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

Volume 4: Pricing remedies

Non-confidential – Redacted for publication [X]



STATEMENT:

Publication date: 18 March 2021

Contents

Section

1. Price regulation in Area 2	1
2. Price regulation in Area 3	41
3. Inter-exchange connectivity pricing	61
4. PIA charges	71
5. Ancillaries	114
6. Charge control design and implementation	140
7. Legal tests	168

1. Price regulation in Area 2

1.1 In this section we set out our decisions in relation to price regulation in the Wholesale Local Access (WLA) and Leased Lines Access (LL Access) markets in Area 2. We also set out our decision in relation to price regulation in the LL Access market in the High Network Reach area (HNR Area). Table 1.1 summarises our decisions.

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

Service	Decision
WLA in Area 2	<p>a charge control on MPF and FTTC 40/10 rental charges, inflation-adjusted from 2021 levels²</p> <p>a requirement that charges are fair and reasonable, 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 of £1.70 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 the HNR Area	a requirement that charges are fair and reasonable

1.2 We have decided to maintain existing price caps at their current levels in real terms for both WLA and LL Access services in Area 2. We consider that this will promote competition and investment in gigabit-capable networks by Openreach and other operators. It will also protect consumers and existing models of downstream competition in the short term.

- It will promote competition through: making it attractive for telecoms providers to build new, competing networks themselves and/or enter into commercial arrangements with other network operators as opposed to relying on buying regulated wholesale services from Openreach; allowing sufficient margins for competing network operators; and providing a stable and consistent regulatory environment.
- It will promote Openreach's investment: as Openreach will have a strong incentive to invest in gigabit-capable networks given the threat posed by competing networks. We also expect Openreach to use its profits on copper services to invest in new networks.

¹ As noted in Volume 3 Section 3, we are also imposing 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 requirement 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.

² By FTTC 40/10 rental charges, we mean all VULA 40/10 (excluding FTTP 40/10) rental charges. Connection charges for MPF and VULA services are discussed in Section 5.

- It will protect consumers and downstream competition because: for WLA services where we have charge controls, wholesale prices will not be able to increase in real terms; for WLA services where we do not have charge controls, prices will be constrained by the option of purchasing the charge controlled anchor products; for LL Access services, charge controls will apply to all speeds; and prices of both WLA and LL Access services will also be increasingly constrained by competition over time.
- 1.3 For LL Access in the HNR Area, we have decided that Openreach will continue to be obliged to set charges that are fair and reasonable. This will preserve investment incentives by allowing prices to be above cost to some degree. The greater degree of competition in the HNR Area will constrain Openreach's ability to raise prices and protect consumers, and the fair and reasonable charging requirement will protect retail competition.
- 1.4 We explain our reasoning in the rest of this section. Stakeholder arguments and our response to them are set out in annex 12.
- 1.5 Where we are imposing charge controls, we set out the detail of these in Volume 4, Section 6. Our decisions in relation to price regulation of ancillary services in these markets is covered in Volume 4, Section 5.

Our approach to price regulation in Area 2

- 1.6 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. To address these risks, we are imposing charge controls on the provision of WLA and LL Access, or a requirement that charges are fair and reasonable where no charge control applies.
- 1.7 In developing our 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 have exercised our discretion in setting these controls in favour of an approach that promotes competition and investment in gigabit-capable networks, by Openreach and other operators. The resulting network competition will provide increasing protection for consumers in the long term, and in many areas effective competition may emerge such that the need for regulation falls away. This will take time and therefore we seek to protect consumers and existing models of downstream competition in the short term.
- 1.8 This approach to pricing was trailed in the DCR (2016), with implementation taking shape in our WLA (2018) and BCMR (2019) decisions.
- 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.

- In the BCMR (2019), Ofcom’s decision on LL Access 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 telecoms providers 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).
- 1.9 We are starting to see the benefits of our approach. In addition to existing competition, predominantly from Virgin Media’s network, we are now seeing significant additional competition emerging from a number of network operators (see Annex 3). Our market analysis suggests that with enabling remedies, competitive network investment in Area 2 could be material.
- 1.10 In setting pricing remedies, our priority in areas that could support material and sustainable competitive commercial investment is to continue to promote network competition, given the significant benefits of this over competition based on regulated access to BT’s network.³ Moreover, we see this present period as a window of opportunity for competing network build, as Openreach has not yet upgraded the majority of its network to full fibre. There is also the possibility of long-term strategic partnerships with MNOs who are rolling out 5G. It is vital that we do not undermine this investment, missing this opportunity, and compromising the interests of consumers over the longer term.
- 1.11 Encouraging competition in networks that offer broadband services will also put pressure on Openreach to build gigabit-capable networks at scale.⁴ Competitive pressure, combined with regulatory support for Openreach’s build, will therefore drive the transformation of Openreach’s network, adding to the benefits arising from a more competitive future.
- 1.12 The Virgin Media network already provides a valuable source of competition in Area 2 and over the next few years we expect Virgin Media to invest further in its network, both to increase its coverage and to upgrade it to be gigabit-capable. Our pricing remedies therefore not only need to support investment by new competing networks, they need to recognise existing sources of competition.
- 1.13 The considerations discussed above apply to price regulation of both WLA and LL Access products in Area 2. We are keen to encourage investment in different types of network, although much of the investment is expected to be by networks offering a range of services to both business and residential customers.⁵ We also take into account that regulation of each market affects incentives to invest in networks that support services in both markets.

Wholesale Local Access services in Area 2

- 1.14 We have considered different options for setting charge controls in the WLA Area 2 market, including approaches suggested by stakeholders. We assess which would meet our

³ We describe the benefits of network competition in Volume 1, Section 2.

⁴ We describe the benefits and importance of gigabit capable networks in Volume 1, Section 2.

⁵ See Annex 3.

objective of promoting competition and investment in gigabit-capable networks by Openreach and other network operators, and also protect consumers and existing models of downstream competition in the short term. We consider the following approaches:

- 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.⁶
- Bringing prices closer to the cost of legacy services (e.g. CPI-1%, CPI-CPI price controls).
- ‘Adaptive regulation’: if adopted, this would have two parts: (1) charge controls based on the cost of legacy services 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.
- A ‘copper wedge’: if adopted, prices would be set above the cost of legacy services. Openreach would recover the costs of those services, and the remaining revenues would go to a central fund and be used to promote rollout of gigabit-capable networks in various ways.

1.15 In contrast to WLA Area 3, we have not considered a Regulatory Asset Base (RAB) approach, which would set a charge control copper services based on both Openreach’s copper costs and fibre deployment costs. As discussed in Section 2, a RAB approach is an appropriate way of supporting network investment by Openreach where it does not face existing competition and there is low potential for material and sustainable competition to emerge in future. In those areas, Openreach’s incentives to invest in gigabit-capable networks otherwise are weak. In areas with existing competition, or which could support material and sustainable competitive commercial investment, our view is that continuing to promote competition will be the most effective way of putting pressure on Openreach to invest. Doing so has the potential for permanent long run benefits as a result of network competition, as well as gigabit-capable network coverage. In WLA Area 2, our focus is therefore on choosing an approach that promotes network competition. In addition, we note that approaches that involve setting prices above costs of copper services to promote network competition could also contribute to Openreach’s FTTP investment (similar to a RAB approach).

1.16 The remainder of this section is structured as follows:

- First, we assess how each option would perform against our objective, and how it might be implemented;
- Second, we set out our preferred option and check to ensure that it does not produce adverse effects which are disproportionate to the aim pursued;
- Third, we set out how the charge control will apply to a 40/10 equivalent product on BT’s FTTP network, when price regulation moves from FTTC to FTTP as part of our approach to supporting Openreach’s copper retirement; and
- Fourth, we discuss our approach to regulation in the future.

⁶ We explain how charge controls will move from Openreach’s legacy network to its new FTTP network later in this section.

Pricing continuity

1.17 Pricing continuity means:

- maintaining existing price caps on wholesale services i.e. maintaining MPF and FTTC 40/10 charge controls at current levels in real terms; and
- maintaining a requirement that prices for higher bandwidth services not subject to charge controls are fair and reasonable, therefore allowing Openreach continued pricing flexibility on these products.

1.18 We have concluded that pricing continuity meets our objective of promoting competition and investment in gigabit-capable networks by Openreach and other operators. It would also protect consumers and existing models of downstream competition in the short term. We explain why we have reached this conclusion in the rest of this section. First, we assess the impact pricing continuity would have on competitive network investment, then on Openreach's investment. We then explain how it would protect consumers and protect existing models of competition in the short term.

Impact on competitive network investment

1.19 With pricing continuity, price caps on MPF and the FTTC 40/10 product would be likely to be somewhat above the cost of providing those services.⁷ In addition, we would expect that the constraint imposed by the 40/10 charge control on higher bandwidths, where Openreach would have pricing flexibility, would gradually reduce over time. We consider that this would promote competitive network investment and explain why below.

1.20 The business case for competitive network investment is challenging, with high barriers to entry as described in Volume 2, Section 8. The move to gigabit-capable networks offers a window of opportunity for other network operators to invest, as large volumes of customers will need to be migrated from Openreach's legacy network to a new full-fibre network, which Openreach has not yet deployed at scale. This provides an opportunity for rivals to deploy gigabit-capable networks in competition with Openreach and compete for ISPs and their end customers. Together with the right price regulation, we have the opportunity for material competitive network investment in WLA Area 2.

1.21 Price regulation, while one factor among others, is an important consideration in the investment decisions by new and existing competitors to BT, and their investors. This is because price regulation will be the dominant influence on prices in these markets in this review period and will also signal the path of pricing beyond the review period.

1.22 Higher wholesale prices make investment more attractive for new competitors by increasing their expected returns. For example, when Openreach's wholesale prices are higher, an ISP using Openreach's network has a stronger incentive to switch to a competing network, which increases expected volumes on that competing network. Higher prices also allow higher margins on each connection. Conversely, price cuts damage new entrants,

⁷ As noted below, Openreach's volumes and costs over the review period are uncertain.

reduce their ability to compete profitably and give ISPs less reason to move away from Openreach.

- 1.23 Supported by our approach to regulation since the DCR and current charge controls, a significant amount of competitive network investment is now underway or planned. Therefore, we consider that the current charge controls are consistent with our goal of promoting investment in high speed networks. The fact that CityFibre increased its rollout ambition from 5 million to 8 million premises after we had proposed to maintain current price caps, resulting from its acquisition of FibreNation and addition of TalkTalk as a major wholesale customer, reinforces this view.⁸
- 1.24 Pricing continuity would also 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. The lack of regulatory certainty on wholesale prices for higher speed products in the future would also provide a greater incentive to telecoms providers currently reliant on access to Openreach's network to invest in competing networks now.
- 1.25 In response to our consultation, altnets agreed that this approach would support investment, and that price reductions would harm the investment case. For example, CityFibre argued "any regulation applied during this critical rollout and market expansion period that stabilises BT's regulated prices (e.g. at CPI-0%) will also stabilise our prices (albeit at a level below BT's prices) which will help to stimulate further investment" and "Falling prices mean higher project risk on the basis of lower expected revenues, which ultimately makes the investment case harder to justify."⁹
- 1.26 Our decision in this Statement will set price caps for the next five years, and if we maintain current charge controls this would support the case for new competition over this period. It would also affect investors' expectations about future regulation, which matters as these investments have long pay back periods. CityFibre's response to our consultation supports this view, for example it told us that "both the CityFibre management team and our owners have historically place[d] considerable weight on the broad 'direction of travel' in Ofcom's regulation."¹⁰
- 1.27 We discuss why pricing continuity would promote competitive network investment in more detail below, addressing the following areas in turn:
- The impact higher wholesale prices have on ISPs' incentives to use competing networks;
 - The impact higher wholesale prices have on margins on each premises served by a competing network; and

⁸ CityFibre (2020) 'CityFibre completes its acquisition of FibreNation increasing its rollout plans to pass up to 8 million premises'. 27th March 2020. [Press release](#).

⁹ CityFibre response to January 2020 Consultation, paragraphs A1.7 and 6.62. See annex 12 for a list of altnets that supported our pricing continuity approach.

¹⁰ CityFibre response dated 22 May 2020 *Promoting competition and investment in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26* dated 8 January 2020, paragraph A1.15.

- Our cost-modelling that suggests current prices are consistent with a competing network's costs.

The impact higher wholesale prices have on ISPs' incentives to use competing networks

- 1.28 An important driver of network competition will come from the choices that ISPs make about their future purchases of wholesale services. This is because one of the key determinants of profitability in an altnet business case is the take-up rate the new network is expected to achieve.
- 1.29 A new network could build a customer base through: contracting with ISPs that already operate at the retail level; an ISP choosing to build its own network; or gaining market share at the retail level. Over this review period, winning business from ISPs would substantially improve the business case for new networks.
- 1.30 Higher access prices increase the likelihood that ISPs currently reliant on Openreach's wholesale services will choose to purchase wholesale services from a competing network or build a network themselves. This is because these options will be assessed against the counterfactual of continuing to purchase wholesale services from Openreach. Higher access prices make buying from Openreach less attractive relative to these alternative options.
- 1.31 Stakeholders have argued that pricing continuity would reduce the volumes a competing network could expect to gain, by reducing non-BT ISPs' market shares while they are still reliant on Openreach. We explain below that we do not expect that pricing continuity would pose a serious threat to the sustainability of retail competitors over the review period. Therefore, we do not expect that keeping price caps the same in real terms would result in significant damage to ISPs' competitive positions in this review period, such that they would no longer be able to offer a large customer base to new network builders.
- 1.32 However, our view is that this pricing continuity would create a longer-term threat to ISPs' market shares if they chose to remain on Openreach's network, which would create an additional incentive to move to an alternative network.

The impact wholesale prices have on margins on each premises served by a competing network

- 1.33 Higher wholesale prices also strengthen the case for new entry by increasing expected revenues on each premises served. This is the case for both wholesale and vertically integrated operators:
- For wholesale operators, if Openreach charges higher prices per line, competing network operators will also be able to charge higher prices. For example, evidence suggests that rival network operators set prices with reference to the prevailing prices for the Openreach FTTC services in long term contracts with ISPs.¹¹
 - For vertically integrated operators, higher wholesale prices feed through to retail prices. Although we acknowledge that changes in wholesale prices may not be fully

¹¹ See Section 2, Volume 2.

passed through to retail prices, it is reasonable to assume a large proportion will be passed through given the degree of competition in the retail market.¹²

- 1.34 Although Openreach could reduce wholesale prices in response to competitive network build, the prohibition on Openreach's ability to respond through targeting discounts geographically (see Volume 3, Section 7) means that it will not be able to reduce wholesale prices only where competition emerges. This reduces Openreach's incentive to reduce prices in response to actual and potential competition.
- 1.35 In the long term, we expect that post-entry prices will be informed by competition rather than regulation. However, given Openreach's market power and the time it will take for competition to become established, we expect price caps to be a strong determinant of Openreach's wholesale prices over the review period and potentially beyond that.

Our cost-modelling that suggests current prices are consistent with a competing network's costs

- 1.36 Pricing continuity would give less support to new entrants if the prices that resulted were significantly below the new entrants' costs. We have therefore also checked that maintaining FTTC 40/10 prices at their current level would sit within our own estimates of the range necessary to allow a competing network operator to profitably offer a range of full-fibre services in the market.
- 1.37 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:
- Using the outputs from our bottom-up fibre cost model, we estimate that the unit cost of supplying FTTP services for a competing network operator ranges between £9.53 and £13.67. We set out our approach to estimating these costs in Annex 15.
 - We have compared these costs against the average wholesale revenue per full fibre customer that a competing 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, competing network operators are likely to be able to charge a modest premium compared to an FTTC 40/10 service. We have concluded that this could be around £1.70 per month,¹³ 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).
- 1.38 Given that the average revenue per full fibre customer is above our cost range estimate, we consider that the current level of price regulation is consistent with our objective of promoting full-fibre investment by rivals to Openreach.

¹² 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.

¹³ See Annex 19.

Impact on Openreach investment

- 1.39 We believe that pricing continuity would also promote Openreach’s investment in gigabit-capable networks. Openreach would have a strong incentive to invest, due to the risk of losing volumes to competitors if it does not. Openreach’s current plans to invest in full fibre, together with its internal documents, are evidence that it does feel the threat of network competition and is investing on this basis.¹⁴
- 1.40 Allowing Openreach to set prices above the cost of copper services would also support Openreach’s investment in FTTP. In particular, in the event we do need to regulate full fibre services in future, the higher profits arising from indexation would be relevant to any assessment of whether Openreach has had an opportunity to earn a fair return.
- 1.41 Openreach’s expectations over future regulation will also affect the expected profitability of its full fibre investment, and therefore its incentives to invest. Although we expect our measures to lead to greater deregulation in future, the possibility remains that we may need to tighten regulation on Openreach’s prices in some areas in future where competition does not arise. We discuss our approach to future regulation below.
- 1.42 Some stakeholders argued that Openreach may have less incentive to invest in gigabit-capable networks than it would under a cost-based charge control, as higher wholesale FTTC prices will increase the relative profitability of remaining on its copper network. We do not agree that this would undermine Openreach’s incentives to invest, as the prices Openreach could charge for full-fibre based products would be constrained by charge controls on FTTC, as we set out in the following section. This means that if we were to reduce the price cap on FTTC 40/10 (and put in place a cost-based price cap on FTTC 80/20), this would not only reduce the threat of network competition, it would reduce the prices Openreach could charge for full fibre and its expected full fibre profits.¹⁵

Protection of consumers

- 1.43 In this section, we explain why pricing continuity will protect consumers in the short term.
- 1.44 Pricing continuity would involve maintaining MPF and 40/10 charge controls at current levels in real terms and imposing a requirement that prices for higher bandwidth services not currently subject to charge controls are fair and reasonable.
- 1.45 We expect consumers also to benefit from pricing continuity in the long term. We expect a substantial amount of competing network build to emerge during the review period if we follow this approach, which will play an important and long-term role in protecting consumers.

¹⁴ Openreach’s Board paper recommending the scale FTTP business case identifies “a credible competitive challenge to our current business if we do not invest” as part of “the strategic rationale for Openreach to invest in a large scale FTTP build”. Scale FTTP Investment Recommendation, 30 June 2020, Page 3. Openreach response to Question 6 of s135 dated 20 August 2020.

¹⁵ We acknowledge that a small proportion of consumers would be willing to pay more for the highest speeds, as set out in Volume 2, Section 2.

- 1.46 We recognise that this approach would be likely to allow Openreach to set prices somewhat above the cost of its copper services. It is uncertain by how much given Openreach's volumes, and therefore costs, over the review period are uncertain. However, any higher returns Openreach would earn on its copper services would contribute to its full fibre investment, as explained in the section above, also benefiting consumers in the long term.
- 1.47 Moreover, given our objective of promoting investment in gigabit-capable networks, we would be unlikely to reduce prices to the cost of copper services even if we were not promoting competition. As discussed above, in Area 3 where we do not believe that there will be material and sustainable competition to Openreach in the commercial deployment of competing networks, we are using a RAB approach which sets prices for copper services to support Openreach's full fibre investments.
- 1.48 In the rest of this section, we explain in more detail why a price cap on MPF and 40/10 services set at current levels, and requirement that prices for higher bandwidth services not currently subject to charge controls are fair and reasonable, would protect consumers in the short term. We discuss the following:
- Protection of consumers on standard and basic superfast broadband
 - Protection of consumers on higher speed services

Protection of consumers on standard and basic superfast broadband

- 1.49 As at March 2020, around [X] of customers on the Openreach network take standard or 40/10 products. This increases to [X]% including customers on the broadly comparable 55/10 product.¹⁶ However, this proportion has been falling and by March 2025, ISPs expect 25% of consumers to still be using these services, with the remaining customers taking higher speeds.^{17,18}
- 1.50 Customers taking these services would be directly protected by charge controls, which will remain the same in real terms.
- 1.51 Our view is that this would provide sufficient protection to consumers, particularly as any additional returns Openreach makes would contribute to Openreach's investment in full-fibre networks.
- 1.52 Some stakeholders suggested that it is not appropriate to allow Openreach to price above the cost of copper services in order to promote competition and investment in gigabit-capable networks, and that it is more important to minimise short term prices, given the need for affordable superfast broadband. We disagree with this view. Although demand for higher broadband speeds is currently limited, new networks will take a long time to build. If investment in gigabit-capable networks is delayed, consumer demand will soon

¹⁶ See Volume 2, Section 2.

¹⁷ This includes customers on the broadly comparable 55/10 product. See Volume 2 Section 2.

¹⁸ As explained in Volume 2, Section 2, last year Openreach forecasted that speeds of 40/10 (including 55/10) or below would continue to account for the majority of Openreach's sales by 2023/24. However, Openreach was unable to provide us with updated volume forecasts.

outpace the capabilities of the current copper network and it will take considerable time for telecoms providers to catch up. During that time, consumers would be unable to obtain the services they need.

- 1.53 We do not think that this approach causes widespread affordability issues. Research done as part of Ofcom's affordability review shows that on average, the large majority (81%) of households have not had an affordability issue with communications services.¹⁹ In addition, our approach is aimed at promoting competition and investment across the range of services that rely on WLA, benefiting all consumers.
- 1.54 As discussed in Volume 3, Section 2, when the charge controls move from copper to full fibre under our approach to supporting copper retirement, we will be mandating access to a 40/10 equivalent on BT's full fibre network only. We will not mandate access or set price caps on a standard broadband equivalent product. As we also describe in that section, demand for standard broadband is declining rapidly and as it continues to do so, we anticipate that there will be a limited number of consumers remaining on standard broadband services and affected by the relaxation of copper regulation.

Protection of consumers on higher speed services

- 1.55 With pricing continuity, there would be no direct price controls on speeds above 40/10. However, we expect that 40/10 services will continue to be a reasonable substitute for higher speed services over the review period and that a price cap on Openreach's 40/10 products would act as an anchor, constraining prices it could charge for higher speeds. As a result, Openreach would be unable to charge significantly higher prices on these higher speed services, despite those not being subject to a charge control. This means that consumers will be sufficiently protected over the review period.
- 1.56 Various pieces of evidence suggest the majority of consumers are not willing to pay significantly more for speeds above 40/10. In addition, while demand for higher bandwidths is likely to grow, we consider it likely that 40/10 will continue to be a reasonable substitute during the review period. This evidence is set out in more detail in Section 2 Volume 2. In summary:
- In order to incentivise take-up of higher speed services, both Openreach and ISPs have set low price differentials between 40/10 and 80/20, and ISPs have also undertaken provider-led programmes to upgrade customers to 80/20 at no additional cost to the customer. Specifically:
 - Openreach's GEA discount contract, signed by [redacted], guarantees a £1 price differential between the 40/10 and 80/20 price, and a £3 differential between the 40/10 and 160/30 price from 2018 until 2023. Openreach's documents on the development of the GEA discount contract suggest that the desire to migrate customers was a significant driver of the agreement ([redacted]) and it believed it needed small price differentials for ISPs to increase volumes on higher bandwidths.

¹⁹ Ofcom, *Affordability of communications services, A summary of initial findings*, 18 December 2020.

- ISPs have significantly reduced advertised retail price differentials for new customers since 2018, and Sky has marketed a single FTTC-based product since May 2019, rather than offering two products (one based on FTTC 40/10 and another based on FTTC 80/20).²⁰ In addition, Sky and BT, the ISPs with large volumes of customers on 80/20, have both automatically migrated large numbers of customers at no additional cost to the customer.²¹ [3<].
- Consistent with this, our analysis of actual prices paid by BT, EE, Plusnet, Sky and TalkTalk customers shows that the average actual price differential between 40/10- and 80/20-based services fell from £5.17 in November 2018 to £4.07 in September 2019.
- Current and future pricing for full-fibre services also suggests that most consumers are not willing to pay a significant premium for higher speeds:
 - Openreach currently offers FTTP 80/20 at around £15 a month, around £1 more than FTTP 40/10. We understand Openreach is planning to offer a new, longer-term deal with at least 5 years price certainty across all speeds above the indexed anchors with aim of encouraging take-up of higher speeds.
 - [3<].
- Stakeholders’ consumer research and internal documents suggest most customers have a low willingness to pay for higher speeds and that there has not been a fundamental shift in preferences as a result of the changes that the Covid-19 pandemic has brought to daily life.

1.57 This evidence shows that although volumes of higher speed services have been increasing and are expected to continue to increase, this has not been driven by high demand from consumers. It has instead in large part been driven by low price differentials and provider-led programmes to upgrade customers at no additional cost. As a result, it is likely that a 40/10 service would be sufficient for a large proportion of customers that have recently migrated to these services. In addition, although future demand is uncertain, the evidence we have is consistent with this being the case throughout the review period.^{22,23}

²⁰ Where a customer’s line is capable of providing a speed above 40Mbit/s they are supplied using FTTC 80/20, otherwise they are supplied using FTTC 40/10

²¹ Sky response dated 30 October 2020 to the s.135 notice dated 18 August 2020, question 1; BT response dated 9 October 2020 to s.135 dated 14 August 2020, question 1; Sky response dated November 2019 to the s.135 notice dated 8 October 2019, question 2; BT response dated 30 September 2020 to s.135 dated 4 August 2020, question 4; BT response dated 5 February 2021 to the s.135 notice dated 6 February 2021, question 3.

²² 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 [3<]% of demand by [3<]. 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 [3<], which we think is consistent with 40/10 providing an effective anchor.

²³ Bandwidth recommendations are consistent with this view. For example, bandwidth recommendations for HD TV viewing are around 5Mbit/s, and for UHD TV viewing they range between around 15Mbit/s and 25Mbit/s (see, for example, <https://www.amazon.co.uk/gp/help/customer/display.html?nodeId=201859000>, <https://support.google.com/youtube/answer/78358?hl=en-GB>, <https://help.netflix.com/en/node/306>). For group video calls on Microsoft Teams, Google Meet and Zoom, download speeds of between 2 and 3Mbit/s, and upload speeds of

- 1.58 We acknowledge the possibility that once customers have been accustomed to higher speeds, they may be willing to pay a higher price than they would have been willing to pay for an upgrade. However, this is a possibility, not a high likelihood. We consider that subscribers who have migrated onto higher bandwidths recently are on average likely to have a low incremental willingness to pay for faster speeds, and would be more likely to downgrade in response to a price increase than customers that upgraded when price differentials were higher.²⁴ We disagree with stakeholders that the extent of downgrades in the past provides strong evidence against our view. Historically, volumes on 80/20 and above have been much lower. Looking at past downgrades from 40/10 to standard broadband is also not informative because, for example, 40/10 is subject to a charge control and, demand for standard broadband is declining rapidly.
- 1.59 Wholesale prices will also be fixed by the GEA discount contract until 2023. After 2023, there is some uncertainty over the level of prices Openreach will set. However, in the longer term we also expect competing network build, as a result of our measures to promote competition, to be an increasing constraint on Openreach's wholesale prices, in addition to the competition already provided by Virgin Media.

Protection of downstream competition

- 1.60 We have explained that pricing continuity would protect consumers. In this section we address the risk that Openreach might raise the wholesale price on higher speed products in order to squeeze out retail competitors.
- 1.61 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 margin squeeze strategy is unlikely to be successful and may be commercially costly for BT. Setting high prices for 80/20 services 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 services will continue to be a reasonable substitute for higher speed services, as well as the fact there are switching costs. Therefore, the main effect is likely to 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 but instead lost to the Virgin Media network.
 - 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

between 1 and 4Mbit/s, are recommended. See <https://docs.microsoft.com/en-us/microsoftteams/prepare-network> <https://support.google.com/a/answer/1279090?hl=en#zippy=%2Cstep-review-bandwidth-requirements> <https://support.zoom.us/hc/en-us/articles/201362023-System-requirements-for-Windows-macOS-and-Linux> [accessed on 1 March 2021].

²⁴ As set out in Volume 2, Section 2, some recent research by [redacted] suggests that consumers would downgrade to a slower service in response to increases in price differentials between their existing package and a slower speed package. Specifically, it found that [redacted].

bandwidth products to encourage the largest retailers to sell more of these products, not less.

- BT would be required to set wholesale charges for higher bandwidth services that are fair and reasonable, meaning that other retailers will have reasonable access to these products and be able to offer these products cost effectively.²⁵ This provides adequate protection in circumstances where 40/10 services are a reasonable substitute for many customers and therefore retailers are not dependent on sales of 80/20 services to make a large contribution to their fixed costs.

Implementation

1.62 Maintaining the same level of price regulation would be straightforward to implement.

Bringing prices closer to cost of legacy services

1.63 In this section we set out our views on whether setting price caps closer to the cost of Openreach's MPF and FTTC services would meet our objective. Bringing prices closer to cost could include the following approaches:

- Setting charge controls on all speeds set at the cost of those services;
- Setting tighter charge controls than under pricing continuity on some or all speeds²⁶ e.g. charge controls of MPF and 40/10 of CPI minus 1%, 2% or CPI, and/or introducing charge controls on higher speeds.²⁷

1.64 We have concluded that a reduction in the charge-controls of MPF and 40/10, or introduction of new charge controls on higher speeds, would not meet our objective of promoting competition and investment in gigabit-capable networks by Openreach and other operators.

1.65 This approach would not create the strong incentives we seek to provide that would drive competitive network investment. We describe above why we believe that there is a significant positive relationship between the level of wholesale prices and competitive network investment, and that maintaining current prices would facilitate current and planned investment. Conversely, a reduction in price caps, or introduction of price caps on higher speeds, would reduce the incentive to invest in competing networks and therefore would not promote investment. We recognise that there could be some competitive

²⁵ As noted in Volume 3, Section 3, our general position is that we would interpret this fair and reasonable requirement to mean that 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 on individual services in this context would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard. For the avoidance of doubt, under our interpretation of this fair and reasonable requirement, BT is also required to cover its retail costs across a broader portfolio of broadband products, such that BT's rivals can supply a comparable range of products.

²⁶ In principle, this includes all options that would set price caps below current levels, but above the cost of Openreach's legacy services. We recognise that options which involve setting prices very close to (but just below) current levels in real terms would result in slightly lower prices in the short term, but might also have slightly less strong incentive properties to pricing continuity. For the purposes of our assessment we have looked at the difference between pricing continuity, and a substantial reduction in prices in real terms.

²⁷ We have not assessed whether all of these possible options would cover the cost of legacy services in practice.

network investment under this approach, and smaller reductions in price caps would have less impact on incentives and profitability. However, these approaches would reduce incentives to invest and make investment less likely. In addition, there is a risk that a reduction in price caps would signal that we are departing from our strategy of setting prices to support investment, and risk undermining current and planned investment.

- 1.66 We believe that this approach would also not promote Openreach’s investment in gigabit-capable networks. Because there would be less risk of losing volumes to competing networks, Openreach would have less incentive to invest. In addition, lower profits on copper services would provide less of a contribution to its full fibre investment.
- 1.67 However, this approach would protect consumers and existing models of downstream competition in the short term. As we conclude that consumers would be protected under pricing continuity, as explained above, it follows that they would also be protected under tighter price regulation.
- 1.68 This approach would in principle be straightforward to implement.²⁸

Adaptive regulation

- 1.69 In this section we set out our views on whether adaptive regulation would meet our objective of promoting competition and investment in gigabit-capable networks by Openreach and other operators. This type of regulation would have two parts: (1) cost-based controls (based on the cost of copper services)²⁹ before competitor 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 competitor rollout has occurred.
- 1.70 We have concluded that adaptive regulation would not meet our objective. We set out a more detailed assessment of the impact adaptive regulation in Annex 12 and summarise our views below.
- 1.71 We believe that adaptive regulation would not promote competitive network investment. This is a view supported by the competing network operators whose build we are seeking to promote. As set out above, higher access prices increase the likelihood of competitive network investment by (1) creating incentives for ISPs to use alternative networks to Openreach and thereby increasing the likely take up rate of the new network, and (2) increasing expected returns on each connection. By introducing cost-based price caps, our

²⁸ As discussed below, estimating Openreach’s costs in these scenarios would raise challenges. Among other things it would involve trying to predict the course of competition and investment and their outcomes over long time periods, in a dynamic and uncertain market context.

²⁹ TalkTalk, the stakeholder that proposed adaptive regulation, proposed that before altnet entry “MPF/FTTC prices would be based on Openreach’s costs (i.e. cost-based).” We understand this to mean that prices would be set at the cost of legacy services, with no contribution to Openreach’s FTTP costs, rather than a RAB approach with price caps on legacy services based on both Openreach’s legacy costs and FTTP deployment costs. TalkTalk response to the WFTMR Consultation, May 2020, paragraph 5.65.

view is that adaptive regulation would reduce the incentive of ISPs to use alternatives to Openreach (i.e. (1)). We acknowledge that some business models do not rely on volumes from ISPs and instead seek to win volumes at the retail level. However, we believe that in many cases, having volume commitments from ISPs would substantially improve the business case.³⁰ We agree with stakeholders that wholesale prices are not the only factor ISPs consider when deciding whether to buy wholesale services from a competitor to Openreach, but we do consider wholesale prices to be an important factor in the decision. For these reasons, our view is that adaptive regulation would weaken incentives for competitive network investment.

- 1.72 Adaptive regulation could also undermine competitive network investment in other ways. For example, a return to cost-based price caps would be likely to signal a departure from our strategy to promote competition. It would also be complex and introduce more risks to the business case, for example the risk that the second part of adaptive regulation (the price floor) would not be put into place. Investors would need to rely on pricing remedies that would be put into place in future, rather than pricing remedies that support investment now.
- 1.73 Similarly, adaptive regulation would not promote Openreach's investment in gigabit-capable networks. Openreach would have less incentive to invest as the competitive threat from competition would be lower. In addition, cost-based price caps would not provide any contribution to Openreach's FTTP investment.³¹
- 1.74 Adaptive regulation would protect consumers and existing models of downstream competition in the short term, where prices remained set at the cost of copper services. We do not think it would promote competitive network investment. In areas with no competitive network investment, prices would remain cost-based, and consumers would not benefit from competition and investment in the long term. Even if it did lead to competition and investment in some areas, the long-term benefits to consumers of competition could be compromised. The introduction of a price floor would bring in new regulation at a time when competition was increasing, rather than allowing competition and market dynamics to flourish to the benefit of consumers.
- 1.75 In addition, adaptive regulation would be complex for Ofcom to implement. It would require us to make a number of decisions on exactly how it would work, for example how granular each geographic area should be, and the appropriate level of competitive network coverage at which to change regulation from a price cap to a price floor. Monitoring would also create an administrative burden. In order to impose a price floor, we would need to be satisfied that this was necessary and appropriate to address the risk that Openreach might engage in excessive pricing or a price squeeze.

³⁰ See Volume 2, Section 8.

³¹ If we were to set price caps which included a contribution to Openreach's FTTP deployment costs, this could better promote Openreach investment. However, under this approach the short run prices to consumers would be higher, and closer to the level of prices under pricing continuity. Therefore, the benefits of adaptive regulation in comparison to pricing continuity would be reduced.

Copper wedge

- 1.76 A 'copper wedge' would involve setting price caps on services delivered over Openreach's copper network above cost, but only allowing Openreach to keep an amount necessary to recover its costs. The difference between the price charged to telecoms providers and costs – the 'wedge' – would be taken from Openreach and could be used to promote full fibre rollout in competitive and non-competitive areas in various ways. Although under this approach prices could be set at different levels, we assume that wholesale prices would be kept constant in real terms, as they are under the pricing continuity approach.
- 1.77 We have concluded that the copper wedge could meet our objective of promoting competition and investment in gigabit-capable networks. However, this option would require a high administrative burden and we are doubtful that we have the legal powers to implement a copper wedge. We set out a more detailed assessment of the impact copper wedge in Annex 12 and summarise our views below.
- 1.78 Our view is that a copper wedge could promote competitive network investment, in the same way as pricing continuity described above.
- 1.79 A copper wedge could also promote Openreach's investment in a gigabit-capable network, as the threat of competition would act as an incentive for Openreach to invest. However, although the 'wedge' funds could also be used to support Openreach's investment in a gigabit-capable network, this would create uncertainty for Openreach, which could lead to less or slower investment in its new network. We therefore do not think 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 full fibre, whereas allowing Openreach to earn revenues somewhat above its costs would provide direct support for Openreach's own FTTP rollout.
- 1.80 A copper wedge could protect consumers and existing models of downstream competition, in the same way as pricing continuity.
- 1.81 However, using the copper wedge to support network build via competitive tender would require a high administrative burden. For example, it could require Ofcom to determine how the wedge funds are to be delivered, the minimum criteria that proposals to use the funds must meet, the appropriate allocation method and the appropriate mechanism for ensuring winning participants deliver on their commitments. It would also be likely to require an ongoing role for Ofcom in assessing delivery and enforcing non-delivery through contractual mechanisms.
- 1.82 We are doubtful that we would have the legal powers to implement a copper wedge. We do not think that the copper wedge could be implemented under our power to set price control SMP conditions. We explain our reasons in more detail in Annex 12.

Conclusion on preferred approach

Evaluation of options

- 1.83 In Area 2, our objective is to promote competition and investment in gigabit-capable networks, by Openreach and other operators. The resulting network competition will provide increasing protection for consumers in the long term, and in many areas effective competition may emerge such that the need for regulation falls away. This will take time and therefore we seek to protect consumers and existing models of downstream competition in the short term. We have decided that pricing continuity is the only option that is effective in achieving this objective.
- 1.84 We have explained how pricing continuity will promote competitive network investment, promote Openreach's investment in gigabit-capable networks, protect consumers and protect existing models of downstream competition. It is also straightforward to implement.
- 1.85 Bringing prices closer to the cost of legacy services and adaptive regulation would better protect consumers and protect existing models of downstream competition in the short term. However, in our view these approaches would not meet our objective of promoting competition and investment, by Openreach or other networks for the reasons described above.
- 1.86 A copper wedge could meet our objective. However, we consider that challenges around implementation render it ineffective. It does not provide any additional benefits in comparison to pricing continuity, but requires a considerably greater administrative burden, and it is uncertain that we have the legal powers to implement it.
- 1.87 Therefore, our preferred approach is pricing continuity.
- 1.88 In the following section we ensure pricing continuity would not produce adverse effects which are disproportionate to the aims pursued.

Proportionality of pricing continuity

- 1.89 We conclude above that pricing continuity meets our objective in Area 2. We have also considered three other potential approaches (bringing prices closer to the cost of copper services, adaptive regulation and a copper wedge) and concluded that price continuity is the only approach that would be effective in meeting our objective.
- 1.90 Some stakeholders argued that we should conduct a detailed cost benefit analysis (CBA), where we compare the price continuity approach with other approaches. We do not believe that it is necessary to conduct such an assessment. For the reasons set out below and in Volume 4, Section 7, we are satisfied that pricing continuity meets our statutory duties and the legal tests set out in the Act. In particular, in reaching our decision we considered alternative approaches and concluded these would not be effective in meeting our objective. On this basis we consider that pricing continuity is the minimum necessary to meet our aim.

- 1.91 While we do not believe it is necessary to conduct a detailed CBA, we have carried out a high-level sense check that pricing continuity is proportionate and would not produce adverse effects which are disproportionate to the aims pursued. Specifically, we have checked that the benefits of the pricing continuity approach – in the form of greater competition and investment – outweigh any higher prices paid by consumers in the short term.
- 1.92 This sense check requires assumptions as to the degree of competition, investment and price level that would apply in the counterfactual. For our counterfactual we assume a future world where no additional competition enters the market and there is no further investment in gigabit capable networks. Thus, in this counterfactual scenario the copper network continues and there are no volume losses on this network. This counterfactual results in the lowest prices that could apply.
- 1.93 The difference between this lowest price and pricing continuity represents a crude assessment of the maximum cost that consumers will pay in the short run. We can then compare this ‘cost’ with the level of expected competition and investment that we expect over the review period.³²
- 1.94 Over the five year review period, setting prices at the lowest possible level would reduce costs to consumers by around £2.4bn, or about £1.80 per month for each customer in this review period.³³
- 1.95 But that scenario would forego widescale fibre deployment in Area 2 which we estimate to be worth c.£10bn.³⁴ These investments include BT’s fibre deployment to reach c.12m premises in Area 2, Virgin Media’s extended coverage by c.2m premises and its network upgrade to be gigabit-capable, CityFibre’s fibre deployment to 8m premises, Hyperoptic’s fibre deployment to 5m premises, plus investment from a number of smaller competitors.³⁵
- 1.96 That investment also represents a very substantial injection of competition and will in our view lead to permanent long-term benefits to consumers in the WLA and LL Access markets in Area 2.

³² There are various intermediate combinations that could be considered, which allow for some competition to emerge and/or for investment in gigabit-capable networks, but also higher prices to reflect this. Attempting to estimate the impact of this would raise further challenges and complexities. Among other things it would involve trying to predict the course of competition and investment and their outcomes over long time periods, in a dynamic and uncertain market context. We think that our simple case is sufficient for our sense check.

³³ This takes into account volumes already on the Virgin Media network. To create the counterfactual scenario, we adjust our service volumes, service prices and depreciation. Our approach to service volumes and depreciation is described in Annex 15. For services prices, in the counterfactual we assume average FTTP prices remain constant in nominal terms and cost-based copper prices, which decline slightly on average in nominal terms over the charge control period. All figures are reported undiscounted. The calculation assumes full pass through from wholesale to retail prices.

³⁴ We have estimated this based on the fibre build plans for operators and cost per home passed and cost per home connected estimates from our FTTP model.

³⁵ We describe fibre deployment plans in Annex 3. As set out in Annex 3, much of the planned investment by competing network operators is in networks providing both broadband and leased lines. Figure of c.12m for Openreach is an Ofcom estimate of Openreach deployment in Area 2 by the end of this review period.

1.97 This high-level sense check supports our view that price continuity will lead to a good outcome for the market and ultimately consumers. We are therefore satisfied based on the analysis we have carried out that pricing continuity is proportionate and would not produce adverse effects which are disproportionate to the aims pursued.

Our decision is pricing continuity

1.98 For the reasons above we have decided 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 pricing requirement. This means that we are introducing:

- a charge control on MPF and FTTC 40/10 rental charges, inflation-adjusted from 2021 levels;
- pricing flexibility, subject to a requirement for prices to be fair and reasonable, on rental charges for higher bandwidths;

1.99 We set out the level of price caps on MPF and FTTC 40/10 in each year of the review period in Volume 4, Section 6.

Charge control on a FTTP 40/10 equivalent service where FTTC is unavailable

1.100 In areas where a copper based 40/10 service is not available today, and when the charge controls move from copper to full fibre under our approach to supporting copper retirement as discussed in Volume 3, Section 2, we have decided to charge control a 40/10 equivalent on BT's full fibre network.

1.101 We have decided that the regulated FTTP 40/10 service price should be set at the level of the FTTC 40/10 product plus a premium of £1.70 per month. This premium reflects the additional benefits of fibre over copper.

1.102 We consider that adding the premium is necessary to achieve our objective of promoting competition and investment in gigabit-capable networks. Due to the higher quality of the FTTP 40/10 service compared to the FTTC equivalent, a premium is necessary in order to maintain the same incentives that support competitive network investment. 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. It could undermine competition because buying from Openreach would become more attractive relative to purchasing wholesale services from a competing network, and it would become harder for competing network operators to profitably compete with Openreach.

1.103 Consumers will still be protected, as the premium will reflect the added value of the FTTP 40/10 service.

1.104 We have decided not to mandate access to a standard broadband equivalent on Openreach's full-fibre network. As we explain in Volume 3, Section 2, demand for standard broadband is declining rapidly and as it continues to do so, we anticipate that there will be

a limited number of consumers remaining on standard broadband services and affected by the relaxation of copper regulation.

1.105 In Annex 19 we describe how we have determined the level for the fibre premium.

Future price regulation and the fair bet

1.106 In our January 2020 Consultation, we explained that if circumstances did eventually emerge where we needed to impose price regulation in the future, we would take account of the ‘fair bet’ principle.³⁶

1.107 In response, BT Group argued that we should be more explicit about how we will take account of the ‘fair bet’ principle and treat the commercial ‘bets’ BT is taking in relation to its fibre investments, should Ofcom decide to regulate fibre prices in the future.³⁷ BT Group recognised that our proposed remedies will help to mitigate full fibre investment risk but considered that downside risks still exist.³⁸

1.108 CityFibre and Virgin Media also requested further clarity on how Ofcom intended to honour the fair bet. CityFibre highlighted that the fair bet concept is relevant for any firm who may be impacted by regulation, directly or indirectly.³⁹

1.109 We recognise that building a gigabit-capable network is a major investment with long payback periods, and that Openreach and other operators face risks when investing. Because of this, we recognise that the question of how we would approach regulation in the future matters for investment decisions in this review period.

1.110 We believe that competition is the most effective driver for innovation and investment. Our regulatory approach is to promote competition and investment in gigabit-capable networks and to this end we are taking a number of measures designed to support investment by BT and other operators:

- Providing access to Openreach’s ducts and poles
- Indexing existing regulated copper prices
- Giving pricing flexibility on services above 40Mbit/s
- Allowing a price premium on the new full-fibre network
- Supporting the retirement of the copper network

1.111 Investment in gigabit-capable networks is expected to take place over much of the next decade.⁴⁰ We cannot prejudge what actions we will take in the future, as any pricing decisions in future reviews will be made in light of the circumstances and legal framework applicable at that time. However, while investment plays out, we would not expect to intervene in a way that hampers this investment. Specifically, we do not expect to

³⁶ January 2020 Consultation, paragraphs 1.86-1.89.

³⁷ BT’s response to January 2020 Consultation, paragraph 3.32. BT response to July 2020 Consultation, paragraph 2.31.

³⁸ BT’s response to January 2020 Consultation, paragraph 3.34.

³⁹ CityFibre response to January 2020 Consultation, paragraph 6.74 – 6.76. Virgin Media response to January 2020 Consultation, paragraph 38.

⁴⁰ See Annex 3.

introduce cost-based prices for full-fibre services until at least 2031 (provided there is sufficient ongoing investment).

1.112 Over the next ten years we expect to see new providers entering and competing with Openreach and Virgin Media. This will put us on a path to even greater deregulation in the future, allowing competition to replace regulation permanently. Where effective competition emerges, there will be no need for Ofcom to regulate.

1.113 However, effective competition is unlikely to emerge in all parts of the UK and this raises questions about the market conditions that would cause the regulator to consider the need to extend price controls and how such price controls should be constructed. We would naturally look carefully at a range of market circumstances when deciding what further regulation, if any, was needed.⁴¹ For example:

- Timing: as mentioned above we expect investment in new networks to take place over much of the next decade, and certainly into the next review period (2026-31), and on this basis we do not expect to introduce cost-based price controls until at least 2031. Throughout the 2026-31 period, we would expect our starting point to be that the same wholesale access prices would apply in each of Area 2 and Area 3 as we expect ongoing investment, commercial and state funded, in both of these areas.
- Ongoing investment and competition beyond 2031: today we only have knowledge of commercial plans and state interventions that run into the period 2026-31, however it is possible that investment and competition could continue beyond this period. If this proved to be the case, we would look to regulate in a way that continued to support this, while ensuring that consumers continue to be protected.
- Absent investment and competition: in the future there may be areas where there is no on-going investment, and competition has not emerged and is not expected to. In these areas we would expect to look at consumer outcomes. It is possible that consumers in these areas benefit from competition through a common pricing approach (i.e. Openreach adopts the same prices here as in more competitive areas), or that Openreach has committed to supply on attractive commercial terms. If that is the case, it may be that light touch regulation is appropriate (or even no regulation on prices).
- Where none of these circumstances apply, we may be required to set cost-based prices going forwards.

1.114 If we decide circumstances require a return to a cost-based control in parts of the UK, we would ensure that operators have a fair bet on investments. This is a principle that we have consistently supported and honoured and continue to do so.⁴²

1.115 An investment is a 'fair bet' if, at the time of investment, the expected return is equal to the cost of capital. In the case of BT's full-fibre investment, we believe that the measures we are proposing support BT's full-fibre investment and significantly de-risk the investment

⁴¹ Our general approach to market analysis is described in Volume 2 and Annex 1.

⁴² The main recent example was Ofcom's approach to setting price regulation on FTTC in the 2018 WLA. See paragraph 1.88 of January 2020 Consultation.

case. However, we accept that some risk remains, and that BT should be allowed the opportunity to earn and keep a higher return than normal if it is successful. This is consistent with the fair bet principle.⁴³

- 1.116 Given the prospects of competition in this market, we do not believe that it is appropriate for the regulator to predetermine a particular return target, or a period of time before we might intervene further and regulate fibre prices, as doing so could influence how competition develops. As discussed above, our expectation is that competition does develop in this market in many areas, such that there is no need for cost-based regulation in the future.
- 1.117 However, should we need to regulate in future, we would check to ensure that BT had a fair bet. Our guiding principle in assessing this would be to consider whether, at the time BT took the decision to invest, it would have gone ahead with the investment if it had understood the regulation we were proposing to adopt.⁴⁴ In doing this we would assess the risks BT faced when making the investments and the cost of capital relevant to those investments at the time they were made. We would then look to ensure that the expected returns were sufficient to ensure that it had been compensated for those risks i.e. the fair bet had been honoured.
- 1.118 In setting any future charge control, our policy would be to ensure that BT could keep the upside it had earned up to that point and ensure that it has the ability to earn its cost of capital going forward.⁴⁵
- 1.119 We recognise that in the early stages of deploying a full-fibre network BT would incur significant capital expenditure with relatively low revenue from FTTP services. One important element of our approach to any future charge controls will therefore be our assumptions about how Openreach's assets have depreciated. Our approach to depreciation will determine the value that Openreach would derive from its investments in the period where it is subject to any charge control. While we would have to consider the prevailing circumstances at the time, we would expect to use economic depreciation rather than accounting depreciation when looking at Openreach's full-fibre investment. Economic depreciation calculates depreciation based on the revenue earning potential of assets (and the services those assets provide) rather than based on a set amount of cost each year (as with accounting depreciation).⁴⁶

⁴³ It is important to provide sufficient potential for BT to earn more than the cost of capital when the investment goes well to compensate for the losses BT could incur if the investment goes badly. Otherwise, BT would not have an incentive to make risky investments, and consumers would not have the benefits of its investment.

⁴⁴ This is consistent with the approach we used when assessing the fair bet in relation to FTTC investments in the 2018 WLA Statement. See Annex 6, 2018 WLA Statement.

⁴⁵ If BT makes higher profits than its cost of capital between now and 2031 (taking into account high returns on copper products), that would be to its benefit.

⁴⁶ This avoids the inverse relationship between in-year utilisation and unit costs prevalent under accounting approaches to depreciation in these circumstances. We have used economic depreciation in the past when faced with investment in a new network (e.g. when calculating charge for mobile and fixed call termination and as a cross-check for FTTC services in the 2018 WLA).

- 1.120 We would expect to depreciate Openreach's assets assuming that Openreach is able to achieve constant per line revenue that would be sufficient for Openreach to recover its costs (including its WACC). In the event competition does not develop to the extent we expect and we come to set a cost-based charge control, we would expect to maintain this historical assumption even if Openreach achieves greater recovery per line than we forecast. In reality, if competition does not develop, we would expect Openreach to be able to achieve a price higher than our assumed price per line, and therefore higher recovery than we would have assumed based on economic depreciation.
- 1.121 Under this approach BT would be able to earn a return above its cost of capital over the whole full-fibre investment cycle, even if cost-based regulation were introduced part way through the investment cycle.
- 1.122 This approach to pricing and depreciation would mean that in those areas where competition does not emerge, Openreach would have had ample regulatory support and funding for its full-fibre roll-out.
- 1.123 We consider that this description of how we might expect to approach future regulation provides Openreach (and other operators) with a sufficient basis to move forward with their gigabit-capable roll out.

Legal tests

- 1.124 We are setting SMP conditions on BT in relation to the market for WLA in Area 2 to give effect to the pricing remedies described above. Further details of the charge controls can be found in Section 3. Our SMP conditions can be found in Volume 7.
- 1.125 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.
- 1.126 As required by section 88 of the Act, we consider that the setting of each of these SMP conditions would be appropriate for the following purposes:
- promoting efficiency;
 - promoting sustainable competition;
 - conferring the greatest possible benefits on end user of public electronic communications services having regard, where relevant to the market analysis, to the long-term interests of end-users in the use of next-generation networks; and
 - promoting the availability and use of new and enhanced networks.
- 1.127 We have also considered:
- the extent of the investment in the matters to which the condition relates of the person to whom it is to apply; and
 - the benefits of predictable and stable wholesale prices in ensuring—
 - efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.

Promoting efficiency

- 1.128 We consider that supporting network competition and investment by Openreach and others through our pricing regulation 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 decisions also encourage Openreach to achieve greater productive efficiency by allowing it to keep any profits it earns from reducing costs over the review period.

Promoting sustainable competition and conferring the greatest possible benefits on end user of public electronic communications services

- 1.129 The charge control conditions are intended to incentivise investment in new networks by both rival network operators and Openreach. 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.
- 1.130 We consider that incentivising investment in new, rival networks 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 approach will be larger than the short-term costs. In reaching this view, we have had regard to the long-term interests of end-users in the use of next-generation networks.

Promoting the availability and use of new and enhanced networks

- 1.131 We are satisfied that our SMP conditions promote the availability and use of new and enhanced networks.
- 1.132 Allowing Openreach to set prices above the cost of copper services promotes investment in very high capacity networks by competing network providers. This competitive pressure provides Openreach with a strong incentive to invest. Allowing Openreach to set prices above the cost of copper services also supports Openreach's investment in FTTP. Where a copper based 40/10 service is not available, we have further decided to charge control a 40/10 equivalent on BT's full fibre network. We also take decisions to support a regulatory transition from copper to full-fibre services. These decisions taken together will lead to increased availability and use of new and enhanced networks.

The extent of the investment and the benefits of predictable and stable wholesale prices

- 1.133 We have taken account of the extent of BT's investment in the matters to which the charge control 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.

- 1.134 As our SMP conditions involve price controls on the provision of network access to existing network elements, we have also taken account of the benefits of predictable and stable wholesale prices in ensuring—
- efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.⁴⁷
- 1.135 Our SMP conditions involve maintaining existing price caps at their current levels in real terms. We also consider that for higher speeds not subject to a price cap, the price cap on Openreach’s 40/10 products will constrain Openreach’s prices. Therefore, our SMP conditions allow predictable and stable wholesale prices. We consider that this level of price regulation promotes efficient market entry by competing network providers and promotes Openreach’s investment in gigabit-capable networks. Consequently, we are satisfied that our SMP conditions provide sufficient incentives for all undertakings to bring into operation new and enhanced networks.
- 1.136 In Volume 4, Section 7, we explain why the setting of these SMP conditions would satisfy the test set out in section 47 of the Act.

LL Access in Area 2

- 1.137 We have considered different approaches to setting charge controls in the LL Access Area 2 market,⁴⁸ including approaches suggested by stakeholders. We have assessed which would meet our objective of promoting competition and investment in gigabit-capable networks by Openreach and other operators, and also protect consumers and existing models of downstream competition in the short term.
- 1.138 Below, we set out our assessment of the following options against our objective:
- Pricing continuity: keeping price caps on all services the same in real terms.
 - Bringing price caps closer to cost.
 - ‘Adaptive regulation’: if adopted, this would have two parts: (1) charge controls based on the cost of services 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.
- 1.139 After assessing how each option would perform against our objective, we set out our preferred option and check to ensure that the option does not produce adverse effects which are disproportionate to the aim pursued.⁴⁹

⁴⁷ We also note the insertion of new provision section 88(1A) of the Act which provides that Ofcom may refrain from setting a price control (even if the other section 88 tests are satisfied) if a demonstrable retail price constraint is present and other SMP conditions other than those imposed under section 87(9) would ensure effective and non-discriminatory access. We have considered whether these tests may be satisfied in this case. We have concluded in light of our SMP determinations that they would unlikely be satisfied.

⁴⁸ This includes both EAD and WDM rental and connection charges.

⁴⁹ 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.

Pricing continuity

- 1.140 Pricing continuity means maintaining the price caps on all services at their current levels in real terms.
- 1.141 We have concluded that pricing continuity would meet our objective of promoting competition and investment in gigabit-capable networks by Openreach and other operators. It would also protect consumers and existing models of downstream competition in the short term. We explain why we have reached this conclusion in the rest of this section. First, we assess the impact pricing continuity would have on competitive network investment, then on Openreach's investment. We then explain how it would protect consumers and protect existing models of downstream competition in the short term.

Impact on competitive network investment

- 1.142 Under this approach, wholesale prices would be able to diverge from the cost of providing those services. This is particularly the case for VHB services, for which the existing price caps are set at a level significantly above cost.⁵⁰ We consider that this would promote competitive network investment and explain why below.
- 1.143 As described above in relation to WLA services, the business case for competitive network investment is challenging, with high barriers to entry. The move to gigabit-capable networks offers a window of opportunity for alternative providers to invest in networks. Because these networks will typically offer both broadband and leased lines services, demand from users of leased lines plays an important role (alongside broadband volumes) in some business plans for rival network investment. It also means that the deployment of these networks will lead to greater competition in both the LL Access and WLA markets.
- 1.144 The fact that much of the planned investment will be in networks providing both broadband and leased lines services reflects the underlying economics of fibre network deployment.⁵¹ Building a network involves a significant amount of upfront investment, and there are economies of scope (and scale) in building a network to deliver both broadband and leased lines.⁵² Using the network to generate as many different revenue streams as possible will help de-risk and improve the commercial business case for investment.⁵³

⁵⁰ The existing price caps that we imposed in the BCMR 2019 held current prices flat in nominal terms. For services of 1Gbit/s and below, the price caps imposed did not depart significantly from cost as these services were subject to a cost-based charge control prior to the BCMR 2019. However, for VHB services, we imposed a safe-guard price cap at the then current level of prices, which was significantly above accounting cost.

⁵¹ See Annex 3.

⁵² Economies of scope exist if there are cost savings from deploying and providing multiple services jointly on a single network. Such savings typically arise from costs which are common across services and need to be incurred to service either or both, broadband and leased line customers. These economies of scope can arise from offering broadband and leased line services sharing common infrastructure, such as duct routes or fibre cables, thus the costs associated with deploying fibre in those sections are incurred only once, resulting in cost savings.

⁵³ See 2018 WLA Statement, Volume 3, paragraphs 2.129-2.140.

- 1.145 The evidence suggests that leased lines are an important source of demand (and revenue) and could play an important role in enabling the business case for competitive network investment. There is evidence that large customers of Openreach’s active leased lines are actively considering opportunities to source dark fibre from other network operators (including those not yet built). In particular, with increasing demand for mobile data and the roll out of 5G, MNOs have been looking at alternatives to Openreach’s existing services to meet their demand for higher capacity connections to mobile sites (see Sections 2 and 8 of Volume 2). This creates the opportunity for long-term strategic partnerships between competing network operators and MNOs.⁵⁴
- 1.146 CityFibre has also told us that leased lines demand is important.⁵⁵ Leased lines customers have acted as anchor tenants to de-risk CityFibre’s network build,⁵⁶ and account for a significant proportion of CityFibre’s revenues in the initial years of deployment.⁵⁷ [X].⁵⁸ Moreover, CityFibre’s 2019 strategic report stated: “Particular success was achieved in securing new Public Sector contracts These form a key part of the Group’s strategy of monetising its network assets across multiple verticals.”⁵⁹ TalkTalk disputed our view that leased lines could play an important role in enabling the business case for investment in these networks. We explain why its arguments do not change our view in Annex 12.
- 1.147 Price regulation, while just one factor, is an important consideration in the investment decisions by new and existing competitors to Openreach, and their investors. This is because price regulation will be the dominant influence on prices in these markets in this review period and will also signal the path of pricing beyond the review period.
- 1.148 Higher leased line wholesale prices make investment more attractive for new competitors, by increasing their expected returns. This applies to networks offering both broadband and leased lines, and to those focused on leased lines.⁶⁰ For example, when Openreach’s wholesale prices are higher, telecoms providers using Openreach’s wholesale leased lines services have a stronger incentive to switch to a competing network.⁶¹ Higher prices also allow higher margins on each connection. Conversely, price cuts damage new entrants,

⁵⁴ These partnerships could extend beyond the immediate connectivity needs to macro cell sites, to providing connectivity to small cell access points in future. In relation to the latter, the economies of scope could be very large (see 2018 WLA Statement, Volume 3, paragraphs 2.134-2.135). See, for example, <https://www.cityfibre.com/news/cityfibre-chosen-preferred-provider-backhaul-threes-5g-rollout-nationwide> [accessed on 2 March 2021]

⁵⁵ See, for example, CityFibre’s response to the January 2020 WFTMR Consultation, paragraphs 2.28 – 2.31.

⁵⁶ See Annex 3.

⁵⁷ CityFibre response dated 01 November 2019 to the s.135 notice titled Promoting investment and competition in fibre networks dated 23 October 2019, slide 4.

⁵⁸ CityFibre’s response dated 18 August 2020 to s.135 request dated 21 July 2020, Question 7, pages 36 and 38).

⁵⁹ CityFibre Strategic Report For the Year Ended 31 December 2019, (page 6), <https://www.cityfibre.com/wp-content/uploads/2016/05/CityFibre-Strategic-Report-for-2019.pdf> [accessed on 2 March 2021].

⁶⁰ Some leased line-only providers have plans to build, as described in Annex 3.

⁶¹ Higher access prices increase the likelihood that telecoms providers currently reliant on Openreach’s wholesale services will choose to purchase wholesale services from a competing network or build a network themselves. This is because these options will be assessed against the counterfactual of continuing to purchase wholesale services from Openreach. Higher access prices make buying from Openreach less attractive relative to these alternative options.

reduce their ability to compete profitably and give telecoms providers less reason to move away from Openreach.⁶²

- 1.149 Supported by our approach to regulation since the DCR and current charge controls, a significant amount of competitive network investment is now underway or planned. Large customers of Openreach's active leased lines are actively considering alternatives to Openreach. We therefore consider that existing charge controls are consistent with our objective of promoting competition and investment in gigabit-capable networks.⁶³
- 1.150 A number of competing network operators agreed our approach would support investment, and that price reductions would harm the business case. CityFibre, Virgin Media and [S<] support our proposal that the Area 2 LL price cap should be set at CPI-0%.⁶⁴ Three – a large purchaser of leased lines – also agreed with our view.⁶⁵
- 1.151 Our decision in this statement will set price caps for the next five years, and if we maintain current price controls this would support the case for new competition over this period. It would also affect investors' expectations about future regulation, which matters as these investments have long pay back periods.

Impact on Openreach investment

- 1.152 By promoting investment in competing gigabit-capable networks offering both broadband and leased lines, we believe that pricing continuity would also promote Openreach's investment in gigabit-capable networks. In particular, Openreach would have a strong incentive to deploy full fibre due to the risk of losing broadband volumes to competitors if it does not.

Protection of consumers

- 1.153 In this section, we explain why pricing continuity will protect consumers in the short term.
- 1.154 Customers buying these services would be protected by price controls, which will remain the same in real terms.
- 1.155 Although Openreach's volumes, and therefore costs, over the review period are uncertain, this approach would be likely to allow Openreach to price above the cost of these services, particularly for VHB LL Access. We expect consumers to benefit from pricing continuity in the long term. We expect a substantial amount of competing network build to emerge during the review period if we follow this approach, which will play an important and long-term role in protecting consumers. In particular, the deployment of new competing gigabit-capable networks is an opportunity for a substantial injection of competition in the

⁶² TalkTalk argued that leased line investment would be relatively insensitive to the level of wholesale prices. We address this in Annex 12.

⁶³ As for WLA, although Openreach could reduce wholesale prices in response to competitive network build, the prohibition on Openreach's ability to respond through targeting discounts geographically (see Volume 3, Section 7) means that it will not be able to reduce wholesale prices only where competition emerges. This reduces Openreach's incentive to reduce prices in response to actual and potential competition.

⁶⁴ See Annex 12.

⁶⁵ Three response to January 2020 Consultation, paragraphs 2.1 – 2.15.

provision of leased lines from large-scale providers with broad geographic coverage and which compete for a broad range of leased lines customers.⁶⁶

1.156 In this section, we assess whether this approach would protect consumers in the short term. We discuss:

- Protection of consumers on services of 1Gbit/s and below; and
- Protection of consumers on VHB services.

Price cap on services of 1Gbit/s and below

1.157 In the charge control currently in place, we kept prices constant in nominal terms and we expect that prices will be close to costs by the start of the review period.⁶⁷

1.158 As a result, we are of the view that purchasers of these services will be sufficiently protected over the review period.

Price cap on VHB services

1.159 VHB services are currently priced above accounting cost and holding price caps constant in real terms allows Openreach to set VHB prices above cost in the short term. Although Openreach's current 1 year VHB products are priced to the cap, its 5 and 7 year products are priced below the cap.⁶⁸

1.160 The extent to which prices will be above cost over the review period is uncertain, given the uncertainty in Openreach's volumes, and the likely increasing constraint on Openreach's prices.^{69,70}

1.161 In terms of the impact on purchasers (or potential purchasers) of VHB services, most are very large businesses or telecoms providers. Although current VHB volumes are small, this is expected to increase. An important driver of this increased demand will come from MNOs as they deploy 5G and require higher bandwidths to support their mobile backhaul requirements.⁷¹

1.162 We expect that purchasers of VHB services will be sufficiently protected over the review period, for the reasons set out below.

1.163 As VHB services move from having niche demand to the mainstream, we expect prices to continue their downward trend and we consider that competition will increasingly offer alternatives to Openreach and constrain Openreach's prices for VHB leased lines over the review period.

⁶⁶ Whilst TalkTalk agreed that there are material benefits to promoting investment in broadband networks, it argued that the benefits of additional networks offering leased lines are minimal. We explain why we disagree in Annex 12.

⁶⁷ For services of 1Gbit/s and below, the price caps imposed in BCMR 2019 did not depart significantly from cost as these services were subject to a cost-based charge control prior to this.

⁶⁸ Volume 2, Section 8.

⁶⁹ As Openreach's volumes are uncertain, its costs are uncertain. The uncertainty in volumes arises as we do not know the extent to which Openreach will lose volumes to competitors, or the extent to which demand for VHB services will grow throughout the review period.

⁷⁰ We discuss Openreach's returns on VHB services in more detail in Volume 2, Section 8.

⁷¹ See Volume 2, Section 2 and Section 8.

- 1.164 Investment in competing networks, supported by the availability of PIA, provides new alternatives to Openreach. For example, CityFibre’s rollout plans represent a very substantial injection of new competition in Area 2, in addition to existing competition from Virgin Media. MNOs have already been able to enter into agreements with rival networks in parts of Area 2,⁷² and the areas in which altnets are available are likely to increase as network build progresses.⁷³ PIA offers an additional path to more competition in leased lines, and Vodafone is also considering using PIA to self-build mobile backhaul connections as one of a number of solutions.⁷⁴
- 1.165 Openreach is already offering 3, 5 and 7-year term pricing for VHB services, providing substantial discounts below the 1 year price (and therefore below the cap) of around 15-35%.⁷⁵ We expect that the emerging competition will impose an increasing constraint on Openreach’s prices for VHB leased lines over the review period.

Impact on downstream competition

- 1.166 We consider that maintaining prices at current levels would provide adequate protection of competition over the review period and ensure that access seekers are still able to purchase the services they rely on, while competition continues to develop.
- 1.167 Some stakeholders argued that pricing continuity would hand BT’s downstream divisions a product advantage.⁷⁶ If the concern is that BT would be able to margin squeeze downstream rivals, VHB 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.

Bring price caps closer to cost

- 1.168 In this section, we set out our views on whether setting price caps closer to the cost of Openreach’s leased line services would meet our objective. Bringing prices closer to cost could include the following approaches:
- Setting charge controls at the cost of those services;
 - Setting tighter charge controls than under pricing continuity on some or all services e.g. charge controls of CPI minus 1%, 2% or CPI.⁷⁷

⁷² See Volume 2, Section 2.

⁷³ [redacted] [redacted] response dated [redacted] to section 135 dated [redacted].

⁷⁴ See Volume 2, Section 2.

⁷⁵ See Volume 2, Section 8. Openreach has also cut charges for some OSA connection and rental services by c.30%, also described in Volume 2, Section 8.

⁷⁶ Vodafone response to January 2020 Consultation, Vol.3 7.14-15, and Telefónica response to January 2020 Consultation, sections 6.1 to 6.3.

⁷⁷ In principle, this includes all options that would set price caps below current levels, but above the cost of Openreach’s legacy services. We recognise that options which involve setting prices very close to (but just below) current levels in real terms would result in slightly lower prices in the short term, but might also have slightly less strong incentive properties to pricing continuity. For the purposes of our assessment we have looked at the difference between pricing continuity, and a substantial reduction in prices in real terms. We have not assessed whether all of the examples listed here would cover the cost of leased line services in practice.

- 1.169 We have concluded that a reduction in the price caps on leased lines services would not meet our objective of promoting competition and investment in gigabit-capable networks by Openreach and other operators.
- 1.170 This approach would not create the strong incentives we seek to provide that would drive competitive network investment. We describe above why we believe that there is a significant positive relationship between the level of wholesale prices and competitive network investment, and that maintaining current prices would facilitate current and planned investment. Although VHB price caps are above accounting costs, this is an important revenue source for competing networks and our view is that a reduction in price caps would reduce the incentive to invest in competing networks and would not promote investment. We recognise that there could be some competitive network investment under this approach, and smaller reductions in price caps would have less impact on incentives and profitability. However, these approaches would nevertheless make investment less likely. In addition, there is a risk that a reduction in price caps would signal that we are departing from our strategy of setting prices to support investment, and risk undermining current and planned investment.
- 1.171 We believe that this approach would also not promote Openreach's investment in gigabit-capable networks. Because there would be less risk of losing volumes to competing networks, Openreach would have less incentive to invest.
- 1.172 However, this approach would protect consumers and existing models of downstream competition. As we conclude that purchasers of leased lines would be protected under pricing continuity, as explained above, it follows that they would also be protected under tighter price regulation. This approach would be straightforward to implement.

Adaptive regulation

- 1.173 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.
- 1.174 We set out above (and in Annex 12) our assessment of the impact adaptive regulation in relation to regulation of WLA services. We are of the view that these considerations would also apply to leased lines. Our views discussed above in relation to setting caps on leased lines services closer to cost also apply in this case. In summary, although adaptive regulation would protect consumers and existing models of downstream competition in the short term, we do not consider that it would meet our objective of promoting competition and investment in gigabit-capable networks by Openreach and other operators.

Conclusion on preferred approach

Evaluation of options

- 1.175 In Area 2, our objective is to promote competition and investment in gigabit-capable networks, by Openreach and other operators. The resulting network competition will provide increasing protection for consumers in the long term, and in many areas effective competition may emerge such that the need for regulation falls away. This will take time and therefore we seek to protect consumers and existing models of downstream competition in the short term. We have decided that pricing continuity is the only option that is effective in achieving this objective.
- 1.176 We have explained how pricing continuity will promote competitive network investment, promote Openreach's investment in a gigabit-capable network, protect consumers and protect existing models of downstream competition. It would also be compatible with the regulatory framework and straightforward to implement.
- 1.177 Bringing prices closer to the cost of leased line services and adaptive regulation would better protect consumers and protect existing models of downstream competition in the short term. However, in our view these approaches would not meet our objective of promoting competition and investment, by Openreach or other networks for the reasons described above.
- 1.178 Therefore, our preferred approach is pricing continuity. In the following section, we ensure pricing continuity would not produce adverse effects which are disproportionate to the aims pursued.

Proportionality of pricing continuity

- 1.179 We conclude above that pricing continuity meets our objective in Area 2. We have also considered two other potential approaches (bringing prices closer to the cost and adaptive regulation) and concluded that price continuity is the only approach that would meet our objective.
- 1.180 Some stakeholders argued that we should conduct a detailed cost benefit analysis (CBA), where we compare the price continuity approach with other approaches. We do not believe that it is necessary to conduct such an assessment. For the reasons set out below and in Volume 4, Section 7, we are satisfied that pricing continuity meets our statutory duties and the legal tests set out in the Act. In particular, in reaching our decision we considered alternative approaches and concluded these would not be meet our objective. On this basis we consider that pricing continuity is the minimum necessary to meet our aim.
- 1.181 While we do not believe it is necessary to conduct a detailed CBA, we have carried out a high-level sense check that pricing continuity is proportionate and would not produce adverse effects which are disproportionate to the aims pursued. We are satisfied that the benefits of the pricing continuity approach, in the form of greater competition and

investment in WLA and LL markets, outweigh any higher prices paid by consumers in the short term.

- 1.182 We expect a large injection of competition in Area 2 by networks supplying broadband and leased lines which will lead to significant benefits to consumers, compared to competition based on regulated access to BT's network, as we describe in Volume 1.⁷⁸
- 1.183 As well as delivering benefits in the LL access market, 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 pricing continuity 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 pricing continuity in the LL Access market are also included.⁷⁹
- 1.184 We are therefore, satisfied on the basis of the analysis we have carried out that we do not consider that our proposal gives rise to any adverse effects that are disproportionate to the aims pursued.

Our decision is pricing continuity

- 1.185 For the reasons above we have decided that for LL Access services in Area 2 currently subject to charge controls, price caps will remain constant in real terms. This means for LL Access in Area 2, we have decided to maintain a charge control on rental and connection charges for leased lines of all bandwidths, inflation-adjusted from 2021 levels.
- 1.186 We set out the level of price caps on LL Access services in each year of the review period in Volume 4, Section 6.

Legal tests

- 1.187 We are setting SMP conditions on BT in relation to the market for LL Access to give effect to the pricing remedies described above. Further details of the charge controls can be found in Volume 4, Section 6. Our SMP conditions can be found in Volume 7.
- 1.188 As explained above, we consider there to be a risk that, absent regulation, BT might fix and maintain prices for LL Access in Area 2 at an excessively high level and/or impose a price squeeze so as to have adverse consequences for end users.
- 1.189 As required by section 88 of the Act, we consider that the setting of each of these SMP conditions would be appropriate for the following purposes:
- promoting efficiency;
 - promoting sustainable competition; and

⁷⁸ Some leased line-only providers also have plans to build, as described in Annex 3.

⁷⁹ This is because we consider that the short-term costs of pricing continuity in the LL Access market are small relative to the benefits, in the form of competition and investment.

- conferring the greatest possible benefits on end user of public electronic communications services having regard, where relevant to the market analysis, to the long-term interests of end-users in the use of next-generation networks; and
- Promoting the availability and use of new and enhanced networks.

1.190 We have also considered

- the extent of the investment in the matters to which the condition relates of the person to whom it is to apply; and
- the benefits of predictable and stable wholesale prices in ensuring—
 - efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.

Promoting efficiency

1.191 We consider that supporting competition from networks offering both broadband and leased lines, and networks focused on leased lines, 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 decisions also encourage Openreach to achieve greater productive efficiency by allowing it to keep any profits it earns from reducing costs over the review period.

Promoting sustainable competition and conferring the greatest possible benefits on end user of public electronic communications services

1.192 The conditions are intended to incentivise investment in new networks offering both broadband and leased lines, and networks focused on leased lines 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.

1.193 We consider that incentivising investment in new, rival networks offering both broadband and leased lines, and networks focused on leased lines, 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.

Promoting the availability and use of new and enhanced networks

1.194 We are satisfied that our SMP conditions promote the availability and use of new and enhanced networks.

1.195 Allowing LL Access wholesale prices to diverge from the cost of providing those services promotes investment in very high capacity networks by competing network providers. This competitive pressure provides Openreach with a strong incentive to invest. These decisions taken together will lead to increased availability and use of new and enhanced networks.

The extent of the investment and the benefits of predictable and stable wholesale prices

- 1.196 We have 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.
- 1.197 As our SMP conditions involve price controls on the provision of network access to existing network elements, in accordance with the amended test in section 88 of the Act, we have also taken account of the benefits of predictable and stable wholesale prices in ensuring—
- efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.⁸⁰
- 1.198 Our SMP conditions involve maintaining existing price caps at their current levels in real terms. Therefore, our SMP conditions allow predictable and stable caps on wholesale prices.
- 1.199 For both 1Gbit/s and below, and VHB services, we consider that this level of price regulation promotes efficient market entry by competing network providers, and promotes Openreach's investment in gigabit-capable networks. Consequently we are satisfied that our SMP conditions provide sufficient incentives for all undertakings to bring into operation new and enhanced networks.
- 1.200 In Volume 4, Section 7, we explain why the setting of these SMP conditions would satisfy the test set out in section 47 of the Act.

Leased Line Services in the HNR Area

- 1.201 We have concluded that BT has SMP in LL Access in the HNR Area. 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 SMP finding is finely balanced as we also find that competition is more developed in the HNR Area. We have taken this into account in our decision on pricing remedies.
- 1.202 In developing our pricing remedies for LL Access in the HNR Area, we have had regard to our overarching legal duties. Consistent with the approach to remedies set out in Section 1 of Volume 3, we have exercised our discretion in setting pricing remedies in favour of an approach that promotes competition and investment in gigabit-capable networks, by Openreach and other operators. We also seek to protect consumers and existing models of downstream competition in the short term.⁸¹

⁸⁰ We also note the insertion of new provision section 88(1A) of the Act which provides that Ofcom may refrain from setting a price control (even if the other section 88 tests are satisfied) if a demonstrable retail price constraint is present and other SMP conditions other than those imposed under section 87(9) would ensure effective and non-discriminatory access. We have considered whether these tests may be satisfied in this case. We have concluded in light of our SMP determinations that they would unlikely be satisfied.

⁸¹ We explain in Volume 1, Section 2 how this objective meets our legal duties.

- 1.203 We explain in Volume 3 that services subject to an access requirement are also subject to a requirement that prices are fair and reasonable, where there is no charge control or basis of charges obligation. This currently applies to LL Access in the HNR area. Below we assess how relying on this requirement would perform against our objective going forward.

Assessment of a fair and reasonable obligation on LL Access in the HNR Area

Impact on competition and investment

- 1.204 A fair and reasonable charging requirement 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.
- 1.205 This would be likely to create incentives for investment by competing 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

- 1.206 We conclude that BT has SMP in the provision of LL Access in the HNR Area, 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 the HNR Area will in our view constrain Openreach's ability to raise prices.
- 1.207 In terms of the impact on retail competition, a fair and reasonable charging requirement would ensure that access seekers would still be able to purchase the services they rely on.⁸²

Our decision is to maintain a fair and reasonable charging requirement

- 1.208 For the reasons we set out above, we expect a fair and reasonable charging requirement to preserve investment incentives by allowing prices to be above cost to some degree. The greater degree of competition in the HNR Area should constrain Openreach's ability to raise prices, and the fair and reasonable charging requirement should protect retail competition. We therefore consider that maintaining a fair and reasonable charging requirement should achieve our objective.

⁸² 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 on individual services in this context would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard.

- 1.209 We have therefore decided to require Openreach to set charges for LL access in the HNR Area that are fair and reasonable, meaning supply wholesale access products on terms which do not constitute a price squeeze.

Proportionality of a fair and reasonable charging requirement

- 1.210 We consider that imposing a fair and reasonable charging requirement is proportionate, as it goes no further than is necessary, reflecting the SMP finding. It recognises the existing and greater expected future levels of competition in the HNR Area. We have not identified any adverse effects of a fair and reasonable charging requirement that would be disproportionate to the aim pursued.

Legal tests

- 1.211 We are setting SMP conditions on BT in relation to the market for LL Access in the HNR Area to give effect to the pricing remedies described above. Further details of the charge controls can be found in Volume 4, Section 6. Our SMP conditions can be found in Volume 7.
- 1.212 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.
- 1.213 As required by section 88 of the Act, we consider that the setting of each of these SMP conditions would be appropriate for the following purposes:
- promoting efficiency;
 - promoting sustainable competition;
 - conferring the greatest possible benefits on end user of public electronic communications services having regard, where relevant to the market analysis, to the long-term interests of end-users in the use of next-generation networks; and
 - promoting the availability and use of new and enhanced networks.
- 1.214 We have also considered
- the extent of the investment in the matters to which the condition relates of the person to whom it is to apply; and
 - the benefits of predictable and stable wholesale prices in ensuring—
 - efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.

Promoting efficiency

- 1.215 We consider that supporting competition from networks offering both broadband and leased lines, and networks focused on leased lines, promotes efficiency. Our decisions also encourage Openreach to achieve greater productive efficiency by allowing it to keep any profits it earns from reducing costs over the review period.

Promoting sustainable competition and conferring the greatest possible benefits on end user of public electronic communications services

- 1.216 The conditions are intended to incentivise investment in new networks offering both broadband and leased lines, and networks focused on leased lines by both Openreach and rival network operators. As explained above, the potential for new network deployments in the HNR Areas, 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. In addition, there is already a material degree of competition in the HNR Area. Setting less onerous regulation allows this material degree of competition and market dynamics to play a greater role, which promotes sustainable competition in respect of existing services, as well as encouraging the increase of competition in the future.
- 1.217 We consider that incentivising investment in new, rival networks offering both broadband and leased lines, and networks focused on leased lines, 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.

Promoting the availability and use of new and enhanced networks

- 1.218 We are satisfied that our SMP conditions promote the availability and use of new and enhanced networks.
- 1.219 We would expect a fair and reasonable charging requirement to preserve investment incentives by allowing prices to be above cost to some degree. This is likely to create incentives for investment by competing network providers. This competitive pressure provides Openreach with a strong incentive to invest. These decisions taken together will lead to increased availability and use of new and enhanced networks.

The extent of the investment and the benefits of predictable and stable wholesale prices

- 1.220 We have taken account of the extent of BT's investment in the matters to which the conditions relate by ensuring Openreach can make a reasonable return on its investments.
- 1.221 As our SMP conditions involve price controls on the provision of network access to existing network elements, in accordance with the amended test in section 88 of the Act, we have also taken account of the benefits of predictable and stable wholesale prices in ensuring—
- efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.⁸³

⁸³ We also note the insertion of new provision section 88(1A) of the Act which provides that Ofcom may refrain from setting a price control (even if the other section 88 tests are satisfied) if a demonstrable retail price constraint is present and other SMP conditions other than those imposed under section 87(9) would ensure effective and non-discriminatory access. We have considered whether these tests may be satisfied in this case. We have concluded in light of our SMP determinations that they would unlikely be satisfied.

- 1.222 We consider that this level of price regulation promotes efficient market entry by competing network providers and promotes Openreach's investment. Consequently, we are satisfied that our SMP conditions provide sufficient incentives for all undertakings to bring into operation new and enhanced networks.
- 1.223 In Volume 4, Section 7, we explain why the setting of these SMP conditions would satisfy the test set out in section 47 of the Act.

2. Price regulation in Area 3

2.1 In this section we set out our decisions for setting charge controls in Area 3 in relation to:

- Wholesale local access (WLA) markets.
- Leased lines access (LL access) markets including dark fibre.

2.2 Table 2.1 summarises our decisions.

Table 2.1: Summary of decisions in Area 3⁸⁴

Market	Decision
WLA services in Area 3	<p>a charge control on MPF and FTTC 40/10⁸⁵ 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 of £1.70 per month to the FTTC 40/10 price</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 We explain our decisions and reasoning in the rest of this section. Stakeholder arguments in response to our proposals and our response to them are detailed in Annex 13.

2.4 Where we are imposing charge controls, we set out the detail of these in Section 6. Our decisions in relation to price regulation of ancillary services in these markets is covered in Section 5.

Our approach in Area 3

The competition problem

2.5 We consider that absent regulation, BT 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).

⁸⁴ As noted in Volume 3 Section 3, we have decided 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.

⁸⁵ By FTTC 40/10, we mean all VULA 40/10 (excluding FTTP 40/10). Connection charges for MPF and VULA services are discussed in Section 5.

2.6 As set out in Volume 3 Section 5, we have therefore decided to impose charge controls on these services to address this risk.

Our objectives

- 2.7 In developing pricing remedies for Area 3, we have had regard to our overarching legal duties. Consistent with the approach to remedies set out in Volume 3 Section 1, we have exercised our discretion in setting these controls in favour of an approach that promotes investment in gigabit-capable networks by Openreach. We also seek to promote competition based on access to Openreach's networks, and to protect consumers.
- 2.8 We consider this will best serve the interests of consumers, as the roll-out of gigabit-capable networks will deliver long term consumer benefits.
- 2.9 These considerations apply to both WLA and LL Access.
- 2.10 We do not believe that there will be material and sustainable competition to Openreach in the commercial deployment of competing networks in Area 3. However, we recognise that given the forward looking nature of our market analysis, the boundary between Area 2 and Area 3 inevitably is an approximation of reality, and that there might be some future competitive investment in Area 3 which represents material and sustainable competition to Openreach. We also recognise that even to the extent that the boundary between Area 2 and Area 3 is modelled accurately, there also might be some future competitive investment in Area 3 which will not represent material and sustainable competition to Openreach. We have been mindful of these factors in our assessment of the options.

Wholesale local access services

- 2.11 We have considered the following options for charge controlling WLA services in Area 3:
- A RAB approach where we set a cost-based charge control across copper and fibre services together.
 - Setting a cost-based control on copper services and allowing price flexibility on fibre services.
- 2.12 We have considered whether these options are effective in achieving our objective, and if so, which 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.
- 2.13 The remainder of this sub-section is structured as follows:
- We assess each option given our objectives in Area 3, concluding that we will use the RAB approach.
 - We set out the specific form of RAB that we have decided to adopt and explain how this meets our objectives.
 - We set out how our price controls will change once Openreach has deployed FTTP and retires its copper network.
 - We discuss how the RAB could be used in future review periods.

Assessment of options

A RAB approach where we set a cost-based charge control across copper and fibre services together

- 2.14 In general terms, a RAB approach involves the assets of all, or a set of, an operator's services being entered into a common pool known as the regulatory asset base (or RAB) which is recovered across all, or a set, 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).
- 2.15 We have considered a RAB approach where we set a cost-based charge control across copper and fibre services together.
- 2.16 We consider that a RAB approach would incentivise Openreach to invest in a fibre network in Area 3 (where it would otherwise have weak incentives) since it provides more certainty of cost recovery relating to its fibre investment. This is because the costs of the fibre investment can be recovered across a wider range of services and customers, for example, copper services and customers.
- 2.17 This is in contrast to the cost-based charge control option that we discuss below, where the charges for copper services are set with reference to the accounting costs of copper services, meaning that copper services cannot contribute to the recovery of the costs of the fibre network investment.
- 2.18 A RAB approach can be designed as a cost-based approach, but one where cost recovery is viewed across multiple services (i.e. fibre and copper services). It therefore protects customers, while also giving Openreach incentives to invest in fibre.

Setting a cost-based control on copper services and allowing price flexibility on fibre services

- 2.19 We have considered an approach whereby:
- a cost-based charge control is imposed on Openreach's copper WLA services (MPF and FTTC services);⁸⁶
 - no charge controls are imposed on new technologies (such as FTTP) for a period.
- 2.20 Under this approach, Openreach would have an incentive to invest in a fibre network if investing in a fibre network and selling fibre services alongside copper services generates more profit than continuing to only sell copper services.
- 2.21 However, given the characteristics of Area 3, there is a material risk that Openreach would not invest in a fibre network in a timely manner. This is because Openreach's incentives to invest in fibre are likely to be influenced by the following factors:
- **Impact on profit:** Openreach could attempt to increase profits by charging higher prices for fibre services. However, in the short term Openreach may not be able to

⁸⁶ Our existing regulation sets a charge control on MPF and FTTC 40/10 services that act as a price constraint on FTTC services at higher bandwidths.

increase profitability in this way, given consumers' low willingness to pay a higher price and the cost of deploying fibre in Area 3.

- **Impact on market share:** While 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, this will not be the case in Area 3. Our view is that in general Openreach's investment incentives will be weak in Area 3 since 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.

2.22 As a result of those factors, Openreach is likely to defer investment until pent-up demand for fibre services becomes clearer.

2.23 While this approach would protect customers in the short run, we do not consider that setting cost-based charge controls would meet our objective because it will not promote investment in gigabit-capable networks by Openreach in Area 3.

2.24 A variant is TalkTalk's adaptive regulation approach⁸⁷, which seeks to combine cost-based prices for copper services with incentives for new competition. Under this approach prices would be set at cost and only increase once rival fibre rollout has occurred in an area. Based on our market analysis, we do not consider that there is potential for material and sustainable competition by rival networks in Area 3, so this model would not assist in meeting our objectives since this approach would be equivalent to setting a cost-based control.

We have decided to adopt a RAB approach

2.25 In light of the above, we have decided that a RAB approach is the only option that meets our objective in Area 3 to promote investment in gigabit-capable networks by Openreach, whilst seeking to promote competition based on access to Openreach's networks and to protect consumers.

2.26 Below we set out design details of the RAB approach we intend to adopt and provide an assessment of how this meets our regulatory objectives.

The design of the RAB

2.27 A RAB approach can be designed in various ways. Two key design choices relate to:

- The set of services that comprise the RAB (and how these costs are recovered); and
- The timing of when the costs of Openreach's fibre deployment are entered into the RAB and shared across services (and thereby reflected in the level of the charge control on copper services).

⁸⁷ This approach was proposed by TalkTalk in response to the January 2020 Consultation and the July 2020 Consultation.

Services comprising the RAB

- 2.28 We have decided to adopt a RAB approach in Area 3, under which the asset base is comprised of WLA services (i.e. MPF, FTTC, G.fast, FTTP) and cost recovery is viewed across all WLA services in aggregate in Area 3.
- 2.29 We consider this approach is consistent with our objective to promote investment in gigabit-capable networks by Openreach, whilst seeking to promote competition based on access to Openreach's networks and to protect consumers.

Timing of fibre deployment costs entering into the RAB

- 2.30 There are two broad RAB approaches relating to the sequencing (or timing) of setting a charge control on copper prices that contribute to the recovery of Openreach's investment in a fibre network:
- **Post-build approach:** Under this approach, prior to any fibre build MPF and FTTC charges are set to allow cost recovery of copper services through a CPI-X control. Following Openreach's deployment of a fibre network, the charge control on copper services is adjusted through a mark-up to allow for cost recovery across both the fibre and copper network. The application of the mark-up would vary each year by an amount determined by Openreach's level of fibre deployment.
 - **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 is set to allow recovery of our forecast of fibre investment costs, based on an upfront commitment from Openreach regarding the level of fibre deployment.
- 2.31 While we consider that a post-build RAB could meet our objectives, our view is that a forecast RAB approach has several advantages:
- Where there is an up-front commitment to build, the forecast RAB approach provides a more direct and certain means of ensuring that consumers in Area 3 benefit from fibre than the post-build approach (since the post-build approach depends on incremental incentives that may not prove to be as effective).
 - Unlike the post-build RAB approach, where prices adjust as Openreach deploys its fibre network, the forecast RAB approach also benefits from providing customers with a predictable path of prices. This has benefits for retail competition since it provides wholesale customers with added certainty on copper prices during a period when they will be considering migrating many of their customers onto fibre.
 - To the extent that there is potential for rival investment in fibre networks, the forecast RAB approach better supports this by providing a more predictable path of prices.
 - It is simpler to implement since the charge control does not need to be updated each year in response to Openreach's fibre build.
- 2.32 A forecast RAB approach could be adopted based on predicted future fibre build by Openreach in Area 3. However, we consider that it must be backed-up by a credible commitment from Openreach to carry out that build. Otherwise, copper prices could be set at a level to contribute to the recovery of a fibre network deployment that may not occur.

Therefore, while we have a general preference for a forecast RAB approach over a post build RAB approach, this is contingent on having a credible fibre build commitment by Openreach in Area 3.

Forecast-RAB with the BT Commitment

- 2.33 On 26 June 2020, Openreach wrote a letter to Ofcom.⁸⁸ In that letter:
- Openreach referred to our January 2020 Consultation and to the possibility of extending our proposed approach to charge controlling WLA services in Area 2 to Area 3 should BT come forward with a sufficient commitment to build a fibre network in Area 3.
 - Openreach confirmed its plans to commercially build out a fibre network (i.e. without public subsidy) to at least 3.2m premises cumulatively by the end of 2025/26.
- 2.34 We refer to this as the BT Commitment.
- 2.35 On 8 March 2021, Openreach confirmed to Ofcom that it was not proposing to change its commitment to commercially deploy a fibre network to 3.2m premises in Area 3 in light of the updated set of postcode sectors in Area 3 (set out in this Statement).⁸⁹
- 2.36 We have considered this as the basis for taking forward a forecast RAB approach.

Our assessment of the BT Commitment

- 2.37 Our RAB approach is a cost-based charge control where costs and cost recovery is assessed across fibre and copper services taken together. In Annex 16, we set out our approach and assessment of the BT Commitment to commercially deploy to 3.2m premises given our intention to set a cost-based control.⁹⁰
- 2.38 Our assessment of the BT Commitment considers the following:
- What is a reasonable level of cost recovery that is required during the next charge control period (given the BT Commitment to deploy a fibre network in Area 3) that would allow an expectation of cost recovery over the lifetime of the fibre and copper network; and
 - What this means in terms of setting charge controls on WLA services for the next five years.
- 2.39 We recognise that there are various ways to set charge controls that are potentially consistent with providing Openreach with an expectation of cost recovery over the lifetime of the fibre and copper networks (given its level of planned build in Area 3). However, as set out further below, we consider that there are additional benefits to a forecast RAB approach that results in consistent pricing for WLA services across Area 2 and Area 3. We

⁸⁸ [Letter from Clive Selley \(CEO, Openreach\) to Dame Melanie Dawes \(CEO, Ofcom\)](#), 26 June 2020.

⁸⁹ [Letter from Mark Shurmer \(Openreach\) to David Clarkson \(Ofcom\)](#), 8 March 2021. [Letter from David Clarkson \(Ofcom\) to Mark Shurmer \(Openreach\)](#), 9 March 2021.

⁹⁰ In that annex, we set out stakeholder responses to our cost modelling in our July 2020 Consultation and our assessment of those stakeholder responses.

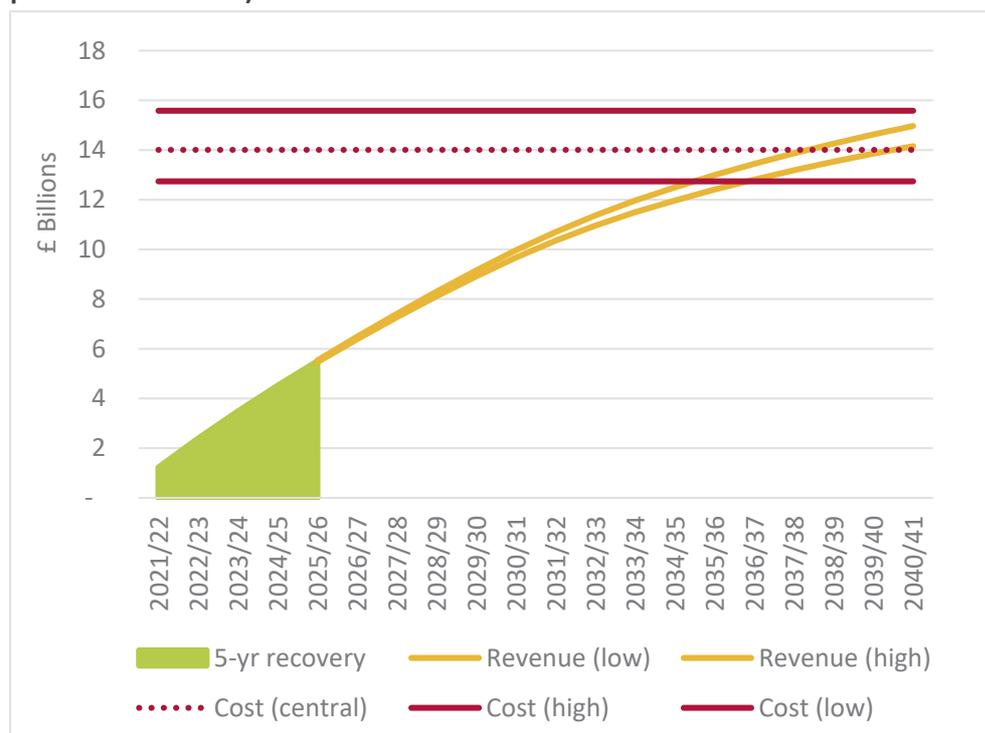
have therefore considered whether indexing copper services at bandwidths up to 40/10 by inflation (and allowing price flexibility on higher bandwidth copper services and fibre services) sits within a reasonable (and plausible) range of profiles providing cost recovery when viewed over 20 years.

2.40 In order to assess the BT Commitment, we have looked at a range of possible outcomes for Openreach's network deployment in Area 3. In summary, our analysis indicates the following:

- With a FTTP network covering 7m premises in Area 3 (with 3.2m premises covered by 2026), Openreach's total costs across FTTP and copper services will range between £12.7bn and £15.6bn on a present value basis over 20 years.
- During the period 2021-26, indexed pricing on copper services (through setting a CPI-0% cap on MPF and FTTC 40/10 services) will allow cost recovery of £5.5bn across FTTP and copper services on a present value basis over this 5-year period.⁹¹
- This is likely to be consistent with cost recovery over the lifetime of the networks, with our indicative modelling suggesting total cost recovery of between £13.6bn and £14.4bn on a present value basis over 20 years where prices remain flat in nominal terms post-2026, or between £14.2bn and £15.0bn on a present value basis over 20 years where prices continue to be indexed during 2026-2031 then remain flat in nominal terms post-2031.

⁹¹ Split between £5.0bn from copper services and £0.5bn from FTTP services.

Figure 2.1: Estimated FTTP and copper cost recovery under 10-year indexation scenario (£ billion, present value basis)



2.41 Therefore, for the reasons set out above, in Area 3 our preferred approach is to:

- Adopt a forecast-RAB approach, backed-up by the BT Commitment, where the asset base is comprised of WLA services (i.e. MPF, FTTC, G.fast, FTTP) and cost recovery is assessed across all services in aggregate.
- Prior to copper retirement, we will set charge controls on MPF and FTTC 40/10 rentals at CPI-0%; and allow pricing flexibility on Openreach's FTTC services at bandwidths above 40/10 and on fibre services (FTTP and G.fast).

2.42 Having identified our preferred approach, we consider below whether this:

- is consistent with our objective to promote investment in gigabit-capable networks by Openreach, promote competition based on access to Openreach's networks and protect consumers; and
- the option does not produce adverse effects which are disproportionate to the aim pursued.

Incentives for Openreach to invest

2.43 The forecast RAB approach is aimed at providing Openreach with an expectation of cost recovery across the lifetime of its copper and fibre networks, given the level of its fibre investment.

2.44 Under the BT Commitment, Openreach has confirmed plans to commercially deploy a fibre network to at least 3.2m premises by the end of March 2026. We consider that this is evidence of the positive investment incentives that the forecast RAB provides which will

deliver a significant level of fibre deployment during the forthcoming charge control period. We also anticipate that we will use the RAB mechanisms to provide Openreach with an incentive to deploy fibre to the rest of Area 3 where commercial build is viable during future charge control periods.

Protection of consumers

- 2.45 Our RAB approach sets a cost-based charge control, in which costs and cost recovery are viewed across multiple services (in this case across services provided over the copper and fibre network). This protects consumers because they pay no more than Openreach's expected costs, including the costs of the fibre investments that will deliver benefits to consumers.

Protection of consumers on standard speed services

- 2.46 Under our forecast RAB approach, MPF and FTTC 40/10 services will be charge controlled at CPI-0%.
- 2.47 As set out in Section 1, around [X%] (50% - 60%) of customers on the Openreach network take standard or 40/10 products.⁹² However, this proportion has been falling and by March 2025, ISPs expect 25% of customers to still be using these services, with the remaining customers taking higher speeds.^{93,94}
- 2.48 Consumers taking these services would be directly protected by price controls, which will remain the same in real terms.

Protection of consumers on higher speed services

- 2.49 Under our forecast RAB approach, we will be allowing pricing flexibility on higher bandwidth services (i.e. on speeds above 40/10). However, we have included the forecast revenues relating to these higher bandwidth services as a contribution to Openreach's cost recovery across its copper and fibre network in aggregate. Accordingly, while higher bandwidth services are not subject to a price cap, these prices provide for cost recovery as part of a cost-based control.
- 2.50 In Volume 4 Section 1 we explain that, in Area 2, there will be no direct price controls on speeds above 40/10. However, we expect that 40/10 services will continue to be a reasonable substitute for higher speed services over the review period and that a price cap on Openreach's 40/10 products would act as an anchor, constraining prices it could charge for higher speeds. As a result, Openreach would be constrained from setting high prices for higher speed services, despite those not being subject to a price control. This means that consumers will be sufficiently protected over the review period.

⁹² This increases to [X%] (60% - 70%) including customers on the broadly comparable 55/10 product. See Volume 2 Section 2.

⁹³ This includes customers on the broadly comparable 55/10 product. See Volume 2 Section 2.

⁹⁴ As explained in Volume 2, Section 2, last year Openreach forecasted that speeds of 40/10 (including 55/10) or below would continue to account for the majority of Openreach's sales by 2023/24. However, Openreach was unable to provide us with updated volume forecasts.

- 2.51 In Volume 4 Section 1, we set out evidence that suggests the majority of consumers are not willing to pay significantly more for speeds above 40/10. In addition, while demand for higher bandwidths is likely to grow, we consider it likely that 40/10 will continue to be a reasonable substitute during the review period.⁹⁵ In summary:
- In order to incentivise take-up of higher speed services, both Openreach and ISPs have set low price differentials between 40/10 and 80/20, and ISPs have also undertaken provider-led programmes to upgrade customers to 80/20 at no additional cost to the customer.
 - Current and future pricing for FTTP services suggests that most consumers are not willing to pay a significant premium for higher speeds.
 - Stakeholders' consumer research and internal documents suggest most consumers have a low willingness to pay for higher speeds and that there has not been a fundamental shift in preferences as a result of the changes that the Covid-19 pandemic has brought to daily life.
- 2.52 We consider that this evidence shows that although volumes of higher speed services have been increasing and are expected to continue to increase, this has not been driven by high demand from consumers. It has instead in large part been driven by low price differentials and provider-led programmes to upgrade customers at no additional cost. As a result, it is likely that a 40/10 service would be sufficient for a large proportion of customers that have recently migrated to these services. In addition, although future demand is uncertain, the evidence we have is consistent with this being the case throughout the review period.^{96 97}
- 2.53 Based on the evidence and analysis, we consider that consumers on higher bandwidth products would also be protected from the risk of high prices over this review period in Area 3.

Promote competition based on access to BT's networks

- 2.54 In this sub-section we address the risk that Openreach might raise the wholesale price on higher speed products in order to squeeze out retail competitors.
- 2.55 We do not consider that this would pose a serious threat to the sustainability of such retail competitors over the review period for the following reasons:
- A margin squeeze strategy is unlikely to be successful and may be commercially costly for BT. Setting high prices for 80/20 services to other retailers may have some effect by

⁹⁵ This evidence is set out in further detail in Volume 2 Section 2.

⁹⁶ 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 [3<] % of demand by [3<]. 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 [3<], which we think is consistent with 40/10 providing an effective anchor.

⁹⁷ Broadband speeds required by different activities are also consistent with this view. For example, speed requirements for HD TV viewing are around 5Mbit/s, and for UHD TV viewing they range between around 15mbit/s and 25mbit/s (<https://www.comparethemarket.com/broadband/content/broadband-for-streaming/>). Gaming requires around 6Mbit/s (<https://go.frontier.com/best-internet-for-gaming>), browsing requires less than 1Mbit/s (<https://www.otelco.com/how-much-internet-speed-do-i-really-need/>).

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 services will continue to be a reasonable substitute for higher speed services, as well as the fact there are switching costs. Therefore, the main effect is likely to 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.

- 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.
- BT is required to set wholesale charges for higher bandwidth services that are fair and reasonable, meaning that other retailers will have reasonable access to these products and be able to offer these products cost effectively.⁹⁸ This provides adequate protection in circumstances where 40/10 services are a reasonable substitute for many customers and therefore retailers are not dependent on sales of 80/20 services to make a large contribution to their fixed costs.

Other considerations

- 2.56 We do not believe that there will be material and sustainable competition to Openreach in the commercial deployment of competing networks in Area 3, therefore our objective in Area 3 does not include promoting competition and investment in gigabit-capable networks by other telecoms providers.
- 2.57 However, due to the forward-looking nature of our market analysis, the boundary between Area 2 and Area 3 is inevitably an approximation of reality. To the extent that there might be future rival network build which represents material and sustainable competition to Openreach, we consider that a forecast RAB approach which results in a consistent pricing approach across Area 2 and Area 3 will reduce the impact of a regulatory boundary.
- 2.58 More specifically, since the charge control in Area 2 has been set at a level to incentivise investment by competing networks, by aligning the charge control in Area 3 this will also be supportive of investment by competing networks irrespective of whether this might lead to future rival network build which represents material and sustainable competition to Openreach.
- 2.59 We have also aimed to provide further support to rivals seeking to extend their networks from Area 2 to Area 3 by mitigating the risks that could result from Openreach's targeting price reductions where this occurs. In Volume 3 Section 7, we set out our decision to

⁹⁸ As noted in Volume 3, Section 3, our general position is that we would interpret this fair and reasonable requirement to mean that 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 on individual services in this context would be to allow a LRIC retail margin on each service, assessed by reference to an equally efficient operator (EEO) standard. For the avoidance of doubt, under our interpretation of this fair and reasonable requirement, BT is also required to cover its retail costs across a broader portfolio of broadband products, such that BT's rivals can supply a comparable range of products.

prohibit Openreach's ability to geographically target price reductions on FTTC and FTTP rental charges in Area 3.

Implementation

- 2.60 The forecast RAB approach is backed up by a voluntary commitment by BT to deploy fibre in Area 3. In Volume 6 Section 3, we set out the information that we will require BT to report to allow us to assess its progress in meeting its commitment.
- 2.61 While we are confident that Openreach has the capacity to meet its commitment and will make all reasonable efforts to do so, we also recognise that there will be risks outside of its control that could mean it is unable to meet its commitment fully.
- 2.62 In Volume 4 Section 6, we set out our approach to mitigating the harm to customers that could result from Openreach not fully meeting its commitment.

We consider our approach to be proportionate

- 2.63 We have explained above why our charge controls would be effective in achieving our objective, and why alternative approaches would not be effective in achieving our objective. We therefore consider that our approach is the least onerous effective option.
- 2.64 As part of assessing proportionality, we have also considered whether our approach would have adverse effects that are disproportionate to our objective. We consider that there are potentially two adverse effects from our decision.
- 2.65 The first of these relate to undermining Openreach's cost recovery. We have decided to take a forecast-RAB approach with a CPI-0% charge control on MPF and FTTC 40/10 services. Our decision is consistent with providing Openreach with an expectation of cost recovery over the lifetime of its copper and fibre networks.
- 2.66 The second relates to setting our charge controls at levels that undermine investment in fibre networks. We are aware that there will be some rival network deployment in Area 3, although as explained in Volume 2, we do not consider this will represent material and sustainable competition to Openreach. We consider that setting a CPI-0% charge control on MPF and FTTC 40/10 (along with our decision to prohibit geographic discounts) will provide support to such investment.
- 2.67 We therefore conclude that our decision is proportionate and appropriate in light of our objective.

Our decision

- 2.68 For the reasons set out above, we have decided to:
- Adopt a forecast RAB approach, backed-up by the BT Commitment, where the asset base is comprised of WLA services (i.e. MPF, FTTC, G.fast, FTTP) and cost recovery is viewed across all services in aggregate.

- Prior to copper retirement, to set charge controls on MPF and FTTC 40/10 rentals at CPI-0%; and allow pricing flexibility on Openreach's FTTC services at bandwidths above 40/10 and fibre services (FTTP and G.fast).

Future approach to regulation

- 2.69 Our forecast RAB approach sets a charge control that allows for an expectation of cost recovery across the lifetime of the fibre and copper networks.
- 2.70 We consider that the RAB approach will be supportive of additional investment by Openreach in future periods. As set out in Volume 4 Section 1, if investment by Openreach continues, we would expect to maintain our approach to pricing until 2031.
- 2.71 As part of making any future decisions, we would anticipate having regard to our typical considerations for setting charge controls:
- Re-base our forecasts with reference to forward looking volumes, costs (and given our RAB framework forward looking revenues) to provide an expectation of cost recovery across the fibre and copper networks.
 - Take account of further commercial build by Openreach in Area 3.
 - Consider setting glidepaths to incentivise efficiency improvements.
 - Set any charge controls that have regard to the fair bet on Openreach's investments meaning we allow Openreach to keep any upside if it performs better than our forecasts during the charge control period.

Approach to the charge control after copper retirement

- 2.72 In Volume 3 Section 2, we set out our decisions relating to the transition of our regulation from copper services to fibre services as Openreach deploys a fibre network.
- 2.73 In Volume 4 Section 1, we have decided to include a 40/10 fibre premium in Area 2 to the FTTP rental price when the charge control switches from services provided on the copper network to those provided on a fibre network. In Annex 19, we explain how we have estimated the 40/10 fibre premium.
- 2.74 We have decided to adopt the same fibre premium in Area 3 as in Area 2 for the following reasons:
- Firstly, our RAB is a cost-based approach where costs are considered across fibre and copper services. Our assessment of the forecast RAB given the BT Commitment to build in Area 3 takes into account the revenues Openreach will receive through charging the full 40/10 fibre premium.
 - Secondly, while promoting investment by competing networks is not our objective in Area 3, our overarching objective for this review is to promote investment in gigabit-capable networks by Openreach and other telecoms providers in order to promote network-based competition. Therefore, we consider that adopting the same approach will support rival networks, including those seeking to extend their networks from Area 2 to Area 3.

- Thirdly, the fibre premium strengthens Openreach's incentives to invest in FTTP.

2.75 Therefore, we have decided the FTTP 40/10 charge controlled price will equal the FTTC 40/10 price plus £1.70 per month.

Role of public subsidies and how these fit with the RAB

2.76 The UK Government is investing at least £1.2bn between now and 2024/25 to subsidise rollout in the hardest-to-reach areas as part of a £5 billion funding commitment. This is alongside other broadband investment programmes from devolved governments in the UK's nations.

2.77 Although the details of these subsidy schemes for the most difficult to reach areas have not yet been finalised, we do not believe that such schemes will conflict with the forecast RAB approach alongside the BT Commitment.

2.78 Under the BT Commitment, Openreach plans to commercially build fibre to at least 3.2m premises in Area 3 (i.e. without public subsidy). Therefore, Openreach's fibre build that has been paid (or will be paid) through a government subsidy will not contribute to meeting the BT Commitment.

Legal tests

2.79 We are setting SMP conditions on BT in relation to the market for WLA in Area 3 to give effect to the pricing remedies described above. Our SMP conditions can be found in Volume 7.

2.80 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).

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

- promoting efficiency;
- promoting sustainable competition;
- conferring the greatest possible benefits on end user of public electronic communications services having regard, where relevant to the market analysis, to the long-term interests of end-users in the use of next-generation networks; and
- promoting the availability and use of new and enhanced networks.

2.82 We have also considered:

- the extent of the investment in the matters to which the condition relates of the person to whom it is to apply; and
- the benefits of predictable and stable wholesale prices in ensuring—
 - efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.

Promoting efficiency

- 2.83 We consider that the 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.
- 2.84 We consider that our 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.
- 2.85 In addition, the charge control has been set to allow BT to earn a reasonable rate of return (cost of capital) where it is efficient.

Promoting sustainable competition

- 2.86 We have set a charge control that aims to support BT's deployment of a fibre network while also promoting retail competition based on wholesale access to BT's network.
- 2.87 While we do not consider that there will be material and sustainable competition to BT in the commercial deployment of competing networks in Area 3, we consider that the charge control is supportive of such rival investment to the extent that it emerges.
- 2.88 The SMP conditions aim to promote and maintain retail competition based on wholesale access to BT's network.

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

- 2.89 The SMP 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 SMP conditions also protect end users from BT setting high prices relative to cost.

Promoting the availability and use of new and enhanced networks

- 2.90 In Area 3 we do not consider that there is potential for material and sustainable competition by rival networks and therefore in the absence of regulation BT's incentives to invest are weak. Our charge control using a RAB approach supports BT's investment in deploying a fibre network by providing BT with greater certainty relating to the cost recovery of its fibre network investment.

The extent of the investment and the benefits of predictable and stable wholesale prices

- 2.91 We have also taken account of BT's investment in the matters to which the SMP conditions relate by modelling BT's forecast costs for copper 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 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.

- 2.92 We are setting a charge control for five-years where services will be capped at inflation adjusted levels. This provides predictability and stability over the control period and is consistent with our objective of supporting investment.
- 2.93 In Section 7, we explain how these pricing SMP conditions satisfy the tests set out in s.47 of the Act.

Leased line access services

- 2.94 As set out above, our objective in Area 3 is to promote investment in gigabit-capable networks by Openreach, promote competition based on access to Openreach's networks and protect consumers.
- 2.95 We have considered whether setting a cost-based control on dark fibre access and a CPI-0% control on active leased lines is likely to be effective in achieving our objective. We have then checked to ensure that this approach is proportionate and does not produce adverse effects which are disproportionate to the aim pursued.

Dark fibre access

- 2.96 In Volume 3 Section 6, we have decided 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.
- 2.97 In Area 3 we do not consider there is potential for material and sustainable competition in rival networks. In the absence of competitive network build and in light of the benefits of dark fibre over active leased lines, we consider that dark fibre should be the primary focus of our regulation.
- 2.98 We consider that setting a cost-based charge control on dark fibre access services will best meet our objectives. Setting a cost-based control on dark fibre access with reference to BT's Fully Allocated Costs (FAC) of the underlying passive infrastructure will allow for the recovery of costs (including a share of common costs and a return on its capital employed) and will preserve Openreach's incentives to invest in its network.
- 2.99 A cost-based control on dark fibre will protect consumers. It will also support take-up and encourage telecoms providers that rely on access to Openreach's network to invest as deep into the network as possible. This will promote competition at the retail level and deliver consumer benefits.
- 2.100 Additionally, this approach is straightforward to implement.
- 2.101 In light of the above, we have decided to set a cost-based charge control on dark fibre access in Area 3 where prices are set with reference to FAC. In Annex 17, we set out our decisions relating to the cost modelling for dark fibre access.

Active leased line access services

- 2.102 We have decided that Openreach should be required to provide network access to dark fibre access at cost in Area 3. Given the benefits of dark fibre over active leased line services, we consider that dark fibre should be the primary focus of our regulation and that customers will increasingly rely on dark fibre and move away from active leased line services.
- 2.103 However, we recognise that customers have traditionally been reliant on having network access to Openreach's active leased lines and it will take time for telecoms providers to transition to using new dark fibre services. During this transition period we believe that regulatory protection on those active leased line services will need to continue.
- 2.104 We consider that maintaining stable prices (in real terms) through a CPI-0% charge control on active leased line services will best meet our objectives. Setting a CPI-0% charge control on these services will allow for the recovery of costs (including a share of common costs and a return on Openreach's capital employed) of providing these services. We consider this will preserve Openreach's incentives to invest in its network.
- 2.105 A CPI-0% charge control on active leased line services will allow Openreach to set prices above the FAC of these services. However, our view is that the availability of dark fibre access at cost will provide protection to customers over the market review period. Therefore, the risk to customers from active leased line services being set above FAC is a transitional issue only where customers increasingly migrate to using dark fibre services during the period. Nevertheless, we consider that customers need protection during this transitional period, which is provided by maintaining stable prices.
- 2.106 Setting a CPI-0% control on active leased line services, alongside setting a cost-based control on dark fibre, will support the migration to using dark fibre services and encourage telecoms providers to invest as deep in the network as possible.
- 2.107 In light of the above, we have decided to maintain stable prices (in real terms) through a CPI-0% charge control on active leased line services in Area 3.

We consider our approach to be proportionate

- 2.108 We have explained above why we consider our dark fibre and active leased line charge controls would be effective in achieving our objective. On this basis we consider that in each case our approach is the minimum necessary to meet our aim.
- 2.109 As part of assessing proportionality, we have also considered whether our approach to either dark fibre or active leased lines would have adverse effects that are disproportionate to our objective. We consider that there are potentially two adverse effects from our decision.
- 2.110 The first of these relate to undermining Openreach's cost recovery. We are requiring that dark fibre access is provided at cost (including a share of common costs). In addition, we

are imposing a safeguard cap for active LL access services that is above cost. Accordingly, Openreach can expect to recover its costs.

2.111 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 we consider there to be limited potential for rival network investment.

2.112 We therefore conclude that our decision is proportionate and appropriate in light of our objective.

Legal tests

2.113 We are setting SMP conditions on BT in relation to the market for LL Access in Area 3 to give effect to the pricing remedies described above. We set out further details of the charge controls in Section 6. Our SMP conditions can be found in Volume 7.

2.114 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).

2.115 As required by section 88 of the Act, we consider that the setting of the SMP conditions in relation to each of the proposed charge controls would be appropriate for the following purposes:

- promoting efficiency;
- promoting sustainable competition;
- conferring the greatest possible benefits on end user of public electronic communications services having regard, where relevant to the market analysis, to the long-term interests of end-users in the use of next-generation networks; and
- promoting the availability and use of new and enhanced networks.

2.116 We have also considered:

- the extent of the investment in the matters to which the condition relates of the person to whom it is to apply; and
- the benefits of predictable and stable wholesale prices in ensuring—
 - efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.

Promoting efficiency

2.117 We consider that each of our 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 controls.

2.118 We also consider that each of our charge controls promote efficiency by, inter alia:

- ensuring BT cannot set high prices relative to cost;

- 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

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

Promoting sustainable competition and conferring the greatest possible benefits on end user of public electronic communications services

- 2.120 We consider that our charge controls are each appropriate to promote sustainable competition and confer the greatest possible benefits on end users of public communications services.
- 2.121 In relation to the charge control for active leased line services, the control prevents BT from setting high prices relative to cost and provides price stability in parallel with the 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 approach will promote and maintain retail competition.
- 2.122 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).
- 2.123 We consider that efficiency gains should, in the longer term, be passed onto consumers through reductions in prices and improvements in quality.

Promoting the availability and use of new and enhanced networks

- 2.124 We have taken account of BT's investment in the matters to which the SMP conditions relate by ensuring that each of our charge controls allow BT to recover its efficiently incurred costs and make a reasonable return on its investment.
- 2.125 Our charge controls provide incentives to provide enhanced networks through incentivising investment in gigabit-capable networks by Openreach and incentivising other telecoms providers to invest as deep into the network as possible through cost based dark fibre.
- 2.126 We have 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.

The extent of the investment and the benefits of predictable and stable wholesale prices

- 2.127 As above, we have taken account of BT's investment in the matters to which the SMP conditions relate by ensuring that each of our 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.

- 2.128 Our charge controls provide for a predictable path of wholesale prices for the five-year control period that will encourage telecoms providers to invest as deep into the network as possible using dark fibre.
- 2.129 In Section 7, we explain how these pricing SMP conditions satisfy the tests set out in s.47 of the Act.

3. Inter-exchange connectivity pricing

3.1 In this section we set out our decisions for setting charge controls for inter-exchange connectivity (IEC). These are leased lines that provide connectivity between BT exchanges. We set charge controls in relation to:

- a) BT+1 exchanges
- b) BT Only exchanges

3.2 Table 3.1 summarises our decisions.

Table 3.1: Summary of decisions for IEC⁹⁹

	Decision
BT+1 exchanges	a charge control on rental and connection charges for leased lines of all bandwidths, inflation-adjusted from 2021 levels
BT Only exchanges	a cost-based charge control on dark fibre where it is available ¹⁰⁰ a charge control on rental and connection charges for leased lines of all bandwidths, inflation-adjusted from 2021 levels

3.3 We explain our decisions and reasoning in the rest of this section.

3.4 Where we are imposing charge controls, we set out the detail of these in Section 6. Our decisions in relation to price regulation of ancillary services in these markets is covered in Section 5.

The competition problem

3.5 We consider that absent regulation, BT would have the incentive and ability to fix and maintain prices for IEC from BT+1 exchanges and BT Only exchanges 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).

3.6 As set out in Volume 3 Section 5 and Volume 3 Section 6, we have therefore decided to impose charge controls on these services to prevent BT abusing its market power.

⁹⁹ As noted in Volume 3 Section 3, we have decided 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.

¹⁰⁰ As explained in Volume 3 Section 6, dark fibre inter-exchange is only available from BT Only exchanges which are not within 100m of a rival Principal Core Operator network.

- 3.7 In developing our charge controls and consistent with the approach to remedies set out in Volume 3 Section 1 we have decided to adopt a regulatory approach to remedies that differs between places where material and sustainable network competition is viable, and places where such competition is unlikely to emerge.

BT+1 exchanges

Our objectives

- 3.8 For IEC to BT+1 exchanges, where there is some competition, we consider that there is potential for material and sustainable competition in IEC leased lines.
- 3.9 Therefore, our objective in setting pricing remedies is to:
- provide access seekers with incentives to build competing IEC leased lines themselves and/or enter into commercial arrangements with alternative network builders as opposed to overly relying on buying regulated wholesale services from Openreach, as well as providing Openreach with the incentive to invest; and
 - protect customers and maintain retail competition in the short term while competition in IEC networks develops.

Our proposals

- 3.10 We considered that there was scope for further investment, in particular using unrestricted PIA, to make it viable for rivals to connect to BT+1 exchanges.
- 3.11 We proposed to set a charge control on IEC leased line circuits at BT+1 exchanges at CPI-0%.
- 3.12 We considered this was at a level that was supportive of promoting network investment while also addressing the risk of excessive pricing or a price squeeze during a transition period where access seekers switched from using leased line services to PIA.

Stakeholder responses

- 3.13 We received limited comments specifically about our proposed approach to setting a charge control for IEC circuits to BT+1 exchanges.
- 3.14 Stakeholders commented more broadly on our proposed approach of setting wholesale charges to promote competition and investment; our proposed approach to defining the IEC market; the scope of the dark-fibre IEC remedy; and the proposed level of the cost-based dark fibre remedy. We set out and respond to those issues in other parts of our Statement.
- 3.15 TalkTalk objected to setting a charge control on leased line services (in general) at a level above costs for several reasons:

- Additional leased line networks will deliver much lower quality or competition benefits than additional FTTP networks since Openreach already has a nationwide leased line fibre network.
 - The benefits of competition and quality could be achieved through a dark fibre remedy.¹⁰¹
- 3.16 TalkTalk also argued that the approach of setting high wholesale prices and limiting dark fibre is incompatible with legislation since there is no objective to promote additional investment. The requirement is for “widespread access” and setting prices above cost (and restricting dark fibre) will deter take-up and encourage inefficient investment.¹⁰² We address these points in Volume 1.
- 3.17 TalkTalk further argued that leased line network investment levels are likely to be relatively insensitive to setting higher wholesale prices in the market review period. It argued that few circuits that were otherwise unviable for build will become viable as result of the proposed higher price.¹⁰³ We address these points in Section 1.

Our assessment and decision

- 3.18 We have considered the approach of setting a charge control on IEC leased line circuits at BT+1 exchanges at CPI-0% against our objectives.

Incentives for rivals to invest

- 3.19 At BT+1 exchanges, by definition, one rival competitor is already connected, and therefore there is existing rival investment to these exchanges.
- 3.20 Our analysis of dig distances for a rival network to connect to a BT+1 exchange indicates:
- the average distance a second rival network would need to extend to connect to an exchange is 875m (with a median distance of 250m).
 - BT+1 exchanges are typically located in more urban areas where there is potential for competition (and investment). Our geographic analysis indicates that 84% of BT+1 exchanges are located in Area 2.
 - 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.
- 3.21 Until April 2019, access to BT’s physical infrastructure was limited to network build primarily focused on the provision of broadband services. Therefore, PIA has only relatively recently been available to operators of networks providing only leased line services. While the impact of PIA in the IEC market over the review period is uncertain, the evidence we have gathered shows that cases are emerging. In light of the above, we consider that there

¹⁰¹ TalkTalk response to January 2020 Consultation, paragraph 7.116.

¹⁰² TalkTalk response to January 2020 Consultation, paragraph 7.121.

¹⁰³ TalkTalk response to January 2020 Consultation, paragraph 7.123-7.126.

is scope for further investment to BT+1 exchanges using unrestricted PIA to make it viable for rivals to connect for the following reasons:

- Given the proximity of a rival not currently connected to the exchange it will not need to significantly extend its network to develop a competing backhaul route.
- Reusing existing ducts via unrestricted PIA will significantly reduce the time it takes to deploy a new circuit. Whereas in some cases it can take days to build 200m of duct using traditional construction methods, fibre cables could be installed in the same length of existing duct in a matter of hours.¹⁰⁴
- Given the higher density of premises in Area 2 and therefore customer volumes, the demand for backhaul capacity will be higher, which can thereby support the investment in backhaul circuits by a rival.

3.22 Our view is that a CPI-0% charge control will make investment more attractive for new competitors. We consider that there is a significant and positive relationship between the level of wholesale prices for Openreach's services and competitive network investment because as wholesale prices increase:

- building or sponsoring an alternative network becomes more attractive relative to buying wholesale services from Openreach; and
- higher wholesale prices allow higher margins on competing services supplied by alternative networks.

3.23 TalkTalk argued that setting leased line prices (in general) at a level above cost to encourage investment will deliver much lower benefits than from additional FTTP networks given Openreach already has a nationwide leased line network. However, our view is that although there is some competition at BT+1 exchanges, there could be more competition in IEC if rivals invest in extending their networks.

Incentives for Openreach to invest

3.24 We consider that a CPI-0% cap on IEC leased lines allows for the recovery of Openreach's relevant costs (including an allocation of common costs and a return on capital) and thereby preserves Openreach's investment incentives.

Protecting customers

3.25 We recognise that access seekers will not be able to immediately switch from using leased line services to PIA. We consider that setting a charge control for IEC leased lines circuits at CPI-0% will be supportive of promoting network investment while also protecting customers and maintaining retail competition by addressing the risk of a price squeeze during this transition period.

¹⁰⁴ [DCMS, November 2011. Microtrenching and Street Works: An advice note for Local Authorities and Communications Providers](#), paragraph 2.11.

Implementation

3.26 This approach is straightforward to implement.

Conclusion

3.27 In light of the above, we have decided to set a charge control at CPI-0% on IEC leased line circuits at BT+1 exchanges.

BT Only exchanges

Our objectives

3.28 We do not consider there is potential for network competition to BT Only exchanges even with the availability of PIA.

3.29 Therefore, our objective in setting pricing remedies is to:

- Ensure that customers are protected including through a weakening of retail competition.
- Ensure that telecoms providers that rely on access to BT's network have access to IEC leased lines at a fair price and are encouraged to invest as deep into the network as possible.
- Promote Openreach's investment in IEC.

Our proposals

3.30 We proposed that BT should be required to provide cost-based dark fibre to BT Only exchanges. We considered this would increasingly be used for IEC to BT Only exchanges and address the risk of excessive pricing or a price squeeze on BT's IEC active circuits at those exchanges.

3.31 We recognised that there would be a transition period as telecoms providers switched to using dark fibre services from active leased lines. We proposed to set a charge control for IEC active leased lines at CPI-0% to provide customer protection during the transition period and better incentivise migration to dark fibre services.

Stakeholder responses

3.32 We did not receive stakeholder comments.

Our assessment and decision

3.33 We have considered the following approach against our objectives:

- setting a cost-based charge control on dark fibre services (where it is available); and
- setting a charge control at CPI-0% on active leased lines.

Protecting customers and encouraging investment deep into the network

- 3.34 We consider that the potential for network competition to BT Only exchanges is weak (even with the availability of unrestricted PIA). This is because 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.
- 3.35 Our analysis of dig distances for a rival network to connect to a BT Only exchange indicates that:
- The average distance a single rival network would need to extend to connect to an exchange is 5.5km (with a median distance of 2.6km) and the average distance from an exchange to a second rival is over 11.6km (median 5.7km). These distances suggest that it is less likely to be economic to extend network to many of these exchanges, even using the PIA remedy.
 - 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 90% of BT Only exchanges are located in Area 3. 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.
- 3.36 In light of the above, we do not consider that further investment to many of these exchanges is likely for the following reasons:
- The lack of proximity of rival networks not currently connected to many of these exchanges, means they would need to make significant extensions to their networks to connect to these exchanges which would be costly.
 - Given the lower density of premises in Area 3 and therefore lower customer volumes, the demand for backhaul capacity will be lower, thereby making the business case for investment less viable.
- 3.37 Given we consider there is not potential for further investment to many BT Only exchanges, we have decided that Openreach should be required to provide network access to dark fibre to BT Only exchanges (where no rival network is close by).¹⁰⁵ We consider dark fibre to be a more effective way of addressing our competition concerns than relying on active remedies alone.
- 3.38 We consider that setting a cost-based charge control on dark fibre will protect customers and address the risk of a price squeeze on Openreach's IEC active circuits at those exchanges; and promote retail competition for telecoms providers relying on wholesale access to Openreach's network.
- 3.39 We consider that setting a charge control on active leased lines at CPI-0% (where cost-based dark fibre is available) has two benefits:

¹⁰⁵ As explained in Volume 3 Section 6, dark fibre inter-exchange is only available from BT Only exchanges which are not within 100m of a rival Principal Core Operator network.

- Firstly, it will encourage the take-up of dark fibre and encourage telecoms providers to invest as deep into the network as possible. This will bring forward the customer benefits relating to dark fibre.
- Secondly, it will provide an appropriate level of customer protection during a transition period where customers increasingly move across to using dark fibre from active leased lines.

Incentives for Openreach to invest

3.40 We consider that a cost-based charge control on dark fibre and a CPI-0% charge control on active leased lines allows for the recovery of Openreach's relevant costs (including an allocation of common costs and a return on capital) and thereby preserves Openreach's investment incentives.

Implementation

3.41 This approach is straightforward to implement.

Conclusion

3.42 In light of the above, we have decided to:

- set a cost-based charge control on dark fibre services (where it is available); and
- set a charge control at CPI-0% on active leased lines.

Transitional arrangements in respect of the deregulation of some BT Only and BT+1 exchanges

3.43 Following the update of our market analysis (as discussed in Volume 2 Section 8 and Annex 6), we have reclassified some BT exchanges, including the deregulation of some BT Only and BT+1 exchanges.

3.44 For the reasons given in Volume 3 Sections 5 and 6 we have decided to require Openreach to continue the supply of (i) active leased lines from deregulated exchanges and (ii) Dark fibre inter-exchange (DFX) from reclassified exchanges, if they have been ordered or are already live by 18 March 2021, for a transitional period of one year until 31 March 2022.

3.45 We have also decided in that transitional period to impose the price controls on active leased lines services and DFX (as applicable) as set out in this section.

3.46 We consider it is appropriate for these requirements to be imposed for a transitional period to ensure the sustainable transition for telecoms providers from Openreach's active leased lines or Openreach's DFX to alternative services.

We consider our approach to be proportionate

- 3.47 We have explained why we consider our decision for setting a charge control to each of BT+1 and BT Only exchanges will be effective in achieving our objectives. We consider in each case that our approach is the least onerous effective option.
- 3.48 As part of assessing proportionality, we have also considered whether our approach would have adverse effects that are disproportionate to our objective.
- 3.49 For IEC leased lines relating to BT+1 exchanges, we are setting a CPI-0% charge control instead of a control set on a national FAC basis.
- 3.50 We are setting a CPI-0% charge control to support competition and investment. We consider that the benefits to customers resulting from investment and competition in IEC to BT+1 exchanges will outweigh the short-term harm from not setting a control on a national FAC basis. Furthermore, our charge control protects customers as prices will not increase from current levels in real terms.
- 3.51 For IEC leased lines relating to BT Only exchanges, we are setting a CPI-0% charge control instead of a control set on a national FAC basis. We are also setting a cost-based charge control on dark fibre to BT Only exchanges (where no rival network is close by). We consider that setting a cost-based charge control on dark fibre will encourage investment as deep into the network as possible and result in customer benefits.
- 3.52 Since we are setting a cost-based charge control on dark fibre we are not also setting a control on a national FAC basis for active leased lines to BT Only exchanges. However, we are setting a CPI-0% control to provide customer protection during a transitional period during which we anticipate telecoms providers will increasingly migrate to using cost-based dark-fibre.
- 3.53 We therefore conclude that our decisions are proportionate and appropriate in light of our objective.

Legal tests

- 3.54 We have decided 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 6. Our SMP conditions can be found in Volume 7.
- 3.55 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.
- 3.56 As required by section 88 of the Act, we consider that the setting of the SMP conditions would be appropriate for the following purposes:
- promoting efficiency;
 - promoting sustainable competition;

- conferring the greatest possible benefits on end user of public electronic communications services having regard, where relevant to the market analysis, to the long-term interests of end-users in the use of next-generation networks; and
- promoting the availability and use of new and enhanced networks.

3.57 We have also considered:

- the extent of the investment in the matters to which the condition relates of the person to whom it is to apply; and
- the benefits of predictable and stable wholesale prices in ensuring—
 - efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.

Promoting efficiency

3.58 We consider that each of our charge controls will 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 controls.

3.59 We also consider that each of our charge controls promote efficiency by, inter alia:

- ensuring BT cannot set high prices relative to costs;
- allowing BT to earn a reasonable rate of return if it is efficient; and
- providing BT with flexibility to change prices to meet demand conditions by recovering common costs in the most efficient manner across groups of services.

3.60 In the case of the controls for IEC leased lines at BT+1 exchanges, we have decided to roll-forward the current prices. We consider that there is potential for additional investment and competition by rivals to these exchanges through the use of PIA. We consider that this will provide BT with incentives to reduce costs over the period and thereby improve productive efficiency.

3.61 In the case of the charge controls for IEC leased lines at BT Only exchanges, we have decided to roll forward the current prices while at the same time setting a cost-based dark fibre IEC remedy from BT Only exchanges (where no rival network is close by). We consider that in combination this will send BT a strong incentive to reduce costs over the period and thereby improve productive efficiency.

Promoting sustainable competition and conferring the greatest possible benefits on end user of public electronic communications services

3.62 We consider that each of our charge controls is appropriate to promote sustainable competition and confer the greatest possible benefits to end users of public communications services, having regard to the long-term interests of end-users in the use of next-generation networks.

- 3.63 Where we consider there to be limited potential for rival network investment, we have set a charge control for IEC leased line services that prevents BT from setting high prices relative to cost and provides price stability in parallel with a cost-based dark fibre IEC remedy. We consider this will provide customer protection as volumes migrate towards dark fibre over time. Setting the dark fibre IEC service at cost will support downstream competition that uses this service 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.
- 3.64 Where there is potential for rival network investment, e.g. BT+1 exchanges, we are not setting 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 BT from setting high prices relative to cost.

Promoting the availability and use of new and enhanced networks

- 3.65 Where there is potential for material and sustainable competition in IEC leased lines (i.e. to BT+1 exchanges) our charge controls provide incentives to build new and enhanced networks. In addition, we are not setting a cost-based dark fibre IEC remedy that could reduce investment in such enhanced networks.
- 3.66 Where there is limited potential for competition in IEC leased lines, i.e. to BT Only exchanges where no rival network is close by, our charge controls provide the incentives to create enhanced networks through investing as deep into the network as possible through a cost-based dark fibre IEC remedy.

The extent of the investment and the benefits of predictable and stable wholesale prices

- 3.67 We have taken account of BT's investment in the matters to which the conditions relate by ensuring that our charge controls allow BT to recover its efficiently incurred costs and make a reasonable return on its investment. We have also ensured that the 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.
- 3.68 Our charge controls also provide for a predictable path of wholesale prices for the five-year control period. This will encourage telecoms providers to invest through building new IEC leased lines or through competing as deep into the network as possible using dark fibre.
- 3.69 In Section 7, we explain why the setting of these SMP conditions would satisfy the test set out in section 47 of the Act.

4. PIA charges

Introduction

- 4.1 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 decisions for PIA pricing.
- 4.2 In the January 2020 Consultation we proposed an approach to the price regulation of PIA services which was consistent with that set out in the 2018 WLA Market Review and the 2019 PIMR. We proposed some changes including removing charges for certain activities such as joint charges and coil hosting, refining our approach to price calculation by forecasting charges over a 5 year charge control period and adopting a recent Openreach proposal to offer a new combined lead-in service in place of existing lead-in services. We also proposed to maintain our approach to network adjustment charges.
- 4.3 In the November 2020 Consultation, we reconsulted on a change to the modelling of PIA prices for some services. We proposed to base the contributions that PIA customers should make for multi-bore duct and footway box products using a simple percentage figure, rather than basing them on utilisation at a point in time.
- 4.4 Following stakeholder responses, and after updating the data to use the most up to date cost information we have set the new maximum rental charges that will apply from 2021/22 to 2025/26.
- 4.5 Maximum charges for duct and footway box services are set out in Table 4.1 below. These are charges per annum excluding VAT. Across all duct and footway services, charges increase on average by around CPI+1%¹⁰⁶ compared to charges currently in place today.

Table 4.1: Maximum rental charges for duct and footway box services

PIA service		Current charge ¹⁰⁷	April 2021	Control to 2025/26
Duct services	Lead-in duct (per connection)	£9.35	£9.51	CPI + 0.4%
	Facility in Spine duct per metre – single bore	£0.29	£0.30	CPI + 1.5%
	Facility in Spine duct per metre – 2 bores	£0.18	£0.19	CPI + 5.1%

¹⁰⁶ This assumes average take-up of services is similar to that of usage across the whole Openreach network.

¹⁰⁷ Openreach. [Product Prices: Physical Infrastructure Pricing](#). [accessed 2 December 2020]

	Facility in Spine duct per metre – 3+ bores	£0.13	£0.14	CPI + 2.5%
Footway box services	Facility hosting (per manhole entry)	£8.66	£8.92	CPI + 1.6%
	Facility hosting (per joint box entry)	£2.08	£2.13	CPI + 1.1%

4.6 Maximum charges for poles services are given in Table 4.2 below. We have reset charges for each pole service on 1 April 2021 and then a separate charge control will be applied on each service till the end of the period, as set out in the table below. Overall pole charges decrease by 56% in April 2021 and then increase on average by CPI+0.2%.

Table 4.2: Maximum rental charges for poles PIA services

PIA service	Current charge ¹⁰⁸	April 2021	Control to 2025/26
Poles services			
Facility on pole for Multi-end-user attachment	£11.56	£5.41	CPI + 0.3%
Facility on pole for Single-end-user attachment	£4.94	£2.12	CPI + 0.2%
Pole top equipment (manifolds)	£3.58	£1.60	CPI + 0.1%
Cable up a pole (per cable)	£2.33	£1.06	CPI + 0.2%

4.7 In the rest of this section, we set out:

- The competition problem, our objectives when setting PIA prices and our decision to set a cost-based charge control;
- Our approach to setting a cost-based control for PIA rental charges;
- The simplification of charges relating to hosting footway boxes and ducted lead-ins; and
- Our approach to ancillaries, in particular network adjustments and the financial limit.

4.8 We discuss how we have set the charge controls from our forecast charges in Volume 4, Section 6. That also covers why we have decided to re-set charges for poles in the year beginning 1 April 2021.

¹⁰⁸ Openreach. [Product Prices: Physical Infrastructure Pricing](#). [accessed 2 December 2020]

The competition problem, our objectives when setting PIA prices and our decision to set a cost-based charge control

The competition problem

- 4.9 Given our 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:
- There is a risk that BT sets high prices relative to cost to maximise the profit it earns from providing access to its physical infrastructure.
 - There is a risk that BT sets high prices relative to cost 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.
 - The adverse price effects could undermine the effectiveness of the obligation to provide PIA, and also result in higher retail prices, all of which is ultimately against the interests of consumers.
- 4.10 We have therefore decided to impose a charge control on PIA rentals to address these competition risks that we have identified.

Our objectives for PIA charges

- 4.11 In developing our 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 have exercised our discretion in setting these controls in favour of an approach that is aimed promoting competition and investment in gigabit-capable networks by Openreach and other telecoms providers.
- 4.12 Our decisions seek to support such investment by ensuring that:
- Openreach can recover its efficiently incurred costs;
 - a level playing field exists between Openreach and other telecoms providers that make use of PIA to provide downstream products; and
 - the way we set prices is simple and easy to implement.
- 4.13 Establishing a level playing field between Openreach and other telecoms providers is important to ensure 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.

Cost based charge control

Our proposals

- 4.14 To achieve our objectives, in the January 2020 Consultation we proposed a cost-based charge control. We proposed to base our cost-based charge control on BT's PIA costs as reported within BT's RFS.

Summary of stakeholder responses

- 4.15 CWU said that "It is important that the regulatory framework allows Openreach to recover [these] costs in full".¹⁰⁹ Three said that it "strongly support[s] cost-based regulated access...to reduce the costs of competitive network build".¹¹⁰
- 4.16 Several stakeholders— notably GOS¹¹¹, TalkTalk and CityFibre - while supporting a cost based control in principle, argued that the cost base for PIA has been valued incorrectly¹¹². They said that, whilst we say we take due account of any applicable EC recommendation, our approach is contrary to the EC's Recommendation on costing methodologies for use in broadband rules.¹¹³ They cited from Recitals 34 and 35 including:
- 4.17 "In the recommended costing methodology the Regulatory Asset Base (RAB) corresponding to the reusable legacy civil engineering assets is valued at current costs, taking account of the costs already recovered by the regulated SMP operator. [...] An over-recovery of costs would not be justified to ensure efficient entry and preserve the incentives to invest because the build option is not economically feasible for this asset category."
- 4.18 They also quoted from our 2005 Valuing Copper Access statement referring to the 1997 revaluation of duct assets on CCA basis arguing that there have been no attempts since 2005 to adjust the asset base for over-recovery.¹¹⁴
- 4.19 Community Fibre further noted that due to the life of the PIA assets, they "assume BT will already have written off the value of most of these assets."¹¹⁵
- 4.20 CityFibre considered that Ofcom's proposed approach leads to an inappropriate calculation of the value of the PIA asset base.¹¹⁶

¹⁰⁹ [CWU](#) response to January 2020 Consultation, paragraph 28.

¹¹⁰ [Three](#) response to January 2020 Consultation, Page 2.

¹¹¹ GOS Consulting responded on behalf of County Broadband, INCA, Community Fibre, Jurassic Fibre, EU Networks, Swish fibre, Wight Fibre, Fibrus, and Zayo.

¹¹² [GOS response](#) to November 2020 Consultation, paragraph 79, page 19. [CityFibre](#) response to November 2020 Consultation, para 2.17. [Fern](#) response to November 2020 Consultation, paragraphs 5-6. [TalkTalk](#) response to November 2020 Consultation paragraph 2.6.

¹¹³ We think CityFibre and GOS are referring to the Commission Recommendation of 11 September 2013, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32013H0466> [accessed 3 March 2021]. Both CityFibre and GOS provided a link to a Commission Directive dated 11 December 2018, which does not appear relevant.

¹¹⁴ Stakeholders also refer to RAB approaches by other UK regulators.

¹¹⁵ [Community Fibre](#) response to November 2020 Consultation, paragraph 11.

¹¹⁶ [CityFibre](#) response to November 2020 Consultation, paragraph 2.8.

- 4.21 To estimate the costs of assets already recovered, several stakeholders¹¹⁷ referred to a Frontier Economics report that estimated BT's returns above the regulatory cost of capital since 2016/17.¹¹⁸ They updated this analysis with estimates of excess returns in recent years and noted that the result should be reduced by removing any excess returns not attributable to PIA assets and other legitimate over-recovery allowed by Ofcom to incentivise static efficiency. They argued that if we did these calculations, then it would show that over-recovery has been significantly more than the current book value of PIA assets within the RFS and concluded that "spend to date on the existing duct and pole network has already been recovered in full."
- 4.22 In the event that we decide not to adopt their proposed revised RAB approach, then stakeholders said we should instead adopt an MEA approach.¹¹⁹ BT should be allowed to only recover the costs of a modern efficient network (i.e. not a network built to accommodate copper). Community Fibre argued that "a full fibre network will not require the multiple bores that BT has built for its tree and branch copper network."¹²⁰

Our decisions

- 4.23 In order to achieve our objectives as set out above, we have decided to impose a cost-based charge control. This will provide strong incentives for rival fibre 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.
- 4.24 We have considered two overarching issues in developing our cost-based charge control: whose costs and how should they be measured or valued, and how these costs should be recovered?
- 4.25 As noted above, our overall objectives for setting prices remain as proposed in the January 2020 Consultation. The first objective is that Openreach can recover its efficiently incurred costs. Historically, we have used estimates of fully allocated costs of BT's asset base on a current cost basis consistent with those reported in the RFS as the measure of costs to ensure that we achieve this objective. We remain of that view as we believe it provides an accurate assessment of the relevant costs.
- 4.26 Although BT's PIA asset base is heavily depreciated given its age, there is still significant capital spend taking place. Openreach's forecasts of its capital spend, consistent with the BT full-fibre roll out plans announced in May 2020, suggest that expenditure on PIA assets is unlikely to decrease from the current levels and may increase over the charge control period.¹²¹

¹¹⁷ GOS, TalkTalk, CityFibre.

¹¹⁸ Frontier Economics "Profitability and the Incentive to Invest" 28 September 2017.

¹¹⁹ GOS response to November 2020 Consultation, paragraph 89, page 22.

¹²⁰ Community Fibre response to November 2020 Consultation, paragraph 13.

¹²¹ Openreach's response dated 18 December 2020 to the s.135 notice titled *Promoting investment and competition in fibre networks* dated 8 December 2020, question 13.

- 4.27 With respect to the proposal by some stakeholders to take past “over recovery” into account when valuing the asset base; our charge controls set how much we expect Openreach will recover during the forward-looking period. Following this, Openreach is able to keep any upside (or lose any downside) it achieves. We do this to provide appropriate incentives for improving efficiency. We therefore consider it inappropriate to undermine these incentives by offsetting historical revenue against costs in future charge controls. This view is consistent with our previous decisions on charge controls and the overarching legal framework.¹²²
- 4.28 We note stakeholder comments that our approach is contrary to the EC’s Recommendation on costing methodologies for use in broadband rules. However, we note that the EC’s Recommendation on costing methodologies for use in broadband rules applies to the market for wholesale network infrastructure access and to the wholesale broadband access market or any markets susceptible to ex-ante regulation identified by NRAs during a market analysis which substitute for these and cover the same network layers.¹²³ We are concerned here with pricing in the upstream Physical Infrastructure market.
- 4.29 We have also considered the suggestion to adopt an MEA approach to value PIA assets but do not believe it is the right approach for a number of reasons.
- It is not clear that it would fulfil our objective for Openreach to recover its efficiently incurred costs.
 - An MEA valuation approach is likely to result in prices that fluctuate over time, given the need to constantly redesign the duct network to meet latest demand conditions. As a result, it would be more complicated and introduce further valuation issues largely because PIA assets have relatively long economic lives, typically 40 years. The current duct network infrastructure may well have been efficient to meet the demand, technological and geographic conditions when it was installed. But it may not be optimal to meet today’s conditions or those in 5 years’ time. Allowance would have to be made for the hypothetical entrant’s sinking of investment.
 - Assuming the network is built instantaneously ignores the realities of large-scale civil construction projects and would not, therefore, be appropriate as a basis for valuing BT’s physical network assets.¹²⁴
 - Indeed, it is not clear that an MEA approach would result in lower prices, as GOS and other stakeholders have suggested. The unit costs of building a metre of duct today are, for a variety of reasons, much greater than they were, say, 10 years ago. The age and relatively long asset life of BT’s duct assets means that some duct assets have been

¹²² We are also doubtful that our powers would allow us to set SMP conditions with retrospective effect to address any concerns about BT’s past over recovery as suggested by some stakeholders.

¹²³ See point 5 of the EC’s Recommendation on costing methodologies for use in broadband rules.

¹²⁴ We note that we have considered and rejected adopting an MEA approach to valuing PIA assets in previous market reviews, notably in our 2005 “Valuing copper access” statement and in 2010 See for example Paragraph 4.86, https://www.ofcom.org.uk/_data/assets/pdf_file/0025/112696/Valuing-copper-access-statement.pdf [accessed 9 March 2021]. And Page 30, Analysys Mason report, available at: https://www.ofcom.org.uk/_data/assets/pdf_file/0023/47390/duct-assets.pdf [accessed 9 March 2021].

written off whilst others now have a low value as a result of having been depreciated over many years. It is also not clear that a uniform single bore duct network would be the MEA, in particular, whether it would accommodate fibre networks from multiple operators in all parts of the network.

- It would be wrong to assess one part of the network – the PIA elements – on an MEA basis and not consider the impact of other network elements. By adopting MEA for PIA we would be creating inconsistencies with other charges.

4.30 We have therefore rejected both the RAB approach proposed by GOS, CityFibre and TalkTalk and an MEA approach proposed by other operators.

4.31 We have therefore decided to base the costs within our cost-based charge control on the valuation of PIA assets on values as recorded and audited within BT's RFS. We believe that this provides a relatively stable, transparent and predictable basis on which to set prices and is consistent with our objectives.

Our approach to setting a cost-based control for PIA rental charges

General approach

4.32 We set PIA rental charges that telecoms providers other than Openreach will pay. The way these charges are set means they are not intended to be paid by Openreach. Rather, Openreach must recover the balance of costs not recovered from other users of the physical infrastructure from its own downstream services.¹²⁵

4.33 There are four main steps to calculating rental charges. These are as follows:

- Determine the regulatory cost base in the base year;
- Forecast the regulatory cost base over the charge control period;¹²⁶
- Attribute the regulatory cost base between different PIA services; and
- Calculate unit costs for each service in each year and then set rental charges as a share of these unit costs.

4.34 We received no comments on this overall approach. We go through each of these steps in turn.

Determine the regulatory cost base in the base year

Our proposals

4.35 The regulatory cost base for the relevant infrastructure being accessed is calculated for each year of the control. In the base year, the costs relate to what we referred to in the January 2020 Consultation as the asset cost component: these are the costs of the existing

¹²⁵ See Annex 8.

¹²⁶ To make it clearer what we have done, for this statement we have split the first stage that we described in the January 2020 Consultation "Determine the regulatory cost base" into two parts: Determine the regulatory cost base in the base year and Forecast the regulatory cost base over the charge control period. To be clear, our approach has not altered.

physical infrastructure to which access is granted.¹²⁷ The cost base includes operating costs, depreciation and a return on capital employed. In the January 2020 and November 2020 Consultations, we used cost data for 2017/18 that BT prepared for us in preparation for publishing cost results for the PIA market for the first time in BT's 2020 RFS. We also made an adjustment to remove costs associated with repayment works to ensure consistency with the Top-Down model. We noted in the November 2020 Consultation that we intended updating the base data to use 2019/20 data.¹²⁸

Summary of stakeholder comments

- 4.36 Openreach made three comments on the base data that we had used in the January 2020 Consultation. Firstly, it said that it supports "Ofcom's approach to updating its estimates of costs for Openreach's duct and chamber infrastructure".¹²⁹ Secondly, it said that our 2017/18 base data did not provide a representative base for expected costs for poles.¹³⁰ Lastly, it said that we should make an allowance for wayleave costs in the duct and footway box operating costs as it has "secured permission to house infrastructure on third party property" and therefore "becomes available to CPs using PIA".¹³¹
- 4.37 We received no other comments on our base data.

Our decisions

- 4.38 Our base year costs include operating costs, depreciation (including any holding gains or losses) and a return on capital employed.¹³² For this Statement we have decided to use costs relating to 2019/20. By updating our base data to 2019/20 we address Openreach's concern that 2017/18 was not a representative year for PIA costs, notably with respect to pole testing cost and PIA product development costs. The most recent set of full year accounts that BT has published relates to 2019/20.
- 4.39 We have also decided to base our assessment of PIA market costs on those published in BT's RFS. We consider the RFS provides a robust starting point from which to estimate PIA charges going forward, especially now that the results have been audited.¹³³
- 4.40 However, we have also decided to make certain adjustments to this base data relating to Wayleaves¹³⁴, Excess Construction Charges (ECCs), and Repayment Costs. We have also

¹²⁷ When forecasting, we add the costs of a second component, the network adjustment cost component which we discuss below.

¹²⁸ November 2020 Consultation, footnote 20.

¹²⁹ [Openreach](#) response to January 2020 Consultation, page 97, paragraph 6.157.

¹³⁰ Openreach response to January 2020 Consultation, page 234, paragraph 9.33.

¹³¹ Openreach response to January 2020 Consultation, paragraph 9.76, page 242.

¹³² 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.

¹³³ This approach to estimating the regulatory cost base in the base year is similar to that adopted in the WLA 2018 and PIMR 2019. In those reviews however we did not have access to a reliable set of audited fully allocated cost information for PIA assets.

¹³⁴ Openreach's wayleaves are legal agreements that allow it to site its infrastructure on third party property.

corrected some misclassification errors in the PIA base data. We provide more details on these adjustments in Annex 18.¹³⁵

Forecast the regulatory cost base over the charge control period

Our proposals

4.41 We proposed in the January 2020 Consultation to forecast the regulatory costs in each year over the control period, to 2025/26 as follows:

- For pay and non-pay operating costs we used our standard cost forecasting equations with assumptions about efficiency and cost volume elasticities (CVEs).
- Our forecasts of capital costs (including depreciation) for duct and footway boxes were driven by assumptions about the overall trend in Openreach capex over the period.
- Our capital cost forecasts for poles were generated from assumptions about the number of poles that would be installed and the unit costs of installing a pole. It also assumed that Openreach would continue its booking practice under which pole costs were assigned the same asset lives as the cables that they were being installed alongside, be they copper, fibre or copper drop-wire cables.
- We added forecasts of costs associated with network adjustments – we referred to this in the January 2020 Consultation as the network adjustment component. As discussed later in this section, network adjustment costs relate to activities 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).¹³⁶ Therefore, these costs are essentially asset costs (e.g. costs for the roll out of new duct and/or pole facilities) which Openreach has not yet incurred.
- We assumed asset prices would increase by RPI for most PIA assets.

Summary of stakeholder comments

4.42 Regarding operating costs on poles, Openreach considered that we had significantly underestimated the costs associated with pole testing and the overheads associated with the testing of poles. Openreach noted that they are proposing to test c.500,000 poles per year (noting that pole testing schedules are constantly under review depending on resource and demand) during the charge control period and therefore consider that Ofcom should amend the operating cost forecast to include these costs.¹³⁷

4.43 Openreach discussed what we have previously referred to as productisation costs, which are “incurred in order to make PIA available to CPs”. It considered that “since 2017/18 the

¹³⁵ These adjustments correct a misallocation of some project management costs to the PIA market and the misallocation of CCA depreciation.

¹³⁶ Any Network Adjustment costs below the financial limit that Openreach incurred in 2019/20 have been included within our base year costs. Network adjustment costs are asset costs. Once forecast, they are treated the same as any other asset costs.

¹³⁷ Openreach response to January 2020 Consultation, paragraph 9.68-9.70, page 240-241.

product has changed and developed” and will continue to increase over the charge control period and that Ofcom should include Openreach’s forecast of these costs.¹³⁸

- 4.44 On poles capital expenditure Openreach considered that “Ofcom make no allowance for replacement of defective poles” and expected the net annual growth rate of poles to be about a third of Ofcom’s proposed growth rate of 1%, but with significant numbers of replacement poles, c.40,000 per annum. It proposed that “Ofcom replace its forecast of poles build with the Openreach forecast”.¹³⁹
- 4.45 On investment in duct assets Openreach said this looks “broadly reasonable based on the committed roll out of FTTP in 2019, but it does not allow for the considerable additional investment required to achieve our recently announced ambition of building to 20m homes by the mid to late 2020’s”. Openreach then said that based on our current methodology it felt the investment should be included in the regulatory cost base.¹⁴⁰
- 4.46 On the appropriate asset price inflation index:
- CityFibre said “use of RPI in Ofcom’s modelling is however distorting price estimates and overstated projected asset values”.¹⁴¹ It proposed that we should adopt CPI as an index and that if we adopted their proposed RAB approach (discussed above) then we could do so without the methodological complexity that would otherwise arise.
 - Openreach said “we would expect our cost base to increase with RPI each year.”¹⁴²

Our decisions

- 4.47 We forecast regulatory costs in each year over the control period, to 2025/26. To support our approach, we forecast volumes of PIA assets and investment in PIA assets over the charge control period.
- 4.48 In relation to the network adjustment component, we have decided 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 within the asset cost component. As a crosscheck we compared our forecasts of network adjustment costs with those provided by Openreach. Whilst the profile over time and the split of investment between ducts and footway and boxes and poles were different – we had a higher proportion that related to duct and footway boxes - the total incremental capex over the period duct was very similar. We therefore believe our forecasts are reasonable.
- 4.49 We have forecast most pay and non-pay operating costs as we did for the January 2020 and November 2020 Consultations and in the same way that we have in other recent “top-down” charge controls. We make assumptions about inflation, efficiency and cost volume

¹³⁸ Openreach response to January 2020 Consultation, page 240, paragraphs 9.63-9.67

¹³⁹ Openreach response to January 2020 Consultation, paragraph 9.71-9.74, page 241.

¹⁴⁰ Openreach response to January 2020 Consultation, paragraph 9.31, page 233

¹⁴¹ CityFibre response to November 2020 Consultation, page 12, paragraph 3.26-3.27.

¹⁴² Openreach response to January 2020 Consultation, page 236, paragraph 9.40.

elasticities.¹⁴³ The exception was pole testing costs where we have used a forecast provided by Openreach.¹⁴⁴ These forecasts of pole testing costs were generally relatively flat over the period.

- 4.50 We also asked Openreach to provide its latest forecasts of productisation costs¹⁴⁵ but we have decided not to use these. Openreach’s forecasts of productisation operating costs were broken down into field and desk staff, management and Service Level Guarantee (SLG) payments. We would not expect the costs of running and administering the PIA product set to increase and certainly by not as much as Openreach forecast:
- The proposed emphasis for scale network builders using PIA is process automation (i.e. simplified processes supported by IT systems developments, including the so-called API developments¹⁴⁶). We also expect a degree of ‘trickle-down’ whereby small-scale network builders also benefit to some extent from the proposed initiatives for the large-scale builders. [§].¹⁴⁷
 - We understand that so far, for Openreach validated orders, SLG payments have been low as a result of low failure levels and low charges. In the future, given that the large external operators will be increasingly ‘self-providing’, there will be fewer opportunities for SLGs to be paid. It seems unlikely that future SLG payments will be that significant. There are no SLG payments within our 2019/20 base year cost data.
- 4.51 Finally, we note that there are already a [§] of general management costs that have been attributed to the PIA market in the base year. It seems likely that, as PIA market reporting matures, better and more targeted attribution rules will be developed which may lead to decreases or increases in some of these overhead costs. Whilst we do not consider it unreasonable to include these overhead costs in the base year, given these uncertainties and the points raised above, we do not think it would be appropriate to include extra costs for productisation over this charge control period.
- 4.52 We have reviewed our approach to forecasting capital costs in the light of Openreach’s comments that it did not consider our capital expenditure forecasts consistent with its proposed “scale case” fibre rollout. We consider that is important in the light of BT full-fibre roll out plans announced in May 2020. It is also important that our forecasts across the different elements of the WFTMR are based on a consistent set of assumptions.
- 4.53 Openreach provided us with forecasts of its capital expenditure consistent with this announcement with the spend on PIA assets separately identified. Openreach explained that its forecasts consisted of two elements. The first was its MTP20 capital expenditure

¹⁴³ We provide more details on these assumptions and the parameter values we have used in Annex 18.

¹⁴⁴ Openreach response dated 15 October 2020 to the s.135 notice titled *Promoting investment and competition in fibre networks* dated 11 September 2020, question 2.

¹⁴⁵ Openreach response dated 15 October to the s.135 notice titled *Promoting investment and competition in fibre networks* dated 11 September 2020, question 1. We also note that these operating cost forecasts have not been part of any formal submissions to the BT Group business planning process.

¹⁴⁶ API stands for Application Programming Interface. It is a mechanism to allow different software programs to interwork by means of a standardised and fully-defined set of interactions.

¹⁴⁷ Openreach response dated 18 February 2021 to the s.135 notice titled *Promoting investment and competition in fibre networks* dated 8 February 2021, question 5.

forecast that was signed off by the Openreach Board in April 2020. The second was the incremental investment required for its “scale case FTTP” investment that was approved by the Openreach board on 30 June 2020. To prepare its response it had taken the best available information from the forecasts outlined above in addition to the best available information from its operational and finance systems and converted this into a forecast of PIA assets and components.¹⁴⁸ This meant that forecasts of expenditure on PIA assets had been derived after the event using a range of different assumptions. It also meant that whilst the overall capex forecasts had undergone due governance the breakdown into how much related to PIA assets had less corporate governance, though the MTP20 analysis was consistent with breakdowns presented as part of this forecast.

- 4.54 We have compared Openreach’s forecasts against those we are using within our bottom up fibre model. Whilst a direct comparison is difficult, we have concluded that the forecasts are broadly similar across both duct and footway boxes and poles.
- 4.55 We do not have pole installation forecasts within our bottom up fibre model, but we have compared its volume forecasts - the number of poles installed each year - against what has been installed historically. Openreach’s forecasts suggest that the number of poles installed in the next 5 years will be significantly more (>70%) than those installed in the last 5 years. However, there have been previous periods where the number of poles installed has been higher than in the last 5 years, and Openreach’s forecasts of poles installed over the charge control period are similar to those installed over the period 2005/06 to 2009/10 so they are not implausible.
- 4.56 Openreach’s capital expenditure forecasts are higher than those we had in the 2020 January Consultation, but are broadly consistent with the capital expenditure forecasts in our bottom up fibre model. We have therefore decided to adopt Openreach’s forecasts of capital expenditure on duct and footway boxes and its forecasts of pole volumes,¹⁴⁹ which rise significantly from 2021/22 onwards. The relatively long life of PIA assets means these forecasts of capital expenditure are not that critical to our final prices. We have addressed Openreach’s comment on volume growth of poles by forecasting how much of each year’s installation volumes related to pole replacements.¹⁵⁰
- 4.57 We have also decided to adjust the asset lives for poles. Duct and footway assets have a life of 40 years. Historically, as pole assets were recorded as part of the cables they were installed alongside, they had a much shorter life, between 10 and 20 years. However, Openreach is planning to record its new pole assets separately from 1 April 2021.¹⁵¹ We have therefore decided to reset the life of all pole assets from that date to 40 years, the

¹⁴⁸ Openreach’s response dated 18 December 2020 to the s.135 notice titled *Promoting investment and competition in fibre networks* dated 8 December 2020, question 13.

¹⁴⁹ Our poles capex forecasts are estimated as the number of poles installed in each year multiplied by the unit cost of installing a pole.

¹⁵⁰ We provide more details in Annex 18.

¹⁵¹ Openreach response dated 18 February 2021 to the s.135 notice titled *Promoting investment and competition in fibre networks* dated 8 February 2021, question 1.

same asset life as other PIA assets.¹⁵² This reduces depreciation on poles but keep mean capital employed higher (as it is depreciated more slowly) over the review period.

- 4.58 Lastly, we have decided to continue to use RPI as a measure of asset inflation for all PIA assets. Although we have generally moved away from using the RPI index, we believe that for PIA assets it remains appropriate. Our past analysis has suggested that asset price inflation on duct and footway box assets has been close to RPI, and more than CPI. We have also directed BT to revalue its duct assets on a RAV basis (introduced from 2005) using RPI and we believe we should be consistent with PIA assets. We therefore do not agree that we should move to using CPI on the basis that RPI is a “discredited index”: on our current evidence CPI would not be a good measure of asset price inflation for PIA assets. We could have moved the indexation to say CPI+1, which is historically close to RPI, but we see no benefit in doing so at this time. We note that the ONS will continue publishing the RPI for the duration of the next charge control period. Finally, we note that moving the index from, say, RPI to CPI would not change overall cost recovery but it would slightly alter the profile of that cost recovery.

Attribute the regulatory cost base between different PIA services

Our proposals

- 4.59 For duct and footway box assets we noted that Openreach’s recent assessment of the attribution was very different to the attribution used in the WLA 2018. In the January 2020 Consultation, we therefore proposed to apply the same attributions used to set charges in the 2018 WLA to costs associated with assets installed up to 31 March 2018. For assets installed after 31 March 2018 we proposed to apply an updated attribution based on recent Openreach data.
- 4.60 For pole assets we proposed attributing 90% of pole costs to attachments, 7% to pole top equipment (manifolds) and 3% of cables up poles. These were the same attributions that had applied in the 2018 WLA and 2019 PIMR statements.¹⁵³

Summary of stakeholder comments

- 4.61 Openreach supported our proposals on the attribution of duct and footway box assets.¹⁵⁴ We received no other comments on this step from other stakeholders.

Our decisions

- 4.62 As BT’s accounting systems do not record costs separately for different PIA services the regulatory cost base needs to be attributed to different PIA services. We have decided to adopt our January 2020 Consultation proposals.

¹⁵² Further details on how we have done this are given in Annex 18.

¹⁵³ See for example paragraph A20.54 in Annex 20 of the January 2020 Consultation.

¹⁵⁴ Openreach response to January 2020 consultation, paragraph 6.157, page 97

- 4.63 We reviewed Openreach’s attribution of costs to different PIA services. We noted that Openreach’s recent assessment of the attribution to duct and footway box services, was very different to the attribution we used in the WLA 2018. As a result, applying Openreach’s latest cost attribution would lead to significant changes in prices for some services, notably for single bore and 3+ bore duct.¹⁵⁵
- 4.64 Our general policy aim is to avoid abrupt changes and to support predictable prices for users.¹⁵⁶ We consider that BT’s revised attribution of PIA costs could result in abrupt changes in PIA charges.
- 4.65 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 have decided to adopt our January 2020 Consultation proposal and apply the “old” attribution used to set charges in the 2018 WLA to costs associated with assets installed up to 31 March 2018. We apply Openreach’s revised attribution to assets installed after 31 March 2018 since we believe this provides a more informed view of its forward-looking incremental costs.^{157 158}
- 4.66 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.
- 4.67 We have also decided to adopt the attributions of pole costs that were proposed in the January 2020 Consultation. We note that we received no stakeholder comments on these.

Calculate unit costs for each service in each year and then set rental charges as a share of these unit costs

- 4.68 The result of the previous stage is to produce a fully allocated regulatory cost for each PIA cost component – for example single bore or multi bore duct, junction boxes, manholes or poles - in each year. We then calculate unit costs for each PIA cost component in each year by dividing these fully allocated regulatory costs by the volumes of that component in that year. So, for example, we calculate the cost per metre for single bore duct and for multi-bore duct, the cost per footway box, and the cost per pole. We set PIA charges as a share of these unit costs.

¹⁵⁵ The data Openreach provided covered the period from 2011/12. This accounts for around [3<] % of the GRC of duct assets installed before 31 March 2018 but around [3<] % of the NRC. 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.

¹⁵⁶ 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 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. Paragraph 7.38 of the 2018 WLA statement.

¹⁵⁷ 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.

¹⁵⁸ We provide further details on the attributions of cost in Annex 18.

Our proposals

- 4.69 In the January 2020 Consultation, we proposed shares of unit costs for each PIA service based on various assumptions which we considered met our objective of ensuring a level playing field exists between Openreach and competing telecoms providers, whilst providing Openreach with an opportunity to recover its efficiently incurred costs.
- 4.70 We also proposed reducing the charge for ducted lead-ins to reflect the impact of customer churn. We considered two options. Under Option 1 operators would only be charged whilst they had the customer. Under Option 2 we considered lowering the price to account for the possibility that the operator might lose the customer. We proposed to adopt Option 2 and to reduce the lead-in duct charge by 10%.¹⁵⁹ We proposed to make the same reduction to single premises attachments on dropwires.
- 4.71 In the November 2020 Consultation we proposed a revised approach to set the shares for multi-bore duct and footway box products as a simple percentage figure, rather than basing them solely on utilisation figures at a point in time. This led to higher shares of unit costs for some services.
- 4.72 The table below sets out the share of unit costs we proposed for each PIA service.

Table 4.3: Proposed shares of PIA service unit costs

PIA service	Shares that currently apply (PIMR 2019)	Share of unit cost January 2020	Share of unit cost November 2020
Lead-in duct	100%	90%	
Single bore duct	50%	50%	
2 bore duct	22.1%	19.3%	25%
3+ bore duct	9.8%	8.8%	10%
Manholes	3.3%	3.3%	3.3%
Joint boxes	14.6%	14.4%	15%
Single-premise attachments	100%	90%	
Multi-premise attachments	64%	63%	
Pole top equipment	52%	52%	
Cable up a pole	56%	56%	

Summary of stakeholder responses

- 4.73 In response to the January 2020 Consultation two stakeholders submitted responses on this issue, Openreach and BT Group.¹⁶⁰

¹⁵⁹ January 2020 Consultation, paragraphs A20.27-A20.34.

¹⁶⁰ BT Group referred to Openreach's response and made the same arguments. See BT Group response, paragraphs 6.25 to 6.29.

- 4.74 Openreach agreed with our objectives but argued that basing the shares of unit costs on the latest utilisation data (i.e. average number of 25mm diameter sub-duct equivalents in the relevant duct) was not appropriate and would lead to pricing instability.
- 4.75 Openreach said that in some cases utilisations had increased reflecting its own FTTP network deployment and would rise further in the short term as more fibre is deployed and fibre and copper networks are run concurrently. Openreach argued that updating the utilisations over time would lead to a falling share of unit costs that a PIA user pays, with Openreach being asked to contribute an increasing share of costs even though its share of value (in terms of the proportion of potential customers it could connect to) remained unchanged. Moreover, in the long-term utilisations are likely to fall (and PIA prices will rise) as copper cables are retired.
- 4.76 Openreach requested that we review the allocation of costs. It suggested that a fairer allocation should be based on the number of network operators expected to serve customers in an area. It proposed that shares for multi-bore duct services should adopt a similar methodology to that used for lead in and single bore duct services but assume three rival networks. That might lead to shares of one third each for dual and multi-bore ducts and manholes. Shares for joint boxes would be higher as these are nearer the edge of the network and so connect lead in and single bore duct routes as well as multi-bore duct routes. Openreach estimated a weighted average share of around 46%.¹⁶¹
- 4.77 In response to the November 2020 Consultation Openreach argued that the shares we consulted on in November 2020 for multi bore duct and footway boxes were too low and we should instead base our calculations on their forecast of the long-run fibre utilisations.¹⁶²
- 4.78 Most other stakeholders voiced concerns on our departure from using Openreach's latest utilisation rates as they felt this signalled a long-term intention to adopt Openreach's proposals within its response to the January 2020 Consultation. They said the resulting increasing shares would go against our objective of pricing stability and would not provide industry with the confidence to invest. TalkTalk argued that our objective should be price predictability.¹⁶³
- 4.79 CityFibre argued that the rationale underpinning our change of approach was flawed. Openreach had denied requests from other operators to remove redundant copper to relieve congestion and has indicated that copper will not be removed from its network for some time.¹⁶⁴
- 4.80 TalkTalk made three main points:

¹⁶¹ Openreach response to January 2020 Consultation, paragraphs 9.78 to 9.85.

¹⁶² [Openreach](#) response to November 2020 Consultation, paragraph 2.18.

¹⁶³ [TalkTalk](#) response to November 2020 Consultation, paragraph 2.11, page 4.

¹⁶⁴ CityFibre response to November 2020 Consultation, 1.2 and 2.16.

- A 50% share for single bore duct is not appropriate as a new entrant would not have the same market power as the incumbent so its market share will be lower in the short to medium term.¹⁶⁵
 - Utilisation rates provide an objective basis on which to base shares but those rates should be those during the review period rather than at a fixed point in the past.¹⁶⁶
 - The shares should be based on the utilisation once the customer has purchased PIA, i.e. the utilisation rate plus one.
- 4.81 Virgin Media said that given its expected hybrid deployment of PIA and new infrastructure deployment it would not be reasonable to expect that its use of a given segment of 2 bore duct would enable it to compete for 50% of customers served by that duct route if in reality its PIA deployment increased Virgin Media’s serviceable homes in the area by say 5%.¹⁶⁷
- 4.82 TrueSpeed, [X] and Virgin Media argued that the shares we had proposed were too high. PIA customers should only pay for the space that they use.¹⁶⁸ It is possible to accommodate many more fibres within ducts than is currently implied by the current shares.
- 4.83 Finally, both CityFibre¹⁶⁹ and [X]¹⁷⁰ did not agree with our proposal that operators should continue to pay 90% of lead in charges if they lost the customer. Both favoured our Option 1 under which operators would only be charged for lead-in duct if they are actively serving the customer. CityFibre argued that space in lead-in duct is not a scarce resource, Option 2 will lead to significant over-recovery of PIA costs, and that it did not believe there is any practical way of transferring usage of lead-in cables between different operators.

Our decisions

- 4.84 The unit costs we have calculated for each PIA cost component in 2025/26 are given in the table below

Table 4.4: Calculated PIA cost component unit costs in 2025/26

PIA service	Unit costs in 2025/26
Lead-in duct	£0.67 per metre
Single bore duct	£0.67 per metre
2 bore duct	£1.01 per metre
3+ bore duct	£1.56 per metre
Joint boxes	£15.96 per joint box

¹⁶⁵ TalkTalk response to November 2020 Consultation, paragraph 2.11, page 5.

¹⁶⁶ TalkTalk response to November 2020 Consultation, paragraph 2.17, page 6.

¹⁶⁷ [Virgin Media](#) response to November 2020 Consultation, pages 7-8.

¹⁶⁸ [TrueSpeed](#) response to November 2020 Consultation, page 2. [X] response to November 2020 Consultation, paragraph 17.

¹⁶⁹ [CityFibre](#) supplementary response to the January 2020 Consultation, paragraphs 3.53-3.68.

¹⁷⁰ [X] response to the January 2020 Consultation, question 5.1, page 11.

Manholes	£309.20 per manhole
Single and multi-premise attachments	£18.09 per pole
Pole top equipment	£3.22 per attachment
Cable up a pole	£2.08 per cable

- 4.85 Our objective in setting the shares of unit costs is to ensure a level playing field exists between Openreach and competing telecoms providers, while providing Openreach with an opportunity to recover its efficiently incurred costs.
- 4.86 Setting shares which achieve our objective involves the use of regulatory judgement. There is no uniquely correct answer as to what the shares should be. Also, PIA is in the early stages of adoption so there is uncertainty as to how exactly competing telecoms providers will use PIA in their network deployments. We explain below why, in our regulatory judgement, the shares we have decided on achieve our objective. We based this assessment on 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.

Duct and chamber services – overview

- 4.87 Ducts fall into two categories: spine ducts and lead-in ducts.¹⁷¹ 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. Lead-in duct is currently priced as a separate service. We explain later in this section that we have decided to set 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.
- 4.88 Manholes and joint boxes are underground chambers, or footway boxes, that act as flexibility points for cables.
- 4.89 The table below shows the share of the unit cost (i.e. the share of the per metre duct cost or the share of the cost per chamber) that we have decided that PIA users should pay when using PIA. 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).

Table 4.4: Decisions on shares of PIA service unit costs – duct and chamber products

PIA component	Share of unit costs
Lead-in duct	90%
Single bore duct	50%

¹⁷¹ 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.

2 bore duct	25%
3+ bore duct	10%
Joint boxes	15%
Manholes	3.3%

4.90 We consider that these assumptions are appropriate given our objective to create a level playing field between Openreach and other telecoms providers that make use of PIA to provide downstream products whilst allowing Openreach to be able to recover its efficiently incurred costs. We go through each of each of these services in turn.

Lead in Ducts

4.91 In most cases, each lead-in duct connects to a single premises. Therefore, our starting point is that when a competing telecoms provider uses 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.¹⁷²

4.92 Rental charges are currently payable if the telecoms provider has a lead-in cable in place. This means that when a customer churns, the competing telecoms provider will continue to pay the rental charge unless it physically removes the lead-in cable. Competing telecoms providers are however unlikely to remove the lead-in just to avoid paying rental charges. This is because the costs of removing a lead-in when a customer churns and re-installing it when a customer reconnects are likely to be significantly higher than the rental charges incurred in the period where the connection is inactive.

4.93 This approach can be viewed as not being consistent with there being a level playing field between Openreach and competing telecoms providers using PIA. For example, it could result in a competing telecoms provider paying 100% of the unit cost of a lead in duct, when another telecoms provider (e.g. Openreach or a third competing telecoms provider) is using that same lead-in duct to serve the customer and generate revenues.¹⁷³

4.94 To address this issue, we have decided to adopt our January 2020 Consultation proposal and set the share at 90%. We explain why below.

4.95 In the January 2020 Consultation we considered two potential alternative options to address the issue above:

- Option 1: Telecoms providers would be charged, but only for as long as they are actively serving a customer. If and when the customer switches to another telecoms provider, the rental charge would be paid by the new telecoms provider. To account

¹⁷² 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.

¹⁷³ There is also a risk that Openreach will over-recover its costs, particularly in the event there is a third competing telecoms provider using the lead-in duct. This is a point we made in the January 2020 Consultation and is consistent with the point CityFibre made in its response as noted above. That said, given typical levels of churn, the extent of any over-recovery over this 5 year charge control period is likely to be minimal.

for instances where a customer switches to a telecoms provider that does not use the lead-in duct, all telecoms providers with an active connection would pay an appropriate uplift, i.e. overall PIA rental charges would be increased.¹⁷⁴

- Option 2: Telecoms providers would continue to be charged for lead-in ducts if they have lead-in cable in place, even when they lose the customer. However, the charge that they pay would be lower than 100% of the lead-in unit cost to account for the possibility that the telecoms provider may lose the customer.

4.96 CityFibre and [S&K] prefer Option 1 and have argued against Option 2. We have not received any other comments from other stakeholders. We remain of the view that Option 2 provides the most appropriate approach for this charge control for similar reasons that we gave in the January 2020 Consultation:

- Telecoms providers (including Openreach) derive a benefit from keeping the lead-in connection in place even when they lose the customer in that they have a competitive advantage over telecoms providers who do not have a connection in place. This is because they can compete for the customer with more certainty over the connection process and offer a quicker customer connection. That benefit has some value.
- Even when the telecoms providers do not have an end-customer connection they still occupy space in Openreach's infrastructure. Telecoms providers should pay for this occupation in the same way that Openreach will for customers that it loses. CityFibre has argued there should be space within the duct for several fibres and so space in lead-in duct networks is not a scarce resource. Whilst that argument may have some validity for pure lead-in duct it is not necessarily the case for shared rider duct,¹⁷⁵ which as we note below, may be shared by several lead-in cables.
- It is easier to implement. There is no need to monitor whether the connection is being used or not.
- This approach may allow the previous and new telecoms provider to find an agreement to transfer the ownership of the installed lead-in if desired. This way the previous telecoms provider would not incur rental charges for the entire period the customer is being served by another telecoms provider. CityFibre has argued this is unlikely to happen in practice. It is possible CityFibre will be correct, but also that market solutions might emerge.

4.97 [S&K] has criticised our approach to estimating the discount but offered no alternatives.¹⁷⁶ No other operators expressed any views on the level of the discount that we proposed. We have therefore decided to estimate the discount as we did in the January 2020 Consultation based on the probability that the telecoms providers may lose a customer over this review period. We have assumed:

¹⁷⁴ For example, a customer may switch to an operator that does not use the Openreach access network. To quantify the uplift would require making similar assumptions to those we have made when estimating the discount under Option 2.

¹⁷⁵ We define what we mean by shared rider duct when we discuss our approach to simplifying ducted lead in charges.

¹⁷⁶ We accept that our approach to estimating the discount is based on assumptions. However, we have no data on how PIA services will be used in the future by multiple competing operators. These assumptions can be reviewed in the light of better evidence in the future.

- there is no demand at the start of the period but that this grows steadily out to 2025/26;
- most of the demand is for broadband services, the contract period for which is typically 12-18 months. The remaining demand is for leased line services for which typical contract periods might be 3 years; and
- churn rates of 10-20%.

4.98 These assumptions produce estimates that 5-20% of the base installed over the period surviving to the end of the period.¹⁷⁷ We have therefore decided as in January 2020 to reduce the lead in duct element of the new composite lead in charge by 10%.

Single bore spine ducts

4.99 Competing telecoms providers and Openreach can simultaneously use spine duct to provide services to consumers. On average, we would not expect more than one competing telecoms provider to be sharing single bore spine duct with Openreach. Where a second telecoms provider uses single bore spine duct then we have decided that the costs are shared equally between them, each paying 50%.¹⁷⁸

4.100 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. We recognise that competing telecoms providers may achieve lower take-up in the short term (as argued by TalkTalk). However, in general, we think it is appropriate to set prices which reflect the opportunity they have to serve customers and consider that it is consistent with ensuring a level playing field. This also provides more certainty to investors over the level of charges they will face in the long term.¹⁷⁹

4.101 We also recognise that some telecoms providers may use single bore duct to compete for a smaller proportion of customers in the long term (as argued by Virgin Media). However, that does not mean our approach is inappropriate. We are setting prices that will apply to all operators. We have considered an alternative approach of adopting operator-specific pricing, but in addition to the considerations above, this would not meet our objective for pricing to be simple and easy to implement.

Multi bore and chamber products

4.102 Spine ducts with two bores, and spine ducts with three or more bores 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 served by that duct.¹⁸⁰ For the purposes of setting a charge control, we consider it reasonable to assume that each sub-

¹⁷⁷ To note that these estimates reflect the relatively limited opportunities for churn over this 5-year review period. It is not a “steady state” calculation.

¹⁷⁸ On average, we would not expect more than one competing telecoms provider to be sharing single bore spine duct with Openreach.

¹⁷⁹ Certainty over the level of charges in the long-term is important to potential investors, given the investment case for network deployment is typically evaluated over a relatively long time period.

¹⁸⁰ In general, in BT’s tree and branch network architecture, a duct that is closer to the exchange has more bores and carries more cables.

duct will not have the opportunity to compete for all end customers served by that section of multi-bore spine duct, and/or that there is greater potential for multiple competing telecoms providers to be sharing these ducts and/or that there will be need for more network assets – for example a single operator might need to install multiple sub-ducts for capacity or routing purposes. Therefore, we consider that competing telecoms providers should pay a smaller share of the unit cost of these multi-bore spine ducts than they do for single-bore spine ducts.

- 4.103 As explained above, there is no uniquely correct answer as to what the shares should be. We have decided to use a share of 25% for 2 bore ducts, and 10% for 3+ bore ducts.
- 4.104 For 2 bore ducts the 25% share we have decided to adopt is consistent with there being four sub-ducts within the two bores: that might be two operators each with two sub-ducts or some other combination.¹⁸¹ The 25% share that we have decided to adopt is similar to the 22% share that currently applies.
- 4.105 For 3+ bore ducts the 10% share we have decided to adopt is consistent with there being on average ten sub-ducts.¹⁸² That might be two operators with five sub-ducts or some other combination.¹⁸³ Again the 10% share we have decided to adopt is similar to the 9.8% share that currently applies.
- 4.106 When renting space in joint boxes telecoms providers pay for each entry and exit. We have decided that the share for an entry and an exit is 30%, i.e. 15% per entry or exit. Most joint boxes are nearer the periphery of the Openreach network and so we consider it reasonable to assume that they generally connect duct routes with relatively few bores. Our share of 30% lies between the share for single bore duct (50%) and the share for 2 bore duct (25%). It is similar to the share that currently applies.
- 4.107 When renting space in manholes telecoms providers again pay for each entry and exit. We have decided that the share for an entry and an exit is 6.6%, or 3.3% per entry or exit. Manholes are generally located deeper within Openreach's network and so will have many routes entering and exiting. The chances of an operator deploying one sub-duct competing for all customers served by routes entering and exiting manholes is therefore much reduced. We consider it could be reasonable to assume that most manholes are used to connect routes involving multi bore ducts – mainly 3+ bores – and that an appropriate share might therefore be around half of the 3+ bore duct routes, i.e. around 5% per entry or exit. For manholes the share we have decided to adopt is slightly lower than this but is consistent with the share we proposed in both the 2019 PIMR and the January 2020 Consultation.
- 4.108 A number of stakeholders expressed concerns that our departure from using Openreach's latest utilisation rates to set the shares for multi-bore duct and chamber products signalled

¹⁸¹ An operator using fewer sub-ducts may not have the opportunity to compete for all end customers served by that section of duct.

¹⁸² Two sub-ducts per bore is consistent with there being 5 bores on average on these routes.

¹⁸³ As above, an operator using fewer sub-ducts may not have the opportunity to compete for all end customers served by that section of duct.

a long-term intention to adopt Openreach's proposals within its response to the January 2020 Consultation. This is not our long-term intention. We explained in the November 2020 Consultation we did not agree with Openreach's proposal to base these shares on an assumption that there are three competing operators throughout the network. This is because we think it is reasonable to assume that competing telecoms providers deploying one subduct¹⁸⁴ will not compete for all end customers served by that duct/chamber, and/or that there is greater potential for multiple competing telecoms providers to be sharing these ducts/chambers.

- 4.109 We proposed to break the direct link between the latest utilisation data and the calculation of those shares to send a clearer signal to all stakeholders that the share of unit costs will not automatically change as a result of changes in utilisation.¹⁸⁵
- 4.110 We remain of the view that setting the shares for multi-bore duct and chambers products as a simple percentage figure, rather than basing them solely on utilisation figures at a point, is a better approach. This is because we think it provides more certainty to potential investors over the level of charges they will face in the long term. We note that by certainty, we do not mean that PIA prices will not change at all.¹⁸⁶ Rather, we mean that the assumptions underpinning the prices – in particular, the shares of unit costs – are likely to be stable, or at least predictable.¹⁸⁷
- 4.111 Finally, we disagree with those stakeholders that argued that the shares of unit costs should be based on utilisation alone. This is because this approach does not result in a level playing field between Openreach and competing telecoms providers. Openreach's own network is currently based on a mix of copper and fibre whereas a rival telecoms provider could deploy a new fibre network using less duct space than Openreach. Therefore, a rival telecoms provider deploying network in a particular area could cover the same customer base as Openreach, but make a smaller contribution to the costs of the shared physical infrastructure. The shares we are setting take into account both use of space and the opportunity to earn revenue related to that usage.¹⁸⁸
- 4.112 We also do not believe that Openreach's proposed revised approach that it suggested in response to the November 2020 Consultation is superior to the shares we have decided on, in terms of meeting our objectives. Given the uncertainty about how exactly competing

¹⁸⁴ Where competing telecoms providers install multiple subducts, they will pay multiple charges and thus pay a larger share of the unit cost.

¹⁸⁵ CityFibre commented that our rationale was flawed as Openreach would not remove redundant copper from its network for some time. However, to clarify, our main point was that using the latest utilisation figures to determine the precise share of unit costs risks setting an expectation that the share of unit costs will fall in future review periods (as a result of increased fibre deployment), resulting in higher PIA prices. We only noted that this trend might be reversed if Openreach were to remove copper cables from its network. November 2020 Consultation, paragraphs 3.14 and 3.15.

¹⁸⁶ For example, prices may change in the future as a result of changes in the regulatory cost base.

¹⁸⁷ Although the simple percentage figures we have decided to use results in an increase in some shares compared to our original proposals, we do not think this undermines investment. This is because the impact on overall PIA rental charges faced by altnets is modest. As noted at the start of this section we estimate that overall duct charges will increase on average by CPI+1% compared to charges currently in place today.

¹⁸⁸ Utilisations do help to inform our shares - and the shares for most multi bore and footway box products - with the possible exception of 2 bore duct – and are not that dissimilar to those in the January 2020 Consultation which were based on the latest utilisation data that was available to us.

telecoms providers will use PIA, we do not believe basing the shares on expectations about long term fibre utilisations is a more robust approach to setting shares in this review period.

Pole services

4.113 The PIA remedy allows telecoms providers to attach cables and equipment to Openreach’s poles. 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. Therefore, as explained in Annex 18 the cost per pole is first attributed between the different attachment types. PIA users installing a particular type of attachment then pay a share of the attributed unit cost for that type of attachment.

4.114 We received no comments on the poles’ “fair” shares. We have therefore decided to adopt the methodology we proposed in January 2020 to assess those. The table below sets out the proposed shares for each type of attachment.

Table 4.5: Decisions on shares of PIA service unit costs

PIA service	Share of unit costs
Single-premise attachments	90%
Multi-premise attachments	63%
Pole top equipment	54%
Cable up a pole	56%

4.115 We consider that these assumptions are appropriate given our objective to create a level playing field between Openreach and other telecoms providers that make use of PIA to provide downstream products whilst allowing Openreach to be able to recover its efficiently incurred costs:

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

- 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, manifolds or cables-up poles that Openreach and the competing telecoms provider will have on a pole.¹⁸⁹ Our methodology to estimate these shares is the same as in the 2018 WLA, 2019 PIMR and the January 2020 Consultation.

The simplification of charges relating to hosting footway boxes and ducted lead-ins

- 4.116 In the January 2020 Consultation we proposed two simplifications relating to the structure of footway box and ducted lead in charges. We go through each below.

Our proposals to simplify charges for hosting in footway boxes

- 4.117 The PIA service allows telecoms providers to install in-line splices/distribution joints and coils of cable in Openreach's footway boxes. In the 2018 WLA and 2019 PIMR we set separate and additional rental charges for these. In the January 2020 Consultation we proposed to remove the rental charges for cable coil and in-line splice hosting and include the recovery for the costs for these within the main junction box and manhole rental charges.

Summary of stakeholder responses

- 4.118 Openreach expressed concern with our proposal to remove cable coil and in-line splice hosting charges. It noted that the expectation is that demand for this product will rise and our proposal was "too blunt given the possible extremely large differences in equipment size and consequential occupancy of Openreach's infrastructure". It considered it "essential that the PIA rental charging recognises this usage in a direct way to incentivise the efficient use of space and good engineering practice".¹⁹⁰
- 4.119 In contrast, CityFibre were supportive of our proposal to remove rental charges for cable coil and in-line splice hosting. It noted that on the basis of its own PIA usage "our payments for hosting cable coils and in-line splices have hitherto accounted for a very small proportion of our overall PIA payments".¹⁹¹ Further, it considered that removing these

¹⁸⁹ 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%. We provide more details on how we calculate these shares and charges in Annex 18.

¹⁹⁰ Openreach response to January 2020 Consultation, page 103, paragraphs 6.189-192.

¹⁹¹ CityFibre Supplementary response to January 2020 Consultation, paragraph 3.11, page 8.

costs will “remove significant complexity enabling us to use PIA more effectively and efficiently”.¹⁹² It noted that efficient use of space should be actively encouraged, including through solutions such as CityFibre’s “approach to connectorization via gel wraps”.¹⁹³ CityFibre noted that operators using larger equipment with traditional fibre splicing would suffer an implicit cost penalty.¹⁹⁴ Finally, it noted that concerns about inefficient use of space are best addressed through engineering rules and not pricing.¹⁹⁵

Our decisions: simplifying the charges for hosting in footway boxes

- 4.120 We have decided to remove rental charges for cable coil and in-line splice hosting. We consider this simplification will support investment by competing telecoms providers and, importantly, reduce the complexity of operating PIA duct services.
- 4.121 Under the PIA pricing methodology used in the 2018 WLA and 2019 PIMR, rental charges for hosting cable coils and in-line splices were assumed to contribute very little to the recovery of footway box costs. Entry and exit rental charges were expected to account for most of PIA users’ contribution to footway box costs.¹⁹⁶ The hosting charges that were set were also based on several working assumptions that are difficult to verify. These charges add to the complexity of the PIA product, without making a material contribution to cost recovery.
- 4.122 We recognise that, in theory, charging for hosting could incentivise telecoms providers to make efficient use of space inside footway boxes and indeed this is Openreach’s argument for retaining these charges. However, in practice, using pricing to incentivise efficient use of space is not straightforward, given uncertainty about how other operators will use PIA services and innovation in providing fibre services in the future.
- 4.123 CityFibre’s experience with “gel wraps” suggests that the current policy does not encourage efficient use of space within footway boxes. As CityFibre claim,¹⁹⁷ gel wraps provide a flexible way of jointing fibres together in a way that does not involve installing equipment in a chamber. CityFibre also say this is space efficient: a gel wrap is 10 to 60 times smaller than a single more traditional piece of equipment such as a “tube distribution closure”. This appears to be the type of innovative solution that should be encouraged, not penalised. However, Openreach treated gel wraps in the same way as traditional joints and “announced it would impose ... a charge of £18.81 for each gel wrap used”.¹⁹⁸ If anything, the current pricing approach may stifle innovation and potentially encourage inefficient use of space.

¹⁹² CityFibre supplementary response to January 2020 Consultation, paragraph 3.13, page 8.

¹⁹³ CityFibre supplementary response to January 2020 Consultation, paragraph 3.15, page 9.

¹⁹⁴ CityFibre supplementary response to the January 2020 Consultation, paragraph 3.16, page 9.

¹⁹⁵ CityFibre supplementary response to the January 2020 Consultation, paragraph 3.17, page 9.

¹⁹⁶ The methodology used in the 2018 WLA Statement effective assumed that hosting charges would contribute an amount equivalent to 2% of the contribution from entry and exit charges.

¹⁹⁷ See Annex 2 of CityFibre’s supplementary response to the January 2020 Consultation.

¹⁹⁸ CityFibre Supplementary response to the January 2020 Consultation, Paragraph A2.24, Annex 2.

- 4.124 We also note that it is the efficient use of space within the whole system that is important, not just the efficient use of space within footway boxes. Installing joints may lead to more efficient use of the duct network and that would be as important as the efficient use of footway boxes on their own. Further, as CityFibre also notes, operators using larger equipment with traditional fibre splicing will suffer a cost penalty compared to other operators that do not.¹⁹⁹
- 4.125 Therefore, we are not persuaded that removing these hosting charges will incentivise inefficient use of space. We also consider that obviously inefficient use of space could be prevented by sensible engineering rules that industry can agree on.

Our proposals to simplify charges for ducted lead ins

- 4.126 Lead-in ducts link customer premises to the main, shared, duct network. Lead-in cables generally run from a distribution point (i.e. a joint chamber and/or a footway box) through lead-in duct to reach the end-customer premises.
- 4.127 In the January 2020 Consultation we proposed to impose a charge control on a new simplified lead-in service. This would be 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.
- 4.128 We based our proposals on an Openreach proposal that set prices for this new service on estimates of the average quantities of lead-in ducts, lead-in links and facility hosting components that are used to provide a connection.

Summary of stakeholder responses on simplifying charges for ducted lead-ins

- 4.129 Openreach supported our proposals to introduce the PIA simplified underground lead in service. It noted that the proposal was the result of significant work carried by Openreach with its PIA customers, the OTA and Ofcom during 2019 in order to restructure and simplify the lead-in product and charges for the benefit of all parties.²⁰⁰ Openreach had notified the launch of the new product in June 2020.²⁰¹
- 4.130 Many other stakeholders were supportive of the proposal to simply the underground lead in product notably SSE²⁰², [S&C],²⁰³ Virgin Media,²⁰⁴ [S&C]²⁰⁵ and [S&C].²⁰⁶ [S&C] supported the proposal on the condition that on average it "did not pay more than for the current pricing for underground lead-ins".²⁰⁷

¹⁹⁹ CityFibre Supplementary response to January 2020 Consultation, Paragraph 3.16.

²⁰⁰ Openreach response to the January 2020 Consultation, page 111, paragraph 6.238.

²⁰¹ Openreach response to the January 2020 Consultation, page 113, paragraph 6.248.

²⁰² [SSET](#) response to the January 2020 Consultation, page 5.

²⁰³ [S&C] response to the January 2020 Consultation, question 5.2, page 12.

²⁰⁴ [Virgin Media](#) response to the January 2020 Consultation paragraph 39.

²⁰⁵ [S&C], response to January 2020 Consultation, page 8.

²⁰⁶ [S&C] response to the January 2020 Consultation, question 5.2, page 8.

²⁰⁷ [S&C] response to the January 2020 Consultation, question 5.2, page 11.

- 4.131 CityFibre also supported the overall direction of travel in simplifying the lead-in product set²⁰⁸. However, it did not support Ofcom’s proposal as it felt:
- lead in link should be combined with the single bore duct product, not the simplified lead in product. CityFibre said it should only be charged once for any length of duct. It should not be charged both for lead-in-link as part of the simplified lead in product and separately for spine duct. It felt “the simplified lead-in product should be redesigned such as to only include the span of network between the joint chamber and the end-user premise”;²⁰⁹ and
 - there should be more than one type of simplified lead-in service to account for differing lead-in distances.²¹⁰

Our decisions on simplifying charges for ducted lead in

Our approach to regulating ducted lead in charges

- 4.132 Telecoms providers using a lead-in cable to serve a single premises 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). Each of these services attract a separate charge. As Openreach does not routinely keep records of their underground infrastructure beyond the distribution point, the lengths of lead-in ducts, lengths of lead-in link ducts and the number of facility hostings (i.e. number of ingress/egress from any chamber in the route) required to serve every premises are not known. Telecoms providers are therefore currently required to capture and record information relating to their use of lead-ins for each customer premises and submit this to Openreach.
- 4.133 To simplify recording and provide greater predictability in charges, Openreach proposed, in discussion with industry, and has since launched, a flat, aggregated price for a “Simplified Underground PIA Lead-in” product. The intention was that 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 was based on estimates of the average usage of the existing three service components.
- 4.134 The new service has received support from telecoms providers not just within industry working groups but also in response to our January 2020 Consultation. It 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.

²⁰⁸ CityFibre supplementary response to the January 2020 Consultation, paragraph 3.27, page 10.

²⁰⁹ CityFibre supplementary response to the January 2020 Consultation, paragraphs 3.36-3.47.

²¹⁰ CityFibre supplementary response to the January 2020 Consultation, paragraphs 3.48-3.52

4.135 We have therefore decided to adopt our January 2020 proposal and set regulated charges for ducted lead-in products based on a simplified lead-in approach. We will not therefore be setting separate prices for lead-in duct or lead-in-link duct.

Calculating the simplified ducted lead-in price

4.136 When setting its original price Openreach estimated the average quantities of lead-in ducts, lead-in links and facility hosting components used to provide a connection on approximately 386,952 new site premises across the UK where lead-in measurements were recorded on Openreach's inventory systems.²¹¹

4.137 The price was derived by multiplying the published prices for the various components (lead-in duct, lead-in link duct and facility hosting) by these average quantities and assuming that:

- a) the lead-in link ducts and chambers are shared by up to 3 cables; and
- b) there are [~~3~~] (between 1 and 2) facility hostings per chamber in the route (i.e. ingress/egress from any chamber in the route).
- c) These assumptions were also based on information from the above-mentioned sample of new premises from their inventory systems.²¹²

4.138 We and some stakeholders, as noted above, have questioned some of Openreach's underlying assumptions: is the data used truly representative of all Openreach's access network, and to what extent could some duct sections be charged for twice.

4.139 Using our statutory powers, we have therefore attempted to re-confirm that the assumptions and estimates that Openreach originally made were reasonable. We have also attempted to quantify or at least gauge the impact of changing assumptions that could be refined. Based on our review of these matters, we have decided not to revise the average quantities that we used to set the price in the January 2020 Consultation as we feel that the overall assumptions that Openreach used to derive the pricing are appropriate for this charge control.

4.140 We estimate that the extent of any double charging of duct²¹³ is less than 3%. That is because Openreach's calculations assume that there are three different types of duct used to provide lead in:

- lead in duct: any duct section that is dedicated to serving a single premises.

²¹¹ Openreach's response dated 10 December 2019 to the s.135 notice titled *Promoting competition and investment in fibre networks* dated 2 December 2019.

²¹² Openreach's response dated 10 December 2019 to the s.135 notice titled *Promoting competition and investment in fibre networks* dated 2 December 2019.

²¹³ We concentrate here on the potential issue of double-counting of spine duct, but there may also be potential double counting of facility hostings.

- shared rider duct: any section of rider duct containing more than one lead-in cable. Rider duct emanates from a single joint box and is a duct section connected with one or more swept tee(s).²¹⁴
- shared spine duct: in the context of the 'Simplified Underground Lead-in Product' this is any duct section that carries more than one lead-in cable but does not connect to a swept tee at either end.²¹⁵

4.141 Shared rider duct is distinct from shared spine duct since there are no opportunities to splice fibres in joint boxes nor access other parts of the network and therefore these rider duct sections can only carry lead-in cables. Shared spine duct is not suitable for use as spine duct. The only duct that might be double charged is therefore shared spine duct and this accounts for a small proportion of the overall price.

4.142 However, whilst reviewing this issue, we identified other factors that might affect prices. Some of these would increase and some might decrease prices. For some neither we nor anyone else currently has the necessary evidence to support making any robust adjustments. Most of the impacts are, like our assessment of the maximum potential double charging effect, small.

4.143 Because we are not able to correct for these factors, because they are small and because they would likely offset each other, we feel comfortable that the overall assumptions that Openreach used to derive the pricing are appropriate for this charge control. We believe this is supported by most stakeholders. When setting the simplified lead in price we have therefore used the average quantities that Openreach originally assumed but then used our updated estimates of the relevant unit costs to convert to a single average price.

4.144 We do not agree with CityFibre that we should introduce further variants of the product or that it would be appropriate at this time to combine the shared spine element, previously referred to as lead-in link, with the single bore element.

- All lead-ins are therefore assumed to have lead-in-duct and shared rider duct and these two elements account for over 95% of the total lead-in distance. The only element that might vary between operators, shared spine duct (or what used to be called lead-in link) is very short. Introducing additional simplified lead-in services with different lengths of spine duct as CityFibre suggests does not seem appropriate or proportionate: multiple services would undermine the simplicity of the product. We address the potential for lead-ins with long lengths of shared spine duct when we discuss usage restrictions below.
- Combining the shared spine element, previously referred to as lead-in link, with the single bore element, would have very little impact on the price. Our assessment of the extent of any potential double charging is that it is minimal.

²¹⁴ Swept-t joints are commonly used to connect Openreach's underground lead-in ducts to Openreach's spine duct (and thereafter they connect to other parts of Openreach's physical infrastructure)

²¹⁵ These definitions are from OR answer of 12 January 2021 to question 2 of Ofcom section 135 information request dated 21 December 2020

Summary of decisions on the simplified ducted lead-in service

- 4.145 We have decided to set a charge control for the simplified underground lead-in service that we consulted on in the January 2020 Consultation. We are not setting charges for lead-in duct or lead-in-link duct^{216 217}.
- 4.146 The approach to setting prices is based on Openreach's original proposal that has been welcomed by industry. We have reviewed Openreach's methodology and calculations. Whilst there are some assumptions concerning the way Openreach has constructed its average quantities, we believe that that overall these set prices at a reasonable level. We have therefore decided to adopt the average quantities within the January 2020 Consultation.
- 4.147 When constructing the price, we have adopted our January 2020 Consultation proposal and reduced the price of the lead-in element of the charge by 10% to reflect the potential future impact of customer churn.

We do not think it appropriate to impose any usage or geographic scope restrictions to the simplified lead-in product

- 4.148 A key aspect of our overall approach to PIA is to ensure that the remedy is not subject to any usage, geographic scope restrictions, or processes that would lead to undue discrimination as we consider that this would undermine its effectiveness. There are two further points that follow from the discussion above:
- Some telecoms providers may attempt to install lead-ins with much longer shared spine duct (lead-in link) lengths than were assumed within the calculations. This would clearly be at odds with these pricing assumptions. While this might be addressed by limiting the length of the lead-in links using the product, we do not think that this is appropriate as we do not expect this to occur on a frequency that might give rise to a risk of undermining Openreach's cost recovery over this charge control period.
 - We think that the assumptions used to calculate the price are indicative of the appropriate scope of the product. Consequently, if some telecoms providers were to install lead-ins with much longer shared spine duct (lead-in link) lengths than assumed, we can conceive of certain circumstances in which this may be inappropriate on the basis that it would be inconsistent with the intended use of the simplified product as a lead-in. For example, a concern could arise if a telecoms provider were to claim that it requires very long lengths of shared spine duct (lead-in link), altering its network design to minimise PIA rental charges and exploiting the flat charge for the simplified product. On the other hand, there may also be circumstances where purchasing the simplified product to install longer lead-in links than assumed would be appropriate. For example, if a telecoms provider requires longer lengths of shared spine (lead-in link) to reflect its own network design, which is different to Openreach's architecture, or where a

²¹⁶ To be clear we are not removing the main charge control on facility hostings. That will apply when these assets are used to support non lead-in cables.

²¹⁷ The legal conditions refer to duct lead in services, rather than simplified underground lead-in services.

telecoms provider has no choice but to run a longer length of share spine duct (lead-in link) because the nearest chamber is full.

- 4.149 We think that the above approach is consistent with our overall approach that generally PIA is not subject to any usage or geographic scope restrictions. A telecoms provider, who sought to install very long lengths of shared spine duct (lead-in link), which would appear inconsistent with the intended use of the simplified product as a lead-in, must still be able to access Openreach's ducts and poles. But this could be achieved by being able to purchase a different set of products. For example, one approach may be for very long shared spine duct (lead in links) to attract additional spine duct rental charges as set by us.

Legal tests

- 4.150 We have decided 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 SMP conditions can be found in Volume 7.
- 4.151 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.
- 4.152 As required by section 88 of the Act, we consider that the setting of each of these 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 having regard, where relevant to the market analysis, to the long-term interests of end users in the use of next-generation networks; and
 - d) promoting the availability and use of new and enhanced networks.
- 4.153 We have also considered:
- a) the extent of the investment in the matters to which the condition relates of the person to whom it is to apply; and
 - b) the benefits of predictable and stable wholesale prices in ensuring—
 - i) efficient market entry; and
 - ii) sufficient incentives for all undertakings to bring into operation new and enhanced networks.

Promoting efficiency

- 4.154 The form of control 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 by setting cost-based charges (i.e. allocative efficiency).²¹⁸

Promoting sustainable competition and conferring the greatest possible benefits on end user of public electronic communications services

- 4.155 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 be cost-based facilitates the building of credible business cases for deploying a network using PIA.
- 4.156 We also 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. In reaching this view we have also had regard to the long-term interests of end users in the use of next-generation networks, in particular of very high capacity networks.

Promoting the availability and use of new and enhanced networks

- 4.157 We have taken account of the need to ensure that the cost recovery methodology and pricing mechanism we have decided to adopt serve to promote the availability and use of new and enhanced networks.
- 4.158 Our decision to impose a charge control on rental charges and the way in which we set those charges will support competitive investment in new and enhanced gigabit capable networks. In particular, our decisions address the risk of Openreach setting high rental prices relative to cost which could undermine the business case for competitive network investment. Our decisions also ensure that there is a level playing field between Openreach and competing networks with respect to these charges, providing rivals with confidence to invest.
- 4.159 Promoting competitive network investment also gives Openreach a strong incentive to invest in new and enhanced networks. We are also allowing appropriate cost recovery which supports Openreach's incentives to invest more generally.

The extent of the investment and the benefits of predictable and stable wholesale prices

- 4.160 We have 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.

²¹⁸ 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.

- 4.161 As our SMP conditions involve price controls on the provision of network access to existing network elements, in accordance with the amended test in section 88 of the Act, we have also taken account of the benefits of predictable and stable wholesale prices in ensuring:
- a) efficient market entry; and
 - b) sufficient incentives for all undertakings to bring into operation new and enhanced networks.²¹⁹
- 4.162 Our decision to impose a charge control provides investors with greater certainty over the level of PIA rental charges and thus facilitates building a credible business case for deploying a network using PIA. Our approach to setting rental charges also seeks to provide more certainty to potential investors over the level of charges they will face in the long term - for example, in the way we have set the share of unit costs that PIA users should expect to pay.
- 4.163 Certainty and predictability over the level of charges for PIA is necessary to fully support investors' ability to build a viable business case for network deployment using PIA. With respect to PIA rental charges, although the charges in a given year will be relatively modest compared to the significant upfront costs of deploying a network using PIA, network investment decisions are typically evaluated over a long time horizon, over which time the total PIA rental charges could represent a material proportion of total costs over the lifetime of the investment.
- 4.164 We consider that our charge control achieves predictability of the level of charges over the period.
- 4.165 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.

Our approach to ancillaries, in particular network adjustments and the financial limit

- 4.166 In addition to the charges for rental services, PIA has a range of associated ancillary activities.

Our proposals

- 4.167 In our January 2020 Consultation, we referred to the following three categories of ancillary activities:

- Activities related to network adjustments: These occur where Openreach (or other operators on its behalf) undertakes work on the Openreach network to make it

²¹⁹ We also note the insertion of new provision 88(1A) of the Act which provides that Ofcom may refrain from setting a price control (even if the other section 88 tests are satisfied) if a demonstrable retail price constraint is present and other SMP conditions imposed as part of a different market review would ensure effective and non-discriminatory access. We have considered whether these tests may be satisfied in this case. We have concluded in light of our SMP determinations that they would unlikely be satisfied.

available for telecoms providers. For example, Openreach may need to repair broken section of duct or clear blockages in ducts. We proposed that:

- Openreach should recover the costs of network adjustments over all users of physical infrastructure in the same way as it does for BT and that these costs should be shared across all Openreach services that use the physical infrastructure.
 - However, we acknowledged that there were risks with this proposal as the costs and incidence of network adjustments are uncertain and variable. We therefore proposed that a financial limit of £4,750 (per km of spine duct) should apply to the costs of network adjustments and that any costs above this limit should be recovered directly from the telecoms provider requesting the network adjustment.
 - Network adjustments relating to overhead lead-ins would not be subject to a financial limit. The costs of these adjustments should be pooled and recovered across all users of the infrastructure.
 - 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 activities or order processing activities: these could relate to accessing network records or validation of communications providers' plans. In previous decisions, our calculation of PIA charges included specific costs incurred by Openreach to set up and manage PIA services, and to process individual PIA orders. However, we proposed to no longer assess these separately as the base year cost data that we used in the consultation included these costs.
 - Other miscellaneous activities related to using PIA, such as engineer accreditation activities or survey activities requiring input from Openreach. These are currently set on a 'basis of charges' approach, which means that these ancillary activity charges should be calculated based on their cost of provision. We proposed that this approach should continue.

Summary of stakeholder responses

- 4.168 Openreach made a number of comments on both duct and pole network adjustments. Those relating to non-pricing issues are considered in Volume 3, Section 4, here we set out those relating to pricing concerns on the financial limit.
- 4.169 Openreach supported our proposal to maintain a financial limit for certain network adjustments. However, it was concerned that the existing financial limit of £4,750 per kilometre was set too high.²²⁰ It felt that by setting the limit at what it considered too high a level PIA customers were not incentivised to maintain their own cost controls on network adjustments and operate efficiently. Further, they never had to take responsibility for the costs they generated. It also meant that Openreach's non-PIA customers would be required to cross-subsidise high cost PIA users.²²¹

²²⁰ Openreach response to January 2020 Consultation, para 6.210.

²²¹ Openreach response to January 2020 Consultation, para 6.215.

- 4.170 Openreach noted that it had received around 2000 relevant underground network adjustment orders since April 2019 and that “this is reporting significantly less than one underground network adjustment per kilometre on average i.e. this would be much more indicative and in line with Financial Limit of the order of £[redacted] (£400 - £1000) per kilometre”. Finally, its analysis of Openreach’s own network adjustments “average of the order of £[redacted] (£400 - £1000) per kilometre across all exchange areas, with 80% of exchange areas estimated at circa £[redacted] (£1000 - £2000) or less per kilometre”.²²²
- 4.171 On pole network adjustments Openreach felt that the setting of a reasonable upper financial limit to protect Openreach and its non-PIA customers from excessive costs would be a logical step to take.²²³ It said this would have important incentive effects to ensure PIA customers take account of the costs they generate in their business cases at least to some degree, and also provide incentives to innovate and plan ahead to minimise costs for Openreach and its non-PIA customers.²²⁴
- 4.172 Virgin Media noted that since the relaunch of PIA, “the Network Adjustment fund has been set at £4,750/km of spine and this has been held flat in nominal terms”. It said that “we believe there is merit in indexing the Network Adjustment fund so that its value does not erode during this charge control period.”²²⁵

Our decisions

- 4.173 We have already discussed productisation costs when we discussed how we determined the regulatory base and how we forecast this over the charge control period. We deal with what we mean by a basis of charges obligation in Section 5 on Ancillaries. We therefore restrict the discussion in this section to the recovery of network adjustment costs, the need for a financial limit on those and then what that level might be.

The recovery of network adjustment costs

- 4.174 Openreach is constantly adjusting its network to support BT’s own use of the physical infrastructure. Today’s infrastructure is the outcome of cumulative decisions over many years to install the original infrastructure and then modify it so can continue to be used.
- 4.175 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 that use the physical infrastructure. This reflects the view that the physical infrastructure is a shared asset used to provide a range of downstream services.
- 4.176 However, as we have said in previous statements, if PIA users faced the full up-front costs of network adjustments and recovered these across their own customer base, this is likely

²²² Openreach response to January 2020 Consultation, para 6.218.

²²³ Openreach response to January 2020 Consultation, para 6.221.

²²⁴ Openreach response to January 2020 Consultation, para 6.225.

²²⁵ Virgin Media response to November 2020 Consultation, page 11.

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.

4.177 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. Therefore, we have decided to continue with our previous policy that Openreach should recover the costs of network adjustments over all users of physical infrastructure in the same way as it does for BT and that these costs should be shared across all Openreach services that use the physical infrastructure.

4.178 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:

- 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.
- It reduces Openreach's ability to exploit any flexibility that it has to increase the costs of network adjustments to competing telecoms providers.
- It promotes investment by reducing the upfront costs of network deployment and the uncertainty that competing telecoms providers face over the level of expenditure required to make the physical infrastructure useable.

The need for a financial limit

4.179 However, the number, scope and cost of network adjustments is uncertain: costs might be relatively high in some circumstances. There is then a risk that our policy might promote investment where the benefits to consumers are not outweighed by the costs of deployment. In the WLA 2018 we sought to mitigate that risk by introducing a financial limit. Costs of network adjustments below that limit would be recovered over all users of physical infrastructure: costs above this limit should be recovered directly from the telecoms provider requesting the network adjustment. The financial limit we adopted was £4,750 (per km of spine duct) and that is the limit that we proposed in the January 2020 Consultation.

4.180 As noted above, Openreach has suggested that actual spend on network adjustments appears considerably lower than the amount allowed for by the financial limit. In addition,

BT's 2020 RFS shows that in 2018/19 all network adjustments costs were below the financial limit; and in 2019/20 all external network adjustments were below the limit, with £0.8m of internal spend being above the limit out of a total spend of £2.3m on internal network adjustments.

- 4.181 In principle, if we could be sure that network adjustment costs would not exceed £4,750 per kilometre of spine duct, the financial limit would no longer be necessary and could be removed. However, we do not have evidence to support that conclusion. We note that:
- Non-BT PIA use currently accounts for a very small proportion of Openreach's overall network. Therefore, current spend on network adjustment costs incurred by non-BT PIA users to date may not be a good indicator of what any "scale" expenditure may be in the future.
 - A large proportion of Openreach's own network adjustments are likely to have been required to support its FTTP rollout. However, this may not be a good indicator of network adjustments required by non-BT PIA users at scale as Openreach is likely to have prioritised areas where the infrastructure is in a better state of repair. Openreach says that 80% of these exchange areas were estimated to have costs of £[X] (£1000 - £2000) or less per kilometre. The corresponding figure for all exchange areas could well be higher.
 - Openreach's own network adjustment costs, as for example reported in the RFS, should be treated with some caution as, although subject to audit, we understand they are currently estimated through an analytic process at the end of the financial year.
- 4.182 We are keen to make the PIA product as simple to use as possible. So, another consideration is whether the introduction of the financial limit has introduced complexity that has undermined the effectiveness of the PIA remedy. We have some evidence that its introduction has caused some administrative complexity, as operators have commented that it is difficult to track financial limits across notice of intents and over time. The issue seems to be concentrated on the process for validating network adjustments, not the operation of the financial limit itself. Future systems improvements (i.e. the API) may make tracking and managing financial limits automatic and therefore much simpler.
- 4.183 Lastly, there is also the argument that the financial limit provides Openreach with some protection against very expensive network adjustments and without that it may be encouraged to introduce additional validation steps to protect itself.
- 4.184 It appears then that the risk that we might promote investment where the benefits to consumers are not outweighed by the costs of deployment may now be smaller. But we do not have sufficient evidence to remove the financial limit, nor do we have evidence to suggest that it is undermining the effectiveness of the remedy (particularly once an API is in place). Therefore, whilst removing the financial limit would undoubtedly simplify the PIA product, this is not sufficient to justify removing it. We have therefore decided to retain the financial limit.
- 4.185 Lastly, we consider whether there is need for a financial limit for pole specific network adjustment as Openreach suggests. For poles where an existing pole is capacity

constrained, adjustments to provide additional capacity on poles are likely to be required. Where poles have capacity but cannot be used because they are defective, pole repairs and replacement are likely to be required.²²⁶

- 4.186 In the 2018 WLA we decided that the costs of making these types of adjustments for the purpose of attaching dropwires should be treated differently from other network adjustments and that such costs should instead be recovered from all users of the infrastructure without limitation. We remain of that view. This is because we view the balance of risks associated with setting a limit and not setting a limit in relation to these adjustments to be materially different from other types of network adjustment for the reasons outlined below.
- 4.187 Overhead lead-ins are likely to be the lowest cost means of connecting individual premises to a network in general, as using an aerial cable avoids the costly civil works required to deploy underground lead-ins.²²⁷ Moreover, the barriers to installing additional poles (for example, opposition from residents) make BT's existing pole infrastructure a particularly important enabler of commercially viable network competition. Therefore, we want to ensure that our approach to recovering the cost of network adjustments related to enabling poles to be used for dropwires does not in any way discourage the use of BT's existing poles. If we subject these network adjustments to a financial limit and set the limit too low, there is a risk that we will undermine the effectiveness of the remedy.
- 4.188 Conversely, we think the risks associated with not applying a financial limit for these network adjustments are small. In particular, given the relative efficiency of using BT's poles for lead-ins compared to underground lead-ins, encouraging the use of BT's poles is less likely to result in entry where the benefits to consumers are not outweighed by the costs of deployment, particularly given other network adjustment costs are subject to a financial limit. The costs of poles network adjustments are also likely to be relatively modest compared to other network adjustments so the uncertainty faced by Openreach as to the level of costs it will have to fund upfront is relatively limited.
- 4.189 We have therefore decided not to impose a separate financial limit for poles network adjustments, i.e. to continue with the regime as it currently operates. 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.
- 4.190 Other network adjustments on poles, but not related to enabling poles to be used for dropwires, are subject to the financial limit.

²²⁶ In both cases, this is subject to the adjustment being necessary (e.g. there are no alternatives available, such as using another pole nearby) and feasible.

²²⁷ For underground lead-ins, civil works are at least required to get the fibre to edge of the property boundary. Civil works may also be required to get the fibre to the outside wall of the house.

The level of the financial limit

- 4.191 Openreach's argument is that the limit is significantly above average costs, and therefore does not set the correct incentive for PIA customers to maintain their own cost controls on network adjustments and operate efficiently, i.e. by looking for alternatives to network adjustments.
- 4.192 However, this is not the objective of the financial limit.²²⁸ As discussed above, the objective of the financial limit is, given that network adjustment costs might be relatively high in some circumstances, to mitigate the risk that our policy might promote investment where the benefits to consumers are not outweighed by the costs of deployment.
- 4.193 The only reason for reducing the financial limit would be if the scale of benefits from network competition had changed. Openreach showing that [X] does not mean the financial limit should be lower.
- 4.194 Openreach claims that operational experience demonstrates that the correct customer behaviours are not being incentivised. It argues that it would be better to have a lower financial limit than for it to employ more resource to deal with excessive numbers of invalid orders. We disagree.
- The fact that Openreach can reject invalid requests provides evidence that our guidance (i.e. the three criteria) is working.
 - The level of invalid requests is likely to decrease as operators become more experienced in the process.²²⁹
 - There are other incentives on operators to minimise the number of invalid requests. Openreach levies a fee for each invalid request. Further, a low proportion of invalid requests is required for an operator to achieve "path to collaboration" status whereby network adjustment requests are subject to less stringent (and so faster) validation.
- 4.195 We have therefore decided not to lower the financial limit. Similarly, we have decided not to raise the financial limit. PIA take-up is still currently low, and we have no evidence that the current limit is preventing network investment taking place. Having a different financial limit applying in different years would also introduce complexity. We have therefore decided to keep the financial limit at its current level of £4,750 per km of spine duct.
- 4.196 Finally we confirm that we have decided to adopt our January 2020 proposal 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.

²²⁸ Openreach referred to our 2017 DPA Consultation in its response. It is correct that in that consultation, we considered that the financial limit had a role in providing an incentive for telecoms providers to request adjustments only where they represented the most efficient option available for overcoming an unusable section of the physical infrastructure. However, in the 2018 WLA Statement, we explained that in light of our guidance setting out the extent to which Openreach is obliged to make network adjustments - i.e. the three criteria - we considered that the risk of inefficient network adjustments being made is small.

²²⁹ Openreach noted that 28% of network adjustment NA orders over the period April 2019 to March 2020 have been rejected as invalid. Openreach response to the January 2020 Consultation, paragraph 6.216.

Costs of removing and replacing existing equipment

4.197 When network adjustments are undertaken, existing users of the infrastructure (including Openreach) may be required to temporarily remove their equipment so that the works can be carried out. To clarify, the costs incurred in temporarily removing and replacing a telecoms provider's equipment so that a network adjustment can be undertaken should be covered by that telecoms provider, and not recovered across all users of the physical infrastructure.²³⁰

Legal tests

4.198 We have decided to set SMP conditions on BT in relation to ancillary services relating to PIA to give effect to the pricing remedies described above. Our SMP conditions can be found in Volume 7.

4.199 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.

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

- promoting efficiency;
- promoting sustainable competition;
- conferring the greatest possible benefits on end user of public electronic communications services having regard, where relevant to the market analysis, to the long-term interests of end-users in the use of next-generation networks; and
- promoting the availability and use of new and enhanced networks.

4.201 We have also considered:

- the extent of the investment in the matters to which the condition relates of the person to whom it is to apply; and
- the benefits of predictable and stable wholesale prices in ensuring—
 - efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.

Promoting efficiency

4.202 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.

²³⁰ This applies to Openreach and competing telecoms providers. We note that in the past this approach had not been consistently applied and re-cabling activities were included within the PIA pole rental charges.

Promoting sustainable competition and conferring the greatest possible benefits on end user of public electronic communications services

- 4.203 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.
- 4.204 We also 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.

Promoting the availability and use of new and enhanced networks

- 4.205 As set out in Volume 1, the test set out in section 88 of the Act has been amended to give effect to Article 74 of the EECC. We have considered the test as amended to satisfy ourselves that in determining whether price control obligations would be appropriate, we have taken 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. We have also taken account of the need to ensure that the cost recovery methodology and pricing mechanism we have decided to adopt serve to promote the deployment of new and enhanced networks.
- 4.206 Our approach to pricing of network adjustments will support competitive investment in new and enhanced gigabit capable networks. In particular, if we had not decided to require Openreach to pool the costs of network adjustments below the financial limit, this might have undermined the case for competitive network investment. Requiring the cost of the adjustments to be recovered across all users of the physical infrastructure will ensure that there is a level playing field between Openreach and competing networks, encouraging them to invest.

The extent of the investment and the benefits of predictable and stable wholesale prices

- 4.207 We have also taken account of the extent of BT's investment in PIA assets as the charge controls we are setting 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.

- 4.208 As our SMP conditions involve price controls on the provision of network access to existing network elements, in accordance with the amended test in section 88 of the Act, we have also taken account of the benefits of predictable and stable wholesale prices in ensuring—
- efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.²³¹
- 4.209 By imposing a financial limit, setting a basis of charges obligation and requiring Openreach to recover the costs of network adjustments below the limit over all users of the infrastructure, we are providing investors with greater certainty over the level of these charges. Any network adjustment charges will generally be incurred upfront and so will be a critical input into any investment decision. Having greater certainty on these will therefore help facilitate building a credible business case for deploying a network using PIA.
- 4.210 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.

²³¹ We also note the insertion of new provision 88(1A) of the Act which provides that Ofcom may refrain from setting a price control (even if the other section 88 tests are satisfied) if a demonstrable retail price constraint is present and other SMP conditions imposed as part of a different market review would ensure effective and non-discriminatory access. We have considered whether these tests may be satisfied in this case. We have concluded in light of our SMP determinations that they would unlikely be satisfied.

5. Ancillaries

- 5.1 As set out in Volume 3 Section 4 (PIA specific remedies) and Volume 3 Section 5 (WLA, Leased line, IEC specific remedies), we are requiring the provision of such ancillary services as are reasonably necessary for the use of network access remedies in the physical infrastructure, WLA, HNR, Leased lines access and IEC markets.
- 5.2 In this section, we set out our decisions for pricing of these ancillaries. A summary of our decisions is provided for each market in in Tables 5.1 – 5.6 below.

Table 5.1: Physical infrastructure

Ancillaries service (basket if indicated)	Ancillary services/detail	Control for review period
Accommodation, Cablelink, Power	(see cross-market section below)	(see cross-market section below)
Any new ancillaries used for PIA		Basis of charges obligation for each new ancillary
Network adjustment ancillaries services		Basis of charges obligation

Table 5.2: Leased Lines access in Area 2 and Area 3, and IEC (BT Only and BT +1)

Ancillaries service (basket if indicated)	Ancillary services/detail	Control for review period
Accommodation, Cablelink, Power, Site and Database Access	(see cross-market section below)	(see cross-market section below)
Excess Construction Charges basket	Direct ECCs e.g. blown fibre, internal cabling, survey fees	CPI-0% on basket <i>Sub-cap on each charge: CPI+5%</i>

	Contractor ECCs	Basis of charges obligation
Ethernet Time Related Charge (TRC)	Individual Ethernet TRCs	CPI-0% for each Ethernet TRC
Other ancillaries ²³²	All other ancillaries excluding the leased lines ancillaries listed above	CPI-0% for each charge

Table 5.3: Dark fibre access in Area 3 and IEC (BT Only)

Ancillaries service (basket if indicated)	Ancillary services/detail	Control for review period
Right When Tested (RWT), dark fibre cessation, initial testing, and patch panels		CPI-0% for each charge
TRCs and ECCs	As per leased lines above	As per leased lines above

Table 5.4: Leased Lines access in the HNR areas

Ancillaries service (basket if indicated)	Ancillary services/detail	Control for review period
All Leased Lines ancillaries listed above		Fair and reasonable charges

Table 5.5: WLA Areas 2 and 3

Ancillaries service (basket if indicated)	Ancillary services/detail	Control for review period
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%

²³² Referred to as Exempt ancillary services in the Legal Conditions but referred to in this section as 'Other ancillaries'.

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%
GEA (FTTP) Connections	Our decisions relating to FTTP connections are set out in 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%

Table 5.6: Cross-market Physical Infrastructure, WLA (Area 2 and Area 3), Leased lines access (Area 2 and Area 3) and IEC.

Ancillaries service (basket if indicated)	Ancillary services/detail	Control for review period
Cablelink basket ²³³	External Cablelink Internal Cablelink	CPI-0%
Accommodation basket ²³⁴	Co-location and co-mingling for PIA, MPF, VULA, and leased lines ²³⁵	CPI-0%
Electricity charge		Basis of charges

Our approach to setting ancillary charge controls

5.3 Absent regulation in each of the physical infrastructure, WLA, LL 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.

Physical Infrastructure Access

Our proposals

- 5.4 In Volume 4 Section 5 of the January 2020 Consultation, we proposed to apply a basis of charges obligation to PIA ancillaries.
- 5.5 In the November 2020 Consultation, we explained how we intended to interpret this proposed basis of charges obligation for PIA ancillaries. We proposed that the price for each PIA ancillary should reflect any incremental external charges paid by BT (e.g. the cost of external labour used to provide the ancillary). We proposed that the price can also include an allowance for any incremental costs incurred by BT when providing ancillaries (e.g. BT's internal labour and planning costs relating to PIA ancillaries), include an appropriate mark-up for common costs (e.g. general overheads) and include a return on capital employed. To ensure prices reflect the cost of provision, we said that total costs associated with PIA ancillary services under the basis of charges obligation should be consistent with the operating and capital costs of the relevant PIA services in the RFS. We

²³³ We are imposing an interconnection obligation as set out in Volume 3 Section 5.

²³⁴ We are imposing an obligation on BT to provide PIA Site Access and PIA database access.

²³⁵ See the [Openreach Product site for PIA](https://www.openreach.co.uk/org/home/products/pricing/loadProductPriceDetails.do?data=BXz41J6zPqN4Eur3f4yDkmrHjN3v60VLJITHqZbd8IMnGHsqdC0vzO163bJmh34D91D7M0q8u%2FIISgtIFAKw%3D%3D), that 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/org/home/products/pricing/loadProductPriceDetails.do?data=BXz41J6zPqN4Eur3f4yDkmrHjN3v60VLJITHqZbd8IMnGHsqdC0vzO163bJmh34D91D7M0q8u%2FIISgtIFAKw%3D%3D>. This shows that accommodation is a cross-market ancillary.

said that we expected prices for PIA ancillaries to be similar to fully allocated costs (FAC) rather than an alternative cost standard such as distributed standalone cost (DSAC).

Stakeholder responses to our proposals

- 5.6 Openreach broadly supported our proposal for PIA ancillaries and new PIA ancillaries to be priced on a basis of charges approach.²³⁶
- 5.7 Openreach, CityFibre, Community Fibre, BUUK, KCOM, TalkTalk, and the Joint Altnet Response submitted by GOS Consulting all agreed with our proposed interpretation of the basis of charges obligation.²³⁷
- 5.8 Community Fibre however did suggest that we should undertake a benchmarking exercise to verify the charge levels being applied by Openreach.²³⁸
- 5.9 In relation to the basis of charges obligation on PIA ancillaries and contractor ECCs, TalkTalk suggested that we should impose a true-up mechanism so that if, in any one year, the price is too high or low, the following years' prices are adjusted down or up accordingly.²³⁹

Our reasoning and decisions

- 5.10 We have decided to impose a basis of charges obligation for PIA ancillaries as proposed in our January 2020 Consultation. We have also decided to broadly adopt the basis of charges interpretation that we proposed in our November 2020 Consultation.
- 5.11 We believe that, given the current low value of ancillary services, a charge control would be disproportionate in this case and a basis of charges obligation is more appropriate and proportionate.
- 5.12 We do not think that DSAC is an appropriate benchmark for the basis of charges obligation, as any efficiency benefits of providing BT with the additional flexibility that DSAC offers (over FAC) are likely to be small, and outweighed by the risk that BT exploits this additional flexibility to the detriment of PIA users, and ultimately, end-users.²⁴⁰
- 5.13 Instead we consider that the basis of charges obligation in this case means the price for each PIA ancillary service should reflect any incremental external charges paid by BT (e.g. the cost of external labour used to provide the ancillary). The price can also include an allowance for any incremental costs incurred by BT when providing ancillaries (e.g. BT's internal labour and planning costs relating to PIA ancillaries), including an appropriate

²³⁶ [Openreach](#) response to January 2020 Consultation, paragraph 9.136.

²³⁷ [Openreach](#), [CityFibre](#), [Community Fibre](#), [BUUK](#), [KCOM](#), [TalkTalk](#), [Joint Altnet Response submitted by GOS Consulting](#) responses to November 2020 Consultation.

²³⁸ Community Fibre response to November 2020 Consultation, page 7.

²³⁹ TalkTalk response to November 2020 Consultation, paragraph 6.5.

²⁴⁰ A key difference between DSAC and FAC is that DSAC allows the regulated firm more flexibility to recover all its costs. FAC represents one specific view of cost allocation and allows the regulated firm little flexibility if it wishes to recover all its costs. If any price is below FAC, then another price needs to be above FAC for the firm to recover its costs. In contrast, charges can be below DSAC and still allow for full cost recovery. This is because the sum of DSACs exceeds BT's total costs.

mark-up for common costs (e.g. general overheads) and a return on capital employed (where applicable).

- 5.14 To ensure that prices reflect the cost of provision, we consider that total costs associated with PIA ancillary services under the basis of charges obligation should be consistent with the operating and capital costs associated with the relevant PIA ancillaries, i.e. we expect prices for PIA ancillaries to be similar to FAC rather than an alternative cost standard such as distributed standalone cost DSAC. We consider that this will address the risk that prices for PIA ancillaries are high relative to cost while allowing BT to recover its efficiently incurred costs. We also note that interpreting the basis of charges with reference to FAC is consistent with the charge controls that we are setting on PIA services (Section 5). In Volume 6 Section 5, we set out the cost information that BT must provide to us to help assess its compliance with the basis of charges obligation.
- 5.15 We recognise there could be a gap between BT setting prices and contemporaneous cost information becoming available, but we expect BT to be able to explain and justify any significant differences between PIA ancillary prices and associated FAC for the purposes of the basis of charges obligation.
- 5.16 With regards to TalkTalk's suggestion that we should impose a 'true-up mechanism' to enable price adjustments in subsequent years, we do not consider that such a mechanism would provide the efficiency incentives that our proposed approach would, i.e. BT is incentivised to align costs with charges. BT will be required to comply with the basis of charges obligation in each period and any under or over-recovery will not be passed on to the following period; e.g. if BT prices below cost in period one, it could not then price in excess of cost in period two as this would likely constitute a breach of the basis of charges obligation in period two.
- 5.17 We disagree with Community Fibre that we should benchmark BT's charges as the purpose of the basis of charges obligation is to address the risk that BT charges excessively for relevant services, while ensuring it can recover its efficiently incurred costs. The obligation requires BT to demonstrate to Ofcom that its charges are reasonably derived from the cost of provision, that is, derived from its own costs.
- 5.18 As set out in Volume 6, we have imposed financial reporting obligations on BT in respect of PI ancillaries. This requires BT to provide us with a cost breakdown for each PI ancillary on an annual basis. For compliance monitoring purposes, we will review this information to ensure that charges are aligned to costs and monitor trends in cost. Where we observe large and/or unexpected variances or movements, we will investigate as appropriate and if we find that BT is in breach of the basis of charges obligation, we will consider what enforcement action to take. We believe this is a more practical and proportionate approach than cost benchmarking to other operators that supply similar services.

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

General approach of CPI-0% on WLA and LL Access in Area 2 and Area 3, and IEC markets (BT Only and BT +1)

Our proposals

5.19 For the majority of ancillaries, we proposed setting a cost-based control by implementing a CPI-0% control on charges.²⁴¹ We considered that a CPI-0% control resulted in a cost-based control for the following reasons:

- As part of the previous WLA²⁴², BCMR²⁴³ and PIMR²⁴⁴ reviews, we examined ancillary costs and charges and implemented CPI-X controls for specific ancillaries to bring the charges in line with costs. Given that the detailed cost modelling we conducted as part of the recent market reviews had largely brought ancillaries in line with costs, we did not consider that further cost modelling would make a material difference to the alignment of charges to costs.²⁴⁵ Therefore, we believed that the prices of ancillary services in aggregate would be close to cost by the end of the current charge control period in March 2021.
- We considered that subsequent changes in costs over the forthcoming market review period were likely to track inflation relatively closely. As a cross check to this and noting that the key cost component for ancillaries are labour costs, our forecast of labour costs predicted these to increase on average by 1% above CPI over the next five years.²⁴⁶ However, we considered that the difference in labour costs and inflation would be largely offset by the expected marginal efficiencies over the review period.

Stakeholder responses to our proposals

5.20 Openreach broadly supported our proposal to set the charge control for some ancillaries at CPI-0%. However, it raised some concerns with the potential for cost recovery for certain ancillary services. Openreach gave the examples of (i) Time Related Charges for the WLA market; and (ii) Special Fault Investigation as ancillary services whose prices should rise in order to cover current costs.²⁴⁷

Our reasoning and decisions

5.21 For the reasons set out below we have decided to set a CPI-0% control on the majority of ancillary services (see Table 6.1 above). We consider that it is appropriate to set a cost

²⁴¹ See Table 6.1 above.

²⁴² [2018 WLA Statement](#), Volume 2.

²⁴³ [2019 BCMR Statement](#), Volume 2.

²⁴⁴ [2019 PIMR Statement](#), Volume 1.

²⁴⁵ 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 of these charges in this review would not lead to costs being more accurate or reliable.

²⁴⁶ Our forecast for labour costs is explained in the opex section of Annex 16.

²⁴⁷ Openreach response to January 2020 Consultation, paragraphs 9.299 – 9.300.

- based control on those ancillary services and we consider that CPI-0% will achieve this outcome.
- 5.22 We do not agree with Openreach that this approach will result in is a risk of under-recovery for ancillaries in aggregate or in relation to the two specific cases identified by Openreach.
- 5.23 One of our objectives in the pricing of ancillaries is for Openreach to be able to recover its efficiently incurred costs in aggregate. By efficiently incurred costs, we mean the incremental cost plus an allocation of common costs which would be sufficient for Openreach to recover the fully allocated cost (FAC) of providing the services in question. We have assessed the ability of Openreach to recover its costs for ancillaries by forecasting both costs and revenues out to 2025/26.
- 5.24 Revenues are currently broadly in line with costs and so we believe it is appropriate to take a simple approach to our modelling. In all forecast years, we have assumed that volumes remain flat. We have also assumed that revenues in 2020/21 are equal those in 2019/20 and from 2021/22 onwards revenues increase by CPI-0%. We have forecast costs using the assumptions for efficiency, WACC and inflation set out in Annex 14.²⁴⁸ For 2020/21 we use a set of assumptions that are consistent with those assumed within the 2018 WLA and 2019 BCMR statements for 2020/21.²⁴⁹ This modelling has shown that Openreach will be able to recover its costs in aggregate over the charge control period if we apply a CPI-0 set of charge controls.
- 5.25 We accept that under this approach some prices for ancillaries will be above FAC, whilst other will be below FAC.²⁵⁰ However, we do not consider this gives rise to concerns because Openreach will still have the opportunity to recover its efficiently incurred costs in aggregate.
- 5.26 Specifically in relation to the concern raised by Openreach that it would under-recover its costs in relation to Special Fault Investigation, as our approach in this review has been to consider cost recovery at an aggregate level, we have not undertaken the task of assessing cost recovery specifically in relation to the Special Fault Investigation ancillary service. We note that in the 2018 WLA Market Review we re-allocated costs from Special Fault Investigation to MPF Rentals in order to ensure appropriate cost recovery specifically in relation to this ancillary service. However, we do not consider that a similar exercise of considering the re-allocation of costs is necessary as part of this review, as, when taken in aggregate the specific allocation of costs will not materially impact our overall assessment of cost recovery.

²⁴⁸ Opex efficiency: WLA 3.5%, LL 5.0%. Capex efficiency: WLA 3%, LL 4.5%. Inflation: pay 2.7%, non-pay 2.2%, RPI (for duct and copper asset inflation) 2.4%. WACC: WLA 7.0%, LL 7.8%.

²⁴⁹ Opex efficiency: WLA 4.8%, LL 6.5%. Capex efficiency: WLA 3%, LL 4.5%. Inflation: pay 1%, non-pay inflation 1.3%, RPI (for duct and copper asset inflation) 1.1%.

²⁵⁰ 2018 WLA Statement -Volume 2 Table 1.2 sets out the services where prices were set at LRIC. These were: MPF Single Migration, MPF Bulk Migration, PCP Only Install 40/10, Start of Stopped Line 40/10 and GEA (FTTC and FTTP) CP to CP Migrations.

5.27 In relation to Openreach’s concerns that it would under-recover its costs in relation to WLA Time related charges (TRCs), we do not agree with Openreach’s suggestion that there would be significant under-recovery. Having looked into this issue, we believe that the price of TRCs is in fact relatively close to the costs incurred specifically in relation to TRCs with 19/20 Total FAC for WLA TRCs being £[<] and total revenue being £[<]. In any case, as noted above, we believe that in aggregate Openreach will be able to recover the cost of its ancillaries across the control period.

Specific comments on some Ancillary services for WLA and LL Access in Area 2 and Area 3, and IEC markets (BT Only and BT +1)

5.28 We outline above our general approach to impose a control of CPI-0% for the majority of Ancillaries in the WLA and LL Access in Area 2 and Area 3, IEC markets. Below, we discuss the detail of some Ancillary services to provide greater clarity on specific Ancillary services and to respond to stakeholder comments.

Charges for TRCs used for dark fibre

Our proposals

5.29 We proposed a CPI-0% charge control for Ethernet TRCs used for dark fibre, in the form of a per-visit charge, as well as controls on initial testing, patch panels, RWT, and cessation activities for dark fibre.²⁵¹

Table 5.2: Proposed CPI controls for ancillaries used for dark fibre

Ancillary service	CPI controls for dark fibre ancillaries
Each Ethernet TRC used for dark fibre	As for actives: CPI-0% on each charge
RWT for dark fibre (per applicable RWT fault)	CPI-0%
Cessation charge	CPI-0%
Initial testing	CPI-0%
Patch panel	CPI-0%

Stakeholder responses to our proposals

5.30 We did not receive any comments from stakeholders on the charges for TRCs used for dark fibre. We address stakeholder comments on the charges for ancillary services that are specific to dark fibre in Annex 16.

²⁵¹ By Time Related Charges we mean: Standard Chargeable Visit, Additional Hour, Supplementary Charges (Per Visit), Supplementary Charges (Per Hour), Internal and External Shifts, and Additional Line Shifted.

Our reasoning and decisions

- 5.31 We continue to consider that it is appropriate to impose a CPI-0% control on Ethernet TRCs used for dark fibre, initial testing, patch panels, RWT, and cessation charges for dark fibre. We consider that without this control, consumers would not be sufficiently protected.
- 5.32 We also consider that it is appropriate for the charges for Ethernet TRCs used for dark fibre to be the same as those used for active circuits, this is because the activities that need to be carried out, and the costs incurred, for Ethernet TRCs are the same for dark fibre as they are for active circuits.
- 5.33 However, we do not consider that the charges for other dark fibre ancillaries should be the same as those for active circuits because the activities needed, and the costs incurred, are different for dark fibre as they are for active circuits. For example, the dark fibre variants require engineering call-outs whereas active circuits can be ceased and tested remotely.

WLA FTTP connections

Our proposals

- 5.34 In Volume 3 Section 2, of our January 2020 Consultation, we proposed that where Openreach had deployed its ultrafast network to cover 100% of premises within an exchange area²⁵², the charge control relating to copper services should be removed and only the charge control on services provided on the fibre network should apply.
- 5.35 We proposed an approach to charge controlling FTTP connections that aligned with our proposals to transition regulation from copper services to fibre services as Openreach deployed its fibre network.
- 5.36 We proposed that prior to the First Threshold Notice being published:
- Where FTTC services were not available, to set charge control FTTP connections at CPI-0%
 - Where FTTC services were available, no charge control on FTTP connections would apply.
- 5.37 We proposed that on publication of the First Threshold Notice:
- Where copper services were available the FTTP 40/10 connection charge is set to zero.
- 5.38 We proposed that on publication of the Second Threshold Notice:
- The FTTP 40/10 connection charge is set to zero.
- 5.39 As part of our January 2020 Consultation and July 2020 Consultation, our proposals applied to both Area 2 and Area 3.

²⁵² In Volume 3 Section 2, we provided details of our proposed approach to transitioning our regulation from copper services to fibre services. We discussed how we intended to assess 100% coverage in an exchange area, including premises where Openreach is not able to deploy ultrafast services despite all best endeavours.

Stakeholder responses to our proposals

- 5.40 Openreach asked for further clarity on the approach to FTTP connections and made the following comments:
- Openreach strongly supported the approach that the first time a premises is connected to FTTP, Openreach should be able to charge for a full price connection (since the significant cost to connect the premises to FTTP for the first time);
 - Openreach argued that where it restarts an existing FTTP line (and which passes testing in advance), a £0 charge should not apply. As a system delivered order, it would have similar cost stack to a product such as bandwidth modify (currently priced at £5.88);
 - Openreach argued that where it restarts an FTTP line that has not been used for a period of time (and fails testing) it will need to send an engineer to investigate the line, in which case the charge should be in line with the new connection price.²⁵³
- 5.41 Vodafone asked for clarity on the issue of connection charges for national migration. It argued that where a customer premises is already connected to the Openreach network and is the subject of a forced migration programme, then no re-connection charges should be levied.²⁵⁴

Our reasoning and decisions

- 5.42 In Volume 4 Section 1 and Section 2, we set out our decision to set charge controls In Area 2 and Area 3 on MPF and FTTC 40/10 rentals (and allow price flexibility on other bandwidths) prior to the retirement of the copper network. In Volume X Section Y, we set out our decisions for transitioning our regulation from copper services to fibre services as Openreach deploys its ultrafast network in an exchange area. This includes the transition of our charge controls of MPF and FTTC 40/10 rentals to the FTTP 40/10 product.
- 5.43 We have taken an approach to charge controlling FTTP connections that is consistent with our overall approach to setting charge controls for WLA rental services (including the transitioning of our regulation from copper services to fibre services as Openreach deploys its ultrafast network in an exchange area).
- 5.44 Our decisions relating to charge controlling FTTP connections apply to both WLA Area 2 and WLA Area 3.
- 5.45 In Volume 3 Section 2, we explain that in relation to transitioning our regulation from the copper network to the fibre network:
- On publication of the First Threshold Notice, Openreach is no longer required to provide new copper connections. For those premises where new copper connections are not available, the charge control applies to FTTP 40/10 rentals.

²⁵³ Openreach response to January 2020 Consultation, paragraph 9.172.

²⁵⁴ [Vodafone](#) response to Measures to support Openreach's proposed trials in Salisbury and Mildenhall November 2019 Consultation, page 3.

- On publication of the Second Threshold Notice, in addition to Openreach no longer being required to provide new copper connections, the charge controls on copper services are lifted (with charge controls continuing to apply to FTTP 40/10 rentals)
- 5.46 In Section 1, 2 and Annex 19, we set out our decision to include a fibre premium on FTTP 40/10 rentals where a charge control is applied to fibre services (e.g. post copper retirement) to capture the additional benefit to customers from an FTTP service relative to the comparable FTTC service. We do not consider that our charge controls on FTTP connections should allow for Openreach to levy additional charges to existing customers on its network (i.e. customers with an active Openreach connection) since any additional benefits from FTTP have already been captured through our charge controls on rentals.
- 5.47 However, where a premises does not have an active connection to the Openreach network, the considerations that apply to migration from FTTC to FTTP do not apply.
- 5.48 Given this, as our regulation transitions from copper services to fibre, our charge controls for FTTP connections draw a distinction between customers that have an active Openreach connection and those that do not.
- 5.49 Reflecting the above, our decisions on FTTP connections are set out in Table X below.

Table 5.3: FTTP connection charge controls

Prior to publication of First Threshold Notice	
Where FTTC is available	No charge control on FTTP connections.
Where FTTC is not available	CPI-0% cap on FTTP 40/10 connections only ²⁵⁵
On publication of First Threshold Notice published and on publication of Second Threshold Notice	
Premises with active Openreach connection	£0 charge cap on FTTP 40/10 connections only
Premises without active Openreach connection	CPI-0% cap on FTTP 40/10 connections only

National prices

Our proposals

- 5.50 In our January 2020 Consultation we proposed that, where BT has an obligation to provide the same ancillary service in different geographic markets, the same charge control should be set in each market; essentially setting a national price, rather than setting different prices in different geographic markets.

²⁵⁵ As explained in Section 3, the FVA and FTTP transition products that we referred to in our January 2020 Consultation have been withdrawn from supply and therefore we will charge control the FTTP data variant.

Stakeholder responses to our proposals

5.51 We did not receive any comments on this from stakeholders.

Our reasoning and decisions

5.52 We have decided that where BT has an obligation to provide the same ancillary service in different geographic markets, it should be required to set the same charge control in each market; essentially setting a national price, rather than setting different prices in different geographic markets.

5.53 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.

Openreach Excess Construction Charges

Our proposals

5.54 In our January 2020 Consultation, we proposed to adopt a separate basket for Direct Excess Construction Charges²⁵⁶. We proposed that this basket should be subject to a CPI-0% control but also proposed a sub-cap on each individual charge within this basket at CPI+5%.

5.55 We proposed to continue the approach taken in the 2019 BCMR to exempt new provisions of Openreach EAD services from the first £2,800 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.

5.56 We also proposed that BT must calculate the ECC balancing charge 60 days after the end of each financial year, meaning that BT would need to calculate the charge by the end of May each year.

Stakeholder responses to our proposals

5.57 Openreach suggested that our requirement for Openreach to have the ECC balancing charge for the year notified by the end of May should instead be extended until the end of June. Openreach stated that this would give it sufficient time to analyse and ensure the robustness of the balancing charge calculation. Openreach cited the difficulties it had in

²⁵⁶ (ECCs for cable (fibre or copper) including any jointing required, blown fibre, blown fibre tubing in duct, internal cabling (including internal blown fibre tubing), overblow services, fibre cable and survey fee/planning charges using Openreach direct labour).

meeting the May deadline in the single year (2020) under its existing notification requirement.²⁵⁷

- 5.58 In relation to the direct ECC basket, Openreach said that it was unable to rebalance charges in the ECC basket as it could not demonstrate revenue weights that reconcile to the RFS. It instead proposed to estimate individual ECC revenue weights by multiplying prior year prices by prior year volume.²⁵⁸
- 5.59 Openreach also commented on the ECC survey, which is one of the products in the direct ECC basket. Openreach said that, where it uses internal labour, the proposed regulated price of £244.52 implied a 4-hour task time, while it considered a 5-hour task time would be more appropriate.²⁵⁹ As it would not be able to demonstrate revenue weights for the ECC basket, Openreach said it could not increase the price of ECC surveys. Openreach said we should apply a starting charge adjustment to increase the ECC survey charge to £306 to cover a 5-hour task time.²⁶⁰ Openreach added that where it uses contractors to perform surveys, their costs are also above the regulated ECC survey charge.²⁶¹
- 5.60 Vodafone suggested that other operators besides Openreach should now have access to the ECC fund.²⁶²
- 5.61 Vodafone also said that as Openreach have extended fibre to many new business premises over the past 5 years, they increasingly do not need to actually extend fibre to businesses and therefore the funding is needed in fewer cases.²⁶³

Our reasoning and decisions

- 5.62 In the 2019 BCMR, we decided to exempt new provisions of Openreach EAD services from the first £2,800 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. Our view was that that use of a threshold charge would significantly reduce the lead times for provisioning of most of the EAD orders which incur ECCs. Furthermore, we considered that this approach ensured cost recovery and revenue neutrality.²⁶⁴ We preferred a flexible balancing charge over a fixed balancing charge because we considered 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 were fixed.²⁶⁵

²⁵⁷ Openreach response to January 2020 Consultation, paragraph 9.314.

²⁵⁸ Openreach response to January 2020 Consultation, paragraph 9.312.

²⁵⁹ Openreach response to January 2020 Consultation, paragraph 9.313.

²⁶⁰ Openreach response to January 2020 Consultation, paragraph 9.312.

²⁶¹ Openreach response to January 2020 Consultation, paragraph 9.313.

²⁶² [Vodafone](#) response to January 2020 Consultation, part 3, paragraph 11.13.

²⁶³ Vodafone response to January 2020 Consultation, part 3, paragraph 11.13.

²⁶⁴ To ensure Openreach used this flexibility appropriately, we required it to demonstrate that the balancing charge was set to ensure revenue neutrality.

²⁶⁵ 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.

- 5.63 We continue to consider that the use of a threshold charge will significantly reduce the lead times for provisioning of most of the EAD orders which incur ECCs. Therefore, we have decided to continue the approach used in the 2019 BCMR whereby new provisions of Openreach EAD services are exempt from the first £2,800²⁶⁶ 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. We consider that this will ensure cost recovery and revenue neutrality in the event of changes in the distribution and incidence of ECCs.
- 5.64 Consistent with the existing approach, 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 should be capitalised and recovered from connection and rental charges for multiple services over time.
- 5.65 We consider it appropriate to maintain our proposals from the January 2020 Consultation to impose a CPI-0% control on the Direct ECC basket, with a CPI+5% sub-cap on each charge within the basket. This is consistent with the approach we took in the BCMR 2019 and we consider strikes the appropriate balance of mitigating the risk of high pricing relative to cost with ensuring cost recovery.²⁶⁷
- 5.66 Basket controls are usually weighted by prior year revenues and BT often reconciles revenue to the RFS to provide assurance that the revenues used for compliance purposes are accurate, though the SMP condition does not explicitly require this. In this instance, we recognise that it would be difficult for BT to demonstrate revenue weights that reconcile to the RFS and consider that Openreach's proposal to estimate revenue weights for individual services by multiplying prior year prices by prior year volumes is a reasonable approach. To ensure we understand how the revenue weights have been derived BT must include the details of this revenue calculation and we have amended the SMP Condition accordingly. We have decided that BT should be required to provide this information to Ofcom under SMP condition 12G.16. BT will be also required to publish a non-confidential version of that information.
- 5.67 This clarification on calculating the revenue weights will allow BT to rebalance charges in the ECC basket. We consider this will provide BT with sufficient flexibility to increase ECC survey charges where necessary (up to CPI+5% per year under the sub cap) and that a starting charge adjustment is not required.
- 5.68 With regards to Vodafone's comments, the ECC fixed fee is set to ensure cost recovery and revenue neutrality rather than to act as a pot of money that operators can access. BT is required to review the fixed fee and demonstrate to Ofcom that the fixed fee is revenue

²⁶⁶ We have decided 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.

²⁶⁷ 2019 BCMR Statement, Volume 2.

neutral, the methodology through which BT is required to demonstrate this is set out in the legal instruments and takes account of the number of premises that BT actually deploys to.

- 5.69 We recognise the difficulties associated with requiring BT to notify the ECC balancing charge by the end of May and therefore consider that it is reasonable to amend the ECC Balancing Charge notification to the end of June.

Contractor Excess Construction Charges

Our proposals

- 5.70 Openreach carries out Excess Construction work either directly by itself or through using contractors.²⁶⁸ Where it uses a contractor a Contractor ECC applies.
- 5.71 In our January 2020 Consultation, we proposed to control Contractor ECCs through a basis of charges obligation, where BT is required to demonstrate the charge is reasonably derived from costs of provision and include a margin that covers common costs. This maintained the approach adopted in the 2019 BCMR.²⁶⁹
- 5.72 In our November 2020 Consultation we did not propose changes to the wording of the basis of charges requirement but clarified that, consistent with previous reviews, our intention was for Contractor ECC charges to be based on the charge paid by BT to contractors, plus BT's relevant incremental costs (e.g. relevant wayleaves), plus an appropriate mark-up for common costs. As with PIA ancillary charges above, to ensure charges reflect the cost of provision, we said we would expect total costs associated with Contractor ECCs to be consistent with the operating and capital costs of these services in the RFS (i.e. similar to FAC rather than DSAC).

Stakeholder responses to our proposals

- 5.73 Openreach agreed that Contractor ECCs should be set on a basis of charges obligation.²⁷⁰
- 5.74 Openreach, Community Fibre, BUUK, and the Joint Altnet Response submitted by GOS Consulting all agreed with the proposals in the November 2020 Consultation relating to the interpretation of the basis of charges obligation.²⁷¹
- 5.75 We address TalkTalk's comments in relation to both Contractor ECCs and PIA Ancillaries under the PIA ancillaries section above.²⁷²

Our reasoning and decisions

- 5.76 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. Therefore,

²⁶⁸ When Openreach conducts this work directly, we apply a CPI-0% control which is outlined in further detail below.

²⁶⁹ 2019 BCMR Statement, Volume 3, paragraph 3.116.

²⁷⁰ Openreach response to January 2020 Consultation, paragraph 9.316.

²⁷¹ Openreach, Community Fibre, BUUK, Joint Altnet Response submitted by GOS Consulting responses to November 2020 Consultation.

²⁷² TalkTalk response to November 2020 Consultation, paragraph 6.5.

consistent with the approach adopted in the 2019 BCMR²⁷³, we have decided to control Contractor ECCs through a basis of charges obligation on BT. We consider that this strikes an appropriate balance between mitigating the risk of high pricing relative to cost while ensuring cost recovery. Under our decision BT is required to demonstrate the charge is reasonably derived from the costs of provision including a margin that covers common costs.

- 5.77 As with PIA ancillary charges, to ensure contractor ECC charges reflect the cost of provision, we expect total costs associated with Contractor ECCs to be consistent with the operating and capital costs of these services, i.e. we expect ECC contractor charges to be similar to FAC rather than DSAC. Contractor ECC charges should be based on the charge paid by BT to contractors, plus BT's relevant incremental costs (e.g. relevant wayleaves), plus an appropriate mark-up for common costs. We consider that this will address the risk that prices for Contractor ECC charges are high relative to cost while allowing BT to recover its efficiently incurred costs. In Volume 6 Section 5, we set out the cost information that BT must provide to us to help assess its compliance with the basis of charges obligation.

VULA CP to CP migration

Our proposals

- 5.78 In the January 2020 Consultation we proposed to impose a CPI-0% charge control on VULA to VULA CP migrations based on our 2018 estimate of LRIC.

Stakeholder responses

- 5.79 Openreach suggested that we should specify that its proposed VULA CP to CP migration prices are for FTTC to FTTC or FTTP to FTTP migrations, not between VULA products. Openreach cited that for FTTC to FTTP switches, new equipment is required to be installed.²⁷⁴
- 5.80 Openreach also stated that our proposed CPI indexation based on LRIC would lead to an under-recovery of costs and that we should therefore apply a FAC approach, as this would allow sufficient cost recovery. Openreach also believed that we are too prescriptive on VULA CP to CP migration charges given that no other charges for FTTP services are determined in such a prescriptive way where:
- other access services are available and ahead of copper retirement; and
 - FTTP take-up on the Openreach network is at an early stage and there is no obvious risk of distorting downstream competition between CPs as a result of the level of CP-CP migration charges we apply.²⁷⁵

²⁷³ 2019 BCMR Statement, Volume 3, paragraph 3.116.

²⁷⁴ Openreach response to January 2020 Consultation, paragraph 9.302.

²⁷⁵ Openreach response to January 2020 Consultation, paragraph 9.302.

Our reasoning and decisions

- 5.81 We have decided to impose a CPI-0% charge control on VULA to VULA CP migrations based on our 2018 estimate of LRIC.
- 5.82 Our VULA CP to CP migration prices are for FTTC to FTTC and FTTP to FTTP migrations, rather than being for migrations between FTTC and FTTP. We have made this clear in our SMP conditions.
- 5.83 With regards to Openreach's suggestion that our CPI indexation approach based on LRIC should instead be based on FAC, we continue to be of the view that LRIC is the appropriate cost standard since this encourages switching between providers. In addition, the charges which we have decided should apply to VULA migration are aligned with our modelled LRIC.
- 5.84 With regards to Openreach's concern that we are being too prescriptive in our charges for VULA CP to CP migration. We consider that our approach will allow for downstream operators to be effectively competitive. We also consider that our approach ensures certainty throughout the course of the review period within which there is likely to be increased reliance upon VULA CP to CP migration. We therefore do not agree that our approach is too prescriptive.

Ethernet and WDM cancellation and Early Termination Charges (ETCs)

Our proposals

- 5.85 In the January 2020 Consultation we proposed to impose a CPI-0% control on all Other ancillaries including for Ethernet and WDM cancellation and ETCs.

Stakeholder responses

- 5.86 Openreach argued that Ethernet and WDM cancellation and ETCs should not be included within the definition of Other ancillaries.
- 5.87 Openreach stated that this was because under our proposals, Other ancillaries are each individually subject to a CPI-0% cap. However, Openreach said that cancellation and ETC charges are currently set with reference to connection and rental charges respectively (and it is proposed that those connection and rental charges are regulated in the Ethernet and WDM basket at CPI-0%).²⁷⁶
- 5.88 Openreach argued that by including the related Ethernet and WDM cancellation charges within the definition of Other ancillaries, Ofcom was imposing two different types of, potentially conflicting, regulation on these services. To avoid a conflict, Openreach suggested removing Ethernet and WDM cancellation and ETCs from the definition of Other

²⁷⁶ We currently impose a CPI-CPI cap on Ethernet and WDM cancellation and ETCs. This is stricter than the control we are currently proposing.

ancillaries and instead regulate these prices under the general fair and reasonable charges obligation.²⁷⁷

Our reasoning and decisions

- 5.89 We consider it appropriate to maintain the proposals set out in the January 2020 Consultation to impose a CPI-0% control on Other ancillaries including for Ethernet and WDM cancellation and ETCs.
- 5.90 We consider that this approach is more flexible than the requirement imposed in the 2019 BCMR in that BT will be able to raise its charges in line with inflation and will allow BT to rebalance its charges for connections and rentals, providing that BT amended the terms of the linked cancellations and ETCs so as not to breach the imposed cap. We consider that this approach effectively removes the risk of potential conflicting regulation as raised by Openreach.
- 5.91 We also consider that our approach of largely maintaining the current requirement, which BT and its customers are familiar with, will help to protect BTs customers and ensure pricing stability.

High Network Reach Area

Fair and reasonable requirement

Our proposals

- 5.92 Our proposed approach to setting charges for ancillaries in the market for Leased Lines Access in the HNR areas was different to that in the Leased Line Areas 2 and 3, reflecting the different degree of competition in these markets.
- 5.93 Consistent with our approach to setting charges for the main services in this market, we proposed to impose a fair and reasonable charging obligation that requires BT to supply the relevant ancillaries on terms which do not constitute a price squeeze.

Stakeholder responses to our proposals

- 5.94 [X] raised concerns that fair and reasonable charges obligations do not provide industry with certainty and question how Ofcom would enforce against such an obligation.²⁷⁸ We respond to these comments in Volume 4 Section 1 where we discuss fair and reasonable obligations in the HNR areas.
- 5.95 We did not receive any other comments on this from stakeholders.

²⁷⁷ Openreach response to January 2020 Consultation, paragraph 9.309.

²⁷⁸ [X] response to January 2020 Consultation, pages 11 – 12.

Our reasoning and decisions

- 5.96 Although we consider that the HNR Area is not effectively competitive, we consider that competition is more developed than in other geographic markets. Moreover, we think that the potential for new network deployments, particularly in light of the availability of a PIA remedy, mean 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.
- 5.97 Our view is that the greater degree of competition in the HNR Area will constrain BT's ability to raise ancillary prices, and the fair and reasonable charging obligation will protect retail competition. We have therefore decided to impose a fair and reasonable pricing obligation on BT in the HNR Area in respect of ancillary services as set out in Table 5.1 above.

Cross-market ancillaries

- 5.98 Below we discuss our proposals relating to cross-market ancillary services, stakeholder responses, and our final decisions.

General approach

Our proposals

- 5.99 In our January 2020 Consultation, we proposed that it would be inappropriate for the same ancillary (e.g. power) to have different charges where they are provided relation to different forms of network access and proposed that where the same ancillary service is provided for different forms of network access, the same charge (or set of charges) should apply.
- 5.100 We identified three types of cross-market ancillary services, where we proposed 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.

Stakeholder responses

- 5.101 Openreach commented specifically on the wording of the relevant conditions relating to cross-market ancillary services. We pick these up in a separate section below.²⁷⁹ We did not receive any other comments on our general approach to cross-market ancillaries.

²⁷⁹ Openreach response to January 2020 Consultation, paragraph 9.307.

Our reasoning and decisions

- 5.102 We continue to consider that it would be inappropriate for the same ancillary service to have different charges where they are provided in relation to 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.
- 5.103 We therefore have decided that where the same ancillary service is provided for different forms of network access, the same charge (or set of charges) must apply. This applies to the Ancillary services listed in paragraph 1.100 above.

Electricity

Our proposals

- 5.104 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.²⁸⁰ In the January 2020 Consultation we proposed to continue to impose a basis of charges obligation on BT with regards to the setting of electricity charges.

Stakeholder responses

- 5.105 Openreach agreed that energy usage per kwh should be cost oriented but noted that it is only able to set prices on a reasonable basis using forward looking costs. Openreach said that around 75-80% of power costs will be hedged when prices are set at the start of the year and that costs can vary during the year. Openreach suggested that it would be appropriate to review prices during the year but did not think that it is realistic to expect that prices charged during the year would ever exactly match costs actually incurred in the year, as some costs are only settled up to 18 months later. Openreach stated that it would not see a mismatch between actual costs and prices in this situation as non-compliance as long as it had set prices in the year based on the best forward-looking view of costs that it had at the time.²⁸¹
- 5.106 TalkTalk said that Ofcom should publish its compliance check each year with an explanation of how it assesses compliance and the justification for its decision on compliance.²⁸²

Our reasoning and decisions

- 5.107 We consider it appropriate to impose a basis of charges obligation on BT. This obligation 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 consider that a price cap on

²⁸⁰ 2018 WLA Statement, Volume 1, paragraph 10.56.

²⁸¹ Openreach response to January 2020 Consultation, paragraph 9.317.

²⁸² [TalkTalk](#) response to February 2020 Consultation, paragraph 4.6.

electricity charges would be inappropriate as 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).

- 5.108 We agree that it may be appropriate for BT to review electricity prices during the year as suggested by Openreach in its response. We consider that BT's ability to increase prices unfairly will also be limited by stakeholder scrutiny arising from the requirement on BT to publish revenues and costs of electricity in the RFS (see below).
- 5.109 With regards to TalkTalk's suggestion that we publish our compliance checks, as explained in section 3 of Volume 6, we have decided to require BT to publish a summary of revenues and costs for electricity in the RFS. Separately, BT will be required to provide to us its calculation of electricity charges, including the mark-up on its purchase of electricity to enable us to monitor BT's compliance with the basis of charges obligation.
- 5.110 In forming our view on compliance, as with all other controls, we might need to consider information over a time series as well as additional information provided through other mechanisms. It is difficult to know in advance all of the information that would be required to support our decision making and therefore the timeframe for our assessment.
- 5.111 As with other charge controls, we do not think that it would be appropriate to commit in advance to publishing the results of our monitoring of BT's compliance with the electricity basis of charges obligation. The monitoring of electricity charges forms part of our routine monitoring, and as with all other controls we monitor, we would not make the results of this monitoring public as a matter of course.
- 5.112 As for all regulatory obligations, if we have concerns about compliance we would consider whether to open an investigation in line with our enforcement guidelines. Where we open such an investigation, our practice is to provide an update to stakeholders.

Cablelink services

Our proposals

- 5.113 In the January 2020 Consultation we proposed to impose a separate basket for Cablelink services capped at CPI-0%. This proposal moved away from the approach we imposed in the BCMR 2019 where Cablelink services were included in the main service basket (the 1 Gbit/s basket) and where all services within that basket were subject to a sub-cap. We also proposed a single charge control on GEA Cablelink set at CPI-0%.

Stakeholder responses

- 5.114 Openreach raised concerns that in our January 2020 Consultation we proposed a separate basket for Cablelink services capped at CPI-0% but that in Condition 12F it appeared that we were proposing an approach that separates out each item, rather than a basket. Openreach noted that it supports the basket approach which we proposed.²⁸³

²⁸³ Openreach response to January 2020 Consultation, paragraph 9.306.

Our reasoning and decisions

- 5.115 In our January 2020 Consultation we proposed a single charge control for GEA Cablelink and a basket approach for Cablelink. We have ensured that our SMP conditions are clear on this point and consider that this should address the concerns raised by Openreach.
- 5.116 Our rationale for including Cablelink services in the main service basket in the 2019 BCMR was the expectation that Cablelink shared some common costs with Ethernet services. However, having reviewed this approach, we consider 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 service. In essence, we think 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.
- 5.117 Therefore, we consider it appropriate to depart from the BCMR 2019 approach and to impose a separate basket for Cablelink services, capped at CPI-0% and for GEA Cablelink to be subject to a single charge control set at CPI-0%.^{284 285}

New ancillaries

Our proposals

- 5.118 For any new ancillaries, with the exception of those relating to PIA, we proposed that charges should be set on a fair and reasonable basis.

Stakeholder responses

- 5.119 Openreach agreed with our proposal.²⁸⁶

Our reasoning and decisions

- 5.120 We consider it appropriate to impose a fair and reasonable charges requirement on all new ancillaries, with the exception of those relating to PIA.

Stakeholder comments on the specific wording of our proposed conditions

- 5.121 Openreach suggested that Ofcom could cover the accommodation services currently in condition 12B (co-mingling and tie cable baskets) in condition 12F. Openreach believes that this would remove the need for 12F to refer to overlapping services and would also mirror

²⁸⁴ 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.

²⁸⁵ Tie-cable / Cablelink ancillaries that are specific to GEA products (i.e. WLA services) are not included in the cross-market Cablelink basket.

²⁸⁶ Openreach response to January 2020 Consultation, paragraph 9.318.

the regulatory reporting that Ofcom has requested, where all accommodation services should be reported.²⁸⁷

Proportionality

5.122 We consider that our 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 that the controls we are imposing for ancillary services are proportionate as in each case they are the least onerous means of addressing the risk of high pricing relative to cost for those services. We have not identified any adverse effects of our decisions that would be disproportionate to the aim pursued.

Legal tests

5.123 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, HNR, 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.

5.124 We are setting SMP conditions on BT to give effect to the pricing remedies for ancillary services described above. Further details of the charge controls can be found in Section 6. Our SMP conditions can be found in Volume 7.

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

- promoting efficiency;
- promoting sustainable competition;
- conferring the greatest possible benefits on end user of public electronic communications services having regard, where relevant to the market analysis, to the long-term interests of end-users in the use of next-generation networks; and
- promoting the availability and use of new and enhanced networks.

5.126 We have also considered:

- the extent of the investment in the matters to which the condition relates of the person to whom it is to apply; and
- the benefits of predictable and stable wholesale prices in ensuring—
 - efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.

²⁸⁷ Openreach response to January 2020 Consultation, paragraph 9.307.

Promoting efficiency

- 5.127 We consider that each of our charge controls will 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 controls.
- 5.128 We also consider that our charge controls and other pricing requirements such as the basis of charges obligations on ancillary services:
- address the risk of high prices relative to cost;
 - 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.

Promoting sustainable competition and conferring the greatest possible benefits on end user of public electronic communications services

- 5.129 We consider that our charge controls and other pricing obligations are each appropriate to promote sustainable competition and confer the greatest possible benefits on end users of public communications services. We have also had regard to the long-term interests of end users in the use of next-generation networks, in particular of very high capacity networks.
- 5.130 In relation to the charge control for ancillary services, the control addresses the risk of high pricing relative to cost 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.
- 5.131 In relation to the 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.

Promoting the availability and use of new and enhanced networks

- 5.132 We have taken account of the need to ensure that the cost recovery methodology and pricing mechanism we have decided to adopt serve to promote the deployment of new and enhanced networks.
- 5.133 We have ensured that the charge controls that we have imposed on ancillary services support the charge controls that we have imposed on services in Sections 1 to 5 of this Volume which we consider promote the availability and use of new and enhanced networks, as outlined in those sections. We therefore consider that the charge controls we impose on ancillary services also serve to promote the availability and use of new and enhanced networks

The extent of the investment and the benefits of predictable and stable wholesale prices

- 5.134 We have taken account of BT's investment in the matters to which the SMP conditions relate by ensuring that on the whole our charge controls on ancillary services, the majority of which are set at CPI-0%, allow BT to recover its efficiently incurred costs and make a reasonable return on its investment.
- 5.135 As our SMP conditions involve price controls on the provision of network access to existing network elements, in accordance with the amended test in section 88 of the Act, we have also taken account of the benefits of predictable and stable wholesale prices in ensuring—
- efficient market entry; and
 - sufficient incentives for all undertakings to bring into operation new and enhanced networks.
- 5.136 These considerations have been reflected in our decisions to 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.
- 5.137 By setting charge controls on ancillary services for the duration of the review period we are providing investors with certainty on the level of prices for the next five years and will allow for investors to develop business plans on the basis of these predictable and stable prices.
- 5.138 In Section 7, we explain why the setting of these SMP conditions would satisfy the test set out in section 47 of the Act.

6. Charge control design and implementation

- 6.1 In Volume 4 Sections 1 and 2, we set out our decisions relating to setting charge controls in Area 2 and Area 3 for wholesale local access services and leased line access services.
- 6.2 In Section 3, we set out our decisions relating to setting charge controls for Inter-Exchange Connectivity (IEC) leased line services (including dark fibre).
- 6.3 In Section 4, we set out our decisions relating to setting charge controls for PIA services.
- 6.4 In Section 5, we set out our decisions relating to setting charge controls for ancillary services.
- 6.5 In Annexes 14 to 18, we set out details relating to the cost modelling.
- 6.6 In this section we set out our decision for the following elements of our charge controls:
- Duration of our charge controls
 - Speed of aligning charges to our caps
 - Mechanism for implementing the charge controls
 - Basket design including weighting price changes in a basket
 - Compliance with our controls
 - Issues relating to the specification of the MPF and GEA charge controls

Duration of our charge controls

Our proposals

- 6.7 In our January 2020 Consultation, we proposed to set a 5-year charge control period for all our proposed charge controls which would align them with the market review period.
- 6.8 We considered that stability and certainty were important for investment decisions (either by rival networks or by BT). Therefore, to provide regulatory certainty we proposed to set a longer charge control period than we have typically used in previous market reviews.

Stakeholder responses

- 6.9 We received limited stakeholder responses to our specific proposal. However, several stakeholders made broader comments about the importance of providing long-term regulatory stability to support investment.
- 6.10 CityFibre referred to investors in telecommunications infrastructure, needing to take a long-term perspective in considering whether market conditions are conducive to investments. It considered that the regulatory system has historically not provided for long-term regulatory commitments of the kind that are applicable to give multi-year certainty on the future regulatory treatment of their investments. As such, it considered

that a pro-investment strategy would continue at least through the 2021-2026 market review period.²⁸⁸

- 6.11 BT argued that Ofcom needed to be mindful of the vast and risky investment needed (and taking place) to deliver world class connectivity, and the critical importance of a long-term regulatory framework in this context.²⁸⁹
- 6.12 Openreach agreed that charge controls should be extended to last for 5 years. This will reduce the level of regulatory uncertainty and provide a more stable environment for investment.²⁹⁰

Our assessment and decision

- 6.13 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 are setting a longer charge control period than we have typically used in previous market reviews.
- 6.14 We have decided to set a 5-year charge control period for all our charge controls.

Speed of aligning charges to the caps

Wholesale local access services, leased line access services and IEC services

- 6.15 In Section 1, we set out our decision to set charge controls in Area 2 for MPF and GEA FTTC 40/10 rentals at CPI-0%.
- 6.16 In Section 2, we set out our decision to set charge controls in Area 3 for MPF and GEA FTTC 40/10 rentals at CPI-0%.
- 6.17 In Section 1, 2 and 3, we set out our decisions 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%.

Our proposals

- 6.18 We proposed that starting charges from 1 April 2021 will be those taken at the end of the previous charge controls for wholesale local access services and leased line services indexed by CPI.

Stakeholder responses

- 6.19 We did not receive stakeholder comments on this aspect of our proposals.
- 6.20 Openreach did comment on the mechanics of the charge controls which we discuss in a later sub-section.

²⁸⁸ [CityFibre](#) response to January 2020 Consultation, Annex 1 paragraphs 1.14-1.17.

²⁸⁹ [BT](#) response to January 2020 Consultation, paragraph 1.15.

²⁹⁰ [Openreach](#) response to January 2020 Consultation, paragraph 9.120.

Our assessment and decision

6.21 We have decided that the charge cap for the relevant control year starting at 1 April 2021 will be set with reference to the charge cap at the end of the previous charge control and indexed by CPI for wholesale local access services, leased lines access services and IEC leased lines.

Our framework for deciding at what speed to adjust prices under cost-based charge controls

- 6.22 Where we are setting cost-based charges, there are three broad options for closing any gap between prices and forecast unit costs within a charge control:²⁹¹
- **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.
- 6.23 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. 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.
- 6.24 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.
- 6.25 We might use SCAs 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.
- 6.26 Where services are charge controlled for the first time, we have often preferred a SCA to cost because we do not have the same productive efficiency concerns.

²⁹¹ We set out our general approach on how to adjust prices to cost in the [2016 BCMR Statement, April 2016](#), and the [2018 WLA Statement, March 2018](#).

Local access dark fibre

- 6.27 In Section 2, we have decided 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.
- 6.28 In Annex 17, we set out our decisions for setting the maximum charges for dark fibre access.

Our proposals

- 6.29 Since we proposed 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 proposed did not arise.
- 6.30 Therefore, we proposed the charges for these services should be set at cost from the point dark fibre services are offered and thereafter align to our forecast of costs in the final year of the charge control period.

Stakeholder responses

- 6.31 Stakeholders commented about the timescales needed to implement a new dark fibre access service and aspects relating to the cost modelling. Our consideration of these issues is set out in Volume 3 Section 6 and Annex 17.

Our assessment and decision

- 6.32 We have decided that the charges for these services are set at cost from launch and thereafter align to our forecast of costs in the final year of the charge control period.

Inter-exchange dark fibre

- 6.33 In Section 3, we have decided to require BT to provide cost-based inter-exchange dark fibre services from BT Only exchanges.
- 6.34 In Annex 17, we set out our decisions for setting the maximum charges for inter-exchange dark fibre services.

Our proposals

- 6.35 Our proposal to require BT to provide cost-based inter-exchange dark fibre services from BT Only exchanges maintained the regulatory requirement imposed as part of the BCMR 2019.
- 6.36 Although our general preference when setting charge controls is to adopt a glidepath approach since this promotes dynamic and productive efficiency, we proposed that inter-exchange dark fibre services are set to cost at the start of the control period and thereafter align to our forecast of costs in the final year of the charge control period.
- 6.37 We did not propose a glidepath since inter-exchange dark fibre services can also be a component relating to dark fibre access segments. Therefore, we proposed a consistent

approach to aligning charges with cost for all dark fibre services (i.e. including dark fibre local access).

Stakeholder responses

6.38 Stakeholders commented about aspects relating to the cost modelling. Our consideration of these issues is set out in Annex 17.

Our assessment and decision

6.39 Given inter-exchange dark fibre services can also be a component relating to dark fibre access segments, we have decided to take a consistent approach to aligning charges with cost for all dark fibre services (i.e. including dark fibre local access).

6.40 Therefore, we have decided to use a SCA and align inter-exchange dark fibre services to cost in the year beginning 1 April 2021 and thereafter use a glidepath to our forecast of costs in the final year of the charge control period.

6.41 While we acknowledge that we have also decided to give Openreach until 17 August 2021 to launch a dark fibre access service, we do not consider that adopting a glidepath for inter-exchange dark fibre services for a relatively short period of time (around five months) would provide material dynamic and productive efficiency benefits that would outweigh the static benefits of aligning charges to cost using a SCA.

PIA

6.42 In Section 4, we have decided to require BT to provide access to its physical infrastructure (i.e. duct and pole access) at cost.

6.43 In Annex 18, we set out details of our cost modelling.

Our proposals

6.44 In our January 2020 Consultation, we proposed to set cost-based controls for PIA services through a set of single service CPI-X controls.

6.45 The most material update we made to our estimates of duct and chamber infrastructure costs reflected a change to allocating costs to different services based on up to date data. Our proposed approach to setting PIA prices resulted in only observing a modest difference between prices and costs for PIA services. Therefore, we proposed to use a glidepath to align duct and chamber charges to cost by the final year of the control.

6.46 For accessing pole infrastructure, we found a material reduction in the cost of poles in the base year (around 60%) and then forecast a small change in costs during the period of the charge control. Given that we had provisionally found such a large difference between cost and price we proposed to use an SCA to align charges to cost in the first year of the charge control. In subsequent years, we proposed a glidepath to align prices with our forecast of cost in the final year of the control.

Stakeholder responses

- 6.47 Openreach agreed with our proposal to use a glidepath to cost in the final year of the charge control for duct and chamber services.²⁹² However, it did not agree with the proposed SCA for poles because:
- this does not reflect the economic value of poles and runs the risk of distorting investment and competition;²⁹³
 - implementing the reduction as a start charge adjustment rather than a glide is not necessary or proportionate;²⁹⁴
 - current poles prices compare well internationally. Openreach considered that the current poles prices i.e. prior to any start charge reduction proposed by Ofcom, are already at an appropriate level and reasonably reflect the value of these types of assets.²⁹⁵
 - Using a similar approach to the one adopted by Ofcom for valuing duct assets would be more consistent and would avoid adverse consequences.²⁹⁶
- 6.48 In contrast TalkTalk agreed with the “proposed reductions in pricing for the use of poles access” as it considered that “PIA has the greatest chance of success if prices are as low as possible”.²⁹⁷
- 6.49 CityFibre also agreed that poles prices should be reset in 2021/22 by making a starting charge adjustment. CityFibre was not surprised that pole costs were lower than previously estimated. It considered that the options to consider were a glidepath, a starting charge adjustment or some combination of these. CityFibre felt the case for a starting charge adjustment was strong in the case of pole rentals due to the “very significant divergence between prices and costs”. Whilst glidepaths had some advantages these did not apply in this case. In CityFibre’s view a large one-off price adjustment in year 1 with smaller adjustments was preferable and “would provide much greater price certainty than large price changes (e.g. 10%) each year for the next 5 years”.²⁹⁸
- 6.50 Secondly, CityFibre argued that we had not calculated the glidepath correctly for duct and chambers products. It noted that we had calculated the starting point for the glidepaths for these services in 2021/22 by applying the formula for the current review period that ends in 2020/21 and then applying a four-year glidepath from that price. It said that normal practice would be to glide from the price in the final year of the current review period (2020/21) and then apply a five-year glidepath to the forecasted charges in 2025/26.²⁹⁹

²⁹² Openreach response to January 2020 Consultation, para 6.157.

²⁹³ Openreach response to January 2020 Consultation, para 9.42.

²⁹⁴ Openreach response to January 2020 Consultation, para 9.42.

²⁹⁵ Openreach response to January 2020 Consultation, paragraph 9.51.

²⁹⁶ Openreach response to January 2020 Consultation, paragraph 9.42, paragraphs 9.54 to 9.57.

²⁹⁷ [TalkTalk](#) response to January 2020 Consultation, paragraph 8.38, page 168.

²⁹⁸ [CityFibre](#) Supplemental Response to January 2020 Consultation, paragraphs 3.72-3.80.

²⁹⁹ CityFibre response to November 2020 Consultation, paragraphs 3.44 to 3.47.

Our assessment and decision

- 6.51 We did not receive comments on our proposal that charges for duct and footway box services should be set using a set of glidepath CPI-X controls. We have concluded our cost modelling and estimate that on average duct and chamber costs will increase over the charge control period by around 1% per year in real terms. Given our estimates are not dissimilar to the current charges, we have decided to adopt a glidepath that aligns charges to cost in the final year of the control.
- 6.52 For poles services our calculations indicate that maximum charges at the start of the new control period should be much lower than those that will be in place when the current charge control period ends on 31 March 2021. Our estimated charges in the base year and in the final year of the control are roughly 60-65% lower than current prices.
- 6.53 We reviewed the costs of poles with Openreach in 2019 and 2020. That review broke down the costs of poles using operational planning data over the last 10 years into various activities. The main reason why charges are so much lower is that, as we explained in our January 2020 Consultation, poles costs now exclude the cost of re-cabling activities when a pole is replaced (these re-cabling costs are not within the PIA market but are part of downstream market costs, for example WLA or leased lines).
- 6.54 The methodology that underpins the pole unit costs that we have used, and that were used to construct the poles costs in BT's 2019/20 RFS, will be used to record pole costs within Openreach's fixed asset register going forward. Therefore, Openreach's argument that our poles charges do not reflect the economic value of poles is contrary to the evidence it has provided to us.
- 6.55 We do not consider it relevant to consider international benchmarks when calculating prices in this case, especially since the benchmarks quoted appear much higher than the charges we have estimated. It is necessary when considering benchmark information that like is compared with like. Costs are likely to be different in different countries due to the different ages of the infrastructure and differing customer/network densities. Furthermore, different regulators may have different objectives and adopt different cost standards; and prices may also not cover the same services.
- 6.56 Ultimately, our objective is to set charges that allow Openreach to recover its efficiently incurred costs. Therefore, we do not consider that benchmarks are relevant to meeting this objective.
- 6.57 Openreach argued that we are being inconsistent in the way we treat poles costs compared to how we treat the attribution of pre- and post- 2018 duct and chambers costs. We disagree. The argument on duct and chambers services concerned the attribution of costs between various duct and chambers assets – i.e. between PIA market costs: total PIA market costs were unaffected by our proposal. Openreach argues that we have a similar allocation problem here because pole costs need to be attributed out of historical cable costs. But if this is an attribution issue, which is not clear, then the attribution is between PIA costs and downstream market costs. It is clear from the evidence that in previous reviews pole PIA costs were overstated which we are now correcting.

- 6.58 Given the material difference between costs and prices there is a strong case for a SCA. Furthermore, Openreach has given no reasons as to why it believes a starting charge adjustment is not necessary or why it believes it to be disproportionate. Furthermore, given that the volume of pole rentals is relatively low at present, the negative impact of any price instability to customers as a result of applying a SCA will also be low.
- 6.59 In light of the above, we have decided to apply a SCA to pole prices.
- 6.60 We agree with CityFibre that we had not calculated the glidepath for duct and chambers products correctly in the January 2020 Consultation and the November 2020 Consultation, though the effect of our calculations was still to set 2025/26 charges at their correct expected levels. We have corrected these calculations in this statement.
- 6.61 We have calculated the Xs in our CPI-X controls so that they glide to our forecast 2025/26 charges over a five-period period. We have set charges for both duct and chambers and poles products in 2021/22 as required for the legal conditions. The duct and chambers prices in 2021/22 are the result of applying that CPI-X control in the first year to current, 2020/21 prices. Poles prices in 2021/22 are our estimated charges for 2021/22.

Mechanism of price control implementation

Target average charge (TAC) and Maximum Annual Charge (MAC)

Our proposals

- 6.62 In our draft SMP conditions, we proposed to implement the various charge controls through either:
- A Target Average Charge (TAC) approach, used where the charge control applies to a basket of services or where the charge control applies to a single service; or
 - A Maximum Annual Charge (MAC) approach, used where the charge control applies to a single service only.
- 6.63 Table 6.1 provides a summary of those proposals.

Table 6.1: Our proposals for the mechanisms of the charge controls

Charge control	Charge control mechanism
Area 2 MPF rental	TAC
Area 3 MPF rental	TAC
Area 2 FTTC rental	MAC (First Year) and TAC in remaining years
Area 3 FTTC rental	MAC (First Year) and TAC in remaining years
Area 2, Area 3 Leased Lines Access, IECs	TAC
Inter-exchange dark fibre	MAC
Area 3 Dark fibre access	MAC
PIA	MAC
Ancillaries	Both MAC and TAC

TAC approach

- 6.64 Under the TAC approach, BT is required to comply with the charge control such that its average charges in the relevant control year do not exceed the charge control cap.
- 6.65 Under the TAC approach, the charge control formula takes into account the timing of any changes BT makes. BT can change charges for services at any time during a particular year. However, the charge control formula explicitly takes into account when changes to charges occur.

MAC approach

- 6.66 Under the MAC approach, BT is required to comply with the charge control such that the maximum price it charges during the relevant year does not exceed the charge control cap. As such, the charge control formula does not need to take into account when changes to charges occur in a year, since compliance is assessed through comparing whether the charge exceeded the maximum cap (at any point in the relevant year).
- 6.67 The MAC approach can provide more certainty over the maximum price that will be set during the relevant year than the TAC approach and can be a simpler way of implementing a charge control.

Stakeholder responses

- 6.68 Openreach commented that for single product charge controls for GEA services, the price ceiling in the first year is prescribed in the legal conditions. This meant that if the effective date of the price change is delayed past April 2021 there is no way to make good the foregone revenue due to the delay. Therefore, it asked that Ofcom publish its Statement before the end of February 2021 and waive notification obligations for the first year price changes in order to ensure Openreach can notify price changes by 1 April 2021.
- 6.69 Openreach suggested that if Ofcom publishes its Statement later than the end of February 2021, it should change the condition for the relevant services such that, instead of a fixed ceiling in the first year, it allows for an average price over the first year period. It noted that this approach had already been proposed for MPF rentals.³⁰⁰

Our assessment and decision

- 6.70 Where we proposed to set charge controls through capping the maximum price that can be at any point in the year ('MAC') from 1 April 2021, Openreach would have been required to implement price changes to take effect from 1 April 2021. In contrast, where we proposed charge controls on the basis of complying with a TAC over the control year, Openreach would have flexibility to adjust prices during the year to ensure that on average across the year its charges do not exceed the cap.
- 6.71 We recognise that following the publication of our Statement, Openreach will need time to complete a set of governance and operational activities (including price notifications) as part of implementing the set of price changes. Given the additional operational pressures as a result of Covid-19 we have decided to give Openreach more flexibility in implementing the FTTC 40/10 rental charge control by moving to a TAC in the first year. This decision brings our approach to the FTTC 40/10 rental charge control into alignment with the MPF rental charge control.
- 6.72 Where we are setting single service charge caps, and where practical, we have a general preference for setting these on a MAC basis so as to give access seekers more certainty about the maximum price they will face during any point of a control year.
- 6.73 Therefore, in the remaining years of the charge control, we have decided that the charge controls on FTTC 40/10 rentals should be set on a MAC basis. In addition, we have decided to bring the MPF rental charge control into alignment with the FTTC 40/10 rental charge control and set this on a MAC basis from the second year onwards.
- 6.74 With the exception of services specific to dark fibre local access, which is not being launched until August 2021, where we proposed to impose single service charge controls on a MAC basis from 1 April 2021 we have also decided to apply a TAC charge control in the first year of the control. This will give Openreach more flexibility in implementing the price changes in the first year of the control. For subsequent years our charge controls

³⁰⁰ [Openreach](#) response to July 2020 Consultation, paragraphs 3.2-3.3.

maintain the approach we set out in the January 2020 Consultation. This will give effect to the regulation as envisaged in our January 2020 Consultation (including where prices need to be lowered).

6.75 A summary of our decisions is provided below.

Table 6.2: The mechanisms for the charge controls

Charge control	Year 1	Year 2 to Year 5
Area 2 MPF rental	TAC	MAC
Area 3 MPF rental	TAC	MAC
Area 2 FTTC rental	TAC	MAC
Area 3 FTTC rental	TAC	MAC
Area 2, Area 3 Ethernet Leased Lines Access, IEC Ethernet Leased Lines	TAC	TAC
Area 2, Area 3 Optical Service Leased Lines Access, IEC Optical Service Leased Lines	TAC	TAC
Inter-exchange dark fibre	TAC	MAC
Area 3 Dark fibre access	MAC	MAC
PIA	TAC	MAC
Ancillaries	Both MAC and TAC	Both MAC and TAC

Basket design

6.76 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.

- 6.77 In designing our 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 recovery of costs.
 - 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

- 6.78 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.
- 6.79 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 constraints 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.
- 6.80 We consider, however, that such considerations are less directly applicable to migration type services. This is because retail demand for migration services is unlikely to be closely linked to the wholesale migration charge; and because migration charges increase switching costs faced by BT's competitors.

Disadvantages of broad baskets

- 6.81 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

- 6.82 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.
- 6.83 Alternatively, or in addition, sub-caps (which limit price increases on certain services within a basket) or inertia clauses (which limit the extent of rebalancing charges within a basket) 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.

Basket design – Wholesale Local Access services

- 6.84 In Section 1, we set out our decision to set charge controls in Area 2 for MPF and GEA FTTC 40/10 rentals at CPI-0%.
- 6.85 In Section 2, we set out our decision to set charge controls in Area 3 for MPF and GEA FTTC 40/10 rentals at CPI-0%.

Our proposals

- 6.86 In each of Area 2 and Area 3, we proposed to set a single product charge control for each of:
- MPF rentals.
 - GEA FTTC 40/10 rentals.
- 6.87 In each of Area 2 and Area 3, and post-copper retirement we proposed to switch our charge control from MPF and GEA FTTC 40/10 rentals to GEA FTTP 40/10. Therefore, in each of Area 2 and Area 3, we proposed a single product charge control for:
- GEA FTTP 40/10 rentals.

Stakeholder responses

- 6.88 We did not receive stakeholder comments about this aspect of our proposals.

Our assessment and decision

- 6.89 We consider that a separate control for MPF rentals (to GEA FTTC rentals) will provide better customer protection to standard broadband customers as customers transition to higher speed services. Therefore, we have decided that in each of Area 2 and Area 3, to set a single product charge control for each of:

- MPF rentals.
 - GEA FTTC 40/10 rentals.
- 6.90 In each of Area 2 and Area 3, and post-copper retirement, we have decided to switch our charge control from MPF and GEA FTTC 40/10 rentals to GEA FTTP 40/10. Therefore, in each of Area 2 and Area 3, there will be a single product charge control for:
- GEA FTTP 40/10 rentals.

Basket design – Leased lines: Ethernet, WDM, Main Link rentals and connections

- 6.91 In Section 1, we set out our decision to set charge controls on leased lines access circuits in Area 2 at CPI-0%.
- 6.92 In Section 2, we set out our decision to set charge controls on leased lines access circuits in Area 3 at CPI-0%.
- 6.93 In Section 3, we set out our decision to set charge controls for IEC leased line circuits at CPI-0%.

Our proposals

- 6.94 We proposed a broad basket of Ethernet and WDM services across all bandwidths including rentals, connections and Main Link including volumes for the Area 2, Area 3, and IEC market. Our proposed approach reflected the 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.
- 6.95 Given the importance of Main Link we considered that it was 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 we proposed that Main Link charges were subject to a CPI-0% sub-cap.

Stakeholder responses

- 6.96 INCA commented that using a broad basket for active leased line pricing, covering all Ethernet speeds and Optical Services, may allow significant scope for BT to engage in opportunistic pricing in order to deter competition.³⁰¹
- 6.97 CityFibre made a similar point noting that a single broad basket, implicitly grants BT greater pricing flexibility across its product set, which raises risk of exploitative and anti-competitive pricing practices. For example, under a broad basket Openreach would have greater ability to price in a manner that favours its own downstream operations.³⁰²
- 6.98 Openreach supported the proposed broad basket. However, it requested for Optical Services to be separated from the broader basket. This was because it tracked optical

³⁰¹ INCA response to January 2020 Consultation, paragraph 139.

³⁰² CityFibre response to January 2020 Consultation, paragraph 6.111.

revenue in its systems by circuit, whereas its price list was set out by modular component. This meant it was not possible to show revenues by price list items that reconcile back to the regulatory financial statements (RFS). Since it did not have revenue weightings for every item in the basket, it was unable to operate a basket and would effectively have a control of CPI-0% on every item.³⁰³

- 6.99 Openreach did not understand the rationale for Main Link to have a CPI-0% sub cap. It argued that DFA main link will exert a pull downwards, and a sub cap of e.g. CPI+3% might allow an increase of c5%, which would still not be a “sharp price increase”. Openreach also noted that there had been no historical behaviour to indicate it would make a sharp price increase which would justify the need for such a tight sub cap.³⁰⁴
- 6.100 CityFibre on the other hand agreed with the proposed sub-cap on Main Link.³⁰⁵

Our assessment and decision

- 6.101 We have traditionally used broader baskets for leased line services (relative to WLA services) that include rentals, connections, and specific ancillary 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 across several component products (e.g. connection and rental) relating to a leased line.
- 6.102 Several stakeholders have noted the risks of implementing broad baskets which may provide an incentive for Openreach to concentrate price cuts on the most competitive services and offset these with increases where competition is weaker. We acknowledge those risks, however, these also need to be considered against the background of our overall package of remedies.
- 6.103 Our view is that in principle a competitive concern could arise from Openreach targeting price cuts in Area 2 and off-setting these with price increases in Area 3. However, we consider that Openreach’s ability to increase LL access charges in Area 3 will be constrained by the availability of cost-based dark fibre access in Area 3 and cost-based dark fibre IEC from BT Only exchanges.
- 6.104 Openreach has requested that WDM Services (also referred to as Optical Services) are treated as a separate basket since it does not report WDM service revenues by the modular items as per the price list but rather on a circuit basis only.
- 6.105 We consider that Openreach’s request is reasonable given the issue it has raised since implementing a single basket including both WDM Services and Ethernet services would prevent Openreach’s flexibility to rebalance prices that we envisaged under our proposals. Furthermore, separating WDM Services from the Ethernet basket would not raise more

³⁰³ [Openreach](#) response to November 2020 Consultation, Annex A paragraphs 4 to 10.

³⁰⁴ Openreach response to January 2020 Consultation, paragraph 9.294.

³⁰⁵ CityFibre response to January 2020 Consultation, paragraph 6.116.

competition concerns than envisaged under our proposal to adopt a single basket (since its flexibility to adjust prices would be more limited).

- 6.106 Therefore, we have decided to implement an Ethernet services basket (across Area 2, Area 3, and IEC).
- 6.107 In relation to WDM Services, since Openreach does not have revenue weightings for each price list item it is unable to operate a basket. Therefore, we have decided to set a single charge cap on each WDM Service modular component.
- 6.108 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.
- 6.109 We continue to consider that it is important to mitigate the risks of sharp price increases in Main Link prices given its low weighting in the relatively broad baskets that we are imposing.
- 6.110 While we note Openreach's concern, we do not consider that a CPI-0% sub-cap on Main Link is overly restrictive or will undermine Openreach's ability to recover its cost on that service (based on a comparison of costs and revenues in BT's 2020 RFS). Therefore, we have decided to impose a sub-cap on Main Link at CPI-0%.³⁰⁶
- 6.111 In summary, we have decided to:
- Implement an Ethernet basket across Area 2, Area 3, and IEC markets.
 - Implement a single service charge cap on each WDM Service module component.
 - Implement a sub-cap on Main Link charges in the Ethernet basket at CPI-0%.

Basket design – Leased lines: Local access dark fibre and Inter-exchange dark fibre

- 6.112 In Section 2, we set out our decision to set a cost-based charge control on local access dark fibre in Area 3.
- 6.113 In Section 3, we set out our decision to set a cost-based charge control on inter-exchange dark fibre from BT Only exchanges.

Our proposals

- 6.114 We proposed single service charge controls for each:
- Local access dark fibre service.
 - Inter-exchange dark fibre service.

Stakeholder responses

- 6.115 We did not receive stakeholder comments on this aspect of our proposals.

³⁰⁶ By virtue of setting single service caps on all WDM prices, a CPI-0% cap on Main Link will also apply to WDM services.

Our assessment and decision

6.116 We consider that single service charge controls will be most supportive of our objectives since they provide the most certainty for access seekers regarding future prices. Therefore, we have decided to implement single service charge controls for each:

- Local access dark fibre service.
- Inter-exchange dark fibre service.

Basket design – Ancillaries

6.117 We set out our decisions in Section 5.

Weighting price changes within a basket

6.118 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 Openreach 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.

6.119 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 the average price during the 12 months prior to the start of the charge control year.

Our proposals

6.120 We proposed to use prior year weightings where we proposed basket controls since we considered that this will best enable BT to plan its charges in a year to meet the overall basket control.

Stakeholder responses

6.121 We did not receive any objections to our proposal.

Our assessment and decision

- 6.122 We have decided to use prior year weightings where we proposed basket controls since we consider that this will best enable Openreach to plan its charges in a year to meet the overall basket control.
- 6.123 We acknowledge that under this approach there is a risk of a specific form of gaming by Openreach. 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.
- 6.124 However, 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

Our proposals

- 6.125 We proposed to use deficiency and excess provisions for our charge controls. We also proposed 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.

Stakeholder responses

- 6.126 We did not receive any objections to our proposal.

Our assessment and decision

- 6.127 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 have decided to use them for baskets of services and several single service controls in this review. These have two functions:
- Where Openreach 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 Openreach for bringing forward a charge reduction or increasing charges less than permitted within the cap.
 - Where Openreach 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 would not adversely affect the pricing stability created by our proposed charge controls.

6.128 We consider that symmetrical provisions remain appropriate i.e. symmetrical with respect to whether Openreach charges below the cap or whether the control is exceeded. We also consider that such a provision requiring Openreach to automatically repay its wholesale customers any over-recovery of revenue from the charge controls fits well with our prior year revenue weights approach. This is because at the start of each control period Openreach 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.

Compliance

Compliance with our charge controls

Our proposals

- 6.129 We proposed 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).³⁰⁷ This statement will provide assurance that the numbers BT is relying on to demonstrate compliance have been correctly extracted from its systems and will help us monitor how BT is meeting its obligations under the charge control.
- 6.130 We proposed that the statement from an independent third party should be provided within three months of the end of each control period (i.e. by the end of June).
- 6.131 We also proposed to require BT to publish non-confidential versions of these compliance spreadsheets on its website consistent with current practice.³⁰⁸

Stakeholder responses

- 6.132 Openreach did not object to our proposal for the spreadsheets submitted by BT demonstrating compliance with its charge controls being accompanied by a statement by an independent third party confirming that the data in the spreadsheets had been properly extracted from BT's systems and that the calculations are in accordance with the SMP conditions. However, it said that details around its implementation needed to be considered, including:
- This would be a finding on performance of tests and not an audit opinion and that the scope of the tests would need to be agreed.

³⁰⁷ We proposed that this assurance will be in the form of agreed upon procedures.

³⁰⁸ This had previously been a requirement under the regulatory financial reporting condition but we proposed to move this requirement to the charge control condition.

- It will take time to deliver (at least six weeks for 100% substantive checks) and can only start once Openreach has already concluded its internal checks and governance. On this a deadline of end of August would be more reasonable and realistic and an end of July deadline (alongside the RFS) would be a very challenging deadline. The current compliance submission deadline of the end of June would not be possible in any circumstances.
- As external auditors are restricted from non-audit advisory work (which this would count as) Openreach would need a statement from Ofcom for Openreach's audit and risk board that they require the external auditors to complete this work for it to be approved.³⁰⁹

Our assessment and decision

- 6.133 We have decided to require BT to submit spreadsheets to Ofcom each year demonstrating compliance with the charge controls. We also require BT to publish non-confidential versions of these compliance spreadsheets on its website consistent with current practice.
- 6.134 We have also decided that BT's compliance spreadsheets relating to basket charge controls should be accompanied by a statement from an independent third party (e.g. the auditor of the RFS) 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).³¹⁰
- 6.135 We consider that this statement will provide assurance that the numbers BT is relying on to demonstrate compliance have been correctly extracted from its systems and will help ensure that BT is meeting its obligations under the charge control.
- 6.136 We intend to engage with BT over the coming months regarding the detail and scope of the tests.
- 6.137 Openreach has raised concerns relating to the proposed deadline of the end of June for providing this statement. We accept that Openreach will need to complete its own internal checks around compliance with its charge controls at the end of each control period. These checks (and completion of governance processes) will take several weeks and will need to be completed before Openreach can liaise with external auditors for a compliance statement to be produced. We also acknowledge that the proposed deadline of 30 June to provide a compliance statement will fall around the same time of the year that BT prepares its RFS.
- 6.138 We consider that taken together these factors mean that providing an annual compliance statement by the end of June could be unduly onerous. Therefore, we have decided to set the deadline at the end of August in each year for the provision of information relating to all charge controls. While this is later than our proposed deadline, we consider that the provision of a compliance statement from an independent third party will expedite our

³⁰⁹ Openreach response to January 2020 Consultation, paragraph 9.176.

³¹⁰ This assurance will be in the form of agreed upon procedures.

own assessment of BT's compliance with its basket charge controls. As a consequence, we consider that the overall completion of our compliance assessment will not be significantly later than under our current timings (where we do not have the benefit of the compliance statement).

- 6.139 Openreach has indicated that it would need a statement from Ofcom to its audit and risk board that Ofcom requires BT's external auditors to complete this work for it to be approved. We will discuss with BT the details of what is required from us to facilitate the production of the statement from an independent third party. We note that BT currently fulfils a similar requirement for the purposes of demonstrating compliance with its voluntary commitment for standalone fixed voice telephony services.³¹¹

Compliance with BT's Commitment to deploy FTTP in Area 3

- 6.140 In Section 2, we set out our decision to set charge controls in Area 3 for MPF and GEA FTTC 40/10 rentals at CPI-0% as part of a forecast-RAB approach based on a BT Commitment to commercially deploy FTTP to 3.2m premises by 2025/26.

Our proposals

- 6.141 In our July 2020 Consultation, we set out our proposals relating to assessing BT's compliance with its commitment to commercially deploy FTTP to 3.2m premises in Area 3 by 2025/26.
- 6.142 While we fully expected BT to meet its commitment, we recognised that there is a risk that it will not.
- 6.143 We proposed that BT reports its progress in meeting its build commitment on an annual basis as part of its regulatory reporting requirements. We explained that if it became clear that BT was not making progress in meeting its build commitment, we would look to re-open the charge control to avoid harm to customers (as a result of prices being above cost).
- 6.144 We recognised that although BT may make all reasonable efforts to meet its commitment, there are nevertheless risks outside of its control that mean it is unable to meet its commitment fully. Therefore, we proposed to use accelerated copper depreciation to help mitigate the harm to customers where BT does not fully meet its commitment. Under our proposals, if BT fell short in meeting its commitment, we could reflect this when setting future charge controls to ensure that Openreach did not over-recover across the lifetime of the network (since those costs recovered via accelerated depreciation by 2025/26 cannot be recovered in future periods).

³¹¹ See [Review of the market for standalone landline telephone services](#), Annex 1, section 3.2 of BT's voluntary commitment.

Stakeholder responses

- 6.145 Stakeholder comments relating to the impact of the proposed RAB approach in Area 3 and our modelling relating to BT's Commitment to commercially deploy FTTP to 3.2m premises by 2025/26 are set out and addressed in Annex 13 and Annex 16.
- 6.146 In relation to our proposals for assessing compliance with BT's Commitment, BT Group considered our proposals around accelerated depreciation to be a reasonable mechanism. It noted that this should be sufficient for Ofcom to ensure the prices customers pay will reflect the amount of full fibre deployed over time and is a reasonable approach for dealing with possible delays, in particular in the context where the macro-economic environment (and its impact on demand) as well as changes in the availability and cost of inputs in global markets, including labour as well as the wider impact of COVID-19 are uncertain.³¹²
- 6.147 Gigaclear argued that failure by BT to meet its commitment does not simply create a problem regarding consumer harm through higher than required prices. Gigaclear said that BT's Commitment will have functioned to deter other networks investing in the areas they declare as part of the build plan. Indeed, the crowding out of this investment and the consequential absence of gigabit capable connectivity in these areas may constitute a greater consumer harm. To address this problem, it is appropriate for Ofcom to consider enforcement of the BT Commitment. Such enforcement should reflect the variable nature of forecasting build in rural areas and permit the impact of events beyond Openreach's reasonable control. However, forecasting of build in rural areas to a reasonable accuracy is part of Openreach's pre-existing operations in executing their BDUK state aid contracts.³¹³
- 6.148 TalkTalk argued that while our proposals provide some contingency and consequent incentive for BT to build, they are not fully effective. It argued that BT would receive a subsidy even if it completed no build in Area 3.³¹⁴ Although TalkTalk disagreed with the RAB proposal, it suggested a number of changes to strengthen the BT Commitment to mitigate the potential harm to customers:³¹⁵
- setting a build target for each year of the 2021-26 control period;
 - making clear that it will reduce the calculation of the FTTP loss and reduce price caps in the 2021-26 period in the event that Openreach falls below these targets so that all unwarranted subsidy is fully recouped;
 - imposing penalties for missing the build targets by a material amount.
- 6.149 Vodafone argued that under our proposals we are unable to enforce the BT Commitment and that we have not considered other options – such as clawback, formal reopeners and other charge controls. It argued that the accelerated depreciation proposal is flawed since

³¹² BT response to July 2020 Consultation, paragraph 3.34.

³¹³ Gigaclear response to July 2020 Consultation, page 4.

³¹⁴ TalkTalk response to July 2020 Consultation, paragraph 5.5.

³¹⁵ TalkTalk response to July 2020 Consultation, paragraph 8.11.

there no guarantee that these costs would have been recovered and it only extends to cost of roll-out for 1.3m premises.³¹⁶

- 6.150 KCOM argued it was important that Openreach is required to provide an up to date public list of its committed fibre build locations with new locations and/or amendments added in a timely manner. It considered this it is important that Ofcom keeps build activity and announcements under careful review and that measures are put in place to address the risk of strategic overbuild by Openreach in Area 3. KCOM suggested that where there was any evidence of Openreach altering its planned deployments in an Area 3 location for anti-competitive reasons (for example, overbuilding an area of planned or actual deployment by an alternative network that was not in its original build plan), Ofcom should make clear that it will require Openreach to explain any such deviations, and that it will take swift action if necessary (e.g. through an ex-post Competition Act investigation).³¹⁷

Our assessment and decision

- 6.151 We are confident of Openreach's ability and intention to meet its target build in Area 3. Nevertheless, we recognise that there are risks that it may not meet its build commitment which could cause harm to customers (since copper prices would be set above the cost just associated with copper services and Openreach would not be incurring, or incurring lower than expected, cost of investing in its fibre network).
- 6.152 Given this risk, we have decided that BT should be required to report its actual build towards meeting its build target annually. Full details of our reporting decision are set out in Volume 6.
- 6.153 Where it is evident that Openreach is not making sufficient progress in achieving its target build of FTTP to 3.2m by 2025/26, we will consider the option of re-opening the charge control to adjust prices to avoid the harm to customers from copper prices being set above the cost associated with copper services when Openreach is not incurring the additional costs of investing in its fibre network as part of meeting its commitment.
- 6.154 We do not agree with TalkTalk's suggestion that we specify a build target in each year and that we adjust prices during the market review period (i.e. 2021-2026) where Openreach does not meet those targets. We consider that such an approach would be unnecessarily complex and would not be able to reflect or accommodate the uncertainties over the rate of deploying a network. As such, we would need to make annual adjustments to regulated copper prices where Openreach does not hit a specified target or where it exceeds its target (e.g. where it accelerates build as part of catching-up to its target). Furthermore, for the reasons set out previously and below, we do not need an enforcement mechanism whereby penalties are imposed where Openreach does not reach a specified target.
- 6.155 As set out in Volume 4 Section 1 and Volume 4 Section 2, our expectation is that Openreach will continue to invest in Area 3 in future periods and that we would maintain

³¹⁶ [Vodafone](#) response to July 2020 Consultation, paragraphs 34-35.

³¹⁷ [KCOM](#) response to July 2020 Consultation, paragraph 2.8-2.10.

our approach to pricing until 2031. Should Openreach narrowly miss its commitment by 2025/26, we would expect it to reach the full 3.2m homes as part of its future investment plans and this could be captured in the RAB. Our approach of accelerating depreciation is suited to accommodating the uncertainty around the timing of Openreach's FTTP deployment while also mitigating the potential harm to customers where Openreach does not meet its build target by 2025/26 and does not plan to reach the commitment in future periods. In Annex 14 we set out details of our cost modelling and bringing forward the recovery of copper costs.

- 6.156 Where there is evidence that Openreach's build progress will mean it will fall below that covered by our accelerated depreciation decision, we consider that this will be indicative of something going wrong with the BT Commitment and we would likely re-open the charge control.
- 6.157 We do not accept Vodafone's point that we have not considered the options of re-opening charge controls and clawback if Openreach does not meet its build target.
- 6.158 The accelerated depreciation approach is intended to address the risk to customers as a result of operational changes or difficulties that means Openreach is unable to fully meet its build target and does not plan to pass the 3.2m homes as part of future investment plans.
- 6.159 Our approach to accelerated depreciation brings forward the full depreciation (and future return on capital) of copper assets capitalised since 2017/18 to 3.2m premises by 2025/26. This brings forwards about a further £117m (present value) of cost recovery into the charge control period. Under this approach if Openreach falls short in meeting its commitment we can reflect this when setting future charge controls to ensure that Openreach does not over-recover across the lifetime of the network (since those costs recovered via accelerated depreciation by 2025/26 cannot be recovered in future periods).³¹⁸
- 6.160 We do not accept Vodafone's argument that our accelerated depreciation approach is flawed since there was no guarantee that Openreach will have recovered those costs. While our charge controls provide no guarantee that costs will be recovered, they are set on the basis of giving Openreach an expectation of cost recovery. Therefore, and particularly given our assessment of the potential for competition in Area 3 by rival networks, we consider that Openreach will have had a reasonable expectation of recovering those costs.
- 6.161 We note that Act has been amended to require Ofcom's reports on infrastructure to include any proposals that providers of UK networks may at any time have to do any of the following within the next 3 years: to bring into operation a new very high capacity network, other than a mobile network; or to extend or upgrade any part of a fixed line network or its equivalent, such as a fixed wireless access network, so as to provide a download speed of

³¹⁸ We believe that £117m of accelerated depreciation would be sufficient to offset any over-recovery should Openreach fall short in reaching 3.2m premises by the end of 2025/26.

at least 100 megabits per second. We do not consider it is appropriate to impose any further transparency requirements on Openreach to address the competition concerns identified by our market analysis.

6.162 Where we have evidence that Openreach has engaged in anti-competitive behaviour, we will investigate this and take action as appropriate.

Details relating to the specification of our charge controls - Wholesale local access: rentals for MPF and GEA

MPF rental service specification

6.163 Openreach 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).³¹⁹ The majority of MPF lines are on the SML1 variant.

Our proposals

6.164 We proposed to impose a charge control on MPF SML1 since we considered that a charge control on SML1 will have greater benefits for downstream competition given the majority of MPF lines use this variant. We also considered this would act as a price constraint on MPF rentals with other SMLs.

Stakeholder responses

6.165 We did not receive stakeholder comments on this proposal.

Our assessment and decision

6.166 We have decided 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. We also consider that it will act as a price constraint on MPF rentals with other SML levels.

Single Order Generic Ethernet Access

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

- By supplying VULA as an overlay to the existing copper services it has developed (i.e. WLR and MPF); or
- 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.

³¹⁹ Openreach provides other SML variants that are not included with the MPF rental.

Our proposals

- 6.168 In our November 2020 Consultation, we proposed that for VULA services that are subject to a charge control (i.e. for FTTC services at speeds of 40/10), the FTTC service provided via SOGEA is also charge controlled. This was a change to our January 2020 Consultation, which proposed that SOGEA was subject to a fair and reasonable requirement.
- 6.169 We proposed that in the first year, the maximum charge for SOGEA should be equal to the proposed MPF charge control cap plus the VULA 40/10 cap and consistent with our proposals for MPF and VULA, a charge control cap of CPI-0% for subsequent years. This would apply in both Area 2 and Area 3.

Stakeholder responses

- 6.170 Openreach noted that it needs to set a price for SOGEA that is attractive for copper and FTTC customers. The combined price of MPF plus FTTC 40/10 forms a commercial ceiling that the SOGEA 40/10 price could not exceed without being unattractive for customers. Given this, it did not oppose SOGEA 40/10 being charge controlled as a single item.³²⁰
- 6.171 We did not receive objections from other stakeholders.

Our assessment and decision

- 6.172 We consider that charge controlling FTTC 40/10 provided using SOGEA will more directly address the competition concerns resulting from an SMP finding than a fair and reasonable requirement (that we initially proposed as part of the January 2020 Consultation).
- 6.173 For those customers that rely on FTTC provided using SOGEA, charge controlling SOGEA will provide more certainty and clarity about the maximum charge that they will face for the service.
- 6.174 Therefore, for FTTC at speeds of 40/10, we have decided to align the approach we take to controlling charges so that services provided using SOGEA are treated on the same basis as services provided using VULA as an overlay to the existing copper service. This will apply in both the WLA Area 2 and the WLA Area 3 markets.

Charge control on GEA FTTP rentals

- 6.175 In Section 1 and 2, we set out our decision to charge control the GEA 40/10 rental service in Area 2 and Area 3.
- 6.176 Before copper-retirement, our decision to charge control GEA rental services relate to services offered over Openreach's FTTC network. However, GEA services can be provided either using GEA-FTTC in conjunction with copper or using Openreach's FTTP network.

³²⁰ [Openreach](#) response to November 2020 Consultation, paragraph 5.4-5.5.

Our proposals

- 6.177 In our January 2020 Consultation, we explained that 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).
- 6.178 Where GEA FTTP is offered and a customer has access to GEA FTTC, we did 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).
- 6.179 We considered that the charge controlled FTTC service will provide a constraint on the price of the FTTP service and therefore protects consumers while allowing Openreach pricing flexibility for FTTP services and thereby promoting competition and investment in fibre.
- 6.180 However, in circumstances where GEA FTTC is not available and GEA services are provided using FTTP, we considered that FTTP services should be charge controlled.
- 6.181 Where an FTTP service is charge controlled, we proposed that the additional value of FTTP over FTTC (the ‘fibre premium’) should be reflected in the price.
- 6.182 Therefore, in the absence of FTTC GEA being available, we proposed 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.
- 6.183 We explained that Openreach also offers a GEA-FTTP 40/10 “data product variant”, a data only service. We did not propose to impose a charge control on GEA-FTTP 40/10 data variants because we considered the full-fibre service rentals set out above (which are combined with voice) should impose a sufficient constraint on prices of the data variants.

Stakeholder responses

- 6.184 Openreach explained that FTTP voice and data rental (referred to by Openreach as Fibre Voice Access, or FVA) has been withdrawn for new connections from 1 April 2020 and is expected to be withdrawn from support before 1 April 2021. In addition, the Transition product withdrawal is also expected to be complete before 1 April 2021. Therefore, it suggested that Ofcom should regulate the FTTP 40/10 data product variant, as this will be the only product variant available moving forward.³²¹

Our assessment and decision

- 6.185 Where GEA FTTP is offered and a customer has access to GEA FTTC, we have decided not to charge control the FTTP service.

³²¹ Openreach response to January 2020 Consultation, paragraph 9.174.

- 6.186 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 high prices relative to cost while allowing Openreach pricing flexibility for FTTP services and thereby promoting investment in fibre.
- 6.187 However, in circumstances where GEA FTTC is not available and GEA services are provided using FTTP, we consider that FTTP services should be charge controlled.
- 6.188 Where an FTTP service is charge controlled, we have decided that the additional value of FTTP over FTTC (the ‘fibre premium’) should be reflected in the price. Our decisions on the level of the fibre premium are set out in Annex 19.
- 6.189 Openreach has confirmed that it has withdrawn both the Fibre Voice Access (FVA) service and the GEA-FTTP Transition service. These were the services we proposed should be charge controlled in our January 2020 Consultation where GEA FTTC is not available and GEA services are provided using FTTP.
- 6.190 Since the GEA-FTTP 40/10 “data product”³²² has now replaced the other products, consistent with our proposed intention, we have decided to set a charge control on GEA-FTTP 40/10 “data product variant”, at the charge controlled MPF plus GEA FTTC level plus the 40/10 fibre premium.

Legal tests

- 6.191 In satisfying ourselves that the decision set out in this section meet the requirements set out in section 88 of the Act, we carried out our assessment in the context of our broader charge control decisions. For this reason, we rely on the reasoning set out under the legal tests in each of Volume 4 Section 1 to Section 5 in this regard.

³²² The voice element uses VOIP.

7. Legal tests

- 7.1 In Sections 1 to 6 and Volume 3 Section 3,³²³ we set out our decisions on pricing remedies in the physical infrastructure, wholesale local access (WLA Area 2 and WLA Area 3), leased lines access (LL Area 2, LL Area 3 and the HNR areas) and inter-exchange connectivity markets (BT Only exchanges and BT+1 exchanges, and for a transitional period BT+2 exchanges).
- 7.2 In order to give regulatory effect to our decisions, we have decided to set the SMP conditions set out in Volume 7.

Section 47 tests

- 7.3 For each SMP condition set out in this volume, we consider that the conditions we have decided 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 it 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 SMP conditions we have decided to set is objectively justifiable. The remedies that we are imposing 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 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”) (or can be treated as such under s.46(8A) of the Act regarding the inter-exchange connectivity BT+2 market). Consequently, we have identified where it appears to us from our market analysis carried out for the purpose of setting our 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 therefore exercising our discretion in setting these obligations in favour of an approach that promotes competition

³²³ We set out in that section our decision 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 charge control or a basis of charges obligation applies (the latter being a type of cost orientation obligation).

and investment in gigabit-capable networks, by Openreach and other providers, in areas with the potential for material competition, while protecting consumers and existing models of downstream competition in the short term. In the remaining areas, we have chosen an approach that promotes competition and investment in gigabit-capable networks by Openreach, while seeking to protect consumers and existing models of competition based on access to Openreach's networks.³²⁴

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

Not such as to discriminate unduly

- 7.7 We consider that each of the SMP conditions does not discriminate unduly against BT. We have decided that BT is the only telecoms provider to hold SMP in the markets that we have identified (or can be treated as such under s.46(8A) of the Act regarding the inter-exchange connectivity BT+2 market) and the SMP conditions seek to address that market position.

Proportionate

- 7.8 We consider that each of the SMP conditions we are setting 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 remedy is proportionate in Sections 1 to 6 and Volume 3 Section 3 in the context of the markets we have identified.

Transparent

- 7.9 We consider that each of the SMP conditions is transparent in relation to what is intended to be achieved. The text of the SMP conditions is published in Volume 7, and the operation of those conditions is aided by our explanations in this statement. Our statement sets out our analysis of responses to our consultations and the basis for our final decisions that we take.

Section 46 tests

- 7.10 In Volume 4 we are imposing pricing SMP conditions to apply to deregulated BT exchanges for a transitional period of 12 months. We consider this is consistent with section 46(8A) of the Act which provides that we can continue to treat a person (here BT) previously determined as having SMP in a given market, who we determine no longer has SMP in that market, as continuing to have SMP in that market for so long as we consider necessary to

³²⁴ We explain in Volume 1 how this objective meets our legal duties.

ensure a sustainable transition for those benefitting from the obligations imposed as a result of the previous SMP determination.

- 7.11 For the reasons set out in Section 3, we consider that the 12 month period is necessary for a sustainable transition for telecoms providers from Openreach's active leased lines to alternative services. We consider 12 months is no longer than is necessary to achieve this aim.

Section 88 tests

- 7.12 We have decided to impose SMP conditions requiring BT to adhere to: (i) certain price controls, rules about the recovery of costs and cost orientation; and (ii) an obligation for charges for network access to be fair and reasonable, except to the extent that a charge control or cost orientation obligation 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 SMP conditions satisfy the tests in section 88 of the Act.

Ofcom's duties

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