This also applies to PIA Co-location and PIA Co-mingling, see <https://www.openreach.co.uk/org/home/products/ductandpoleaccess/ductandpoleaccess.do>.

¹¹⁴ Excluding those specific WLA Cablelink ancillaries.

service. In essence it is a ‘tie-cable’ ancillary that either connects two disparate pieces of equipment within an exchange or connects equipment in the exchange to a point of presence up to 100m outside of the exchange. This point of presence may be infrastructure hosted within an Openreach duct.

6.33 Therefore, we propose a separate basket for Cablelink services, capped at CPI-0%.^{115 116}

Further details on our proposals

6.34 In this sub-section, we provide more details relating to several issues.

Time Related Charges (TRCs) including Right When Tested (RWT) and Dark Fibre cessation

6.35 To protect against excessive pricing, we are proposing CPI-0% charge controls for TRCs for dark fibre; for RWT; and cessation activities, in the form of a per-visit charge. We note that although Openreach could incentivise providers, via the level of the RWT charge, to make efficient decisions on repair, this may not be sufficient by itself to prevent excessive pricing.

6.36 We propose that where Ethernet TRCs are used for dark fibre the same set of charges for the active services should apply to dark fibre. This is because the activities will be common to both dark fibre and active circuits.

6.37 For RWT and cessation charges, we propose that the same charges do not apply to dark fibre and active circuits alike since the dark fibre variants require engineering call-outs whereas active circuits can be ceased and tested remotely.

Table 6.2 Proposed charges for TRCs used for dark fibre

Ancillary service	Charge for TRCs used for dark fibre
Each Ethernet TRCs used for dark fibre	As for actives i.e. CPI-0% on each charge
RWT for dark fibre (per applicable RWT fault)	CPI-0%
Cessation charge	CPI-0%

Excess Construction Charges

6.38 In the 2016 and 2019 BCMR Statements we adopted a separate basket for Direct Excess Construction Charges (ECCs for cable (fibre or copper) including any jointing required, blown fibre, blown fibre tubing in duct, internal cabling (including internal blown fibre

¹¹⁵ As there was already a sub-cap on these ancillaries within existing leased lines 1Gbit/s basket, moving Cablelink into a separate basket does not materially affect the pricing flexibility of these particular ancillaries.

¹¹⁶ Tie-cable / Cablelink ancillaries that are specific to GEA products (i.e. WLA services) are not included in the proposed cross-market Cablelink basket.

- tubing), overblow services, fibre cable and survey fee/planning charges using Openreach direct labour).
- 6.39 We propose to continue this approach and to subject this basket to a CPI-0% control. We also propose a sub-cap on each individual charge within this basket at CPI+5%.
- 6.40 In 2019 BCMR, we continued to exempt new provisions of Openreach EAD services from the first £2,800¹¹⁷ of ECCs (the threshold charge) and to make up the resulting loss of its revenue with a balancing charge that could change based on the volumes and pricing of relevant ECCs and the volume of EAD or EAD LA circuits sold in the prior financial year. This ensures cost recovery and revenue neutrality.¹¹⁸ We prefer this flexibility for the balancing charge over the fixed balancing charge because we consider there to be a continued risk of Openreach not maintaining revenue neutrality and not recovering efficiently incurred costs if both the threshold and the balancing charge are fixed.¹¹⁹
- 6.41 The rationale for our decision in the 2019 BCMR was that the use of a threshold charge would significantly reduce the lead times for provisioning of most of the EAD orders which incur ECCs. We propose to keep the threshold charge fixed at £2,800 and propose that Openreach continues to have the flexibility to adjust the balancing charge, but not the threshold charge. This will ensure cost recovery and revenue neutrality in the event of changes in the distribution and incidence of ECCs.
- 6.42 To be clear, new infrastructure in the common parts of BT's network (such as the installation of a new fibre flexibility point, or new main link fibre when required) and work to repair blockages/damage are not charged as ECCs even when undertaken to fulfil a customer order. These common infrastructure costs are capitalised and recovered from connection and rental charges for multiple services over time.

Contractor Excess Construction Charges

- 6.43 Openreach carries out some construction work itself, as explained above. But it sometimes uses contractors for Excess Construction work.¹²⁰ We consider that forecasting Contractor ECCs is difficult and there would be a significant risk of over- or under-recovery if we were to set the prices for Contractor ECCs. As such, we maintain our view previously explained in the 2019 BCMR¹²¹, that an effective approach to controlling Contractor ECCs is a basis of charges obligation, where BT is required to demonstrate the charge is reasonably derived from costs of provision and includes a margin that covers common costs. This strikes an

¹¹⁷ We propose that the threshold charge be allowed to rise by up to CPI-0% per year, in line with our overall approach to charges in this review.

¹¹⁸ To ensure Openreach used this flexibility appropriately, we required it to demonstrate that the balancing charge was set to ensure revenue neutrality.

¹¹⁹ At the time of the last review, Openreach was making a balancing charge of £722 as part of the standard connection charge for all other EAD new provisioning services. We note that this charge has fallen to £593.

¹²⁰ When Openreach conducts this work directly, we apply a CPI-0% control which is outlined in further detail below.

¹²¹ BCMR 2019 Statement, Volume 3, paragraph 3.116.

appropriate balance between mitigating the risk of excessive pricing while ensuring cost recovery.

FTTP connections

- 6.44 In Volume 3 Section 2, we propose that where Openreach has deployed its ultrafast network to cover 100% of premises within an exchange area¹²², the charge control relating to legacy copper services will be removed and only the charge control on services provided on the fibre network will apply.¹²³
- 6.45 Prior to our charge controls being removed on copper services and where FTTC is not available, we propose the following controls on FTTP connections:
- a CPI-0% cap for the connection charge of FVA in combination with FTTP; and
 - a CPI-0% cap for the connection charge of FTTP transition service.
- 6.46 In Area 2, where copper services are available and the First Threshold Notice is not published, we do not propose to impose a charge control on FTTP connections. Where copper services are not available, we propose that the FTTP 40/10 connection charge is set to zero. From the point in time where the charge control on copper services has been removed, we propose that the FTTP 40/10 connection charge is set to zero.
- 6.47 In Area 3, where charge controls on copper services have not been removed, we propose that FTTP connection charges are set to zero. This is consistent with our RAB calculations that assume that Openreach does not charge for FTTP connections. From the point in time where the charge control on copper rentals has been removed, we propose that the connection charge for FTTP 40/10 service is set to zero.

New ancillaries

- 6.48 For any new ancillaries, with the exception of those relating to PIA, we propose charges are set on a fair and reasonable basis.

Proportionality

- 6.49 We consider that our proposed pricing remedies for ancillary services are proportionate as they address the competition problems we have identified and go no further than is necessary to do so. Our view is therefore that a CPI-0% control for the majority of ancillary services is proportionate as it is the least onerous means of addressing the risk of excessive pricing for these services. We have not identified any adverse effects of our proposals that would be disproportionate to the aim pursued.

¹²² In Volume 3 Section 2, we provide details of our proposed approach to transitioning our regulation from copper services to fibre services. We also discuss how we intend to assess 100% coverage in an exchange area, including premises where Openreach is not able to deploy ultrafast services despite all best endeavours.

¹²³ This only applies to premises where fibre is available. See Volume 3 Section 2.

Legal tests

- 6.50 As explained above, we consider there to be a risk that, absent regulation, BT might fix and maintain prices for ancillary services in the physical infrastructure, WLA, Leased lines access and IEC markets at an excessively high level and/or impose a price squeeze so as to have adverse consequences for end users.
- 6.51 We are proposing to set SMP conditions on BT to give effect to the pricing remedies for ancillary services described above. Further details of the proposed charge controls can be found in Section 3. Our draft SMP conditions can be found in Volume 5.
- 6.52 As required by section 88 of the Act, we consider that the setting of each of these draft SMP conditions would be appropriate for the following purposes:
- a) Promoting efficiency.
 - b) Promoting sustainable competition.
 - c) Conferring the greatest possible benefits on end user of public electronic communications services.
- 6.53 Regarding a), we consider that our proposed charge controls on ancillary services:
- ensure BT cannot price excessively,
 - allow BT to earn a reasonable rate of return if it is efficient, and
 - provide BT with flexibility to change prices to meet demand conditions by recovering common costs in the most efficient manner across groups of services
- 6.54 Regarding b) and c), we consider that our proposed charge controls are each appropriate to promote sustainable competition and confer the greatest possible benefits on end users of public communications services.
- 6.55 In relation to the proposed charge control for ancillary services, the control prevents excessive pricing and provides price stability. This provides customer protection as the charge controls on ancillaries ensure that the remedies outlined in Volume 3 are effective and support sustainable competition that benefits end users.
- 6.56 In relation to the proposed basis of charges obligation on electricity and contractor excess construction charges, we consider that each requirement promotes efficiency and sustainable competition and provides the greatest possible benefits to end-users by enabling competing providers to buy network access at levels that might be expected in a competitive market.
- 6.57 We have also taken account of BT's investment in the matters to which the draft conditions relate by ensuring Openreach can make a reasonable return on its investments.
- 6.58 As discussed in Volume 1, we anticipate that the test set out in section 88 of the Act may be amended before we issue our Final Statement, to give effect to Article 74 of the EECC. This requires NRAs, in determining whether price control obligations would be appropriate, to take into account the need to promote competition and long-term end-user interests related to the deployment and take-up of next- generation networks, and in particular of

very high capacity networks. NRAs are also required to ensure that any mandated cost recovery methodology or pricing mechanism serves to promote the deployment of new and enhanced networks.

- 6.59 In Section 7, we explain why the setting of these draft SMP conditions would satisfy the test set out in section 47 of the Act.

Consultation questions

Question 6.1: Do you agree with our proposed approach to charge controls for ancillaries? Please set out your reasons and supporting evidence for your response.

Question 6.2: Do you agree with our proposals for fair and reasonable obligations for ancillaries not covered by a charge control? Please set out your reasons and supporting evidence for your response.

7. Legal tests

- 7.1 In Sections 1 to 6 and Volume 3 Section 3 we set out our proposals for pricing remedies in the physical infrastructure, wholesale local access, leased lines access and inter-exchange connectivity markets.
- 7.2 In order to give regulatory effect to our proposals we propose to set the draft SMP conditions set out in Volume 5.

Section 47 tests

- 7.3 When imposing SMP obligations, we need to demonstrate that the obligations in question are 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. For each draft SMP condition set out in this consultation, we consider that the conditions we are proposing to impose satisfy the tests set out in section 47 of 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 it is intended to achieve.

Objectively justified

- 7.4 We consider that each of the draft SMP conditions we are proposing is objectively justifiable. The remedies that we are proposing are designed to address the competition concerns that we have identified in our market analysis (see Volume 2). As explained in Volume 3 Section 1, our provisional market analysis has found that Openreach has the ability and incentive to set excessive wholesale charges or, in combination with downstream prices, engage in a price squeeze behaviour (also referred to as “margin squeeze”). Consequently, we have identified where it appears to us from our market analysis carried out for the purpose of setting our proposed draft SMP conditions that there is a relevant risk of adverse effects arising from price distortion.
- 7.5 Therefore, in the absence of a requirement to provide network access, supported by associated obligations including charge controls, BT could refuse or impede access to its network, or it could provide access on less favourable terms and conditions compared to those obtained by its own downstream businesses. We are proposing to exercise our discretion in setting these obligations in favour of an approach that supports investment in fibre networks through promoting network competition in areas where this is economically

viable, while protecting consumers from excessive pricing or a loss of retail competition in the short term and in areas in which network competition is unlikely to develop.¹²⁴

- 7.6 We explain in 1 to 6 and Volume 3 Section 3 for each proposed obligation, why we consider that obligation is objectively justified in the context of the markets we are reviewing.

Not such as to discriminate unduly

- 7.7 We consider that each of the draft conditions does not discriminate unduly against BT. We are proposing that it is the only telecoms provider to hold SMP in the markets that we have identified and the draft conditions seek to address that market position.

Proportionate

- 7.8 We consider that each of the draft conditions we are consulting on is proportionate to what that condition is intended to achieve. In each case, we are imposing an obligation on BT that: is effective to achieve our aim; is no more onerous than is required to achieve that aim; and does not produce adverse effects which are disproportionate to our aim. We explain why we consider each proposed remedy is proportionate in Sections 1 to 6 and Volume 3 Section 3 above in the context of the markets we are reviewing.

Transparent

- 7.9 We consider that each of the draft conditions is transparent in relation to what is intended to be achieved. The text of the draft conditions is published in Volume 5 for consultation, and the operation of those conditions is aided by our explanations in this document. Our final statement will set out our analysis of responses to this consultation and the basis for any final decision that we take.

Section 49 tests

- 7.10 In Section 5 we set out our proposal to issue a direction in relation to Condition 7D of the draft SMP conditions in the Wholesale Local Access market and Condition 6 in the Physical Infrastructure Market Review 2019. These directions are necessary to ensure that the Wholesale Local Access SMP conditions and Physical Infrastructure Market Review SMP conditions continue to accurately reflect the PIA products offered by BT following changes to BT's products and that the relevant conditions continue to operate in the way set out in the 2018 WLA Statement and 2019 PIMR Statement.
- 7.11 We consider that the proposed directions comply with the requirements of section 49(2) of the Act. They are objectively justifiable and proportionate for the reasons set out in Section 5 and above. They do not discriminate unduly as we are proposing that BT is the only telecoms provider to hold SMP in the Physical infrastructure market and the WLA market

¹²⁴ We explain in Volume 1 how this objective meets our legal duties.

and our proposed directions seek to address that market position. They are transparent in relation to what is intended to be achieved and the text of the proposed directions is published in Volume 5.

Section 88 tests

- 7.12 We are proposing to impose SMP conditions requiring BT to adhere to certain price controls, rules about the recovery of costs and cost orientation and provide network access on reasonable request on fair and reasonable terms, conditions and charges where no charge control applies in each of the physical infrastructure, wholesale local access, leased lines access and inter-exchange connectivity markets. We set out in Sections 1 to 6 how we consider the draft conditions satisfy the tests in section 88 of the Act.

Ofcom's duties

- 7.13 As set out in Volume 1, we consider the proposed package of draft SMP conditions both individually and together meet our duties in sections 3 and 4 of the Act.