CityFibre response to the WFTMR Consultation

Non-confidential version

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Contents

1 Executive Summary

1.1 This document comprises our formal response to Ofcom's consultation entitled 'Promoting competition and investment in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26', published on 8 January 2020, hereafter referred to as the 'WFTMR Consultation'.[1]

1.1 Context for this review

1.2 We are pleased to be providing comments on the future of fixed telecoms regulation, at this critical point in the journey to achieving the Government's ambition of ensuring the UK has the world-class digital infrastructure necessary to meet the growing needs of consumers and businesses.

1.3 Following its 2015 Digital Communications Review, Ofcom made a strategic shift toward promoting infrastructure competition. Since then, Ofcom has set out its comprehensive plan for achieving this, which has included defining a new overarching objective of 'promoting competition and investment in fibre networks'. The WFTMR Consultation marks the first time that Ofcom is seeking to fully implement this new regulatory strategy.

1.4 In 2018, the UK Government published its Future Telecoms Infrastructure Review (FTIR) which set out the Government's ambition to deliver fibre connectivity to all. These ambitions have been reinforced more recently, including by the Prime Minister who has pledged to deliver nationwide full fibre coverage by 2025.

1.5 The Government has acknowledged that to meet this connectivity ambition, significant changes to the regulatory and policy environment will be necessary, including the implementation of stable and long-term regulation that incentivises competitive network investment.[2]

1.6 Both the Government and Ofcom recognise that the required investment levels to meet the future connectivity requirements is substantial; indeed, industry estimates suggest national fibre coverage will cost around £30bn.[3] This is an unprecedented level of investment, exceeding even the very significant levels of capital expenditure in fixed telecoms following market liberalisation in the 1990s.

1.7 In undertaking the challenging task of deploying fibre broadband for all, which will take many years to deliver, we consider that it is in the long-term interests of consumers to ensure that the new high-capacity networks are future-proof. Full fibre networks are universally recognised as the gold standard of digital network technology.[4] One reason for this is the

[1] Ofcom (2020) 'Promoting competition and investment in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26'. 8th January 2020. [Link]

[2] DCMS (2018) 'Future Telecoms Infrastructure Review'. Page 5. [Link]

[3] "The total level of investment required for the national roll out of full fibre is estimated to be in the region of £30 billion" [Source: FTIR. page 4].

[4] For example, see the 2018 National Infrastructure Commission report on 'Building a Digital Society' which notes that "Full fibre, a connection without any copper, is the best available broadband technology on the horizon." [page 21, Link]. A January 2020 Commons Library Briefing reiterated this point, stating that "Full-fibre is also the most reliable broadband technology currently available. Full-fibre connections experience fewer operating faults than copper-based networks and are cheaper to maintain and operate. Full fibre connections are also less likely to slow down when many people use the network." [page 7, Link]. Finally, Ofcom itself has recognised that "Full-fibre broadband connections can deliver much faster speeds than copper – up to one gigabit per second. They are also up to five times more reliable, and less likely to slow down when lots of people use them at the same time." [Link]

relative ease of upgrading the network, since once the fibre is installed the only required upgrades are with the electronic equipment attached to it.

1.8 We therefore consider that going forward, regulatory and policy interventions should prioritise investment in full fibre networks, over and above other network technologies. This is not least because partial-fibre technologies would in any event need to be replaced with full fibre in the near future as demand for connectivity outpaces the bandwidth capability of such technologies.

1.9 Furthermore, we consider that the COVID-19 crisis has further magnified the value that businesses, consumers and wider civil society place on reliable, high-quality connectivity as well as the importance in ensuring sufficient network capacity for all.[5]

1.10 Finally, we note that there is appetite at this time amongst investors to invest in this programme of infrastructure upgrade, provided that the right policy and regulatory environments are in place. This favourable investment window must be seized upon in order to ensure that consumers' connectivity requirements are met, both now, and for the decades to come.

1.11 We are therefore pleased to be providing comments on the future of fixed telecoms regulation and to support Ofcom in its critical role in supporting the investment case for full fibre deployment as well as in promoting competition more generally.

1.2 Ofcom's overall approach in the WFTMR Consultation

1.12 Given the significant levels of anticipated investment in new fibre networks over the coming years, Ofcom is proposing in the WFTMR Consultation a new approach to assessing and regulating fixed telecoms markets.

1.13 First, Ofcom is moving to a holistic approach to market assessment, by reviewing all wholesale fixed telecoms markets as part of one integrated review process. This reflects the fact that full fibre networks can supply services to a range of different customers – including residential consumers, businesses, the public sector and mobile network operators.[6]

1.14 In other words, Ofcom is recognising that such networks are an 'indivisible whole' and that regulation applying to each of the different fixed telecoms markets must be consistent in terms of the policy objective and regulatory approach. We fully agree that it is no longer appropriate to consider these fixed markets in isolation and Ofcom is entirely correct to move to a single integrated assessment of all fixed telecoms markets that can be served by full fibre networks.

1.15 Second, Ofcom proposes to lengthen the period of its competition assessment, from a three to a five-year duration. This would mean that the WFTMR would cover the period April 2021 to April 2026.

1.16 We consider that the aggregate effect of these two features will be to provide greater clarity and longer-term certainty for investors; this is critical for investors seeking to deploy capital for the building of full fibre networks. This approach will, directly support our investment case for deploying full fibre as well as ensuring that the regulatory regime will remain in place for

[5] We consider that, unlike full fibre, other 'gigabit-capable' technologies do not provide the reliable, future-proofed capability needed to support the UK's long-term digital ambitions, including its 5G goals.

[6] In fact, the 5G deployments will be entirely dependent on availability of fibre networks to provide sufficient mobile backhaul bandwidth.

at least five years. This is critical given the long payback period for such large-scale investments.[7]

1.17 Notwithstanding our support for Ofcom's overall approach, we note that in undertaking a single integrated review across all fixed markets, and doing so for a longer duration (five years) magnifies the importance of getting the regulatory regime right. Given that the effects of any mistakes or errors in judgement will be felt across more many markets, for many years.

1.18 Furthermore, as we noted above, there is appetite at this time amongst investors for deploying fibre networks, provided that the right policy and regulatory environments are in place.

1.19 For these reasons, it is absolutely critical that Ofcom takes extra care to ensure that its proposals provide the best possible scope for achieving its overall objective of 'promoting competition and investment in fibre networks'.

1.3 The critical actions Ofcom must take to ensure competition and investment in fibre networks

1.20 In terms of Ofcom's regulatory proposals in the WFTMR Consultation, at a high-level, we are pleased to see Ofcom's continued focus on its overarching regulatory strategy of promoting competition and investment in fibre networks. On this point, we wish to emphasise that ensuring all remedies link directly back to this overarching objective will be critical to achieving it.

1.21 We are specifically pleased to see clear explanation from Ofcom as to how it considers its proposed remedies will support this overarching regulatory strategy. An example of this is Ofcom's proposal in Wholesale Local Access (WLA) Area 2 to maintain the fibre to the cabinet (FTTC) anchor product on the 40/10 variant (i.e. not move to a higher speed) and also to move to a CPI-0% price cap.[8] These proposals clearly seek to provide the right kind of market conditions for promoting market-wide investment in fibre networks.

1.22 However, in a number of places we consider that Ofcom's proposals in the WFTMR Consultation do not fully align with its overarching regulatory strategy. As a result, Ofcom risks undermining investment incentives and failing to meet the Governments connectivity ambitions.

1.23 Examples of these include: regulation of geographic discounts and other commercial terms (Annex 15 of the WFTMR); geographic market definition (i.e. Area 2 and Area 3 boundary); and ensuring an effective Physical Infrastructure Access (PIA) product. We set out in this response areas where we consider Ofcom needs to adjust its proposals in order to ensure that it is promoting competition and investment in fibre networks to the maximum extent possible.

[7] For example, Ofcom considered in the 2016 WLA that the payback period for BT's FTTC investment was around 10 years. We note that that investment only constituted around a tenth of the investment envisaged to deploy full fibre across the country. As such, payback times could be well in excess of 10 years.

[8] We refer to Ofcom's charge controls and charge control levels as a 'price cap' when discussing the specific charge controls Ofcom proposes to put in place as the upper limit of what BT/Openreach can charge for the regulated product. We consider a price cap to be an upper limit on what a business can charge for a given product or basket of products and is only one form of many other charge control measures a regulator can impose such as e.g. a price floor. Where we refer to 'charge controls' in the document we refer to the general use of the term and in reference to general strategy i.e. we use it to include all the potential charge control measures Ofcom can put in place in addition or substitution of the price cap charge control e.g. Regulated Asset Base (RAB) charge control or a price floor.

1.24 We highlight below the critical areas where we think Ofcom must revise the approach it has set out in the WFTMR Consultation. We consider that failure to address these issues will put Ofcom's objective of promoting competition and investment in fibre networks at critical risk.

i. **Ofcom must ensure it effectively addresses the risk of anti-competitive conduct from Openreach, by reinforcing its proposals in Annex 15. This must include:**

- Extending the prohibition on geographic discounts to include all ancillary charges (most especially connection fees).
- Addressing the prevailing uncertainty on the precise forms of wholesale pricing by Openreach that would and would not fall foul of the Article 15 provisions, by issuing detailed guidance.

ii. **The proposed Wholesale Local Access (WLA) and Leased Line (LL) Access geographic market definition and associated postcode allocation risks deterring commercially attractive investment:**

- To address this Ofcom must ensure that parts of the UK that are commercially attractive for fibre deployment are not allocated to Area 3. As such, Ofcom needs to undertake analysis to identify all postcode sectors (currently allocated to Area 3) which are viable for commercial deployment.

iii. **PIA is not working effectively today, and urgent action is needed by Ofcom to ensure that PIA delivers on its promise, specifically:**

- Ofcom must impose equivalence of inputs (EoI) on Openreach in respect of PIA, as it has now become clear the current regime based on 'no undue discrimination' is not sufficient.

iv. **Ofcom must give urgent attention to prevailing demand-side barriers that are limiting the scope for competition and investment in fibre networks by:**

- Ensuring fixed broadband switches (especially cross-platform) are fully Gaining-Provider Led (GPL) by the start of the market review period.[9]
- Putting rules in place around how broadband can be advertised, to stop confusing advertising that misleads customers into believing they are buying full fibre, thereby suppressing demand for actual full fibre services.
- Making sure that the copper switch-over is competitor neutral and that Openreach does not gain an unfair advantage. This will be critical for ensuring that consumers' interests are fully served. This must also deal with the specific risk of anti-competitive impacts from the copper switch-over, which Ofcom can mitigate by ensuring that Openreach is not able to deter rival network deployment by locking in ISP customers directly or indirectly through wholesale agreements.

1.4 Detailed summary of our response

1.25 Having listed (above) the critical actions Ofcom must take, we now set out a more detailed summary of each of the four key issues outlined above. These issues form the basis for much of the substantive points we make in the remainder of this document.

[9] We note that in May 2020 Ofcom stated that implementation of the EECC was still planned for December 2020, however that implementation may take 12 months from that date. We consider that implementing GPL switching will take some time, however, consider that at least an initial cross-platform GPL process could be in place by the start of the market review period (i.e. April 2021).

Anti-competitive Openreach pricing

1.26 In Annex 15 of the WFTMR Consultation, Ofcom sets out its concern that BT, via Openreach,[10] may adopt wholesale pricing structures which would deter alternative network rollout.

1.27 Overall, we are very pleased that Ofcom has recognised that Openreach has the ability and incentive to use its dominant market position to foreclose rival network operators by using wholesale pricing structures to reduce the returns available to investors in new fibre networks and to thereby undermine their investment case.[11]

1.28 We consider that it is vital that Ofcom comprehensively address this competition concern. Failure to do so would drastically undermine investment incentives by rival operators to BT, shield Openreach from emerging competition and directly curtail the achievement of Ofcom's strategic objective of 'promoting competition and investment in fibre networks.'

1.29 Ofcom identifies the specific concern that Openreach may use geographically targeted price reductions, which involve charging different prices for the same wholesale access in different locations, in order to deter rollout in areas where others are starting/planning to roll out new fibre networks.[12] However, Ofcom also recognises that Openreach could use other commercial terms (such as loyalty discounts or pricing contingent on large volume commitments from wholesale customers) in order to deter alternative network rollout. An example of Ofcom's concern is commercial terms which disincentivise access seekers from moving volumes from Openreach to an alternative operator and, in so doing, undermine investment in alternative networks.[13]

1.30 We are also very pleased to see that Ofcom has identified geographic discounts as a specific concern. But simply identifying the issue is not sufficient. To address it, Ofcom must ensure that Openreach cannot engage in geographic price discounts through any form, including ancillary components of an offer such as connection fees. Under Ofcom's current proposals Openreach would be restricted from being able to target geographic discounts on fibre to the premises (FTTP) rentals but would have no restriction in respect of connection fees or other economic elements.

1.31 Because Ofcom is not proposing an outright prohibition on geographic discounts, vigilance is required to avoid harm to competition. Ofcom's proposals provide for Openreach to apply for exemption through the 'Process for granting consent for geographic price variations.' Ofcom proposes that under this process, Openreach would bear the burden of setting out the objective justification for the offer.

1.32 This effects-based approach is also adopted in Ofcom's proposals regarding other commercial offers, in which Ofcom states that it "would expect to prohibit any commercial terms which created a barrier to using alternative network operators which Openreach could not justify."

[10] In this document we use 'Openreach' predominantly (as opposed to BT) when discussing regulatory matters, given they are deemed the SMP operator. However, we note that Ofcom seems to use Openreach and BT interchangeably in the WFTMR Consultation and so when we refer to Ofcom proposals, we seek to use their own language which in some instances refer to 'BT' directly as opposed to Openreach.

[11] Ofcom (2020) "Promoting investment and competition in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26'. [WFTMR]. Annex 15. Page 111. Paragraph A15.6. [Link].

[12] Ofcom (2020) WFTMR Consultation. Annex 15. Page 112. Paragraph A15.7.

[13] Ofcom (2020) WFTMR Consultation. Annex 15. Page 112. Paragraph A15.12.

1.33 We are pleased to see Ofcom setting out so clearly the concern about how Openreach's conduct threatens effective competition, as well as Ofcom's proposals to tackle these issues with *ex ante* regulation. In terms of addressing these concerns, we recognise that it may not be appropriate to impose outright bans on all possible wholesale offers and therefore, that a case-by-case approach to assess the effects could be adopted for determining whether Openreach should be allowed to launch a particular offer.

1.34 Notwithstanding this, we consider Ofcom must ensure it does not allow Openreach to launch offers which, although they may provide some short-run consumer benefits (e.g. in the form of lower pricing), have at their heart the strategic objective of foreclosing rival operators.

1.35 While we fully support undertaking case-by-case assessments of the effects, we consider that Ofcom's proposals do not deliver sufficient clarity and certainty on the precise forms of wholesale pricing that may be adopted. To address this, we consider that Ofcom should provide detailed guidance as to the types of terms and pricing that will be permitted, as well as not permitted. This form of guidance we feel is particularly apt for a regulatory intervention that seeks to prevent anti-competitive conduct *ex ante*.

1.36 A critical feature of that guidance could be to address the question of how Ofcom would, going forward, approach the question of the existing Openreach price offers, such as the Localised Marketing Offer (LMO) and GEA volume discounts. Without fettering Ofcom's discretion to consider any future offers that Openreach seeks to launch, we consider that existing offers in the market can serve as useful case-studies, in order to allow Ofcom to set out its framework for assessing such offers going forward. This would provide much needed clarity and certainty for the industry.[14]

1.37 Providing such clarity and guidance will not simply make the remedy more effective; it will also make the remedy more predictable in its application, thereby reducing regulatory uncertainty across the industry. This should be in the interests of Openreach itself and Ofcom, by reducing the likelihood that there will be costly and distracting disputes about particular pricing or terms down the track. Furthermore, avoiding any wasted resources (time, attention and money) arising from such disputes will undeniably be in the interests of final consumers.

Geographic market definition

1.38 Ofcom is proposing three relevant geographic markets in respect of WLA (and LL Access), which vary according to the level of existing and anticipated presence of rival multi-service networks (MSNs) to BT. In the WFTMR Consultation, Ofcom defines these as:

- Area 1: "a geographic market comprising postcode sectors where there are at least two established rival MSNs to BT";[15]
- Area 2: "a geographic market comprising postcode sectors where there is already some material commercial deployment by rival MSNs to BT or where this could be economic";[16]

[14] Worked examples that illustrate that, for example, Openreach's LMO (described below) would require objective justification in order to remain open (and the type of evidence that would be required to support such a justification) does not limit or restrict Ofcom's future freedom, but would help focus Openreach and those affected by its conduct on the most important issues, improving the efficiency of the regulatory process.

[15] Ofcom (2020) WFTMR Consultation. Volume 2. Page 91. Paragraph 7.46. [Link].

[16] Ofcom (2020) WFTMR Consultation. Volume 2. Page 83. Paragraph 7.6 (a).

- Area 3: "a geographic market comprising postcode sectors where there is unlikely to be material commercial deployment by rival MSNs to BT".[17]

1.39 While we in principle agreed with these definitions when we first saw them, a subsequent statement made by Ofcom on 10 March 2020,[18] Ofcom clarifies that it is in fact proposing that Area 2 comprise only areas where there is either a) existing material MSN deployment, or b) actual build plans for such deployment, (i.e. Area 2 does not include all those areas that could support commercial deployment, such as from a rival MSN to BT):

> *"We are now proposing only to rely on operator's actual build plans when identifying areas where material commercial deployment could be economic. This is because we think it could be speculative to base our view of 'economic' areas on our cluster analysis (see paragraph 7.34)."*

1.40 This means that all places (i.e. postcode sectors) for which there are no existing MSNs and no current build plans, will be allocated to Area 3. In other words, Ofcom proposes that the parts of the UK where it would be commercially viable for alternative fibre operators such as CityFibre to enter, but where such deployments are not currently 'planned', should be allocated to Area 3.

1.41 On the basis of Ofcom's proposed market definitions (noting the above clarification), Ofcom has allocated postcode sectors (the proposed geographic unit) to each relevant market. On the basis of this exercise, Ofcom proposes in the WFTMR Consultation that there are no locations that meet the definition of Area 1. Ofcom proposes that there are 6,037 postcode sectors (21.3 million premises) meeting the definition of Area 2, and 3,521 postcode sectors (9.2 million premises) that meet the definition of Area 3.

1.42 Critically, of the 9.2 million premises (representing ~30% of all UK premises) that Ofcom proposes should be allocated to Area 3, a significant proportion of these are likely to be commercially viable for alternative fibre operators such as CityFibre. This is based on the UK Government's assessment that only around 20% of the UK will be unable to support commercial fibre deployment.[19]

1.43 By implication, the UK Government consider that 80% of the UK can support commercial fibre deployments. Indeed, this was noted explicitly in the FTIR when discussing "*Areas that can support commercial roll out of two or more gigabit-capable networks*" noting that "*These areas are likely to comprise around 80% of premises*."[20]

1.44 On the basis of this, one can estimate that around one third of Area 3 as currently proposed by Ofcom (equating to 3.1 million premises) would be commercially attractive for rival MSNs to BT. We present this graphically in Figure 1.1 (below):

[17] Ofcom (2020) WFTMR Consultation. Volume 2. Page 84. Paragraph 7.6(b).

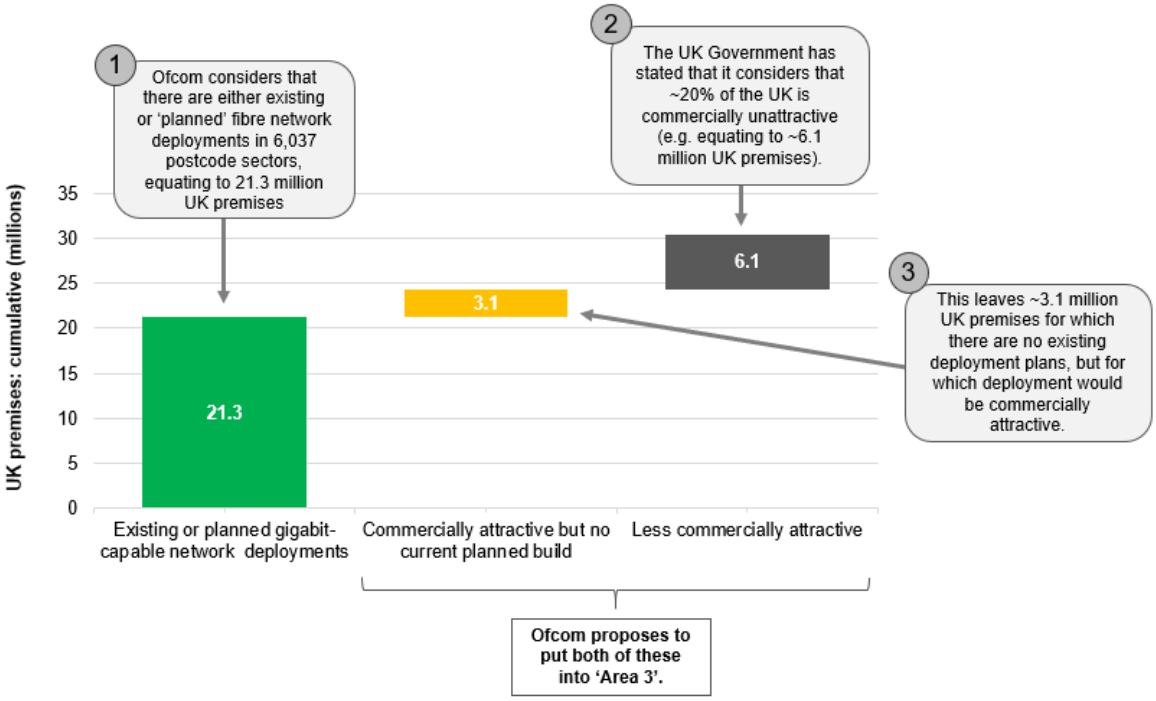
[18] Ofcom (2020) 'Update 10 March 2020 – clarification on Area 2'. 9th March 2020. [Link]

[19] This is based on the UK Governments latest assessment that around 20% of the UK will be unable to support commercial fibre deployment: "As a result of The Future Telecoms Infrastructure Review, the Chancellor announced [in May 2019] a £5 billion commitment to fund gigabit capable broadband for the 20% of UK premises that would be unlikely to receive commercial access to gigabit capable broadband."

Source: DCMS (2020) 'Building Digital UK'. 26th March 2020. [Link].

[20] DCMS (2018) FTIR. Page 40. Paragraph 108.

Figure 1.1 Ofcom's proposed approach to WLA geographic markets in light of the UK Government's assessment of commercially attractive areas



Source: CityFibre analysis based on Ofcom and DCMS data

1.45 Allocating commercially attractive postcode sectors to Area 3 raises the material risk of significant regulatory failure.[21] This is because postcode sectors that are commercially attractive today, and allocated to Area 3, will likely no longer be commercially attractive (given Ofcom's proposed remedy package in Area 3). In other words, the combination of Ofcom's postcode sector allocations, and Ofcom's proposed remedies that would apply to Area 3, will likely directly undermine investment that would otherwise have taken place.

1.46 In addition, Ofcom's proposal to use 'planned' deployments (and not simply commercially attractive areas) to delineate between geographic markets fails to account for the ever-evolving nature of plans. For instance, plans made today could look very different in six-months' time.

1.47 Furthermore, it is not clear how Ofcom intend to take account of deployment plans made after the WFTMR Statement is published in April 2021. For instance, we have recently increased our deployment ambition from 5 million to up to 8 million premises. However, we are still assessing which towns/cities comprise this incremental 3 million.

1.48 For these reasons, Ofcom must reconsider its proposed market definition and associated allocations of postcode sectors in order to ensure that parts of the UK that are commercially attractive for deployment are not allocated to Area 3. This involves two steps:

[21] Ofcom has previously defined 'regulatory failure' as follows: "*Regulatory failure arises when public intervention is unwarranted, or even when appropriate, it is subject to errors that significantly reduce its benefits*" Source: Ofcom (2009) 'The PRS Scope Review'. 28th October 2009. Page 21. Footnote 26. [Link].

i. Identify all the areas (postcode sectors) currently allocated to Area 3 (i.e. for which there are no current build plans) that are commercially attractive for fibre network deployment.

ii. Having identified these areas, move them out of Area 3. This could involve moving them to Area 2, or alternatively into a newly defined market, e.g. 'Area 2.5'.

1.49 In order to achieve '1' we propose that Ofcom undertake two complementary activities. Firstly, Ofcom should ask network builders what parts of the UK they consider are commercially attractive. This would be the 'first-best' source of evidence as operators (and not Ofcom) are best placed to assess which areas are likely to be attractive for investment given all of the relevant commercial considerations.

1.50 While this exercise will help to identify many of the commercially attractive areas, it may not identify all commercially attractive locations given that operators may not have considered all possible locations across the UK. Given this we consider that Ofcom should also undertake its own assessment of commercially attractive areas, which could be based on population density and clustering analysis. Such analysis was in fact undertaken by Ofcom in its December 2018 consultation on 'Promoting investment and competition in fibre networks: Approach to geographic markets'.[22]

1.51 While we think Ofcom's broad approach to clustering analysis as set out in the December 2018 consultation is the right one, we consider that Ofcom's analysis failed to consider a number of key considerations and as a result significantly underestimated the number of postcode sectors that are likely to be commercially attractive. In light of this, we submitted to Ofcom in October 2019 a submission in which we set out a framework for assessing commercially attractive postcode sectors. We attach that submission to this response in Annex 3.

1.52 Once Ofcom has correctly identified all postcode sectors which are commercially attractive, we consider that Ofcom has two options: i) move all these postcode sectors to Area 2, or ii) move these postcode sectors into a new market (i.e. 'Area 2.5').

1.53 In terms of Option 1, this would have the benefit of simplicity and also promoting investment and competition across all areas that are commercially viable. Fundamentally this would provide the greatest level of support to achieving Ofcom's overarching regulatory objective of promoting competition and investment in fibre networks.

1.54 Option 2 on the other hand could be used if Ofcom were to be concerned that such areas may not see commercial deployment for some time, and that there may be scope for consumer detriment during the interim period. In this case, Ofcom could define an 'Area 2.5' that is comprised of a set of remedies that seek to promote investment as much as possible but also takes account of the risk that deployment does not materialise in the short run.

1.55 Finally, we wish to highlight that the regulatory proposals Ofcom makes in this market review are not just relevant for investment in areas that are currently commercially attractive, but also for those areas that could (soon) become commercially attractive. For example, measures to address demand-side barriers (as we discuss in Section 8) and ensuring improvement in the PIA product (as we discuss in Section 5.1) will help to improve the overall business case for fibre deployment, allowing operators to build out further into the rural areas.

[22] Ofcom (2018) 'Promoting investment and competition in fibre networks: Approach to geographic markets'. 11th December 2018. Section 4. [Link].

1.56 In addition to such regulatory measures, mechanisms set out in the revised European Electronic Communications Code (EECC) would also greatly support fibre investment, including through co-investment schemes and through transparency mechanisms. We think these will be critical for supporting the process of determining where and how full fibre rollout will take place in Ofcom's Area 3.

1.57 Transparency measures have already been implemented in France, and their experience, strongly suggests that many areas across the UK which are currently deemed by Ofcom to be commercial rollout could become so if similar transparency measures were in place.

1.58 The reason for this is that maximising the number of commercially attractive areas across the UK rests on implementing mechanisms to address three key things: i) the cost of deploying networks, ii) the take-up of services (i.e. demand) and iii) the risks of the investment. Transparency directly supports 'ii' and 'iii' by providing greater clarity and certainty about the likely penetration (on the basis of rival presence).

1.59 In addition, the concern from investors is that an area that may be attractive for an operator to deploy would become unattractive if there is rival build taking place at the same time or imminently thereafter. This can lead to a 'hold up' problem where the anticipated returns do not support a commercial investment case, on the basis of anticipated overbuild. Transparency measures would help to address this and ensure commercially funded networks are deployed into as many areas as possible as fast as possible.

1.60 The case for implementation of a transparency mechanism to address the 'hold up' problem was explicitly recognised by the Government in the FTIR.[23] [24] It is surprising therefore to see no discussion in the WFTMR Consultation of how this mechanism could be utilised to assist Ofcom in achieving its objectives. We urge Ofcom to integrate into its approach the use of the EECC mechanisms for promoting investment, to guide more efficient and extensive capital deployment into Area 3.

PIA

1.61 Despite many years of progressively stricter regulation, PIA remains today a product that is not fit for purpose. While PIA has enormous potential to transform the business case for fibre deployment, it continues to frustrate users by not delivering the cost and time savings which it ultimately could if implemented effectively.

1.62 We are one of the largest users of PIA. For instance, we currently account for a significant proportion of all notices of intent (NoIs)[25] placed with Openreach [✂]. In addition, we are seeking to make use of PIA for our future deployments as much as possible.

1.63 However, for the reasons set out below the benefits of using PIA today fall far short of what it has the potential to deliver. Specifically, we estimate that PIA is currently delivering less

[23] DCMS (2018) 'Future Telecoms Infrastructure Review'. 23rd July 2018. Paragraph 17.

[24] At present only limited voluntary transparency exists. It remains the Government's policy to implement in full the EECC, notwithstanding the UK's exit from the EU.

[25] NoIs refer to the first stage in the ordering process for the PIA product. The NoI process allows a CP to place an order for those elements of Openreach's duct and pole infrastructure that it intends to use. The CP will use the PIA Map Tool via the Openreach portal to select the infrastructure elements, e.g. duct, joint chambers and poles that it requires. These elements then form part of an NoI. The NoI provides CPs with permission to access the Openreach infrastructure and install its equipment within, as such a CP is unable to enter the Openreach infrastructure and deploy its assets using PIA without a valid NoI.

than half of its potential costs saving. Ofcom must address this short fall in order to support investment.

1.64 For the first seven years of its existence, very little use was made of PIA. This was because over that time the product was not usable for wide-scale deployments, not least because of the lack of information about available duct/pole capacity and the complicated and administratively burdensome ordering process. Regulatory changes imposed by Ofcom in 2016 forced Openreach to adapt the product, which then started to yield some benefits from its use, to network builders like ourselves.

1.65 What is perhaps most frustrating for operators seeking to make use of PIA is that, while the issues with PIA are many, none of them are especially complex. In fact, the majority of them could easily be addressed by the end of 2020, through proactive effort by Openreach.

1.66 The major issues which need to be resolve are systems related. A lack of automation and integration means that too much reliance is placed on the manual submission of spreadsheets and communication through chains of email correspondence between the communication provider (CP)[26] and Openreach. Protracted communications back and forth between a CP and Openreach results in much wasted time and resources (for both parties).

1.67 One example of this is network design, in that while CPs design their network plans on their own GIS systems, due to the inadequacy of the Openreach systems, these designs cannot be simply transferred onto the Openreach systems, rather they must be manually transposed into Openreach's mapping tool, making network design and build much slower for CPs than for Openreach.

1.68 In Section 5.1 we set out in detail the critical prevailing issues with PIA. These broadly fall into five categories:

i. Systems: the systems for PIA have not been updated for many years and are completely inadequate for serving large-scale deployments.

ii. The Network Adjustment Process: when CPs encounter blockages in the network (which is fairly often), the required process for notification and resolving the issue is complex and time consuming. This slows anyone competing with Openreach.

iii. Refusal to supply wayleave information: while CPs have the right to make use of BT's wayleaves (following changes introduced by the Government in December 2017), Openreach refuses to reveal where these are, meaning CPs cannot in practice benefit from this provision, and are instead left with no choice but to obtain and pay for duplicate agreements with property owners, adding delay and cost to fibre deployment.

iv. Lack of incentive on the part of Openreach: Openreach has no commercial incentive to make PIA work efficiently.

v. Forecasting: CPs are required to provide extensive forecasts to Openreach six months in advance. Openreach has managed at best to reach 42% accuracy in translating

[26] A communications provider (CP) means a person who (within the meaning of section 32(4) of the Communications Act 2003) provides an Electronic Communications Network or an Electronic Communications Service.

these forecasts into usable information.[27] CPs question the value of the current forecasting regime.

1.69 In Annex 2 we set out the progress that has been made to date on addressing issues such as those listed above. The key conclusion we draw is that even after many years of proactive effort by those using or wanting to use PIA, many of the outstanding issues remain unaddressed. We consider that these issues could be quickly and easily resolved if Openreach was so minded and appropriately incentivised to do so.

1.70 To date Ofcom has relied on imposing a no undue discrimination obligation on Openreach in respect of PIA provision. We consider that this will not be sufficient to deliver an effective PIA product within a reasonable timeframe, and therefore call on Ofcom to impose Equivalence of Inputs (EoI) on Openreach in respect of PIA provision.[28]

1.71 We consider that full equivalence is necessary to provide incentives for Openreach to address issues with the PIA product (i.e. by forcing them to consume the same product as they offer rivals) in order to address concerns about Openreach being able to use its own infrastructure more effectively than its rivals. As Ofcom is well aware, it is only following the imposition of EoI that other regulated products such as LLU and Ethernet have become effectively usable by CPs.

1.72 On this point we note that Ofcom's own cost modelling analysis assumes that Openreach will use its own infrastructure to deploy fibre networks roughly 70-80% of the time, whereas Ofcom assumes a rival network builder will use PIA around 30-50% of the time.[29] We do not see why there should be any divergence and therefore consider that full equivalence must be implemented on the basis that the current regime (based on 'no undue discrimination') is clearly leaving rivals to Openreach at a significant disadvantage.

Demand-side

1.73 While Ofcom is not formally consulting on demand-side issues, we wish to highlight that addressing demand-side barriers will be essential to achieve Ofcom's strategic objective of promoting investment and competition in fibre networks.

1.74 This is because as full fibre networks are rolled out, maximising the number of people using them will: i) underpin the investment case, and ii) secure the full benefits of the technology. Achieving this will involve ensuring timely migration of customers off of legacy networks and onto new fibre networks. However, at present, there are a number of barriers to this.

1.75 Specifically, we consider that there are two demand-side obstacles that require urgent regulatory action since they are standing in the way of the UK achieving its full fibre ambitions:

[27] Openreach (2020). 'PIA Forecasting: Mid-term review'. 9th January 2020. Slide deck provided to industry. Slide 4.

[28] Openreach's own extensive deployment of its own full fibre network means that the costs and benefits of imposing EoI are now totally different to when the original decision not to impose EoI was made, at a time when Openreach was undertaking relatively small amounts of full fibre build.

[29] Ofcom notes in Annex 17, paragraph A17.32 that: "we have made the following reusage assumptions for the modelled network:

• For the entrant price-cost test, we assume the re-use of physical infrastructure varies between 30% and 50%.

• For our RAB calculations, we assume that Openreach can re-use between 70% and 80% of its physical infrastructure in Area 3."

i. **Removing barriers to consumers' ability to assess and understand the benefits of full fibre broadband (including advertising practices that make it difficult for consumers to comprehend what is on offer):** Ensuring that consumers understand the benefits of full fibre, and are able to make informed choices, is critical to promoting the take up and usage of it. A precondition to achieving this is to ensure that advertising practices do not create confusion, i.e. make it difficult for consumers to distinguish between services and technologies according to reliability and quality of experience. Ofcom should explore the possibility of using the General Conditions of Entitlement to mandate advertising practices that enable consumers to easily distinguish full fibre broadband from other offerings as regulators elsewhere have done (such as in Italy and France).[30]

ii. **Making consumer switching easier:** The industry is currently in dialogue to agree the process for fixed (phone and broadband) switching that will apply from 2021 onwards, to bring it in line with the Gaining Provider Led standard. The ambition is to ensure that consumer switching (especially across networks) is seamless and quick. Achieving this will ensure that consumers see there being minimal barriers to switching and thereby being able to easily migrate off legacy broadband services and onto full fibre. Ofcom is being presented with two options, one of which (namely 'Option Y') is likely to significantly increase the propensity of consumers to switch. We believe that this option must prevail and be effectively implemented in order to ensure switching becomes easier.

1.76 These barriers act to directly limit the amount of consumer switching that takes place in the market. In fact, Ofcom's own switching tracker shows that consumer switching is low in the broadband sector, and that this low level of switching has persisted for many years. For example, Ofcom's 2019 Core Switching Tracker survey showed that only 7% of respondents had switched their fixed broadband service in the previous 12 months. If only 7% of consumers switch from legacy broadband to fibre broadband each year, then it will take over fourteen years to migrate all customers, which is far too slow to support ubiquitous fibre by 2025.

1.77 It is therefore critical that these demand-side issues are addressed quickly to ensure there is sufficient take-up and usage of fibre networks when available to support the fibre investment case.

1.78 We consider that migration onto fibre networks should not be forced, and that all reasonable efforts must be made to support voluntary migration. To address the remaining 'non switchers' we agree that the copper switch-over has a key role to play. As a starting point, we fully recognise that the copper switch-over is a key component in supporting investment in fibre networks, in that it can help stimulate demand for fibre, to enable new networks to achieve scale quicker, and to ensure a smooth transition process for customers.

1.79 However, in line with the UK Government's statements in the FTIR, we consider that the copper switch-over must be competitor neutral and not provide Openreach with an unfair advantage.[31] Only by ensuring this will consumers' interests be fully served.

[30] In 2016, the French Government adopted a decree to limit the circumstances in which "fibre" may be used in advertising to FTTP (including fibre for the in-building wiring) and required the indication of upload speeds in addition to download speeds.

In 2018, the Italian regulator AGCOM implemented a mandatory traffic light labelling system for advertising broadband products. For fixed networks, ADSL offers are marked in red with an R, FTTC offers are marked in yellow and FTTP offers are marked in green. Only FTTP services are allowed to be advertised as fibra/fibre.

[31] DCMS (2018) FTIR. Page 9

1.80 Given this, we are surprised that Ofcom does not appear to have considered how the copper switch-over can help to stimulate demand in areas of the UK where Openreach is not planning to deploy fibre networks. To the extent Ofcom wishes to promote UK-wide migration to fibre services, we would expect Ofcom to set out in its consultation, how the copper switch-over will work in areas where alternative networks (and not Openreach) have deployed fibre, and indeed how the copper switch-over can help support that alternative operator's investment case.

1.81 Notwithstanding this, we consider that overall the copper switch-over raises a significant risk of anti-competitive effects which could have very detrimental impacts on competition in the market. This is because, as proposed, the switch-over will allow Openreach to all but eliminate take-up uncertainty for its fibre network deployment. Take-up uncertainty is one of the biggest risks facing fibre investors, and directly impacts incentives to invest.

1.82 This concern arises because Openreach today enjoys a dominant position in the market for broadband services, with around 70-80% of broadband customers currently on the Openreach network.[32] Given this, the switch-over could allow Openreach to simply leverage its existing dominant market position from copper services to fibre services. The manifestation of the concern would be to distort market incentives for fibre investment, in a way that would favour Openreach over other operators. This competition concern is based on the following logic.

- The investment case for deploying fibre broadband networks (by any operator) critically relies on the assumption that there will be sufficient demand for such services.
- The vast majority (70-80%) of UK broadband customers are today on the Openreach network (most of these take copper-based services).
- If allowed to simply migrate its existing (copper broadband) customers onto its fibre network, Openreach would be able to: a) all but eliminate take-up risk in respect of its fibre network, and b) ensure high levels of take-up/penetration (e.g. up to 80%) within a few years of its fibre deployment.
- In sharp contrast, the take-up risk for alternative networks remains very significant and they will need to build market share over time.
- This significant divergence in take-up risk between Openreach and entrant network operators significantly distorts fibre investment incentives, in favour of Openreach. If this occurs, Openreach's market dominance will likely be further entrenched and the scope for a competitive market may be destroyed.

1.83 In short, the copper switch-over provides a significant incumbency advantage to Openreach who will, relative to other operators, reduce their investment risk given that it is effectively able to eliminate take-up risk on its full fibre network by leveraging its existing overall broadband market dominance.

1.84 While we consider this to be a very significant risk, we recognise that addressing this concern directly through the copper switch-over process (i.e. Ofcom imposing obligations on Openreach in respect of the switch-over process) may not be practical. One reason for this is that Ofcom does not have powers to instruct Openreach as to where it deploys its fibre network, nor over which technology Openreach wishes to use to offer services.

[32] Ofcom (2020) WFTMR Consultation. Volume 2. Page 123. Paragraph 8.97

1.85 In addition, the copper switch-over does have a key role to play in promoting migration of customers onto full fibre networks, which is something we are very keen to support.

1.86 As such, a careful balancing act is required in order to seek to preserve the benefits of copper switch-over while addressing the anti-competitive risk. In the first instance we consider that the risk of any harm to competition would be significantly mitigated if BT Retail was operating genuinely independently from Openreach in relation to its network purchasing strategy. In this case BT Retail would be incentivised to mass migrate its customers onto whichever fibre network was present in an area, regardless of who owns/operated it.

1.87 We see no reason why a legally-separated and independent BT Retail would not want to purchase access from rivals to Openreach, especially in areas where such rivals have a fibre network and Openreach does not. Its willingness to do so (as we noted above) would mitigate anti-competitive effects from the switch-over process.

1.88 Notwithstanding whether BT Retail is willing to depart from its sole reliance on Openreach we consider that there are two broad actions that Ofcom must take to mitigate the risk of anti-competitive effects from the copper switch-over (as outlined above) while preserving the benefits from it. These two actions are:

- **Ensuring Openreach is unable to lock in ISPs through wholesale agreements**: The risk that Openreach will leverage its existing market dominance is reduced significantly if regulation is in place to ensure that Openreach cannot use wholesale pricing to lock in ISPs (e.g. through promotions and loyalty inducement mechanisms). This is a critical issue as if Openreach is in fact able to lock in ISPs then this directly deters alternative network rollout. This issue is being considered by Ofcom as part of its proposals in Annex 15 of the WFTMR. We consider Ofcom's proposals are broadly right but, in some places, do not go far enough. We set out our detailed views on these proposals in Section 7 of this document.
- **Promoting consumer engagement and making switching quicker and easier**: Openreach's existing high broadband market share (70-80%) is less of a concern if consumers considering taking fibre services are engaged and able to switch provider quickly and easily. We discussed such measures above in paragraph 1.75. This would mean that alternative operators are more easily able to compete for these customers and therefore the divergence in take-up risk between Openreach and alternative operators would decrease.

1.89 Overall, we consider it is critical that Ofcom and Government work proactively with industry to address any and all demand-side barriers, in order to support the achievement of the objective of promoting investment and competition in fibre networks, as well as to address the risk of anti-competitive effects (e.g. from the copper switch-over).

1.90 The remainder of this document is structured as follows:

- **Section 2:** sets out a high-level introduction, including the market context for this market review as well as an overview of our current deployment ambitions
- **Section 3:** sets out our comments regarding market definition
- **Section 4:** sets out our comments regarding SMP
- **Section 5:** sets out our comments regarding non-price remedies
- **Section 6:** sets out our comments regarding price remedies

- **Section 7:** sets out our comments regarding Ofcom's proposal on regulation of geographic discounts and other commercial terms (set out in Annex 15 of the WFTMR)
- **Section 8:** sets out our assessment of demand-side barriers that exist in the market
- **Annex 1:** sets out why Ofcom's strategic shift to promoting investment (including by departing from cost-based price regulation) has been effective
- **Annex 2:** sets out examples of the lack of progress in recent years on PIA issues
- **Annex 3:** comprises (as a separate attachment) our October 2019 submission to Ofcom on WLA geographic markets
- **Annex 4**: sets out the list of announced CityFibre towns and cities
- **Annex 5:** sets out a mapping of the WFTMR Consultation questions, and where in this document we respond to each

2 Introduction

2.1 This section provides relevant market context for the WFTMR, including the significant market-wide investment that is expected to take place over the next few years in light of Ofcom's strategic shift towards promoting infrastructure competition.

2.2 We also provide in this section an overview of CityFibre, our current ambitions, and a summary of recently announced commercial activities, including the acquisition of FibreNation, our new wholesale agreement with TalkTalk and mobile backhaul agreement with Three.

2.1 Market context

The UK Government's future connectivity ambition will require significant levels of investment

2.3 The UK Government has set out its ambition to ensure that the UK has the telecoms infrastructure it needs to meet the growing demands of consumers and businesses, and to promote the benefits of connectivity more generally across the UK. The Government has made clear that they are keen to see this delivered as soon as possible, with Boris Johnson setting the target date to 2025.[33]

2.4 Today most broadband customers are served by copper-based networks which are now struggling to meet the needs of consumers. Furthermore, these networks have pretty much exhausted their upgrade potential. As a result, significant investment is required to deploy new state-of-the-art digital networks to meet the needs of the nation.

2.5 We consider that it is in the long-term interests of consumers to ensure that these newly deployed high-capacity networks do not need to be upgraded for many decades. Given this we highlight that full fibre networks are future proof in that once the fibre is installed the only required upgrades are with the electronic equipment attached to it. Furthermore, full fibre is universally recognised as the gold standard digital network technology with the maximum potential connectivity attributes.[34]

2.6 Given this, we consider that all future regulatory and policy interventions should prioritise investment in full fibre networks, over and above other network technologies, which would likely need to be replaced with full fibre anyway after a few years.

[33] During his leadership campaign in July 2019 Boris Johnson decried the FTIR ambition to be "laughably ambitious" and proposed that as part of his promise to level up Britain we "say goodbye to the UK's mañana approach to broadband and unleash full fibre for all by 2025". (Source: Jackson, Mark. (2019) 'Boris Johnson Pledges Full Fibre for All UK by 2025 – Doesn't Say How'. 17th June 2019. ISPreview (news article). [Link]).

Johnson repeated this pledge as he entered Downing Street and in his party's Manifesto: "We intend to bring full fibre and gigabit-capable broadband to every home and business across the UK by 2025. (Source: The Conservative and Unionist Party Manifesto (2019) 'Manifesto 2019: Get Brexit Done Unleash Britain's Potential'. Page 28. [Link]).

[34] This is supported by multiple sources, for instance, the 2018 National Infrastructure Commission report on 'Building a Digital Society' notes that "Full fibre, a connection without any copper, is the best available broadband technology on the horizon." [page 21, Link]. A January 2020 Commons Library Briefing reiterated this point, stating that "Full-fibre is also the most reliable broadband technology currently available. Full-fibre connections experience fewer operating faults than copper-based networks and are cheaper to maintain and operate. Full fibre connections are also less likely to slow down when many people use the network." [page 7, Link]. Finally, Ofcom itself has recognised that "Full-fibre broadband connections can deliver much faster speeds than copper – up to one gigabit per second. They are also up to five times more reliable, and less likely to slow down when lots of people use them at the same time." [Link]

2.7 In regard to what we set out above, we note that the National Infrastructure Commission made the same points in its 2018 'National Infrastructure Assessment' in which it set out why the UK must prioritise full fibre:

> *"Full fibre, a connection without any copper, is the best available broadband technology on the horizon. It can provide consistent, gigabit speeds, which are less affected by rain and flooding, uses less energy, costs less to maintain and has no long term foreseeable capacity constraints. Nationwide full fibre would also provide the foundation for 5G mobile connectivity and could improve 4G coverage in harder to reach places.*
>
> *The two alternatives to fibre are G.fast (a copper based technology), and cable (which uses shielding to reduce the electromagnetic interference that affects copper). G.fast might be an appropriate interim solution in some areas, but it is ultimately subject to many of the same limitations as copper. Unlike fibre, speeds on copper lines drop significantly over longer distances. Existing cable networks can be upgraded to compete more effectively with fibre over the long term. But Virgin Media, the UK's main cable provider, is increasingly rolling out fibre as it expands its network into new areas, partly because deploying and maintaining new cable is more expensive than full fibre. Full fibre also has the potential to deliver much higher upload and download speeds."*

2.8 Achieving the full fibre ambition will require significant levels of investment, indeed the UK Government has estimated that national full fibre deployment will cost in the region of £30 billion.[35]

2.9 This level of investment is unlike anything the UK's fixed telecoms sector has seen for a generation, and is in fact ten times the investment seen in respect of the previous wave of fixed network upgrades, when BT deployed its FTTC network.[36]

2.10 Investments are now being made by a number of network operators, including us, Openreach, and Gigaclear, all of whom are deploying full fibre telecommunication networks.[37] However, much of the investment is yet to be made. In fact, currently only 12% of UK premises have access to full fibre broadband,[38] meaning that the vast majority of the investment is yet to be made.[39]

2.11 Furthermore, the wide-reaching impact from the 2020 COVID-19 pandemic and associated societal changes have highlighted the extent to which our economy critically relies on access to high quality connectivity. The response to the crisis has seen a significant increase in remote working, with tens of millions working from home (and video conferencing being the

[35] DCMS (2018) FTIR. 23rd July 2018. Page 4.

[36] BT announced in 2008 that it was investing £1.5bn in rolling out FTTC to 40% of UK homes [Source: Link] A few years later, BT increased its ambition to 66% of UK premises with an anticipated cost of £2.5bn [Source: Link] This level of investment is less than one-tenth of the anticipated investment required to deliver national full fibre connectivity (i.e. at around £30bn).

[37] In addition to meeting the connectivity demand of consumers today, full fibre networks are future-proof in that the fibre capacity being installed can be upgraded by switching over electronics to higher capacity services (e.g. transitioning from Gigabit Passive Optical Network (GPON) with 1Gbps as standard to NGPON2 with 10 Gbps as standard). [✂]

[38] Ofcom (2020) 'Connected Nations Update: Spring 2020'. 13th May 2020. [Link]

[39] While 12% of premises are covered, it is most likely that more than 88% of the investment costs is to be made, since that the highest cost deployment areas (e.g. rural) have not seen material investment to date, as operators have focussed investments on the (relatively lower cost) urban areas.

default for many meetings), as well as significant increases in usage of online entertainment services, such as video streaming[40] and online gaming.

2.12 The enduring economic and societal challenges COVID-19 will be present for years to come including an ongoing period of social distancing. A such, we expect to see extensive use of remote working going forward. This means that for the foreseeable future, a significant proportion of the UK workforce will in one way or another have to rely on their home broadband connection to operate and continue business.[41]

2.13 As such, businesses and their employees will be requiring, reliable and high-quality internet connectivity which, amongst other things, has the ability to maintain bandwidth- and latency-demanding video conferences as well as frequent file exchanges. Full fibre is the best technology to deliver this connectivity.

2.14 As the UK economy adjusts to this new way of working, full fibre infrastructure could well be one of the most singularly effective mechanisms by which to accelerate the UK's recovery. Notwithstanding the above, with consumer connectivity demands only expected to grow, not least from emerging technologies such as 5G (which is critically reliant on fixed telecoms infrastructure) we consider that the current legacy (copper-based) networks will soon fail to meet the needs of the UK economy. Given this we fully support the need to promote investment in new full fibre networks.

Ofcom has made a strategic shift to promoting competition and investment in fibre networks

2.15 In 2015 Ofcom undertook an overarching review of the UK's digital communications market, under the banner of a 'Digital Communications Review'. Ofcom explained at that time that:[42]

> *"The aim of the review is to make sure digital communications markets continue to work for consumers and businesses.*
>
> *This review considers future issues relating to infrastructure and competition. Key to this will be how incentives for efficient investment and effective competition drive good outcomes."*

2.16 Following the review, Ofcom announced (in February 2016) that it would make a strategic shift to promote investment in new 'ultrafast' networks:[43]

> *"We will make a strategic shift to encourage large-scale deployment of new ultrafast networks, including fibre direct to homes and businesses, as an alternative to the copper-based technologies currently being planned by BT.*

[40] In fact, in response to significant increase in Netflix usage during the COVID-19 lock-down, Netflix chose to cut their streaming quality in an effort to reduce bandwidth and minimise broadband network congestion [Source: Link]

[41] The mass continuation of a workforce working remotely, and utilising future-proof full fibre networks would also significantly assist Government in managing the health risks, for example with fewer people having to commute on crowded transportation services in order to work.

[42] Ofcom (2015) 'Digital Communications Review'. [Link].

[43] Ofcom (2016) 'Making communications work for everyone: Initial conclusions from the Strategic Review of Digital Communications'. Page 5. [Link].

New deployments will deliver increased choice of broadband services for people and businesses over the next decade, while reducing the UK's reliance on the Openreach network."

2.17 In the years following this statement, Ofcom set out how it proposed to implement this strategy through its market reviews. In the most recent market reviews (i.e. 2018 WLAMR and 2019 BCMR) Ofcom has begun to actually implement this strategy.

2.18 We set out below a brief history of relevant Ofcom statements (we also include one statement from the UK Government, in regard to its Future Telecoms Infrastructure Review). These show a clear progression in Ofcom's regulatory policy toward interventions aimed at supporting competition and investment in fibre networks:

- **March 2017** – *WLAMR Consultation*: Ofcom set out the strategic context for the market review and the shift to promoting investment in new networks, as well as the critical role for network competition: "*One of the key proposals in our Strategic Review of Digital Communications ("Strategic Review") is to make a strategic shift to encourage the large-scale deployment of new ultrafast broadband networks, including fibre direct to homes and businesses (sometimes called 'full-fibre') […] Network competition is a powerful driver of innovation, leading to higher quality and lower prices*."[44]

- **March 2018** – *WLAMR Statement*: Ofcom reiterated its strategic objective and set out how its proposals in the WLA market will help achieve that: "*We believe competition among different networks is the most effective way to spur continued investment and innovation in high-quality, fibre networks. […] Promoting competition is central to our efforts to stimulate investment in the UK's telecoms sector and the infrastructure the country needs. We have therefore adopted a major strategic shift to encourage large-scale investment in full-fibre networks, and away from reliance on the predominately copper-based technologies of BT's existing network. This regulatory approach will support recent commitments by broadband companies to connect several million premises to full-fibre over the next few years, and is designed to promote further investment beyond these ambitions*."[45]

- **July (23rd) 2018** – *Future Telecoms Infrastructure Review (FTIR):* In which the UK Government set out its ambition for ubiquitous national full fibre coverage and proposed the means in which it can be achieved. – *"A telecoms market that promotes competition between rival networks where possible is best placed to deliver the Government's objectives of extending full fibre coverage across the country as rapidly as possible. […] It is the Government's view that promoting investment should be prioritised over interventions to further reduce retail prices in the near term, recognising these longer-term benefits."*[46]

- **July (24th) 2018** – *Ofcom Strategic Policy Position*: Published one day after the FTIR, Ofcom set out they key components of its approach to regulation going forward. Critically, Ofcom announced that it will consolidate its market assessments into a single holistic review: "*investors in full-fibre networks are increasingly looking to offer*

[44] Ofcom (2017) 'Wholesale Local Access Market Review – Volume 1 Consultation on the proposed market, market power determinations and remedies'. 31st March 2017. Page 2. Paragraph 1.3. [Link].

[45] Ofcom (2018) 'Wholesale Local Access Market Review: Statement – Volume 1 Markets, market power determinations and remedies.' 28th March 2018. Page 4. Paragraphs 1.4-1.5. [Link].

[46] DCMS (2018) 'Future Telecoms Market Review'. Page 7. [Link].

a range of services over a more common underlying fibre infrastructure: ultrafast broadband to households and small businesses; leased lines to larger businesses; and 'backhaul' for mobile operators, who use fixed broadband lines to transmit data between mobile sites. […] Since the same underlying fibre network will increasingly be used to deliver a range of different services for business and residential customers, it no longer makes sense to consider residential and business access markets separately."[47]

- **November 2018** – *BCMR Consultation*: Ofcom gave notice of its intention to undertake a holistic market review from 2021 onwards, and noted that it intends to implement as much of its new strategy ahead of that review as possible: "*By 2021, we intend to implement a consolidated review of residential and business telecoms markets and physical infrastructure. Before then, we are taking certain steps to both facilitate our new consolidated review and to implement certain key elements of our strategy more quickly. […] In this document, we set out proposals for the business connectivity market during this period. Given the regulation in business markets will expire in March 2019, we need to refresh it before we carry out a single market review for business and residential markets holistically in 2021. This is a short review as we transition to our longer-term model for regulation, but we have included elements to ensure consistency with our longer-term direction*."[48]

- **December 2018** – *Approach to geographic markets consultation*: In which Ofcom further clarified its holistic approach to future regulation: "*To date, we have conducted separate regulatory assessments of residential (local access) and business (leased lines) services. However, we expect that the coming years will see major investment in fibre-rich networks that can serve both residential and business markets. In response to this, we propose to assess competition from a network viewpoint, rather than focusing on specific downstream services. New networks will take time to deploy. This requires a longer-term and more expansive view of the downstream activities affected*."[49]

- **March 2019** – *FAMR Remedies Consultation*: Building on its initial proposals on geographic market definition, Ofcom set out the range of potential remedies it could seek to implement to reflect the likelihood of network competition emerging. It stated *"New fibre networks will be capable of providing services in each of the markets we currently review separately. Therefore, when considering whether and how to regulate, it is no longer appropriate to focus on each of these markets in isolation. For example, measures taken in respect of wholesale local access services will have implications for the incentives to build new fibre networks, which will in turn affect competition for leased lines, and vice-versa."*[50]

- **June 2019** – *BCMR Statement*: Ofcom made clear its strategic objective in the most recent BCMR statement:

[47] Ofcom (2018) 'Regulatory certainty to support investment in full-fibre broadband: Ofcom's approach to future regulation'. 24th July 2018. Pages 6-7. Paragraphs 1.9-1.10. [Link].

[48] Ofcom (2018) 'Business connectivity market review – Volume 1 Market analysis, proposed SMP findings and remedies'. 19th December 2018. Page 4. Paragraph 1.4 [Link].

[49] Ofcom (2018) 'Promoting investment and competition in fibre networks: Approach to geographic markets'. 11th December 2018. Page 3. Paragraphs 1.7-1.8 [Link].

[50] Ofcom (2019) 'Promoting competition and investment in fibre networks – Initial proposals – Approach to remedies'. 29th March 2019. Page 4. Paragraph 1.10. [Link].

> "*We want to secure investment in fibre networks by BT and other companies by promoting network-based competition. We want to encourage BT's competitors to build their own networks, rather than relying on access to the Openreach network. Competition is the best way to achieve investment in new high quality, future-proofed networks.*
>
> *We share Government's ambition to secure further investment to deliver fibre and 5G to everyone. Government also set out its support for network competition as the best way to secure long-term investment across the majority of the UK, while acknowledging the need for alternative action in other areas.*"[51]
>
> "*The changes needed to fully implement our strategy and realise network competition and investment need to be introduced in a consistent way. While desirable, it is not possible to introduce these changes in one go without holding up the potential for competitive network investment. Where possible, we will implement parts of the strategy as early as we can. […] It will take time to design a regime to underpin long term investment. We will introduce the new regime in 2021*."[52]

2.19 The above quotes clearly set out Ofcom's ongoing efforts to implement its new strategy, and the significant consideration Ofcom gave to its overarching strategy in its 2018 WLAMR Statement and 2019 BCMR Statement.

2.20 Given the above, we were therefore not surprised to see Ofcom state clearly in the WFTMR Consultation its continued focus on promoting competition and investment in fibre networks. Specifically, Ofcom stated in the WFTMR Consultation that: "*we consider that incentivising network investment, through both network competition and the right investment incentives, is the best way to meet the growing demand for high speed and data intensive communications services and will provide a platform for innovative new services to develop*."[53]

2.21 In regard to Ofcom's regulatory proposals, it states that it is, "*creating the conditions to transform the business case for investment in full-fibre broadband through how we regulate BT. We are removing barriers to help the rollout of fibre networks right across the UK*."[54]

2.22 We take Ofcom's statements very seriously, and we wish to flag that while each market review may historically have been considered in isolation, given we are building a multi-service network (as we discuss in Section 2.2, below), which involves a significant period of investment followed by a long-payback period, we care greatly about Ofcom's approach to regulating all fixed markets, as well as Ofcom's consistency of regulation over time.

2.23 For these reasons we are very pleased to see Ofcom's consistent focus over the past few years on implementing its long-term strategy of promoting infrastructure competition by encouraging competition and investment in fibre networks. The WFTMR Consultation is the latest set of proposals from Ofcom in this regard and certainly the most important to date given that the WFTMR covers all fixed wholesale markets over a five-year period. As such, it is of paramount importance that Ofcom ensures its proposals will achieve its overarching objective.

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[51] Ofcom (2019) 'Promoting competition and investment in fibre networks: review of the physical infrastructure and business connectivity markets: Physical Infrastructure Market Review (PIMR), Business Connectivity Market Review (BCMR), and Leased Lines Charge Control (LLCC)'. [PIMR, BCMR]. 28th June 2019. Page 1. Paragraphs 1.2-1.3 [Link].

[52] Ofcom (2019) BCMR Statement. Page 3. Paragraphs 1.12 - 1.14.

[53] Ofcom (2020) WFTMR Consultation. Volume 1. Page 7. Paragraph 2.11.[Link].

[54] Ofcom (2020) WFTMR Consultation. Volume 1. Page 3.

2.2 About CityFibre

2.24 CityFibre is the UK's third national digital infrastructure platform. We have an investment plan of up to £4bn to build full fibre to up to 8 million premises in over 100 towns and cities across the UK.

2.25 We were formed in 2011 through the acquisition of assets previously owned by a firm called H2O Networks that had constructed a limited footprint of fibre optic telecommunications network infrastructure in a handful of locations across the UK.

2.26 After a period as a publicly quoted company on AIM, the company was acquired in 2018 by a consortium of Antin Infrastructure Partners and West Street Infrastructure Partners (a fund managed by Goldman Sachs). The current owners have a strong belief in our business model and are committed to scaling up our network roll-out. In November 2018, CityFibre announced a £2.5 billion investment programme to expand our network footprint, to pass a total of 5 million premises by 2025 (our "5 Million Plan"). Build is already underway or in plan for 62 towns and cities where we have already announced our intention to deploy fibre, see Annex 4 for the full list of our announced towns and cities.

2.27 In March 2020 we completed the acquisition of FibreNation, along with a wholesale agreement with TalkTalk which culminated in expanding our ambition to deliver fibre to up to 8 million premises. This will be delivered by an increased investment programme now amounting to up to £4 billion. We discuss this in more detail in paragraphs 2.32 – 2.41 (below).

CityFibre's long-term strategy

2.28 We operate a wholesale-only, 'open access' network, which is built entirely with fibre elements. This provides the highest possible scope for delivering high bandwidth services to our downstream customers and, ultimately, to end-users.

2.29 Being a wholesale-only network allows us to focus our efforts on constructing and maintaining the highest quality fibre infrastructure for all downstream market uses, irrespective of the use case or the service provider using the network. Our aim is to provide high quality fibre-based connectivity services to any downstream customer who would like to use our network. As a result, we have a variety of different customers, who fall broadly into four market segments:

i. residential and small business users – through service providers who predominantly wish to purchase mass-market FTTP products for onward retail;

ii. larger businesses;

iii. public sector customers (e.g. GP surgeries, hospitals and schools); and

iv. Mobile Network Operators ("MNOs").[55]

2.30 Given that our network is able to provide services to customers in many different market segments (e.g. business leased lines, FTTP, backhaul for mobile networks), when making decisions as to where and when to invest, we consider the opportunities from all downstream market segments.

[55] For the purposes of mobile backhaul services. For 5G mobile services, this will critically rely on high capacity fibre networks.

2.31 A key facet in our business model is that each of these customer segments generates a contribution to the shared costs of building new infrastructure, as this reflects the considerable economies of scope in building a single, multi-purpose fibre network that serves them all.

CityFibre's growing ambition and 2020 announcements

2.32 As stated above, our original full fibre ambition was established in 2018 and was to pass a total of 5 million premises by 2025 (our "5 Million Plan"). To deliver this, we announced in 2018 a £2.5 billion investment programme to expand our network footprint. As of April 2020, we have announced full fibre deployments in 62 towns and cities, see Annex 4 for the full list.

2.33 As a wholesale only network, we rely on communications providers to make use of our network, and ultimately to deliver services to final consumers (end-users). In 2017 we entered into a long-term FTTP wholesale agreement with Vodafone in order to support our initial network deployment. This agreement included a degree of exclusivity which to an extent limited the scope for other CPs to make use of our network.[56]

2.34 While this agreement was essential to support the early phases of our full fibre deployment, we have grown in scale and ambition and therefore are keen to ensure that we are able to offer broadband services to many other CPs. As a result, in early 2020 we announced that we had signed an agreement with Vodafone to modify the terms of our existing partnership. The agreement will enable us to open up our network to other consumer ISPs sooner than planned.[57]

2.35 Alongside this announcement, we also stated that we had increased our ambition to up to 8 million UK premises on the back of two other critical announcements:

- **FibreNation acquisition**:[58] FibreNation was founded in 2018, four years after a joint venture between TalkTalk, Sky and CityFibre was launched to deploy full fibre infrastructure and services across the City of York. FibreNation operates and continues to expand this network, where approximately 49,000 premises can currently access gigabit speed broadband services from TalkTalk. FibreNation also has network construction projects underway in Harrogate and Dewsbury and is mobilising in Bolton, Knaresborough and Ripon, with plans to make full fibre available to up to 3 million homes and businesses. The acquisition of FibreNation and the addition of its experienced team will bolster our design, planning and deployment capabilities.
- **Adding TalkTalk as strategic customer**:[59] TalkTalk has made long-term commitments across our existing footprint and future network rollout, ensuring its customers can benefit from faster, more reliable connectivity at competitive prices. We have also struck an extensive wholesale agreement for business services.

[56] Under the wholesale agreement, Vodafone had a period of exclusive rights (predominantly during the build phase of each city network) to market ultrafast consumer broadband services on the FTTP network to be built, operated and owned by CityFibre.

[57] CityFibre (2020) 'CityFibre acquires FibreNation and adds TalkTalk as strategic customers, increasing its rollout plans to pass up to 8 million premises'. 21st January 2020. Press Release. [Link].

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

[59] CityFibre (2020) 'CityFibre acquires FibreNation and adds TalkTalk as strategic customers, increasing its rollout plans to pass up to 8 million premises'. 21st January 2020. Press Release. [Link].

2.36 In addition, we also announced, in early 2020, that we had been appointed as the preferred provider of full fibre capacity for Three's 5G rollout outside London.[60] The long-term agreement enables Three to leverage our rapidly growing national full fibre network to support its rollout of 5G services.

2.37 The first phase of the agreement will see us provide backhaul connectivity to Three's cell sites, with hundreds of sites already planned for connection this year across a number of our full fibre cities. The first connections to sites will go live in summer 2020, supporting Three's ambitious 5G rollout programme.

2.38 By underpinning the UK's largest 5G spectrum holding with full fibre backhaul, Three will be able to offer the UK's fastest 5G network for consumers and businesses. Furthermore, our dark fibre connectivity will provide Three with far greater capacity to meet the growing demand for mobile data. Three will also have access to our full product portfolio including small cell access points throughout its city-wide networks, providing the local fibre capacity required to support 5G services in busy urban areas.

2.39 Following the above announcements and our growing ambition, we launched in April 2020 a 'Accelerated Tender Award Programme' to engage with suppliers and invite offers to deliver our network build. The tender in total comprises £2bn of contract value and will create approximately 10,000 new jobs.

2.40 This tender has the explicit aim of creating long-term relationships with civil contractors to execute our 2025 plan. This demonstrates the seriousness of our ambition and the speed at which we are seeking to move (i.e. we launched the tender process only a month after completing the above commercial agreements).

2.41 These developments clearly demonstrate our growing ambitions and desire to fully and quickly establish ourselves (alongside Openreach and Virgin Media) as the UK's third national digital infrastructure platform and to meet the UK Government's ambition of 'fibre for all'.

[60] CityFibre (2020) 'CityFibre chosen as a preferred provider of full fibre capacity for Three's 5G rollout nationwide'. 18th February 2020. Press Release. [Link].

3 Market definition

3.1 In this section we set out our response to Ofcom's proposals on market definition for both product and geographic markets for each of: Physical Infrastructure Access (PIA), Wholesale Local Access (WLA), Leased Line (LL) Access, Inter-Exchange connectivity services (IECs) and downstream service markets.

3.2 While we make a number of points in this section, we consider the most important one is in regard to Ofcom's proposed geographic market definition for WLA and LL Access, and its approach to allocating postcodes sectors between so called Area 2 and Area 3. Specifically, we consider that Ofcom's proposed delineation between Area 2 and Area 3 is not well founded and will likely lead to significant regulatory failure.[61]

3.3 While Ofcom intends to use 'planned' network deployments (as opposed to areas that, on objective criteria, could support commercial deployment) to delineate between Area 2 and Area 3, we consider that many areas where there are no current 'planned' deployments are indeed commercially viable for alternative fibre operators such as CityFibre.

3.4 The combination of allocating commercially attractive locations to Area 3, along with Ofcom's proposed remedies that would apply to Area 3 (i.e. to significantly reduce the market price for broadband), means that Ofcom's proposals introduce a significant risk of regulatory failure, since such intervention will likely stop investment that otherwise (i.e. absent regulation) would have taken place.

3.5 Furthermore, it is not clear how Ofcom's approach based on 'planned' deployments will work in practice given that deployment plans are themselves constantly evolving. As a case in point, we have just increased our deployment ambition from 5 million to up to 8 million UK premises but at the time of writing we have not yet finalised the specific deployment areas for the 5-8 million part of the plan. In addition, future deployment plans by us and other operators are also (obviously) unknown as of today.

3.6 It is not clear how Ofcom intend to take account of deployment plans made after the WFTMR Statement is published in April 2021 and how this could be done to address the risk of areas being initially allocated to Area 3 (from April 2021) which would directly and immediately influence all future plans for such areas, in that they would likely no longer be commercially attractive.

3.7 For these reasons, Ofcom must reconsider its proposed market definition and associated allocations of postcode sectors, in order to ensure that parts of the UK that are commercially attractive for fibre deployment are not allocated to Area 3 from the start of the market review period.

3.8 Further to the above, we consider that Ofcom is making an unsubstantiated assumption that in Area 3 only Openreach is likely to deploy fibre networks. We consider that at present there is great uncertainty as to who will deploy in Area 3, where they will deploy and when.

3.9 To the extent that rural locations can support a single fibre operator, there is no reason why this cannot be a rival to BT, such as us or Gigaclear. This is not least because all operators

[61] Ofcom has previously defined 'regulatory failure' as follows: "*Regulatory failure arises when public intervention is unwarranted, or even when appropriate, it is subject to errors that significantly reduce its benefits*" Source: Ofcom (2009) 'The PRS Scope Review'. 28th October 2009. Page 21. Footnote 26. [Link].

are able to equally compete for government subsidies and gap funding mechanisms which could result in significant network deployment in rural areas by rivals to BT.

3.10 The remainder of this section covers each of the proposed markets in turn, and is structured as follows:

- **Section 3.1:** Physical Infrastructure Access (PIA)
- **Section 3.2:** Wholesale Local Access (WLA)
- **Section 3.3:** Leased Line Access (LL Access)
- **Section 3.4:** Inter-exchange connectivity (IEC)
- **Section 3.5:** Downstream service markets

3.1 PIA

3.11 In regard to Ofcom's proposals for defining the PIA market, overall we agree with the proposed definition on the basis of Ofcom's assessment of the product and geographic markets:

- **Product market definition**: We agree that the relevant product market is "the supply of wholesale access to telecoms physical infrastructure for deploying a telecoms network."[62] This is on the basis that Ofcom has correctly identified the focal product and correctly concluded that demand and supply-side substitutability is not sufficiently material at this time to broaden the product market further.
- **Geographic market definition**: We agree with Ofcom that the relevant geographic market is national. A key reason for this is that ubiquity of infrastructure is critical for network operators looking to make use of it.

3.12 We set out below our more detailed response in regard to physical infrastructure product and geographic markets.

3.1.1 Product market definition

3.13 We fully agree with Ofcom's overall assessment of the physical infrastructure product market definition, and the logical finding that results from that assessment.

3.14 As a starting point, Ofcom defines a focal product based on *"all physical infrastructure which is deployed for the purposes of supporting a telecoms network (irrespective of the owner of that infrastructure); [and] deployed to host fixed (or 'wired' elements) of telecoms networks (e.g. ducts, poles and chambers)."*[63] We fully agree with this focal product.

3.15 Ofcom then turns to assess whether the relevant product market is wider than the focal product on the basis of demand and supply-side substitutability.

3.16 In considering demand-side substitution, Ofcom concludes (consistent with the 2019 PIMR)[64] that non-telecoms infrastructure in not a suitable substitute for telecoms physical infrastructure, used for deploying telecoms networks.[65] As a result, Ofcom states it would not expect to see switching at sufficient scale, in response to a small but significant and non-

[62] Ofcom (2020) WFTMR Consultation. Volume 2. Page 37. Paragraph 3.2.

[63] Ofcom (2020) WFTMR Consultation. Volume 2. Page 38. Paragraph 3.10.

[64] Ofcom (2019) PIMR Statement. Volume 1. Pages 14 – 17. Paragraphs 3.31 – 3.46 [Link].

[65] Ofcom (2020) WFTMR Consultation. Volume 2. Page 40. Paragraph 3.16.

transitory increase in price (SSNIP) of telecoms physical infrastructure to warrant widening the product market.

3.17 We very much agree with Ofcom that non-telecoms physical infrastructure is not a credible substitute for telecoms physical infrastructure for the purpose of deploying fixed telecoms networks.

3.18 As a starting point, the simple fact that almost no use has been made of such non-telecoms infrastructure in the UK (e.g. via the Communications (Access to Infrastructure) Regulations),[66] is evidence that network builders do not see access to such alternative infrastructure as helpful in supporting network deployment.

3.19 Furthermore, experience from our predecessor (H2O Networks) demonstrated the range of issues from using non-telecoms infrastructure, in that case, sewer systems. H2O Networks encountered numerous issues, including significant difficulty in obtaining access to the infrastructure for installation and maintenance, given the numerous and very strict health and safety requirements when working in sewers.

3.20 In addition, the sewer network topology suffered from a lack of break-out points, which are essential when deploying a full fibre network. This restricted the utility of this infrastructure to the point that it was judged by H2O Networks to not be viable for scale deployment of fibre.

3.21 Given this, we consider non-telecoms infrastructure is not a credible option for our network deployment. Instead we solely are using telecoms infrastructure, i.e. to date we have sought to make extensive usage of Openreach's PIA product, and as of March 2020 are making use of [✂] poles and [✂] km of duct.

3.22 We are planning to use significantly more Openreach PIA going forward, in order to support our ambition of delivering fibre broadband to up to 8 million UK premises. In contrast, we currently have no plans to use any forms of non-telecoms infrastructure for the delivery of any our network build.

3.23 Given what we set out above and the experiences of our predecessor, we set out below the specific reasons why we are not intending to make use of any non-telecoms infrastructure:

- **Network access**: for many non-telecoms infrastructure (including electricity networks and sewers) there are very strict provisions around access, given health and safety concerns. The restricted and delayed access would substantially slow down our fibre network deployment and increase the administrative burden and therefore cost of deployment.
- **Network topology**: non-telecoms networks are very different from telecoms networks from a topological perspective. For instance, the points of aggregation and break-out, required at certain distances from the customer, traditionally used for telecoms networks are not relatable to networks like sewage and electricity. Using such network topologies would require a radical redesign of our network architecture.
- **Network capacity information**: non-telecoms networks do not typically have accurate information available on capacity within the network, such as for the installation of sub-ducts. This means that it is not possible to plan the network deployment ahead of time, and availability of network space can only be confirmed

[66] Ofcom (2016) 'Guidance under the Communications (Access to Infrastructure) Regulations 2016'. 6 December, [Link]

though inspecting each and every part of the network, which would be time consuming and expensive.

- **Access pricing and maintenance costs**: negotiating access pricing and ongoing rental costs are an additional burden for network operators seeking to deploy over non-telecom infrastructure. There is no industry standard access and rental price,[67] between different non-telecom operator networks which thus requires extensive negotiation to agree on price and terms. A prerequisite to making an investment decision is to ensure the business case for the option is clear, favourable (e.g. in terms of cost) and relatively advantageous when compared to the other options available. This is not the case with non-telecoms infrastructure which does not share the same pricing certainty the Openreach PIA product has (i.e. a definitive price list for a definitive list of assets and services to use).

3.24 In addition to non-telecoms infrastructure, Ofcom also considers in the WFTMR Consultation whether wireless (i.e. microwave links, satellite and fixed wireless access (FWA)) constitutes a constraint on access to telecoms infrastructure. Ofcom concludes that all such services are not included in the relevant product market. We strongly agree and note that at this time we have no plans to make use of wireless for our network deployment. This has been reaffirmed by a study we commissioned by economic consultancy Plum in 2020 which concluded that 'FWA service quality cannot meet FTTP levels'.[68]

3.25 Finally, we consider that there is very limited scope for supply-side substitution of telecoms network physical infrastructure. Not least because the time taken to deploy such infrastructure is very long, e.g. building a comprehensive telecoms network, in a UK city (of say 100,000 premises) would take over 3 years. For example, we began to deploy fibre networks to premises in Milton Keynes (a city with around 81,000 premises) in mid-2018 and based on current forecasts we are planning to fully complete the city-wide build in [✂].[69]

3.26 This duration will likely be a significant under-estimate for pure self-build since a proportion of this rollout made use of the Openreach PIA product which has enabled us to speed up our deployment somewhat, relative to pure self-build. Although we do flag that the current PIA product is not delivering its full potential in terms of time and cost savings; we discuss this in Section 5.1.

3.27 On the basis of the above, we strongly agree with Ofcom's conclusion that the product market is the supply of wholesale access to telecoms physical infrastructure for deploying a telecoms network.

3.1.2 Geographic market definition

3.28 In regard to geographic markets, Ofcom is proposing to conclude that the relevant geographic market for wholesale access to telecoms physical infrastructure for deploying telecoms networks is the UK excluding the Hull area. We strongly agree with this, for the reasons we set out below.

[67] Nor do the ATI regulations give clear guidance on such issues.

[68] Plum (2019) 'Developing the 5G carrier services opportunity' [A report for CityFibre].

[69] We note that this deployment made us of the Openreach PIA product and therefore that the deployment duration would be longer if we had to rely on pure self-build (i.e. we were not able to make use of Openreach's PIA product).

3.29 Most importantly, as Ofcom highlights in the WFTMR Consultation, ubiquity of network infrastructure is the key factor for operators looking to make use of physical infrastructure for the deployment of telecoms networks.

3.30 First and foremost, given our experiences of using PIA, and the time taken to learn the ordering process and actively deploy networks, we consider it would not be realistic to adopt a mix-and-match approach, whereby an operator used different infrastructures in different areas.

3.31 Ubiquitous telecoms physical infrastructure provides much greater flexibility to expand and alter deployment plans in response to market demands. In other words, the only constraint would (in theory) be on the demand-side (i.e. where demand for network services was required), and not on the supply-side (i.e. where the non-ubiquitous infrastructure was available). Ofcom correctly highlight this point in the WFTMR:[70]

> *"Most telecoms networks are built to connect to premises or sites in response to demand, and the precise location of this demand is not known at the point of network deployment. Irrespective of the business model adopted (e.g. whether targeting certain types of customers or all types of customers) the ability to provide any connection in response to future demand, quickly and without significant cost, is likely to be important. This is more likely to be possible if using a ubiquitous infrastructure, than one that is not ubiquitous."*

3.32 Ubiquity of network is not just important within a local area (i.e. a town or city) but also nationally. With only 12% of UK premises currently having access to full fibre services,[71]ensuring infrastructure coverage across the remaining 88% will be critical in securing ubiquitous network coverage.

3.33 In contrast, if a non-ubiquitous network was only available in, say, half of the country, this would directly constrain the ability of operators to deploy nationally, and would require either self-build or utilising alternative physical infrastructure (i.e. a mix-and-match approach) neither of which are in any way attractive for us (or likely any other network builder).

3.2 WLA

3.34 In the WFTMR Consultation, Ofcom considers whether it is appropriate to define a single market for wholesale access services. This consideration is based on the anticipation that going forward, the extent of competition in the supply of wholesale network services will be driven primarily by the presence of Multi Service Networks (MSNs). Ofcom ultimately concludes that defining such a market now would be premature.

3.35 We consider that the markets over time will converge as the presence of MSNs increases, but consider that at present there are significant levels of heterogeneity, e.g. in terms of competitive constraints and market dynamics. However, we agree with Ofcom that the evidence indicates that now is not the right time to define a broad market and consider that come the next market review period (in 2026) it may well be appropriate to define a single wholesale network market.

[70] Ofcom (2020) WFTMR Consultation. Volume 2. Page 46. Paragraph 4.18.

[71] Ofcom (2020) 'Connected Nations Update: Spring 2020', 13th May 2020. [Link]

3.36 Given this, Ofcom proposes (as it has done previously) to define a stand-alone WLA market. We set out below our comments on those proposals:

- **Product market definition**: We agree with Ofcom's proposed product market, especially in regard to all speeds being in the same market and wireless services not being in the relevant market.
- **Geographic market definition:** While Ofcom has helpfully adopted a simple and pragmatic approach to defining markets, its proposal to allocate commercially attractive areas to Area 3 raises a very significant risk of regulatory failure. This is because the combination of Ofcom's postcode sector allocations, and Ofcom's proposed remedies that would apply to Area 3, risks directly undermining competitive investment that would otherwise have taken place. To address this Ofcom must ensure that parts of the UK that are commercially attractive for fibre deployment are not allocated to Area 3. As such, Ofcom need to undertake analysis to identify all postcode sectors (currently allocated to Area 3) which are viable for commercial deployment.

3.37 We now go on to discuss each of these in turn.

3.2.1 Product market definition

3.38 We agree with Ofcom's proposal to define a focal product as 'the supply of WLA services by fixed networks to support the delivery of broadband services to residential and business customers'.[72]

3.39 Having established this focal product, Ofcom goes on to assess various possible supply-side and demand-side factors, and concludes that:

i. All fixed network technologies are in the same market

ii. All speeds are in the same market

iii. Residential and business are in the same market

iv. Leased lines are outside the WLA market

v. Wireless services are outside the market

3.40 We agree with each of these, and therefore overall agree with Ofcom's proposed product market definition.

3.2.2 Geographic market definition

Summary of key points

3.41 Ofcom is proposing three relevant WLA geographic markets, which vary according to the level of existing and anticipated presence of rival MSNs to BT. Ofcom defines these in the WFTMR Consultation, as follows:

[72] This follows Ofcom's approach in previous reviews in recognising the economies of scope inherent in supplying multiple downstream broadband services from a single access connection.

- Area 1: *"a geographic market comprising postcode sectors where there are at least two established rival MSNs to BT"*;[73]
- Area 2: *"a geographic market comprising postcode sectors where there is already some material commercial deployment by rival MSNs to BT or where this could be economic"*;[74]
- Area 3: *"a geographic market comprising postcode sectors where there is unlikely to be material commercial deployment by rival MSNs to BT"*.[75]

3.42 While we in principle agreed with these definitions when we first saw them, a subsequent statement made by Ofcom on 10 March 2020,[76] clarified that it is in fact proposing that Area 2 comprise only areas where there is either a) existing material MSN deployment, or b) actual build plans for such deployment (i.e. Area 2 does not include all those areas that could support commercial deployment, such as from a rival MSN to BT):

> *"In our early thinking, which we consulted with stakeholders on in 2018, we proposed to identify areas where material commercial deployment could be economic based on:*
>
> *• Operator's actual build plans; and*
>
> *• Our 'cluster analysis', which was intended to identify geographic areas of sufficient size and density of premises to support potential material commercial deployment.*
>
> *We are now proposing only to rely on operator's actual build plans when identifying areas where material commercial deployment could be economic. This is because we think it could be speculative to base our view of 'economic' areas on our cluster analysis (see paragraph 7.34)."*

3.43 On the basis of these defined markets (noting the above clarification), Ofcom has allocated postcode sectors (the proposed geographic unit) to each relevant market. On the basis of this exercise, Ofcom proposes that at present there are no locations that meet the definition of Area 1. Ofcom proposes that there are 6,037 postcode sectors (21.3 million premises) meeting the definition of Area 2, and 3,521 postcode sectors (9.2 million premises) that meet the definition of Area 3.

3.44 As clarified in Ofcom's 10 March 2020 statement, Ofcom is proposing to allocate to Area 2 only places where there is either a) existing rival MSNs to BT, or b) where there are actual build plans by rival MSNs to BT. This means that all places for which there is no existing MSNs, and where there are no current build plans, will be allocated to Area 3.

3.45 This means that all parts of the UK where it would be commercially attractive to deploy fibre networks, but where such deployments are not currently 'planned' by operators are allocated to Area 3. Critically, such areas are likely to make up a significant proportion of Area 3 (in terms of UK premises) as currently defined by Ofcom.

[73] Ofcom (2020) WFTMR Consultation. Volume 2. Page 84. Paragraph 7.9.

[74] Ofcom (2020) WFTMR Consultation. Volume 2. Page 83. Paragraph 7.6 (a).

[75] Ofcom (2020) WFTMR Consultation. Volume 2. Page 83. Paragraph 7.6 (b).

[76] Ofcom (2020) 'Update 10 March 2020 – clarification on Area 2'. 9th March 2020. [Link].

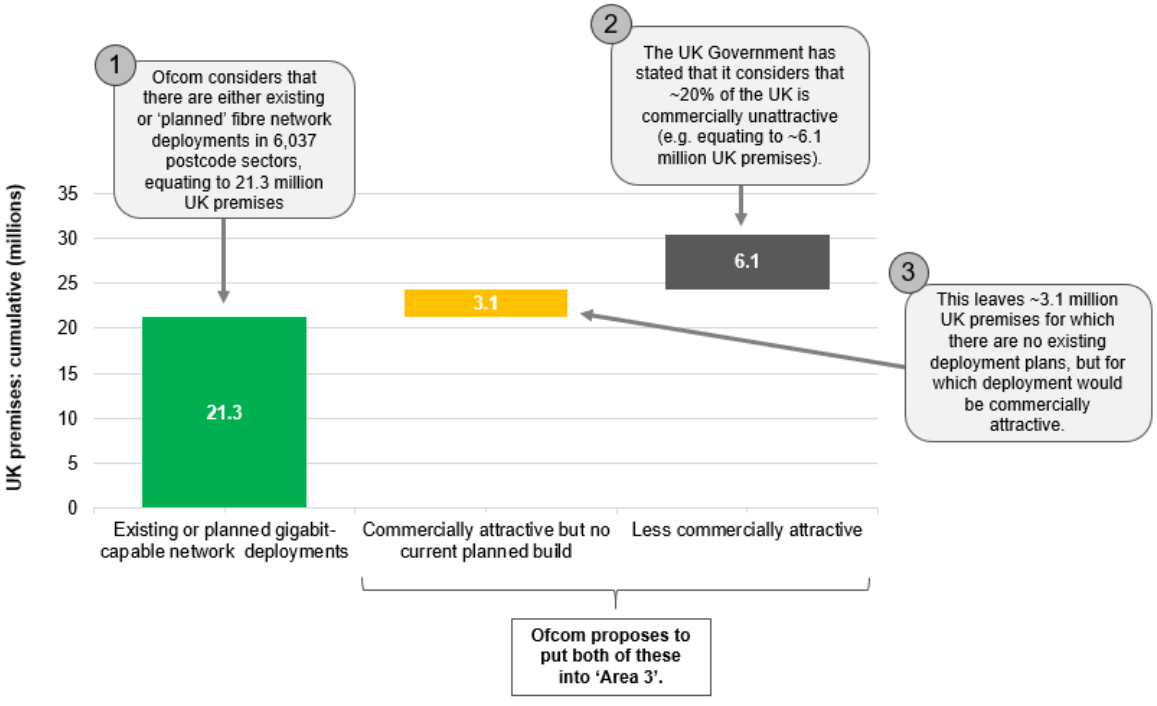
3.46 The UK Governments latest assessment indicates that around 20% of the UK will be unable to support commercial fibre deployment:[77]

> *"As a result of The Future Telecoms Infrastructure Review, the Chancellor announced [in May 2019] a £5 billion commitment to fund gigabit capable broadband for the 20% of UK premises that would be unlikely to receive commercial access to gigabit capable broadband."*

3.47 By implication, the UK Government consider that 80% of the UK can support commercial fibre deployments. Indeed, this was noted explicitly in the FTIR when discussing "*Areas that can support commercial roll out of two or more gigabit-capable networks*" noting that "*These areas are likely to comprise around 80% of premises*."[78]

3.48 On the basis of this, one can estimate that around one third of Area 3 as currently proposed by Ofcom (equating to 3.1 million premises) would be commercially attractive for rival MSNs to BT. We present this graphically in Figure 3.1 (below):

Figure 3.1 Ofcom's proposed approach to WLA geographic markets in light of the UK Government's assessment of commercially attractive areas



Source: CityFibre analysis based on Ofcom data and UK Government statements

3.49 Allocating postcode sectors to Area 3 that could be commercially attractive raises the material risk of regulatory failure. This is because Ofcom is proposing for WLA Area 3 to implement

[77] UK Government. 'Guidance: Building Digital UK' (Last updated 26 March 2020) [Link].

[78] DCMS (2018) FTIR. Page 40. Paragraph 108.

price caps which could see wholesale broadband prices fall by as much as 15% per year. Over a 5-year market review period, this could result in prices decreasing by more than half.[79]

3.50 In short, the combination of Ofcom's postcode sector allocations, and Ofcom's proposed remedies that would apply to Area 3, will likely directly undermine investment that would otherwise have taken place.

3.51 In addition, Ofcom's proposal to use 'planned' deployments (and not simply commercially attractive areas) to delineate between geographic markets fails to account for the ever-evolving nature of plans. For instance, plans made today could look very different in six-months' time.

3.52 Furthermore, it is not clear how Ofcom intend to take account of deployment plans made after the WFTMR Statement is published in April 2021.For instance, we have recently increased our deployment ambition from 5 million to up to 8 million premises. However, we are still assessing which towns/cities comprise this incremental 3 million.

3.53 For these reasons, Ofcom must reconsider its proposed market definition and associated allocations of postcode sectors in order to ensure that parts of the UK that are commercially attractive for deployment are not allocated to Area 3. This involves two steps:

i. Identify all the areas (postcode sectors) currently allocated to Area 3 (i.e. for which there are no current build plans) that are commercially attractive for fibre network deployment.

ii. Having identified these areas, move them out of Area 3. This could involve moving them to Area 2, or alternatively into a newly defined market, e.g. 'Area 2.5'.

3.54 Having set out the above summary of our key points, we now turn to discuss them in more. We set out below in bullets our five key points, which form the structure for the remainder of this section.

- **Ofcom's simple and practical approach to market definition is the right one:** We support the proposal to adopt a simple and practical approach to assessing markets. For instance, we support limiting the number of geographic markets to a manageable number (i.e. less than 5), as well as to keep the regulatory approach simple and seek to ensure consistency of regulation across the majority of the UK.

- **Ofcom's approach must be sufficiently flexible, to account for 'planned' deployments that are not yet formalised:** Operators deployment plans today are unlikely to capture their full ambition. For example, we recently increased our deployment ambition from 5 million to up to 8 million premises, however we are still assessing which towns/cities comprise the incremental 3 million. It is not currently clear how Ofcom's proposals would account for operator's plans announced after the WFTMR Statement is published in April 2021.

- **Ofcom's proposal to allocate commercially attractive areas to Area 3 raises a very significant risk of regulatory failure:** In addition to simply being inconsistent with the stated market definition in the WFTMR, allocating postcode sectors to Area 3 that could be commercially attractive raises the material risk of regulatory failure.

[79] Assuming an index of 100, a decrease of 15% per year over 5 years results in the index falling to 44.4 (= 100 * (1 – 15%)^5).

- **Ofcom must identify commercially attractive areas allocated to Area 3, and move them to another market:** There are a number of ways Ofcom can identify the commercially attractive areas, including asking operators for their own assessments as well as undertaking density and clustering analysis. We propose Ofcom uses as many different approaches as possible to ensure that it is able to accurately identify all the commercially attractive areas.

- **Ofcom must maximise the number of locations across the UK that are commercially attractive, including by implementing key EECC mechanisms:** Ofcom must make efforts to support the business case for deploying fibre networks, not just to ensure deployment in urban and sub-urban areas, but also to improve the overall investment case to enable deployment into areas that currently are not commercially attractive. We consider the provisions in the revised European Electronic Communications Code, most especially in regard to transparency and co-investment, should be a critical component to this.

Ofcom's simple and practical approach to market definition is the right one

3.55 We support Ofcom's broad approach to market definition, which seeks to provide a pragmatic solution for how to define relevant markets and identify competition concerns, in what is a fast-moving market environment.

3.56 Ofcom's starting point for assessing the WLA (and the LL Access) market is to define the concept of an MSN. In doing so, Ofcom recognises that operators deploying full fibre networks (such as CityFibre) can provide services to customers in many different market segments (or verticals), including:

- Fixed voice (landline) services;
- Broadband (unbundled or bitstream);
- Leased lines (including mobile backhaul); and
- Dark fibre.

3.57 We set out in paragraphs 2.29 - 2.31 that, as a builder of full fibre networks, our investment case is underpinned by all of these customer segments, since each generates a contribution to the shared costs of building our network.

3.58 When making decisions as to where and when to invest, we consider the aggregate market potential across all possible downstream customers. Provided that there is sufficient revenue potential across all possible customers, then the investment can be commercially attractive. In other words, a multi-purpose full fibre network can take advantage of considerable economies of scope.

3.59 While this is how we (and most likely other MSNs) think about investment, Ofcom has historically not regulated the various fixed telecoms market in unison, instead opting to review each of the above markets in isolation and at different points in time. Furthermore, Ofcom's regulatory objective and approach has varied considerably across market reviews.

3.60 We are therefore very pleased to see Ofcom now undertaking a holistic review of all wholesale fixed markets, and in doing so recognising the spill-over benefits (economies of scope) from the building of a network able to serve multiple downstream customer segments. A holistic and consistent approach to regulation across all fixed markets will help to provide

clarity and certainty to investors, which will ultimately translate into a higher willingness to invest.

3.61 In conjunction with Ofcom's decision to extend the market review period to 5-years, we believe that Ofcom is taking the right steps to provide the investor confidence needed to meet the Government's ambitions for ubiquitous full fibre coverage.

3.62 In assessing geographic markets, Ofcom proposes to use postcode sectors as the relevant geographic unit. While we consider that this strikes a reasonable balance between pragmatism and ensuring the ability to identify differences in competitive conditions between locations, we do highlight that postcode sectors cannot be assessed in isolation as the relationship with adjacent or nearby postcode sectors is of critical importance for operators assessing the business case for network deployment.

3.63 As a case in point, we do not approach investment on an incremental postcode sector basis. Instead, our approach to investment is based on deploying network across an entire town or city. As such, what matters for us is whether the business case makes sense for the full town/city deployment.

3.64 When considering relevant markets and (ultimately) competitive condition within markets, we consider that Ofcom must give regard to the geographic unit over which investments are typically made. While this does not mean Ofcom should not use postcode sectors as the geographic unit, however we consider that if Ofcom does so, that it should consider postcode clustering analysis to assess large contiguous areas that network operators will use as their minimum efficient scale in a local area.

3.65 We are therefore pleased to see Ofcom adopting postcode clustering analysis, at least in regard to urban areas, as set out in Annex 8 of the WFTMR Consultation document. However, this analysis seems to be only used by Ofcom where operators have not provided detailed deployment data, in order to map the town/cities back to specific postcode sectors.

3.66 We consider that such clustering analysis should be employed to also assess, on a forward-looking basis, which postcode sectors could be economic for commercial fibre deployment. For example, clustering analysis can be used to identify which postcode sectors might be uneconomic in isolation but would become economic (commercially attractive) when looked at on a localised incremental basis (i.e. once an operator has deployed network nearby).

3.67 We actually undertook such analysis in our October 2019 submission to Ofcom on geographic markets, where we undertook analysis to identify postcode sectors that are commercially attractive incrementally (however may not be standalone). We attached this submission to this response in Annex 3. In the below sub-section titled 'Ofcom must identify commercially attractive areas allocated to Area 3, and then move them to another market' (paragraphs 3.92 - 3.113) we discuss some of this analysis.

Ofcom's approach must be sufficiently flexible, to account for 'planned' deployments that are not yet formalised

3.68 As we noted in paragraph 3.42, Ofcom is proposing that Area 2 comprise only those areas where there is either a) existing material MSN deployment, or b) actual build plans for such deployment. As such, under Ofcom's proposals, areas that could support commercial deployment, but for where there are no current 'deployment plans' will be allocated to Area 3.

3.69 A key issue with Ofcom's proposal to use planned deployments (and not simply commercially attractive areas) to delineate between geographic markets is that such deployment plans are ever evolving. It is therefore not clear how Ofcom will take account of deployment plans made after the WFTMR statement is published in April 2021.

3.70 For instance, we have recently increased our deployment ambition from 5 million to up to 8 million premises as a consequence of the acquisition of FibreNation. However, we are still assessing which towns/cities comprise this incremental 3 million. Furthermore, while there are no such current plans, it is not impossible to see our ambitions increase further than 8 million.

3.71 Given that we are still in the early phases of fibre deployment (with only 12% of UK premises covered by full fibre networks) there are likely to be many evolving and new deployment plans over the next few years.

3.72 Furthermore, we consider that the process of deploying networks into the more commercially attractive areas (in the first instance) will increase the scope for deployment to the rest of the UK, since self-generated revenues will provide a much more attractive funding basis for additional network rollout when compared to third-party growth capital.

3.73 In other words, we are expecting that once operators have deployed networks and begin generating significant revenues, there will be much greater opportunity and willingness to deploy in areas that currently are considered less attractive (on the basis that such deployments would require lower cost financing options).

Ofcom's proposal to allocate commercially attractive areas to Area 3 raises a very significant risk of regulatory failure

3.74 As noted above (see Figure 3.1), on the basis of UK Government estimates, Ofcom is likely allocating around 3.1 million UK premises to Area 3 that are commercially attractive.

3.75 However, we recognise that market definition is a means to an end (identifying and addressing competition concerns) and not an end in itself. The key question that Ofcom must consider is, how allocating these to Area 3 (i.e. compared to Area 2) will impact the incentives to invest in these areas, and therefore the achievement of Ofcom's overarching regulatory objective of promoting competition and investment in fibre networks.

3.76 We set out below our assessment of impact on incentives to invest for the ~ 3.1 million UK premises that Ofcom proposes to allocate to WLA Area 3, which are likely to be commercially attractive.

3.77 In WLA Area 2 Ofcom is proposing to apply a package of remedies that seeks to promote competition and investment in full fibre networks, especially from rival MSNs to BT. This includes the proposal to keep the anchor product at the 40/10 FTTC variant and also to impose a CPI-0% price cap (as opposed to a pure cost-based price cap).

3.78 In contrast the remedies proposed for Area 3 are much less geared towards promoting investment by rival MSNs to BT, and instead are focussed on driving prices down significantly, and in providing incentives for Openreach to invest in full fibre. Ofcom sets this out in the WFTMR Consultation, noting (specifically in relation to pricing remedies):

> *"We give less weight in Area 3 to setting charge controls that incentivise rival network investment, as we do not believe that there will be material competitive fibre deployment in these areas."*

3.79 Specifically, Ofcom is proposing for WLA Area 3 to implement a Regulated Asset Base (RAB)[80] based approach to setting price caps, which could see wholesale broadband prices (for all FTTC bandwidths, including the current 40/10 anchor) fall by as much as 15% per year; over a 5-year market review period, this would result in market prices for broadband decreasing by more than half.[81]

3.80 In order to assess the impact of these sorts of price decreases on investment incentives, we have modelled the impact on the Internal Rate of Return (IRR) for towns/cities where we are currently (or soon will be) deploying our network, all of which have commercially attractive levels of expected IRR.

3.81 Our modelling is based on [✂]. We compute two scenarios, firstly a base-case in which prices remain flat at current levels. The second scenario assumes a price decline, of 15% per year, for the next five years (i.e. the proposed price caps for Area 3). We assume the prices remain flat from year six onwards.

Table 3.1 Estimated IRR impact from a 15% per year price reduction, for our second million set of cities/towns

City	Current IRR Indexed at '100'	New IRR Index	IRR % Change
[✂]	[✂]	[✂]	[✂]
…	…	…	…
…	…	…	…
Average	**100**	**62**	**-38**

3.82 We see in the above table that the impact is very significant across all the towns and cities. In fact, the smallest IRR impact is [✂], with the largest impact being [✂]. Across the entire tranche of towns and cities, we can see that the average IRR falls by 38%

3.83 We have also conducted this analysis for cities in our third, fourth and fifth million tranches. We present these tables below and can see that the smallest IRR decline for a particular town/city is [✂], with the largest impact being [✂]. Overall, we see (as above) a significant impact for each investment tranche from such a price reduction, with the IRR for the third, fourth and fifth million tranches anticipated to decline by 38%, 36% and 38% respectively.

Table 3.2 Estimated IRR impact from a 15% per year price reduction, for our third million set of cities/towns

City	Current IRR Indexed at '100'	New IRR Index	IRR % change
[✂]	[✂]	[✂]	[✂]
…	…	…	…
…	…	…	…
Average	**100**	**62**	**-38**

[80] As per Ofcom's definition: *"a RAB approach involves the assets of all the operator's services being entered into a common pool known as the regulatory asset base (or RAB) which is recovered across all of the firm's services. This allows an operator to recover the costs of a particular service (e.g. Service A) through revenues earned from multiple services (e.g. Service A and Service B)."*. Source: Ofcom (2020) WFTMR Consultation. Volume 4. Page 35. Paragraph 2.19.

[81] Assuming an index of 100, a decrease of 15% per year over 5 years results in the index falling to 44.4 (= 100 * (1 – 15%)^5).

Table 3.3 Estimated IRR impact from a 15% per year price reduction, for our fourth million set of cities/towns

City	Current IRR Indexed at '100'	New IRR Index	IRR % change
[✂]	[✂]	[✂]	[✂]
…	…	…	…
…	…	…	…
Average	**100**	**64**	**-36**

Table 3.4 Estimated IRR impact from a 15% per year price reduction, for our fifth million set of cities/towns

City	Current IRR Indexed at '100'	New IRR Index	IRR % change
[✂]	[✂]	[✂]	[✂]
…	…	…	…
…	…	…	…
Average	**100**	**62**	**-38**

3.84 The evidence above demonstrates that such price reductions as proposed by Ofcom for WLA Area 3 would very significantly reduce the anticipated levels of returns from investment in areas that would otherwise be commercially attractive.

3.85 While the above analysis is based on towns and cities that generally fall within Area 2, we consider that the insight and implications are entirely applicable to Area 3. Price reductions could completely undermine commercial investment in Area 3 locations which we might otherwise consider investable. This is due to the obvious point that the more rural areas (which comprise much of Area 3) are likely to have a lower expected IRR to start out with due to the more challenging commercial attributes (for example, the more sparely distributed population in rural areas increases the costs to build per premise).[82]

3.86 [✂]

3.87 Given all this, we consider that Ofcom's proposed approach to price regulation in Area 3 would directly undermine the achievement of the Governments ambition to deliver nationwide fibre broadband as quickly as possible, and also undermine the achievement of Ofcom's overarching regulatory objective of promoting competition and investment in fibre.

3.88 In conclusion, we consider that price reductions proposed by Ofcom for Area 3 will have a very material detrimental effect on expected returns. As such, to the extent that these price

[82] See for example the January 2020 House of Commons 'Full-fibre broadband in the UK' briefing paper, which notes that: *"Challenging geographies in many rural areas increase the cost of installing fibre, while low population densities reduce the returns that operators receive from customers buying services*." [page 25, Link]

reductions apply to areas that (absent regulation) would be commercially viable for investment, the effect of the price reductions will be to significantly decrease their commercial attractiveness.

3.89 In addition to the above point about the impact on incentives to invest from price reductions, there are also other regulatory proposals which act to further lower investment incentives in Area 3 locations. Specifically, while Ofcom is proposing to prohibit Openreach from launching geographic discounts on FTTP in Area 2 (to address the concern that Openreach may use geographically targeted price reductions to deter alternative network rollout) this prohibition is not proposed to apply in Area 3.

3.90 Under these proposals, Openreach would be free to adopt geographic discount strategies in order to foreclose rivals in commercially attractive areas. As we set out above, these commercially attractive areas currently allocated to Area 3 are likely to account for ~3.1 million UK premises.

3.91 In other words, with Ofcom adopting its proposed postcode sector allocations (proposing to allocate postcode sectors to WLA Area 3 for which "there is no planned [rival MSN] build, but where build may be economic") taken in conjunction with the proposed WLA Area 3 remedies, Ofcom is likely to directly foreclose commercial deployment by rival MSNs to BT, to millions of UK premises.

Ofcom must identify commercially attractive areas allocated to Area 3, and move them to another market

3.92 We consider that Ofcom is making the unsubstantiated assumption that in 'Area 3' only Openreach is likely to deploy fibre networks. We consider that at present there is great uncertainty as to who will deploy in 'Area 3', where they will deploy and when.

3.93 To the extent that the most rural locations can support a single fibre operator, there is no reason why in many cases this cannot be a rival to BT, such as CityFibre, Virgin Media, or Gigaclear.

3.94 In addition, for those area that cannot support commercial deployment of even a single operator, there is no reason why Openreach should be granted any preferential treatment. This is not least because all operators are equally able to compete for government subsidies and gap funding mechanisms which could result in significant network deployment in rural areas by rivals to BT.

3.95 We set out below how Ofcom can approach the task of identifying all the locations (postcode sectors) allocated to Area 3 which are commercially attractive. We also discuss the two options available to Ofcom having identified these areas and seeking to move them out of Area 3, which are; i) moving them to Area 2, and ii) move them to a new market (i.e. 'Area 2.5').

3.96 In the first instance Ofcom could simply ask operators which locations they consider are commercially attractive, and require any such statements be supported by robust evidence (e.g. a detailed business case). This would be the 'first-best' source of evidence as operators (and not Ofcom) are best placed to assess which areas are likely to be attractive for investment given all of the relevant commercial considerations.

3.97 We would expect that the major fibre investors will have already identified a list of potential deployment locations which are then refined into a list of commercially attractive locations. From here, operators select a subset of these to define their current 'planned' deployment.

3.98 We have undertaken just such an exercise to identify the towns/cities that make up our planned network deployment. Our process is comprised of three steps:

i. **Identify all areas that would be commercially attractive for us (i.e. where could we invest)** – We start by assessing which parts of the UK are commercially attractive for full fibre deployment. The UK Government consider that at least 80% of the UK is likely to be commercially attractive.[83] Our approach to deploying full fibre networks is to build entire towns or cities, and in assessing where it could be attractive for us to invest, we consider a wide range of factors including:

- Market size and characteristics of the area (i.e. town or city);[84]
- Proximity of existing assets (i.e. do we have network there already or nearby?);
- Relationships with local authorities;
- Competitive presence in an area (i.e. other full fibre or gigabit capable networks), either currently or anticipated to be (such as based on operator announcements); and
- Deployment costs (e.g. availability of PIA).

ii. **Which commercially attractive areas do we want to include in our current deployment plans –** Having identified which parts of the UK could support commercial investment, we then proceed to define the scope of the ambition by selecting the area in which we actually wish to deploy our network. The decision of which areas are selected for planned deployment will be informed by the stated ambition of our investors. As such, this step involves identifying the best mix of towns/cities from the long list of commercially attractive areas. [✂]. However, for various reasons this list can evolve over time, including through expanding our ambition (i.e. from 5 to up to 8 million) as well as by swapping out cities due to evolving market conditions.

iii. **When will we invest –** Having identified the specific locations where we wish to deploy a full fibre network, it will then be necessary to determine the planned timing (i.e. start and anticipated completion date), and the order of builds. The timing of builds will be largely informed by a variety of external factors, including: workforce availability (including build contractors and when they are able to start work in that location), time taken for planning, getting wayleaves approved and capital constraints.

3.99 On this basis we would be happy to share with Ofcom our analysis in Step 1 in which we have identified over 200 UK locations for which fibre deployment could be commercially attractive. As noted above we would expect other major fibre investors to have undertaken a similar exercise. If Ofcom was to collate from each operator their assessment of commercially

[83] In its Future Telecoms Infrastructure Review (2018), DCMS obtained the following figures: (i) c.80% of the market will be able to host at least 2 operator competition; (ii) 10% of the market, whilst commercially viable for at least one operator may require 'competition for the market' mechanisms to secure investment; (iii) the final 10% of the market is unlikely to support network deployment and will require additional funding. [Source: DCMS (2018) FTIR. Pages 4-5.]

[84] The market size and potential customer base will be significantly influenced by demand-side factors such as consumers' awareness and understanding of full fibre benefits. In addition, the copper-switch over will play a significant role in affecting investor's incentives given that it will impact the number of customers who will take fibre services. We discuss these demand-side considerations in detail in Section 8.

attractive areas, Ofcom would be able to see all the locations that operators consider are commercially attractive.

3.100 After gathering this information, Ofcom could undertake an exercise to delineate between areas which have been identified by multiple operators as being commercially attractive, and those that are identified by only a single operator. In the former case there should be little argument that such a location is commercially attractive. In the latter case, Ofcom may wish to do further work to verify that this location really is commercially attractive for all operators (i.e. whether other operators have assessed and dismissed this location or perhaps simply not assessed it in the first place).

3.101 While the exercise above will help to identify many of the commercially attractive areas, it will unlikely identify all commercially attractive locations given that operators are unlikely to have considered all possible locations across the UK.

3.102 Given this (and in order to inform the information received from operators) we consider that Ofcom could also undertake its own assessment of commercially attractive areas, which could be based on population density and clustering analysis. Such analysis was in fact undertaken by Ofcom in its December 2018 consultation on 'Promoting investment and competition in fibre networks: Approach to geographic markets'.

3.103 In that consultation Ofcom outlined its proposed approach to assessing potential future rollout beyond existing plans. Specifically, Ofcom stated that:[85]

> *"We also need to consider how to determine those areas where we might expect potential future network rollout beyond operators' existing plans, as we wish to capture all possible locations for commercial scale rollout of new networks within our potentially competitive areas."*

3.104 Ofcom stated in that consultation that it intended to include in 'Category 2' [potentially competitive areas] those areas where operators do not currently have plans, but where there is a prospect that network build may be economic. To identify these areas, Ofcom undertook the following steps:

- identify 'urban' postcodes where there is a reasonable density of premises;
- group these postcodes into clusters;
- identify which of these clusters meet certain criteria indicating that network build may be economic;
- map those selected clusters onto postcode sectors; and
- select postcode sectors where 65% or more of the premises are included in those clusters.

3.105 We fully support this approach to assessing the commercially attractive parts of the UK. However, (as we noted in our October 2019 submission on geographic markets, see Annex 3) we consider that Ofcom's clustering analysis set out in its December 2018 consultation failed to address a number of key considerations and as a result significantly underestimated

[85] Ofcom (2019) 'Promoting investment and competition in fibre networks: Approach to geographic markets'. Page 22. Paragraph 3.45. [Link].

the number of UK postcode sectors that are likely to be commercially attractive for fibre deployment.

3.106 We set out these critical factors in the executive summary of our October 2019 submission, and set them out again below for convenience:

- **Ofcom has not taken account of all relevant investment factors:** For operators like us, there are four general categories of factors that must be considered when deciding where to deploy assets, these are: i) market size and characteristics; ii) proximity of existing assets and relationships with local authorities; iii) competitive presence in the area, and iv) deployment costs and availability of PIA. In its clustering analysis, Ofcom undertook an assessment of only the first of these, and therefore did not consider other critical investment factors.

- **The majority of postcode sectors allocated to Area 3 have equal or higher density than those allocated to Area 2:** Ofcom used density to help inform its clustering analysis. As such, we note that while the average density across all of Area 3 is much lower than in Area 2, when investigating further, one can see that the average belies the reality that many postcode sectors allocated to Area 3 have a density equal to or higher than postcode sectors allocated to Area 2. The low average density for Area 3 is explained by a number of extremely low-density postcode sectors, which bring down the average significantly. If we instead take the highest 80% of postcode sectors (provisionally allocated by Ofcom) in Area 3, ordered by density, we see that their average density is almost exactly equal to the average density across all of Area 2.

- **Postcode sectors cannot be considered in isolation, as regard must be given to their physical location and whether they are within a town/city that is commercially attractive, or near to one:** Postcode sectors that do not appear to be commercially attractive in isolation, may be so if they are located within a contiguous town/city area, for which it is natural and logical to deploy across the entire contiguous area. In addition, there may be postcode sectors (e.g. villages) near to a commercially attractive town/city that would not attract commercial deployment in isolation but could if a network were deployed into the nearby town/city. There may also be the case where a city/town on its own is not commercially attractive, nor would be the surrounding villages, however they all may become commercially attractive once the total demand potential of the area (e.g. town/city plus neighbouring villages) is aggregated together.

- **Relationships with local authorities can materially influence where an operator deploys its network**: Negotiations with local authorities are critical to successful deployment and it is not at all unusual that they seek to influence and expand coverage areas to include locations that would not naturally fit our selection criteria if reviewed individually outside the context of other local deployments.

- **Full fibre deployment costs can vary significantly by region and are likely to be independent from population size and density:** Perhaps the most significant factor influencing build cost is the availability of PIA, which has the ability to significantly reduce the costs of full fibre deployment. As a result, the decision of where alternative operators choose to deploy full fibre will be largely influenced by where PIA can be effectively utilised.

- **Ofcom should take due account of deployment announcements:** Ofcom has stated that one of the criteria it will take into account in determining 'potentially competitive areas' (i.e. Area 2), is where "an alternative network provider has announced plans to build in the area". However, it appears that Ofcom has not given full regard for recent announcements. We encourage Ofcom to give all due consideration to planned deployments, to ensure the areas that are planned for commercial deployment by alternative operators are not inadvertently and incorrectly designated as Area 3.

3.107 As we set out in our October 2019 submission, once all the factors affecting incentives to invest by alternative full fibre operators (like CityFibre) are considered, Area 3 is likely to be significantly smaller than the ~30% of UK premises that Ofcom has proposed.

3.108 Furthermore, owing to the complexities involved in the decision of where to invest, and the many different relevant factors, it would be far more practical at this time for Ofcom to withhold from defining binary geographic boundaries based on market circumstances as they are today. Ofcom should instead focus its efforts on promoting investment in as many areas of the UK as possible.

3.109 Doing this requires ensuring that all areas that could support commercial deployment are not included in Area 3 since doing so would lead directly to regulatory failure by undermining investment that otherwise (i.e. absent the regulator intervening) would have taken place.

3.110 Finally, having correctly identified all postcode sectors which are commercially attractive, in order to remove the risk of regulatory failure, we consider that Ofcom has two options: 1) move all these postcode sectors to Area 2, or 2) move these postcode sectors into a new market (i.e. 'Area 2.5').

3.111 In terms of option 1, this would have the benefit of simplicity and also promoting investment and competition across all areas that are commercially viable. Option 2 on the other hand could be used if Ofcom were to be concerned that such areas may not see commercial deployment for some time.

3.112 Under Option 2, Ofcom could define an 'Area 2.5' that is comprised of a set of remedies that seek to promote investment as much as possible but also takes account of the risk that deployment does not materialise in the short run, and that there may be scope for consumer detriment during the interim period.

3.113 Ofcom could also consider transitory solutions such as to introduce an 'Area 2.5' as a short-term (holding) market. In this scenario, Area 2.5 could have the same remedy set as Area 2 however on the condition that if no explicit deployment plans emerge for Area 2.5 postcode sectors within a reasonable period of time, then these areas would move into Area 3. We consider that this could all happen during the market review period.

3.114 For example, Ofcom could give a time limit of 24 months from the publication of the WFTMR Statement (i.e. April 2023) at which point, all postcode sectors in Area 2.5 for which there is no confirmed deployment plans, would immediately move to Area 3. Such an approach would provide significant benefits over Ofcom's current proposals, in terms of providing greater incentives for commercial investment.

Ofcom must maximise the number of locations across the UK that are commercially attractive, including by implementing key EECC mechanisms

3.115 The regulatory proposals Ofcom makes in this market review are not just relevant for investment in areas that are currently commercially attractive, but also for those areas that could (soon) become commercially attractive.

3.116 For example, measures to address demand-side barriers (as we discuss in Section 8) and ensuring improvement in the PIA product (as we discuss in Section 5.1) will all help to improve the overall business case for fibre deployment, allowing operators to build out further into the rural areas.

3.117 In addition to such regulatory measures, we wish to highlight the key provisions set out in the revised European Electronic Communications Code (EECC) to support fibre investment, including through co-investment schemes and transparency mechanisms.[86] We consider that such provisions will be critical for supporting investment in fibre networks in Area 3.

3.118 In regard to co-investment, Article 76 of the EECC sets out new requirements for regulators in terms of ensuring lighter-touch regulation when an SMP operator engages in a co-investment (i.e. risk-sharing) arrangement for the deployment of fibre networks. In areas where it is not commercially attractive for a single operator to roll out fibre, co-investment arrangements can unlock investment into areas that otherwise would require government subsidies. They are therefore an efficient market mechanism for fulfilling the ambition for ubiquitous fibre connectivity.

3.119 In addition, the EECC introduces other mechanisms for promoting investment in fibre, most especially the new conditions around transparency. Maximising the number of commercially attractive areas across the UK rests on implementing mechanisms to address three key things: i) the cost of deploying networks, ii) the take-up of services (i.e. promoting demand including through the copper switch-over) and iii) the risks of the investment. Transparency directly supports 'ii' and 'iii' by providing greater clarity and certainty about the likely penetration (on the basis of rival presence).

3.120 The EECC sets out in Article 22 provisions for how to ensure appropriate transparency of network deployments, to maximise the efficiency of coverage, especially in the less commercially attractive areas.

3.121 We believe this could be a powerful mechanism, most especially to align Government interventions such as the proposed 'outside in' gap funding mechanism more closely to areas where deployment of any full fibre network is not viable without subsidy.[87]

3.122 The data gathered under the Article 22 mechanism, would constitute a significant enhancement to the data previously captured under the Government's Open Market Review processes,[88] not least because the accuracy of the data presented would be backed up by Ofcom's data gathering powers and its ability to impose fines for non-compliance (e.g. providing inaccurate data). We believe this could help to focus interventions on those areas in which there is genuinely no prospect of deployment in the short-to-medium term.

[86] Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code. [Link].

[87] In addition, it would help to address the specific issue of there being locations that in theory are commercially attractive however suffer from a 'hold up' problem, in which no operator is willing to deploy out of fear of being overbuild.

[88] DCMS (2014) 'State aid – Guidance – Open Market Review (OMR)'. 26th November 2014. [Link].

3.123 Furthermore, the Article 22 provisions could act as a deterrent mechanism for strategic gaming by market participants. Such gaming could include falsely announcing rollouts in order to deter rivals from rolling out their networks in certain areas, as well as withholding announcements in areas where it may be possible to achieve state aid funds to support investment.

3.124 An area that may be attractive for an operator to deploy into would become unattractive if there is rival build taking place at the same time or imminently thereafter. This can lead to a 'hold up' problem where the commercial case would become negative in the event of near-term overbuild. Transparency measures would help to address this and ensure commercially funded networks are deployed into as many areas as possible as fast as possible.

3.125 The UK has already seen some evidence of gaming behaviour by some market participants notwithstanding the previous Open Market Review processes, whereby areas claimed by operators to be uncommercial, are 'mysteriously' recipients of commercial deployment after a public intervention has been announced.

3.126 France has itself experienced issues with strategic gaming and has introduced a national transparency mechanism to overcome issues with operators declaring intentions to deploy in certain areas, only to subsequently renege on these commitments with resultant chilling effects on market-wide investment. In fact, the Article 22 mechanism in the EECC was based off France's approach and experience.

3.127 These experiences suggest a strong case for backing up the Article 22 mechanism with penalties for providing misleading information and a requirement to provide an objective justification for deviations from a declared network rollout plan.

3.128 Having said this, some care will need to be taken in the detailed design of the data gathering exercise to recognise the inherent uncertainty of future deployment plans. Exogenous factors that cannot be reasonably foreseen at the point where information is shared through this mechanism may lead to significant deviation from plans over time.

3.129 It may be worth considering supplementing the annual data gathering requirements with a general obligation for operators to report substantial deviations from previous plans within a reasonable period of time of business decisions being taken.[89]

3.130 Further to the above, it will be essential to draw a clear distinction between 'committed' roll-out and 'aspirational' rollout. An obvious starting point for identifying the level of certainty over any claims about future rollout would be to identify those plans which already have committed capital or for which there is a mechanism to draw down capital (e.g. a pre-agreed financing scheme that draws down capital under certain conditions).

3.131 The case for implementation of a transparency mechanism to address the 'hold up' problem was explicitly recognised by the Government in the FTIR:[90] [91]

> *"We are, however, interested in the effect that greater transparency might have on accelerating commercial network roll out. Transparency of build plans could give alternative operators the option to compete with*

[89] We agree that, as far as possible, Ofcom should avoid replicating other data requests and are grateful that the Government is cognisant of the burden on businesses of multiple, overlapping data requests.

[90] DCMS (2018) FTIR. Paragraph 116.

[91] At present only limited voluntary transparency exists. It remains the Government's policy to implement in full the EECC, notwithstanding the UK's exit from the EU.

Openreach, as we want and expect them to do in many parts of the country, or alternatively to allocate capital to roll out in other areas."

3.132 It is surprising therefore to see no discussion in the WFTMR Consultation of how this mechanism could be utilised to assist Ofcom in achieving its objectives.

3.133 We urge Ofcom to integrate into its regulatory regime the use of the EECC provisions (such as the transparency and co-investment mechanisms) to support more efficient and extensive fibre deployment, especially into the less commercially attractive parts of the UK.

3.3 LL Access

3.134 In regard to Ofcom's proposed market definition for LL Access, our views are summarised below.

- **Product Market Definition**: we agree with Ofcom's decision to limit the focal product so as to only include wholesale fibre-based Ethernet and WDM services, and dark fibre used to supply leased line services. However, we remain concerned with Ofcom's position on the issue of mobile backhaul, for which we continue to be concerned about anti-competitive conduct by BT Enterprise.[92]
- **Geographic Market Definition**: in line with what we set out above in respect of WLA, we consider that Ofcom must ensure that Area 3 does not include locations where there is the realistic prospect of commercial deployment, i.e. by rival operators to BT. Ofcom's current proposals to include commercially attractive areas (for which there are no existing deployment plans) in Area 3, raises the risk of very significant regulatory failure.

3.135 We expand on each of these in turn below.

3.3.1 Product Market Definition

3.136 Ofcom recently assessed LL Access market definition, as part of its 2019 BCMR. This assessment included consideration of demand-side and supply-side substitution, although focussed mostly on the latter. Ofcom's conclusions from that market review can be summarised as follows:

- Ofcom defined a single market for LL Access services at all bandwidths, which includes all wholesale fibre-based Ethernet and WDM services;
- Ofcom included dark fibre used to supply or self-supply LL Access services in the product market; and
- Ofcom excluded business-grade connectivity services provided over EFM, as well as broadband (symmetric and asymmetric), from the product market.

3.137 Ofcom states in the WFTMR Consultation that it intends to adopt the same approach as set out in the 2019 BCMR on the basis that no material change has taken place:[93]

"In the six months since the 2019 BCMR Statement, we have not seen any evidence to suggest a different product market definition would be appropriate for the period covered by this review (2021 to 2026). Therefore,

[92] Ofcom (2020) WFTMR Consultation. Volume 2. Page 78. Paragraph 6.88(a).

[93] Ofcom (2020) WFTMR Consultation. Volume 2. Page 103. Paragraph 6.70.

in this section we summarise the main evidence and findings underlying our decision in the 2019 BCMR Statement and explain why we think the product market as we found it then remains appropriate for the period of this review."

3.138 In the WFTMR Consultation Ofcom sets out four main findings from its assessment of LL Access product market definition. We set out below each of these four findings, along with our comments on them.[94]

"Different bandwidths of LL Access services are sufficiently close substitutes to one another such that they should be considered in the same product market. Dark fibre is also a substitute."

3.139 We strongly agree with this finding and stress that once a full fibre MSN has deployed into an area, all bandwidths are equally able to be supplied with minimal additional cost.

3.140 This means that a telecoms provider supplying certain bandwidths could easily respond to an increase in the price of the focal product bandwidth. As Ofcom correctly identify in the WFTMR Consultation, for full fibre networks the only difference in providing various bandwidths is the electronic equipment installed at the circuit ends. For this reason, we consider that there is no bandwidth break within the broad LL Access market.

3.141 We consider it is also appropriate to include dark fibre within the same relevant market. We offer both dark fibre and LL Access services given that our MSN is easily able to supply both services. Furthermore, our experience suggests that many of our consumers see these services as substitutable. We therefore agree that it is entirely appropriate to include dark fibre within the relevant product market.

"Other access services, such as broadband and EFM, should not be considered in the same product market as LL Access services."

3.142 We agree that these services are not part of the same market currently, however we anticipate that there will be growing convergence as full fibre networks become more widely available meaning that by the end of the upcoming market review there is likely to be significant substitutability between broadband and leased line services.

3.143 In regard to demand-side substitutability, once full fibre broadband (which can offer speeds of 1Gbps or more) is ubiquitous, we would expect many businesses to move away from leased lines and instead rely only on broadband services. This is because full fibre broadband provides many of the quality characteristics of leased lines.

3.144 In regard to supply-side substitutability, with the anticipated deployment of MSNs (capable of offering many different fixed telecoms services) there is no reason why a network offering full fibre broadband cannot quickly and easily offer high quality business-grade connections, and vice versa.

3.145 For instance, our network is designed to support multiple types of product for residential, small to medium enterprise (SME) and corporate-type customers through a combination of Passive Optical Network (PON) and Point to Point architectures. [✂].

3.146 As such, wherever MSNs are deployed we would expect that the market will converge over time, negating the need to distinguish between fixed connections for residential broadband, and those used for large businesses.

[94] As set out in, Ofcom (2020) WFTMR Consultation. Volume 2. Page 103. Paragraph 6.71.

3.147 Notwithstanding the above, we accept that such market convergence may not happen with sufficient scale during this upcoming market review to warrant defining a single broad market.

"There is a single market for all access customers, and in particular we consider that mobile backhaul services form part of the leased lines access market."

3.148 We do not agree with this statement, as we consider that mobile backhaul services have significant differences in market structure from the rest of the leased line market which give rise to a specific set of competition concerns.

3.149 Historically mobile network operators (MNOs) have sought to rely on BT's nation-wide leased line network to provide the high and uncontended (dedicated) capacity they require to connect up all of their base-stations to the relevant access node.[95]

3.150 MNOs have relied almost entirely on BT Enterprise's (previously BT Wholesale)[96] Managed Ethernet Access Services (MEAS) product for this connectivity. MEAS as a product is based on the connectivity available from BT's local exchange footprint, and as such, providing this product requires that the operator be co-located at each of BT's local exchanges.

3.151 This is not a problem for BT Enterprise who are (unsurprisingly) co-located in all BT exchanges, however for MNOs or CPs seeking to serve MNOs, the task of co-locating in all exchanges is very significant, since it would require entering into some 5,500 BT exchanges in order to be able to provide national connectivity to all mobile sites.

3.152 While MNOs and rival CPs to BT Enterprise have co-located in a number of BT exchanges, these are in the more urban locations. As such, BT Enterprise is the only provider of mobile backhaul services in rural areas and therefore uniquely placed to provide ubiquitous mobile backhaul coverage on a national basis.

3.153 This situation is entirely analogous to what Ofcom considered in regard to PIA in which it highlighted in the WFTMR Consultation the importance of ubiquity of physical telecoms infrastructure for network builders.

3.154 BT Enterprise's advantageous position (of being co-located in all BT exchanges) means that MNOs have been almost entirely dependent on BT Enterprise as a third-party provider of mobile backhaul connectivity.

3.155 [✂]

3.156 The issue of MNO's dependency on BT Enterprise is an issue we have raised consistently with Ofcom in our response to market reviews and in bilateral discussions. Our long-standing concern is that BT Enterprise is able to leverage its unique position in rural, in order to foreclose competitors (also seeking to provide mobile backhaul services) across the whole national market.

[95] This can hypothetically be used to facilitate a connection back to BT exchange with further backhaul links back to the MNO's core network.

[96] In April 2018 BT Group brought its 'Business and Public Sector' and 'Wholesale and Ventures' businesses together under the control and brand of its newly founded 'BT Enterprise' affiliate. BT Wholesale formerly owned the relationship with the MNOs including the provision of BT circuits used by the MNO's for mobile backhaul. (Source: Jackson, Mark (2018) 'BT Group UK Merges Wholesale and Business Divisions in BT Enterprise'. 18th April 2018. ISPreview. [Link]).

3.157 We have previously requested Ofcom review this issue with the aforementioned concerns in mind, and for Ofcom to assess whether BT Enterprise has Significant Market Power (SMP) in this (mobile backhaul) market.

3.158 On the basis that we consider there is a stand-alone market for mobile backhaul, we set out in paragraphs 4.93 - 4.101 our views on SMP and our specific competition concerns in regard to BT Enterprise, including that BT Enterprise's pricing structure is likely predatory.

"LL Access and IEC services are in different markets."

3.159 For the reasons set out by Ofcom, we agree that IEC services and LL Access services are in separate markets. For instance, LL Access services provide a dedicated single link service from an end-user site to a point of aggregation, whereas IEC services provide a service to carry aggregated end-user traffic between BT exchanges (which include connections between access areas).

3.3.2 Geographic Market Definition

3.160 Ofcom proposes to adopt the same approach to defining geographic markets for LL Access as for WLA.

3.161 Given this we refer to the comments we make above regarding Ofcom's proposals for the WLA geographic market definition. Fundamentally, our concern remains the same, that Ofcom appears to be allocating postcode sectors for which commercial deployment would be attractive, into Area 3. Doing so will lead directly to regulatory failure, by foreclose investment that, absent regulation, would have taken place.

3.162 We do note that for the LL Access market Ofcom proposes to base its assessment of network presence on the basis of a 50-metre buffer distance, noting that:[97]

> *"we considered that we should count rival networks presence for operators with network within a 'buffer distance' of 50 metres of the geographic centroid of post code where the business is located."*

3.163 We consider this 50-metre assumption to be excessively conservative. Based on actual data from our agreed contracts, our average dig distance for new leased line customers is over 50 metres [✂]. Given this we consider that Ofcom is significantly under-representing the scale of network presence in the leased lines market.

3.164 In addition to distinguishing between Area 2 and Area 3, Ofcom also proposes to continue to define a high network reach (HNR) market as well as a central London area (CLA), on the basis of their unique competitive characteristics.

3.165 In regard to the CLA, the evidence set out by Ofcom does suggest that, based on existing network presence, this is a particularly distinct geographic area with significant density of large businesses and a significant number of operators present. Specifically, Ofcom notes that across the CLA, on average large business and mobile sites have a choice of four networks present to supply leased lines services. This competition is also reflected in the distribution in choice across customer sites with 90% of sites with a choice of two or more networks present and 81% with three or more.

[97] Ofcom (2020) WFTMR Consultation. Volume 2. Page 59. Footnote 249.

3.166 In regard to the HNR, we consider that Ofcom's use of 65% as the number of customer sites an operator has to be able to reach (within the dig distance) in order to be considered 'present' in that location, results in a significant overstatement of competition in that area. The fact that 35% of customers do not have the choice of three suppliers (and it is entirely feasible that a sizeable proportion of customers may only have access to BT), means that it is not appropriate as the distinction to define a separate geographic market. The conditions within the areas Ofcom has defined as the HNR market will include a significant proportion of customers having access to only BT and one other competitor, and likely also some customers with access only to BT.

3.167 We do not believe that those conditions qualify as homogenous, nor that they differ sufficiently from the conditions in the neighbouring areas to justify the definition of a separate market. If Ofcom was to use a higher and more reasonable coverage threshold, then it is much less likely that there will be any customer with access to BT only. Furthermore, the mix within the specified area would be significantly more homogenous and would be clearly distinct from other areas.

3.4 IEC

3.4.1 Product Market Definition

3.168 Ofcom proposes to define a single market for IEC services which:

i. includes active services at all bandwidths provided between BT exchanges;

ii. includes dark fibre between BT exchanges;

iii. excludes LL Access services; and

iv. excludes all trunk services that do not connect between BT exchanges.

3.169 We agree with Ofcom's product market definition.

3.4.2 Geographic Market Definition

3.170 Ofcom proposes to adopt the same geographic market definition as set out in its 2019 BCMR. In the 2019 BCMR Statement Ofcom concluded that connections to one BT exchange are not a substitute for connections to another BT exchange.

3.171 Ofcom also said that connectivity from another location (e.g. close to an exchange) is not a close enough substitute to be part of the defined market. This is because, in both cases, telecoms providers need to be present at a specific exchange to use access remedies in the corresponding access area and, therefore, require onward connectivity from that exchange. Furthermore, Ofcom noted that the conditions of competition can vary at each BT exchange, depending on presence of rival networks.

3.172 We consider Ofcom's approach in the 2019 BCMR to be broadly reasonable and do not at this time have further comment.

3.5 Service markets (WBA, WFAEL)

3.173 While Ofcom sets out proposed product and geographic markets for these service markets (WBA, ISDN, WFAEL) Ofcom concludes that these markets are not suitable for ex-ante regulation, on the basis that they fail to meet the three-criteria test.

3.174 In the interest of brevity, we do not comment on the proposed market definitions, but simply comment that these legacy markets are of lessening importance over time to the overall sector.

3.175 As such, we support Ofcom's proposals to deregulate these markets and to focus its attention instead on securing competition and investment in the next generation of telecommunications infrastructure.

4 SMP

4.1 In this section we set out our response to Ofcom's proposed Significant Market Power (SMP) findings.[98] In general, we agree with most of Ofcom's findings in regard to SMP. We especially agree with Ofcom's provisional conclusion that on the basis of the evidence, BT clearly has SMP in both Area 2 and Area 3in respect of WLA and LL Access.

4.2 We consider that recent pricing practices by Openreach clearly demonstrate that it has the incentive and (absent regulation) the ability to adopt wholesale pricing structures which would deter alternative network rollout. In other words, without appropriate regulation in place, Openreach will continue to seek to abuse its dominant position to foreclose rival infrastructure operators. We discuss further how Ofcom proposes to address this concern in Section 7.

4.3 The remainder of this section is structured as follows:

- **Section 4.1:** PIA
- **Section 4.2:** WLA
- **Section 4.3:** BCM (covering LL Access and IEC)

4.1 PIA

4.4 In this section we set out our views in respect of Ofcom's proposed SMP finding in the PIA market. We begin by assessing whether the PIA market meets the three criteria test and (on the basis of finding that it does, and therefore is susceptible to *ex ante* regulation) set out our views in regard to SMP.

4.1.1 The PIA market clearly meets the three criteria test

4.5 The 2014 EC Recommendation sets out the following cumulative criteria which must be applied if national regulatory authorities wish to apply *ex ante* regulation to any market that is not on the EC's lists of markets that it considers are susceptible to *ex ante* regulation:

- the presence of high and non-transitory barriers to entry. These may be of a structural, legal or regulatory nature;
- a market structure which does not tend towards effective competition within the relevant time horizon. The application of this criterion involves examining the state of competition behind the barriers to entry; and
- the insufficiency of competition law alone to adequately address the market failure(s) concerned.

4.6 The market Ofcom proposes to define for the supply of wholesale access to telecoms physical infrastructure for deploying a telecoms network is not on the list of recommended markets. Therefore, it is necessary for Ofcom to apply these three criteria to ensure compliance with the EC recommendations in order to validate that this market is susceptible to *ex ante* regulation.

[98] SMP is defined in the Communications Act 2003 as being equivalent to the competition law concept of dominance, namely, a position of economic strength affording a telecoms provider the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers.

4.7 Ofcom sets out in the WFTMR Consultation its consideration that the physical infrastructure market meets the three criteria test and therefore is susceptible to *ex ante* regulation. We agree with this finding, for the following reasons.

4.8 In regard to high and non-transitory barriers to entry, we note that the cost and time required to deploy telecoms physical infrastructure is very significant. As we stated in paragraph 3.25, the building of a physical telecoms network in an average UK city (of say 100,000 premises) would take over three years.

4.9 Furthermore, the very high sunk costs associated with installing such infrastructure are a very significant entry barrier. To the extent that network operators (such as CityFibre) do self-build telecoms physical infrastructure, the costs of doing so will be significantly higher than they would be when deploying a network using PIA.

4.10 In regard to the market structure not tending towards effective competition, we very much agree with Ofcom's assessment that BT's market power is significant and entrenched. BT remains the only operator with ubiquitous physical infrastructure coverage and that endows them with enormous market power, including in the deployment of new (fibre) networks.

4.11 In regard to the insufficiency of competition law to address market failures, we consider that *ex ante* regulation is the only credible tool for promoting competition. While competition law can be employed to identify and punish abuses of a dominant position, it has no scope for supporting the achievement of promoting competition (i.e. in downstream markets), largely because the assessment takes place after the abuse has taken place (often many years after) by which time the anti-competitive practices have had their effect. On this point we re-iterate that in order to deliver full fibre to consumers as quickly as possible (i.e. by 2025) it is crucial that the mechanisms are in place now to promote competition and investment.

4.12 In other words, the next 12-24 months will be crucial in ensuring operators are able to begin deploying networks at scale. Noting this, the timelines for a competition law investigation (which often take three or more years to resolve, as seen by the recent decision regarding Royal Mail)[99] are completely incompatible with securing the necessary investment and competition in the short run.

4.13 In addition, competition law does not provide any regulatory certainty, which is critical for investors considering making long-term risky investments in fibre networks.

4.14 For the reasons set out above, we firmly believe that competition law would not be sufficient on its own, and therefore that *ex ante* regulation is required. As such, we consider that the physical infrastructure market meets the three criteria test and is therefore susceptible to *ex ante* regulation.

4.1.2 BT has SMP on the basis of the proposed market definition

4.15 As noted above, we agree with Ofcom's proposal that the relevant market should be defined as the 'national market for the supply of wholesale access to telecoms physical infrastructure for deploying a telecoms network'.

[99] Ofcom issued its Statement of Objections in regard to Royal Mail in July 2015 [Link], however Ofcom did not deliver its final decision until August 2018 (over three years later) [Link]. This decision was subsequently appealed to the Competition Appeals Tribunal, and that judgement was handed down in November 2019 [Link], over four years after Ofcom's initial Statement of Objections.

4.16 On the basis of that market definition and given our (and Ofcom's) assessment that this market meets the three criteria test and is therefore susceptible to *ex ante* regulation, we agree with Ofcom's finding that BT has SMP in this market and should be subject to *ex ante* regulation. We set out our reasons for this below.

4.17 Ofcom base its SMP assessment on three factors: i) the strength of competition from existing competitors, ii) the scope for entry and expansion by new or existing operators deploying new telecoms physical infrastructure, and iii) whether telecoms providers have buyer power which weakens BT's market power. We discuss each in turn below.

Strength of competition from existing competitors

4.18 As Ofcom sets out in the WFTMR Consultation, generally, SMP analysis would include an assessment of market shares within the market being considered. However, in regard to the PIA market, Ofcom notes that:[100]

> *"trying to calculate market shares in the supply of access to infrastructure is difficult and not very enlightening, because of the significant use of it for own infrastructure which means that like-for-like comparisons of usage of the infrastructure, or revenues from it, cannot easily be assessed. In the 2019 PIMR Statement we, therefore, focussed on assessing the strength of competition to BT from existing competitors based on information from access seekers about what matters to them, including in relation to the characteristics of those networks."*

4.19 We agree that market shares may offer less insight into market power in this case. We also support Ofcom's approach of assessing the requirements of operators seeking to make use of physical infrastructure, and on that basis the degree to which BT faces competitive constraints.

4.20 Fundamentally, we consider that there is no viable alternative to BT in terms of providing PIA. First and foremost, and as Ofcom highlights in the WFTMR Consultation, ubiquity of network infrastructure is the key factor for operators looking to make use of physical infrastructure for the deployment of telecoms networks. Given that Openreach is the only operator with a UK-wide network, there is no choice but to use Openreach.

4.21 Furthermore, a ubiquitous telecoms physical infrastructure provides much greater flexibility to expand and alter deployment plans in response to market demands. In other words, the only constraint would (in theory) be on the demand-side (i.e. where demand for network services was required), and not on the supply-side (i.e. where the non-ubiquitous infrastructure was available). Ofcom correctly highlight this point in the WFTMR:

> *"Most telecoms networks are built to connect to premises or sites in response to demand, and the precise location of this demand is not known at the point of network deployment. Irrespective of the business model adopted (e.g. whether targeting certain types of customers or all types of customers) the ability to provide any connection in response to future demand, quickly and without significant cost, is likely to be important. This is more likely to be possible if using a ubiquitous infrastructure, than one that is not ubiquitous."*

4.22 Ubiquity of network is not just important within a local area (i.e. a town or city) but also nationally. With only 10% of UK premises currently with full fibre access, and network

[100] Ofcom (2020) WFTMR Consultation. Volume 2. Page 56. Paragraph 5.7.

operators (such as CityFibre) assessing where to deploy fibre networks, the ability to use physical infrastructure in all locations across the UK is a significant consideration.

4.23 While it could be argued that an operator could mix and match (i.e. using different infrastructures in different areas), we note that, on the basis of our experience of using PIA, and the time taken to learn the Openreach ordering process and actively deploy networks, it would not be realistic for us to adopt a mix-and-match approach.

4.24 However, even if it was possible to effectively mix and match, we note that (as described above) there is no viable alternative for us to use. Specifically, in regard to Virgin Media, we agree strongly with Ofcom's assessment that Virgin Media's network is not a realistic substitute for BT's:[101]

> *"In relation to Virgin Media infrastructure, as explained in Section 4:*
>
> - *it does not provide the same level of coverage as BT infrastructure;*
> - *BT's lead-in infrastructure may offer it advantages; and*
> - *Whilst Virgin Media's Project Lightning is extending its coverage, the extent to which this makes its coverage ubiquitous in any area (i.e. comparable to BT), and whether it would be useable by access seekers, is uncertain."*

4.25 We agree with these points and that overall Virgin Media (and indeed no other entity) offers a reasonable substitute to BT's ubiquitous network of ducts and poles.

Scope for entry and expansion by new or existing operators

4.26 While there have been announcements of significant new network deployments, including our own ambitions to deliver full fibre to up to 8 million UK premises, as Ofcom correctly identifies, these build plans are critically dependent on wholesale access to BT's physical infrastructure via the existing PIA remedy (and so is not relevant under a modified greenfield approach).

4.27 Even if operators were not planning to make use of the existing PIA remedy, we still note that at present there is only minimal alternative rival networks to BT (other than Virgin Media). Furthermore, we note that it will take a number of years for new networks to be deployed. For instance, we note that building a comprehensive MSN in an average UK city (of say 100,000 premises) is likely to take at least 3 years.

4.28 For example, we began to build our fibre network in Milton Keynes (a city with around 81,000 premises) in mid-2018 and based on current forecasts we are planning to fully complete the city-wide build in [✂]. This is itself based on using the regulated PIA product, and we note that without having access to PIA it would take longer.

4.29 For these reasons, we fully support Ofcom's view that the threat of entry or expansion by new or existing operators would not effectively constrain BT.

[101] Ofcom (2020) WFTMR Consultation. Volume 2. Page 57. Paragraph 5.10.

Countervailing buyer power

4.30 As noted above, given the lack of realistic alternative options, we consider that there is no material buyer power for PIA. [✂].

4.31 In addition, and as Ofcom note, the largest user of BT's physical infrastructure is BT itself. Furthermore, BT's position as a vertically integrated operator weakens its incentive to offer effective access to its infrastructure given that it will lead to greater downstream competition.

4.32 For the reasons given above we strongly agree with Ofcom's proposal to find that BT has SMP in a national market for the supply of wholesale access to telecoms physical infrastructure for deploying a telecoms network.

4.2 WLA

4.33 In its assessment of the WLA market, Ofcom has, as it did in the 2018 Wholesale Local Access Market Review (WLAMR), provided due regard to the criteria for assessing SMP set out in the EC SMP Guidelines.[102] Those Guidelines provide a non-exhaustive list of criteria to be considered in an SMP assessment, and state that a dominant position may derive from a combination of these criteria, which when taken separately may not necessarily give rise to an SMP finding.

4.34 Specifically, Ofcom sets out the following criteria that it considers to be relevant to an SMP assessment in the WLA market:

- Market shares;
- Pricing and profitability;
- Control of infrastructure not easily duplicated (network presence and potential expansion); and
- Countervailing buyer power.

4.35 We discuss the above factors and set out our views in the section below.

4.2.1 CityFibre's assessment of the key evidence relied on by Ofcom when assessing SMP in WLA Area 2 and Area 3

Market Share

4.36 The SMP Guidelines note that "*market shares are often used a proxy for market power*". The SMP Guidelines also state that:

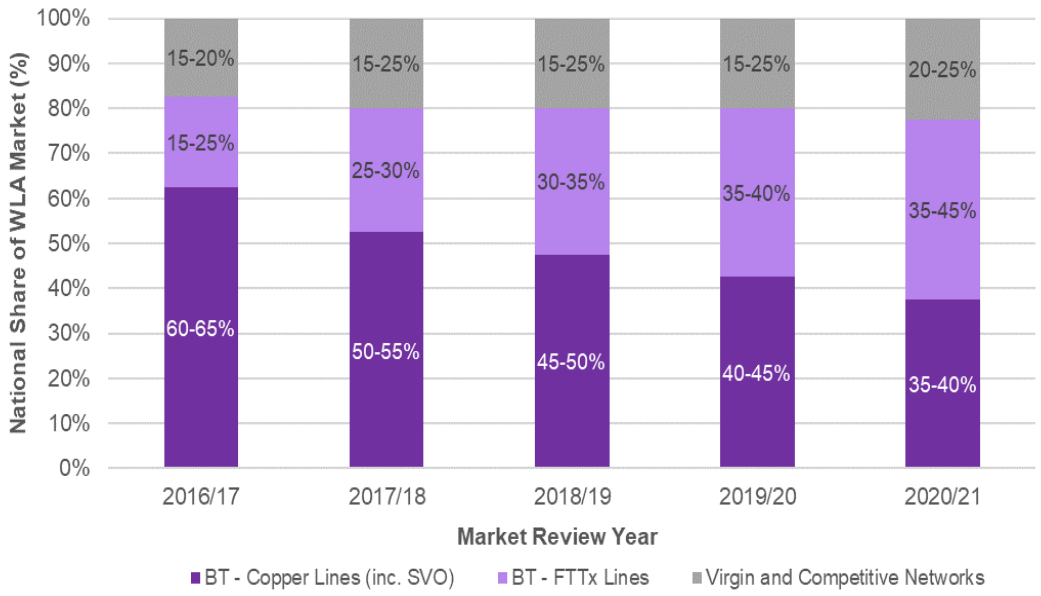
- Single dominance concerns normally arise where market shares exceed 40%;
- Concerns can also arise at lower shares depending on the difference between the market shares of the undertaking in question and that of its competitors;
- Very large market shares in excess of 50% are in themselves evidence of a dominant position, save in exceptional circumstances; and

[102] European Commission (2018) 'Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services.' (2018/EC 159/0-1).

- Undertakings with market shares of no more than 25% are not likely to enjoy a (single) dominant position on the market concerned.

4.37 As a starting point we note that in the 2018 WLAMR, Ofcom identified that BT had a very significant share of national broadband lines, of 80-85% as of 2016/17, with the majority of these being copper lines).[103] Ofcom also forecasted shares out to the end of the market review period (i.e. 2020/21) which showed that BT would continue to have a very high market share (of 75-80%). We show this information in Figure 4.1 (below) which breaks down the BT share for copper and FTTx lines.[104]

Figure 4.1 Ofcom's analysis of WLA national market share in its WLAMR Statement 2018



Source: Ofcom (2018). 'WLA Market Review: Statement – Volume 1". Figure 4.1: Forecast WLA Market Shares. Page 72.

Notes: Reproduced by CityFibre.

4.38 As a result of this evidence, Ofcom stated in the 2018 WLAMR Statement that BT's market shares "*are high and expected to remain stable at levels consistent with a presumption of dominance throughout the period covered by this review*."[105]

4.39 Ofcom is proposing to use new geographic markets from April 2021, namely the 'Area 2' and 'Area 3' markets. Given this, Ofcom has presented in the WFTMR consultation evidence in each of these defined geographic markets on premises passed and share of connections. We reproduce this evidence below in Table 4.1.

[103] Ofcom computed service shares of the (overall) WLA Market in the UK (excluding Hull) based on the number of access connections. Ofcom presented this information for BT (broken down by copper and fibre lines) as well as for 'Virgin Media and others'. Ofcom also forecasted how market shares might evolve over the market review period.

[104] We note the vast majority of the FTTx lines are in fact FTTC and not FTTP (full fibre).

[105] Ofcom (2018) 'Wholesale Local Access Market Review: Statement – Volume 1'. Volume 1. Page 85. Paragraph 4.78

Table 4.1 Ofcom's analysis of premises passed and connected in WLA Area 2 and Area 3

	Area 2	Area 3
BT's largest rival, % of premises passed	60 – 70%	0 – 10%
BT, share of connections	c.70%	Close to 100%
Next largest rival, share of connections	c.30%	c.0%

Source: Ofcom (2020) WFTMR. Volume 2. Page 110. Table 8.5
Notes: Reproduced by CityFibre.

4.40 As a starting point we consider that 'premises passed' provides a poor measure of shares, as it captures potential rather than actual customers. We consider that 'premises passed' will under-estimate the level of competitive constraint faced by BT, including because of the number of significant demand-side barriers which are currently faced by rival operators to BT and act as a direct barrier to consumer switching, and therefore capturing market share from BT.

4.41 These barriers include the low levels of consumer engagement that we currently see in the market, as well as the complexities with cross-platform (i.e. inter-network) switching processes, which are currently 'cease and re-provide' connections, often leading to consumers having gaps in service continuity. As a result, we consider that even if Openreach faced direct competition across 100% of its footprint, BT's market share is likely to remain high given the ongoing barriers to the switching facing rival operators.

4.42 Ofcom's own evidence shows that consumer switching is low in the broadband sector, and that this low level of switching has persisted for many years. For example, Ofcom's 2019 Core Switching Tracker[106] survey showed that only 7% of respondents had switched their fixed broadband service in the previous 12 months.[107] This same level of switching (i.e. 7%) was also observed in the 2018 Core Switching Tracker.[108]

4.43 If market-wide switching remains low, then regardless of the levels of rival network presence, BT will continue to hold a position of dominance. We therefore urge Ofcom to promote competition by addressing the demand-side barriers that persist in the market. We discuss these further in Section 8.

4.44 We consider that the most insightful data for considering WLA market shares is 'share of connections' as this represents the actual share of customers. On the basis of this, BT appear to have a very high share, of close to 100% in Area 3, and 60-70% in Area 2 (as shown in Table 4.1).

4.45 We consider that for both Area 2 and Area 3, BT maintains a high market share currently, which gives rise to a presumption of dominance. In area where there is unlikely to be material

[106] Ofcom (2019) 'Ofcom Core Switching Tracker 2019. 17th July to 21st August 2019.' [link]

[107] Ofcom (2019). 'Ofcom Core Switching Tracker 2019. 17th July to 21st August 2019'. See page 12, which shows that 111 out of 1500 respondents stated that they had not switched their fixed broadband in the previous 12 months.

[108] Ofcom (2019) 'Ofcom Core Switching Tracker 2019. 17th July to 21st August 2019'. See page 9 which shows that 110 out of 1500 respondents stated that they had not switched their fixed broadband in the previous 12 months.

deployment by rival networks, we would expect BT's (almost 100% market share) to be maintained.

4.46 In Area 2 we would expect BT's share to fall as alternative operators deploy networks and compete for customers. While the future levels of competition are uncertain, given the increasing scale of current network rollout and the already announced deployment plans by us and other operators, we consider that on the basis of the proposed remedies (most especially those set out in Annex 15 of the WFTMR Consultation) by the end of the market review period, BT's share in Area 2 could fall materially. However, we note that BT's market share in Area 2 will still likely continue to be at levels which trigger a presumption of dominance (i.e. 50%).

4.47 Absent regulation we would expect BT to continue to hold a very significant market share in Area 2 across the market review period. However, if Ofcom is able to implement effective regulation across this market review period to promote competition and investment in fibre networks, we would expect that BT's market share could fall substantially over the market review period.

4.48 We consider such effective regulation must ensure that Openreach does not foreclose rivals through wholesale pricing practices and does not engage in predatory pricing practices, as well as by ensuring that prevailing switching barriers (as discussed in Section 8 of this document) are addressed.

Pricing and profitability

4.49 Ofcom notes in the WFTMR Consultation that, BT had been setting its prices up to the regulated price cap level[109] and that if BT was unregulated, Ofcom would expect BT to raise the prices of all its services above that cap.

4.50 This was also Ofcom's position in the 2018 WLAMR, in which Ofcom highlighted that BT has been making significant returns on these services: "*the presence of increasing returns which are comfortably above the benchmark cost of capital despite a number of WLA services being charge controlled, are consistent with enduring market power.*"[110]

4.51 While we do not disagree with the role that profitability analysis should play in assessing market power (although we do flag the critical consideration of the fair bet when considering any profitability analysis), when it comes to considering absolute pricing levels, we think Ofcom must give due regard to ongoing investment in the market, and the need to ensure that market pricing gives investors sufficient headroom to fund their planned fibre network deployments.

4.52 Given this, we do not consider that BT pricing up to the cap is necessarily compelling evidence of significant market power, since this could simply be a necessary commercial practice for supporting the network investment.

4.53 Furthermore, we consider that excessive pricing is one form of conduct, however flag that Ofcom must also consider evidence of other forms of anti-competitive conduct. For instance, we have seen in recent years a number of commercial offers and promotions launched by Openreach which have the clear object and effect of deterring rival network deployment.

[109] Ofcom (2020) WFTMR Consultation. Volume 2. Page. 150. Paragraph 8.67

[110] Ofcom (2018) WLAMR Statement. Volume 1. Page 80. Paragraph 4.55. [Link].

4.54 Ofcom sets out this concern in Annex 15 of the WFTMR Consultation, and we consider that these considerations must also feed into Ofcom's SMP analysis, given that Ofcom sets out that BT have the incentive and (absent regulation) the ability to adopt wholesale pricing structures which would deter alternative network rollout. We consider that such conduct is more compelling evidence of Openreach's SMP, than is the setting of prices up to the regulated price cap.

Infrastructure not easily duplicated (barriers to entry and expansion)

4.55 Ofcom sets out in the WFTMR Consultation that prevailing network coverage analysis shows that given BT's ubiquitous network coverage, it has significantly larger coverage than any of its rivals in Area 2.

4.56 While over the market review period, it is anticipated that there will likely be significant rival network deployments across Area 2, we note that it will take a number of years for these networks to be deployed. For instance, we note that building a comprehensive MSN in an average UK city (of say 100,000 premises) is likely to take at least 3 years. For example, we began to deploy our fibre network in Milton Keynes (a city with around 81,000 premises) in mid-2018 and [✂].[111]

4.57 Furthermore, (as already noted above) it will take time for the entrants to win business and grow their customer base. This is impacted by the prevailing demand-side barriers in the market, and we are asking Ofcom during this upcoming market review period to address these in order to lower the barriers to market entry and expansion (see Section 8).

4.58 Finally, we note that we in general agree with Ofcom's assessment on the competitive constraint small scale rollouts may have on BT's market power. Specifically, we agree with Ofcom's statement that whilst these small-scale deployments may overcome some of the barriers to entry larger scale providers face (e.g. operational complexity, investment required, penetration required for material return etc.) the nature of these deployments are that they are not extensive enough to create a competitive constraint on BT's market power.

Countervailing buyer power

4.59 Countervailing buyer power corresponds to the bargaining strength that the buyer has vis-à-vis to the seller, and its ability to switch to alternative suppliers.[112] This is a useful metric, to be used in conjunction with the others considered above, to identify the degree of upstream market power.

4.60 In the 2018 WLAMR, Ofcom analysed countervailing buyer power and stated that: *"in order for the threat [of switching supplier] to be effective, the volumes that are or can credibly be met from another source of supply need to have a material impact on the suppliers profitability".*[113]

4.61 Ofcom's position at that time was that the alternative sources of supply available were not of sufficient scale to threaten BT with any legitimate risk of it losing enough volume to harm its commercials.

[111] We note that this duration would be longer if we had to rely on pure self-build (i.e. we were not able to make use of Openreach's PIA product).

[112] What is meant by this, is that even firms with very high market shares may not be in a position to significantly impede effective competition, in particular by acting to an appreciable extent independently of their customers, if the latter possess countervailing buyer power.

[113] Ofcom (2018) WLAMR Statement. Volume 1. Page 83. Paragraph 4.64

4.62 Furthermore, Ofcom stated that it considered that, at the wholesale level, absent WLA remedies, BT would be unlikely to offer third-party telecoms providers access, as is currently the approach adopted by Virgin Media, and was also BT's practice before the imposition of regulation requiring it to provide LLU.

4.63 Ofcom also noted that even if BT did allow access, other telecoms providers could only credibly threaten to switch if Virgin Media also offered wholesale access, which is unlikely. In addition, switching is likely to be costly for telecoms providers who have already built their networks to interconnect to BT's and switching would not be possible in areas outside the cable coverage areas.

4.64 Ofcom reiterated these points in the WFTMR Consultation, adding that:[114]

> *"even if Virgin Media were to supply downstream products, Virgin Media would be unable to supply all of a customer's requirements (for example, due to expected partial coverage, Sky or TalkTalk would still be reliant on BT to supply some of their customers). Other network operators which represent an opportunity for countervailing buyer power are currently much smaller in scale."*

4.65 We firmly agree that at present there is no significant scope for downstream CPs to exercise countervailing buyer power, given that currently there is no legitimate alternative national wholesaler.

4.66 While CPs can seek to establish wholesale agreements with rivals to BT, we note that CPs remain strongly tied to BT and we do not see this weakening materially over this market review period.

4.67 [✂]

4.2.2 CityFibre's conclusions on SMP in WLA Area 2 and Area 3

4.68 On the basis of the evidence considered above, we consider that BT clearly has SMP in both WLA Area 2 and Area 3. We reach this finding based on all the factors set out above, but we do wish to highlight BT's high and persistent market share as well as the significant barriers that exist for rivals seeking to acquire customers from BT.

4.69 Furthermore, and most significantly with regard to Area 2, we consider that recent pricing practices by BT clearly demonstrate that it has the incentive and (absent regulation) the ability to adopt wholesale pricing structures which would deter alternative network rollout. In other words, without appropriate regulation in place, BT will continue to seek to abuse its dominant position.

4.3 BCM (LL Access and IEC)

4.70 In this section we set out our views on SMP in the business connectivity markets (BCM), namely LL Access and IEC.

[114] Ofcom (2020) WFTMR Consultation. Volume 2. Page 116. Paragraph 8.64. [Link].

4.3.1 LL Access

4.71 Ofcom is proposing to define four LL Access markets: CLA, HNR, Area 2, and Area 3. To inform the SMP assessment, Ofcom has set out in the WFTMR Consultation the following 'key evidence':

Table 4.2 'Key evidence for LL Access markets' [Reproduction of Ofcom's Volume 2, Table 8.3 in the WFTMR Consultation]

	Proportion of businesses with X rival operators to BT present	CLA	HNR Areas	Area 2	Area 3
Total Postcode Sectors (% of total)	-	275 3%	304 3%	5536 56%	3511 35%
2017 Customer Ends Connected (% of total)	-	7,988 13%	3,978 6%	38,866 61%	12,964 20%
BT Service Share (2017 new connections)	-	[✂]% 60-70%	[✂]% 60-70%	[✂]% 70-80%	[✂]% 90-100%
BT Service Share (inventory)	-	[✂]% 50-60%	[✂]% 50-60%	[✂]% 50-60%	[✂]% 80-90%
Average number of rivals present	-	4.3	2.4	0.8	0.1
Proportion of businesses with X rivals present	X=0	4%	4%	35%	89%
	X=1	6%	12%	53%	10%
	X=2	9%	44%	9%	1%
	X=3	17%	26%	2%	-
	X=4	18%	9%	-	-
	X=5 or more	46%	5%	-	-
Average modelled distance to the nearest rival networks	X=1	0-50m	0-50m	150-200m	2.0-2.5km
	X=2	0-50m	0-50m	500-550m	5.0-5.5km
	X=3	0-50m	50-100m	1.0-1.5km	9.0-9.5km
	X=4	0-50m	200-250m	2.5-3.0km	14.0-14.5km
BT's proportion of 2017 new customer ends	On-net (fibre blowing)	[✂]% 90-100%	[✂]% 90-100%	[✂]% 80-90%	[✂]% 80-90%
Rivals' breakdown of 2017 new customer ends	On-net (fibre blowing only)	73%	55%	43%	12%
	On-net (digging required)	2%	9%	5%	2%
	Off-net	25%	36%	51%	86%

Source: Ofcom (2020) WFTMR. Volume 2. Page 120-122.
Notes: Reproduced by CityFibre.

4.72 We discuss below Ofcom's SMP proposals in each of the four identified geographic markets. We also discuss below (on a stand-alone basis) our concerns in respect of mobile backhaul, following what we set out in paragraphs 3.148 - 3.158 and our position that Ofcom must consider further the conduct of BT Enterprise in the provision of mobile backhaul services.

LL Access in the CLA

4.73 In the 2019 BCMR Statement Ofcom concluded that BT did not have SMP in the CLA in for the review period 2019 - 2021

4.74 Ofcom sets out in the WFTMR Consultation, that it considers that BT will face greater competition in the CLA over the upcoming review period (2021-2026) than was the case in the current (2019-2021) period covered by the 2019 BCMR Statement.

4.75 Ofcom therefore proposes to find that BT does not have SMP in the CLA. In making this proposal, Ofcom notes:[115]

> *"a) […] although BT has a market share above the 50% threshold normally associated with a presumption of dominance, the density of rival networks suggests that, on average, BT will face competition from four rivals, which will either be connected to customer sites or requiring short network extensions.*
>
> *b) This competitive pressure is reflected in BT's pricing and in its internal competitive assessment. BT not only felt obliged to match the substantial cuts in prices required by charge controls in the rest of the UK, but to undercut them, despite the fact that the CLA has been fully deregulated since 2016. Evidence suggests that the price cuts were partly due to competition. This shows that BT lacks the market power necessary for a finding of SMP.*
>
> *c) This constraint on BT is likely to increase further due to the prospects of network build in the CLA using PIA"*

4.76 While BT does have a market share above 50%, we consider that market shares is only one factor Ofcom should take into account when assessing SMP. Ultimately, Ofcom must consider the extent of competitive constraints on BT and therefore the extent to which BT can act independently of competitors and consumers in this area.

LL Access in HNR

4.77 Ofcom proposes that BT has SMP in the provision of LL Access circuits in HNR areas over this review period, however, notes that "*this finding is finely balanced*".

4.78 Ofcom states that BT has a high market share in HNR areas, consistent with a presumption of dominance. However, notes that BT is likely to face some level of actual and potential competition from rival networks. Specifically, Ofcom highlights the following three factors:[116]

> *"a) BT offers lower prices for EAD 1Gbps in HNR areas compared to Areas 2 and 3, which is likely to reflect the higher level of competition in HNR areas.*

[115] Ofcom (2020) WFTMR Consultation. Volume 2. Page 124. Paragraph 8.107.

[116] Ofcom (2020) WFTMR Consultation. Volume 2. Page 123. Paragraph 8.102.

> *b) While BT would face some level of infrastructure-based competition from existing networks in these areas, the current density of rival infrastructure may not be sufficient to impose effective competitive constraints on BT.*
>
> *c) The strength of competition is likely to increase over this review period as we expect an increase in the density of rival networks in light of the availability of a PIA remedy. Some of these plans are specifically in the HNR areas. However, there are uncertainties around where and when rivals will deploy networks in HNR areas, and around the competitive impact this would have."*

4.79 As a result, Ofcom concludes that:[117]

> *"while we think that competition in HNR areas may eliminate BT's SMP in the future, this is not sufficiently certain that we should find no SMP on a prospective basis for the period of this review. We take account of the potential for effective competition to emerge in future, specifically in leased lines competition due to network build, in our remedy assessment."*

4.80 We agree that a finding of SMP in the HNR areas is a very finely balanced one, however we consider Ofcom's ultimate proposal to find SMP as reasonable.

4.81 Firstly, we consider that BT does appear to have a high market share of connections. However, we equally recognise that there appears to be a higher number of rivals present (2.4 on average based on Ofcom's analysis) which would suggest BT does face significantly higher levels of contestability, when compared to Area 3 and Area 2.

4.82 Secondly, we consider that an SMP finding is not a bright-line test and does involve a significant degree of judgement. Fundamentally, Ofcom must decide the extent to which there are competition concerns in the HNR that require *ex ante* regulation. As Ofcom notes in the above quote, it is able to take account of specific competition considerations in its remedy assessment.

4.83 Given Ofcom has significant latitude to impose light-touch remedies (in the face of less severe competition concerns), we consider that in cases where an SMP finding is very marginal, like the HNR areas, it is perfectly reasonable for Ofcom to determine that there is in fact SMP, provided that the imposed *ex ante* remedies reflect that, the competition concerns in the market are must less concerning than those present in other markets.

LL Access in Area 2

4.84 Ofcom proposes that BT will have SMP in the provision of LL Access circuits in Area 2, on the basis of BT facing:[118]

> *"very limited competition in this geographic market from existing networks. This is driven by the evidence on BT's very high market share (of 70-80% and 50-60% based on 2017 new connections and inventory, respectively), and the limited presence of (up to) one rival network."*

4.85 We agree that BT currently has a very high market share of connections in Area 2 and that this is a strong indicator that BT possesses market power.

[117] Ofcom (2020) WFTMR Consultation. Volume 2. Page 124. Paragraph 8.103.

[118] Ofcom (2020) WFTMR Consultation. Volume 2. Page 123. Paragraph 8.97.

4.86 While Ofcom recognises that, if implemented, rival network deployments could deliver a very substantial injection of new competition in Area 2, it considered that the actual outcome (e.g. when and where rival networks will be deployed) is still uncertain. Fundamentally, the competitive constraint will only materialise once networks have actually been deployed.

4.87 Consistent with what we set out in paragraph 4.56, we note that it will take a number of years for new networks to be deployed. For instance, building a comprehensive MSN in an average UK city (of say 100,000 premises) is likely to take at least 3 years. This means that for a significant proportion of the market review period, BT would not face material competitive constraints in Area 2.

4.88 We also wish to note the prevailing demand-side barriers in the market, which mean that even once a rival network is deployed, there are still significant barriers to acquiring customers and thereby directly and effectively compete with BT.

4.89 As a result, we consider that BT does indeed have SMP in LL Access Area 2.

LL Access in Area 3

4.90 Ofcom proposes that BT has SMP in the provision of LL Access circuits in Area 3, on the basis of:[119] "*BT's very high market share (of 90-100% and 80-90% based on 2017 new connections and inventory, respectively) and the limited competitive constraint on BT's market power from existing or potential rival network presence*."

4.91 We consider that for Area 3 there is very strong evidence of BT holding SMP in the provision of LL Access services. As Ofcom correctly identifies, BT has over 90% market share of connections. Furthermore, this high market share has persisted for some time.

4.92 In addition, while we flag in Section 3.2.2 that a significant portion of Area 3 as currently defined is commercially attractive, we consider that if correctly defined (i.e. as locations where there is no commercial incentive for rival network deployment) then BT is very unlikely to face any material increase in competitive constraint going forward.

Mobile Backhaul

4.93 As described in the market definition section (paragraphs 3.148 - 3.158), Ofcom currently proposes that mobile backhaul remains part of the overall leased lines market. In regard to this, we draw Ofcom's attention to the behaviour of BT Enterprise in the provision of mobile backhaul which suggests there is a competition concern that must be addressed.[120]

4.94 As we set out previously, we consider that BT Enterprise has a unique position in being the only entity able to provide mobile backhaul service in rural areas. This endows them with a degree of market power for rural provision, which it has the ability and incentive to leverage into the non-rural areas. We discuss this further below.

4.95 We first wish to flag that contracts between BT Enterprise and MNOs are subject to strict commercial confidentiality. As such, we have not had any direct sight of them. Furthermore, BT Enterprise does not provide any information or transparency in regard to its mobile backhaul pricing terms.

[119] Ofcom (2020) WFTMR Consultation. Volume 2. Page 123. Paragraph 8.94.

[120] Even if Ofcom considers that mobile backhaul should not form part of a separate market, we consider that Ofcom must consider the specific competition concerns that arise.

4.96 However, through our involvement in the industry and in seeking to provide mobile backhaul services, we understand that BT Enterprise employs a two-part tariff for MEAS, based on, a fixed annual fee for core network backhaul, and an annual rental fee for each base station circuit connection.

4.97 On the basis of being the only provider of rural mobile backhaul connectivity, BT Enterprise would be able to exploit this position by setting a very high charge for core access, and then to essentially 'bundle' individual site connectivity in such a way as to foreclose rivals.

4.98 The structure of such an anti-competitive practice would be to set the incremental site price at level below that of an efficient rival, meaning that the rival is effectively foreclosed from competition for that connection. In this case, the rural monopolist would be able to cross-subsidise from rural in order to ensure that across the whole contract it is no worse off. This form of conduct amounts to predatory pricing, in respect of the incremental connections.

4.99 The overall effect of this form of conduct is that rivals are significantly constrained from competing fairly for mobile backhaul contracts. Given that such contracts can deliver significant revenues, foreclosure from this market will directly limit the scope for competitive investment in fibre networks more generally.

4.100 Whilst we have recently won a contract with Three for providing mobile backhaul to their 5G masts, the complexity and time it took in arriving to it and the continued existence of these barriers to this sub-market (i.e. prevention of others coming onto the network) mean the issue remains material.

4.101 CityFibre's view therefore is that Ofcom must undertake an investigation of BT's conduct in providing mobile backhaul.[121] In the event that Ofcom finds that BT's pricing may be deterring competitive entry, then Ofcom should consider *ex ante* remedies, which could include:

- Transparency over BT Enterprise's purchasing requirements and purchasing arrangements in the form of a price list, as required and provided by Openreach across its regulated markets.
- Prohibition of linked sales (in that the sale of access circuits to base-stations is linked to the sale of the core network service).
- Prohibition of national purchasing schemes, in particular prohibition of purchasing arrangements that cross the different regulatory markets as defined by Ofcom.

4.3.2 IEC

4.102 Consistent with Ofcom's findings in the 2019 BCMR Statement, Ofcom proposed that BT has SMP at its exchanges where only BT, or BT plus one Principal Core Operator, are present (directly or indirectly in the exchange area).

4.103 While we have not undertaken an in-depth assessment of Ofcom's proposals, they seem to be reasonable on the basis that BT faces limited competition in those exchanges where it faces no more than one Principal Core Operator, noting that in the vast majority of these BT faces no nearby competition.

[121] Bearing in mind that BT Group plc is the regulated entity and not Openreach, other than as a member of BT Group

5 Non-pricing remedies

5.1 In this section we set out our views on Ofcom's propose non-price remedies for each of, PIA, WLA, LL Access and dark fibre. While we do cover each of these four markets in this section, we give particular attention to PIA in that we see this as a key market with regard to Ofcom's non pricing proposals.

5.2 While PIA remains a product with enormous potential to transform the business case for fibre deployment, for the reasons we set out in Section 5.1, the benefits of using PIA today fall far short of what it has the potential to deliver. Specifically, we estimate that PIA is currently delivering less than half of its potential costs saving. Ofcom must address this short fall in order to support investment.

5.3 To date Ofcom has relied on imposing a no undue discrimination obligation on Openreach in respect of PIA provision. We consider that this will not be sufficient to deliver an effective PIA product within a reasonable timeframe, and therefore call on Ofcom to impose Equivalence of Inputs (EoI) on Openreach in respect of PIA provision.

5.4 We consider that full equivalence is necessary to provide incentives for Openreach to address issues with the PIA product (i.e. by forcing them to consume the same product as they offer rivals) in order to address concerns about Openreach being able to use its own infrastructure more effectively than its rivals. As Ofcom is well aware, it is only following the imposition of EoI that other regulated products such as LLU and Ethernet have become effectively usable by CPs.

5.5 In regard to dark fibre, we set out in this section our views on Ofcom's proposals to introduce a regulated dark fibre product in Area 3. On this proposal we have three key points:

- An effective PIA product is likely to be sufficient to address Ofcom's concerns in Area 3, and so making PIA fully effective should be Ofcom's focus before considering other regulatory measures;
- Ofcom is speculatively asserting that Area 3 will not see material investment by rival networks to BT, and therefore there is no material risk that competition and investment in fibre networks will be undermined by regulated dark fibre;
- Introducing regulated dark fibre in Area 3 will likely have spill-over effects into Area 2, affecting investment across the UK.

5.6 Given the above points, we consider that Ofcom must reconsider its proposal to implement regulated dark fibre in Area 3. Notwithstanding this, we consider that if Ofcom is minded to impose a dark fibre remedy in Area 3, this must not be based on BT's own costs, but rather the costs of a reasonably efficient operator.

5.7 This is because, owing to BT's significant scale and scope economies, a regulated dark fibre price set at BT's own costs will likely fall significantly below those of rival networks, effectively foreclosing them from the market. We also discuss this point in the context of price remedies, in Section 6.4.

5.8 Finally, in regard to WLA and LL Access, we commend Ofcom for giving recognition to the need to promote competition and investment in fibre, for example by keeping the WLA anchor product at 40/10.

5.9 The remainder of this section is structured as follows:

- **Section 5.1:** PIA
- **Section 5.2:** WLA
- **Section 5.3:** LL Access
- **Section 5.4:** Dark fibre

5.1 PIA

5.10 In this section we set out our response to Ofcom's proposals regarding non-price remedies on Openreach in the PIA market. In Section 6.1 we set out our response regarding price remedies in the PIA market.

5.11 Before discussing any remedies however, we wish to provide relevant context and so set out below a brief history of PIA regulation, as well as our assessment of the current PIA product, including how effective it is today (we do this in Section 5.1.1). Following this, we set out Ofcom's proposed non-price remedies in respect of PIA (in Section 5.1.2) and our views on each of these proposals (in Section 5.1.3).

5.12 Before setting out our views however, we wish to highlight that we are one of the largest users of PIA today. Indeed, as of March 2020, we have ordered some [✂] poles and [✂]km of duct]. Furthermore, since April 2019 (when the new PIA reference offer took effect), we have submitted [✂] notices of intent (NoI).

5.13 Given that only [✂] NoIs have been submitted in total to Openreach since April 2019, we have accounted for [✂]%, i.e. a very significant proportion of all NoIs.[122] This figure is higher if we just consider the period from September 2019 to January 2020 (when we began to ramp up our usage of PIA). During that period, we submitted [✂], which represents [✂]% of all NoIs submitted to Openreach.

5.14 In Figure 5.1 (below) we present this data. The figure shows the number of new (incremental) NoI requests from us for each month from May 2019 to January 2020 along with the total number of NoI requests from the rest of industry (combined).

Figure 5.1 Number of PIA notices of intent (NoIs) submitted by CityFibre compared to rest of industry

[Confidential figure - redacted from public version]

Source: CityFibre analysis based on visually inspected Openreach data from Industry Working Group Slides (February 2020). [✂].

Notes: Visual inspection of figures are reasonable approximations and may be subject to a small but insignificant rounding error. [✂].

5.15 We now turn to provide some relevant context including a history of PIA regulation as well as our recent experiences in the development and evolution of the PIA product.

[122] It should be of further note that when we submit an NoI it will **not** be for infill purposes (i.e. a duct here a pole there) as we will aim to design and build to an entire NoI using all the assets available within the said NoI area, and by extension build multiple NoIs to patch up-to an entire city. This means that [✂].

5.1.1 Context

5.16 Despite many years of progressively stricter regulation, PIA remains a product that is not yet fit for purpose. As of May 2020, PIA remains a product with enormous potential, but today it continues to frustrate users and is not delivering the cost or time savings that it has the potential to deliver.

5.17 Ever since Ofcom first mandated Openreach to provide PIA, industry has complained consistently about the lack of effectiveness of the product. We have been fully engaged in industry working groups over the past few years, including with the PIA Industry Working Group (IWG)[123] and The Office of the Telecoms Adjudicator (OTA),[124] as well as directly with Openreach in seeking to improve the effectiveness of PIA.

History of PIA regulation

5.18 Despite existing as an Openreach product for a decade, PIA, sometimes referred to as duct and pole access (DPA) has so far failed to become a mass-market solution for network deployment.

5.19 In 2010 Ofcom determined that Openreach had SMP in the WLA market, and on that basis introduced a new remedy obliging Openreach to offer; "*Physical Infrastructure Access ("PIA"), which will allow competitors to deploy their own NGA infrastructure between the customer and the local exchange, using BT's duct and pole infrastructure*."[125] Prior to this, Openreach had never offered access to its ducts and poles on a voluntary basis.

5.20 Ofcom's 2010 WLAMR Statement set out that Openreach would be required to publish a PIA reference offer by mid-January 2011, and should launch the PIA product by mid-2011:[126]

> *"[PIA] will allow OCPs [other communications providers] to deploy fibre in the access network using BT's ducts and poles - either to support deployment of fibre-to-the-premises ("FTTP") technology, or to support deployment of fibre-to-the-cabinet ("FTTC") technology (by enabling a 'backhaul' connection between street cabinets and the OCP's network). BT has to produce a draft reference offer ("RO") for duct and pole access by mid-January 2011, with a view to launching a product by the middle of that year. BT will be obliged to provide PIA services for the purposes of deploying of NGA networks to support services such as broadband, telephony and cable TV, but not, at this stage, leased lines."*

5.21 For the first few years PIA was available, there was no significant use made of it. This was noted by Ofcom in 2014:[127]

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[123] The PIA Industry Working Group (IWG) is a collection of PIA consuming CPs, CPs interested in consuming PIA but are yet to become official PIA customers, Openreach and is overseen and chaired by a representative from the Office of the Telecoms Adjudicator (the OTA). The PIA IWG provides a forum for industry and Openreach to discuss the commercial development of the PIA product, contractual terms in the Reference Offer and Statements of Requirement (SoR) for the PIA product.

[124] The Office of the Telecoms Adjudicator (OTA, OFFTA or the OTA2) was established as a follow-on to the original OTA Scheme. They are independent of Ofcom and of industry. They facilitate the implementation of processes where necessary to enable a wider range of Communications Providers and End Users to benefit from clear and focussed improvements, in particular, as is the case with the PIA product, where multi-lateral engagement is necessary.

[125] Ofcom (2010) 'Review of the wholesale local access market: Statement' [WLAMR (2010)]. 7th October 2010. Page 1. Paragraph 1.5 [Link].

[126] Ofcom (2010) WLAMR Statement. Page 4. Paragraph 1.23.

[127] Ofcom (2014) 'Fixed Access Market Review: Statement'. ['FAMR (2014)']. Page 435. Paragraph 12.392. [Link].

> *"We introduced PIA in 2010 with the intention of providing opportunities to deploy NGA networks either in competition with BT's own NGA network or where BT was not investing. However, since then we have seen virtually no use of PIA to carry out such a deployment."*

5.22 This was despite the initial involvement of a number of leading providers in the product and contract negotiations with Openreach over the course of two years. The companies involved were so frustrated with the limitations (and cost) of the product that they felt compelled to write on 14th November 2011 to then Ofcom CEO, Ed Richards, and Secretary of State Jeremy Hunt. Some of the key points raised in this letter are set out below, many of which remain relevant today despite this letter being almost nine years old:

> *"…industry is concerned by a number of key difficulties likely to impact the practical utilisation of PIA, including:*
>
> *No service level agreements or guarantees will be agreed until March 2013 at the earliest. This exposes alternative networks to high risks when bidding for BDUK money from local authorities. Without SLAs in place, milestone slippage is a real possibility and a massive commercial liability.*
>
> *PIA contracts are limited to five years at BT's insistence. This loads CPs with significant uncertainty as to the tenure of their investments and by implication, the potential commercial returns, are not certain beyond this point."*
>
> *and*
>
> *"…any alternative network operators looking to compete on a level playing field with BT, will require PIA product inadequacies and restrictions to be tackled …. There is a risk that if these issues are not resolved rapidly, the excellent work that Ofcom has done around pricing will be in vain. [...]Therefore, intervention by Ofcom on all of these aspects is absolutely vital to completing the job of enabling alternative network operators to compete effectively and with certainty both in the ongoing and forthcoming procurement processes and beyond."*

5.23 Despite this, and some coverage in the national press,[128] no immediate action was taken to address the PIA issues.

5.24 In the 2014 FAMR, Ofcom set out what it heard from stakeholders about why PIA was not an effective product:

> *"We note the various reasons listed by stakeholders for the lack of use of PIA, including being unable to gain economies of scope from also being able to use PIA to deploy leased lines, a lack of information on BT's duct and pole network, general lack of usability of the PIA product, BT not consuming PIA on an EOI basis, various ancillary charges which increase the price of PIA in practice and the challenging viability of deploying a separate access network."*

5.25 What Ofcom did not explicitly identify however was the obvious lack of any incentive on behalf of Openreach to improve PIA, something it never wanted to offer in the first place and which, by strengthening competitors' ability to rollout networks, is bound to lead to a loss of market share for BT.

[128] For example: Thomas, Daniel (2011). "Hunt criticises BT over broadband access". Financial Times. [Link].

5.26 In February 2016, Ofcom published its Strategic Review of Digital Communications and set out a ten-year vision for ensuring the quality and availability of communications services in the UK. This vision included the UK moving towards widespread availability of competing networks, and the UK being a world leader in the availability and capability of its digital networks, delivering benefits to people and businesses in terms of choice, innovation and affordable prices.

5.27 One of Ofcom's key proposals was to make a strategic shift to encourage investment in the large-scale deployment of new ultrafast broadband networks, including fibre direct to homes and business premises, as an alternative to the predominantly copper-based technologies then planned by BT. Ofcom stated that they believed network competition was the most effective spur for continued investment in high quality, fibre networks.[129]

5.28 Ofcom recognised that PIA was a key pillar for achieving this objective. In this context Ofcom noted in 2016 the failure of the product at that time:[130]

> *"We intend to achieve this strategy shift by improving access to Openreach's network of telegraph poles and its 'ducts' – the underground tubes that carry telecoms cables. Competitors will then be able to connect their own fibre optic cables directly to homes and businesses at a lower up-front cost.* ***This will require substantial improvement in how Openreach opens access to its infrastructure****." [emphasis added]*

5.29 Furthermore, Ofcom noted that:[131]

> *"****Openreach will be required to provide greatly improved systems and processes for access to its ducts and poles****. We will require Openreach to provide a new database showing the physical location and characteristics of its ducts and poles. We will implement and enforce these changes, including through our competition powers." [emphasis added]*

5.30 In December 2016, Ofcom published a comprehensive review of the PIA product as part of its WLAMR, in a document titled 'Initial proposals to develop an effective PIA remedy.' In that document, Ofcom set out its views on what might be required for the PIA remedy to be effective.[132] In seeking to achieve an effective PIA remedy, Ofcom made reference in the December 2016 publication to the concerns raised by industry in the 2011 letter to Ofcom, and explored three specific:[133]

> *"how PIA can be used and the potential to relax current usage restrictions; how PIA should work in terms of simplified and less costly processes; and how PIA should be priced, helping to support competitive investment."*

[129] Ofcom (2016) 'Wholesale Local Access Market Review - Initial proposals to develop an effective PIA remedy: Consultation. 6th December 2016. Page 1. Paragraph 1.1 – 1.2.

[130] Ofcom (2015) 'Making communications work for everyone: Initial conclusions from the Strategic Review of Digital Communications: Statement'. 25th February 2016. Page 5.Paragraph 1.23. [Link].

[131] Ofcom (2015) 'Making communications work for everyone: Initial conclusions from the Strategic Review of Digital Communications: Statement'. 25th February 2016. Page 6. Paragraph 1.24. [Link].

[132] Ofcom (2016) 'Wholesale Local Access Market Review - Initial proposals to develop an effective PIA remedy: Consultation'. 25th February 2016. Page 3. Paragraph 1.10.

[133] Ofcom (2016) 'Wholesale Local Access Market Review - Initial proposals to develop an effective PIA remedy: Consultation'. 25th February 2016. Page 3. Paragraph 1.11.

5.31 In Ofcom's subsequent WLAMR Statement (published in March 2018), Ofcom implemented a number of new regulatory obligations, intended to make it quicker and easier for rival providers to use PIA for their network deployments. These included:[134]

- Requiring Openreach to make adjustments to the existing infrastructure, so it is 'ready for use' – repairing faulty infrastructure and relieving congested sections where necessary.
- Relaxing the current PIA usage restriction to allow 'mixed usage' whereby telecoms providers can deploy local access networks offering both broadband and non-broadband services, provided the primary purpose of the network deployment is the delivery of broadband services.
- Subjecting BT to a 'no undue discrimination' obligation.
- Requiring Openreach to provide duct and pole network records, including detailed location information and the extent of spare capacity.
- Obliging Openreach to set out in its reference offer how operational processes (e.g. ordering PIA, clearing blocked ducts) will work, together with relevant terms and conditions including service level agreements and guarantees.
- A cap on PIA rental charges resulting in significant reductions compared to prevailing rental charges.
- Financial reporting requirements on BT, so Ofcom could monitor the effectiveness of the pricing regulation and the 'no undue discrimination' condition.

5.32 At that time (2018) Ofcom asked industry whether they would prefer to have immediate access to the revised PIA product subject to a looser "no undue discrimination" obligation, or access to PIA subject to full equivalence. Industry reluctantly opted for immediate access in the hope that Openreach could be persuaded to offer a workable product, and that any misconduct could be deterred by the no undue discrimination condition.[135]

5.33 In July 2018, the UK Government published its FTIR, in which it set out the Government's ambition for achieving ubiquitous full fibre coverage. The FTIR noted the critical role that DPA must play in achieving the Governments objectives:[136]

> *"The largest expense incurred when deploying a network is typically the costs of civil works in laying passive infrastructure like ducts and poles. There are limited benefits from the duplication of passive infrastructure and sharing such assets will reduce both costs and disruption, while preserving the ability of networks to compete. Ofcom's enhanced access regulations requiring Openreach to share its vast network of ducts and poles with rival operators has the potential to significantly reduce deployment costs.*
>
> *Duct and Pole Access (DPA) could transform the business case for investing in competing full fibre networks. If the evidence shows that this*

[134] Ofcom (2018) 'Wholesale Local Access Market Review: Statement – Volume 3: Physical infrastructure access remedy: Statement'. 28th March 2018. Volume 3. Page 1, Paragraph 1.2. [Link].

[135] Unfortunately, experience since suggests that industry's optimism was misplaced and that, in the absence of further regulatory pressure, Openreach will not make sufficient changes to ensure that PIA enables CPs to deploy network anywhere near as quickly as Openreach does for BT.

[136] DCMS (2018) FTIR. Page 6.

> *remedy is not being implemented properly by Openreach, all options should be considered to ensure compliance."*

5.34 The FTIR went on to refer directly back to Ofcom's 2018 WLA findings, and the changes to the PIA obligations:

> *"The Duct and Pole Access (DPA) remedy allows for other providers to access ducts and poles "as easily as BT itself using (as far as is possible) the same processes, service levels, systems and digital data maps". Rental prices were also halved. Ofcom expects this to reduce up-front deployment costs by around 50% and reduce deployment time.*
>
> *It is imperative that Openreach fully implements these requirements to open up its passive infrastructure. If the evidence shows that this remedy is not being implemented properly, we will consider all options with Ofcom to ensure compliance."*

5.35 Furthermore, the Government also set out in the FTIR that in order to support competition across the various downstream markets, Ofcom should consider removing all PIA restrictions.[137]

> *"[…] the right of access to Openreach ducts and poles is restricted to networks used primarily to deliver broadband to small offices and homes. Ofcom should consider removing these restrictions on use as soon as possible […]"*

5.36 In 2019 Ofcom mandated that 'unrestricted PIA' be made available, sweeping away the last of the usage restrictions and enabling the use of PIA for operators seeking to install fibre for business connectivity circuits.

Summary of evidence of a lack of historic progress in addressing PIA issues

5.37 We have over the last few years been actively involved in industry efforts to improve PIA and address its outstanding issues, including through dialogue with the OTA, Ofcom and Openreach directly.

5.38 On the basis of this, we wish to set out our experiences of the PIA product evolution and specifically what we see as a clear lack of progress that has been made in addressing the various PIA issues. In Annex 2 we set out the (five) most significant and material examples of PIA issues and the process that has sought to address them, as well as the current status of progress. We provide below a brief summary of these five points:

- **PIA pole testing**: This issue relates to the fact that many of Openreach's poles are not fit for use as they have not recently been tested to ensure they meet the requisite safety and usability requirements. Ultimately this undermines the cost and time saving benefits of PIA, as well as the lack of scalability of the product. We raised the issue of pole testing in January 2019, however even today (17 months later) significant issues persist meaning that we still cannot use Openreach's poles at sufficient scale.

- **Wayleaves**: Despite the Government implementing new law in 2017 to allow third parties to share Openreach's wayleaves, in practice this is not being implemented effectively. This is due to repeated barriers created by Openreach to inhibit the effective functioning of the wayleave sharing programme. As a result, today, it is very

[137] DCMS (2018) FTIR. Page 71. Paragraphs 243-244.

difficult to identify which wayleaves can be shared without significant time and effort, to the extent that in many cases it is not worth CPs seeking to make use of shared wayleaves, essentially nullifying the 2017 law.

- **Systems development**: Current PIA systems continue to be inefficient and unsuited for large-scale use. For instance, they require significant amounts of manual input for each item and element of the PIA product. We have been asking for improved systems since mid-2019 and have made numerous proposals. So far, only limited progress has been made in making improvements.

- **Systems SLAs/SLGs**: Since the publication of the 2018 WLAMR, the industry has been pushing for systems SLAs to give assurance and protection to CPs that Openreach has a suitable incentive to maintain and repair the systems required to use to consume PIA and to ensure they are robust and fit-for-purpose. Two years on and no solution has yet been delivered. Openreach refuse to even consider accepting liability for direct losses caused by their failures to meet SLAs leaving CPs with no commercial remedy for the failings of their sole supplier.

- **Pole Top Capacity for Customer Drop and Time Bound Concessions (TBCs):**[138] An ongoing issue we have frequently raised to Openreach since July 2018, in meetings, correspondence and through a Statement of Requirements (SoR) requests, is the issue concerning capacity assurance, particularly at the customer drop. For instance, if we begin a network deployment only to find significant pole congestion, then this will significantly delay our build, as well as introduce significant unexpected costs, in order to work-around the congested poles. Instead if we knew from the outset the available capacity on all poles, we could plan our deployment more efficiently. Some progress has been made and, indeed after a few months of Openreach doing little to progress the issue, we finally came to a compromise of a trial to test a solution in October 2019. We are currently engaged in the trial process, although it remains unclear whether the solution will continue to exist post-trial.

5.39 These examples show how, even after many years of effort, CPs have still been unable to resolve many of the issues with the PIA product, and which act to restrict its effectiveness.

CityFibre's assessment of the effectiveness of the current PIA product, in terms of deployment speed and cost

5.40 We agree with both Ofcom and the Government's view that greater access to an effective PIA product will have a significantly beneficial impact to the speed and cost of full fibre rollout.

5.41 In order to better understand the cost effectiveness of PIA today, and how that compares to the potential cost savings (i.e. from an effective PIA product), we have undertaken some quantitative analysis. This analysis seeks to answer two questions:

i. What in theory is the potential cost saving from using PIA?

ii. What in practice are the actual cost savings being delivered by PIA?

[138] A TBC process allows a CP consuming a PIA pole to load the pole and request a retrospective network adjustment, with specific caveats as to the priority of health and safety regulation and requirements. The TBC process provides a temporary solution for CPs attempting to connect up customers (or end-users) to the network (otherwise known as customer drops) via the PIA pole but where the pole top is congested. It provides a temporary solution for a CP who would otherwise have to wait for a network adjustment to alleviate the congestion and make capacity available, and in waiting the CP would run the risk of losing the end-user(s) waiting to take a service with them.

5.42 The difference between these two numbers is the 'unfulfilled potential' of the product. Any such divergence could be addressed by sorting out the outstanding issues with the product.

5.43 Given Ofcom has spent significant time and effort creating a full fibre cost model, which includes many scenarios and sensitivity parameters, we have opted to use Ofcom's Fibre Cost Model as the basis for estimating the potential cost saving from using PIA.

5.44 Ofcom has helpfully included in the Fibre Cost Model two scenarios, which when compared against each other, allow us to directly compute Ofcom's estimated potential cost saving from PIA usage. These two scenarios are:

- Scenario 1: a large-scale new entrant full fibre network provider (covering 5 million premises by 2025)[139] utilising PIA; and
- Scenario 2: a large-scale new entrant full fibre network provider (covering 5 million premises by 2025) utilising only self-build (i.e. no PIA).

5.45 Running the model for these two scenarios and comparing the respective costs, allows us to identify Ofcom's estimated impact of using PIA vs not using PIA, for a large-scale rival to BT, across each year of the market review period. We do this for the cumulative CAPEX per premise passed and present the results in Figure 5.2 (below).

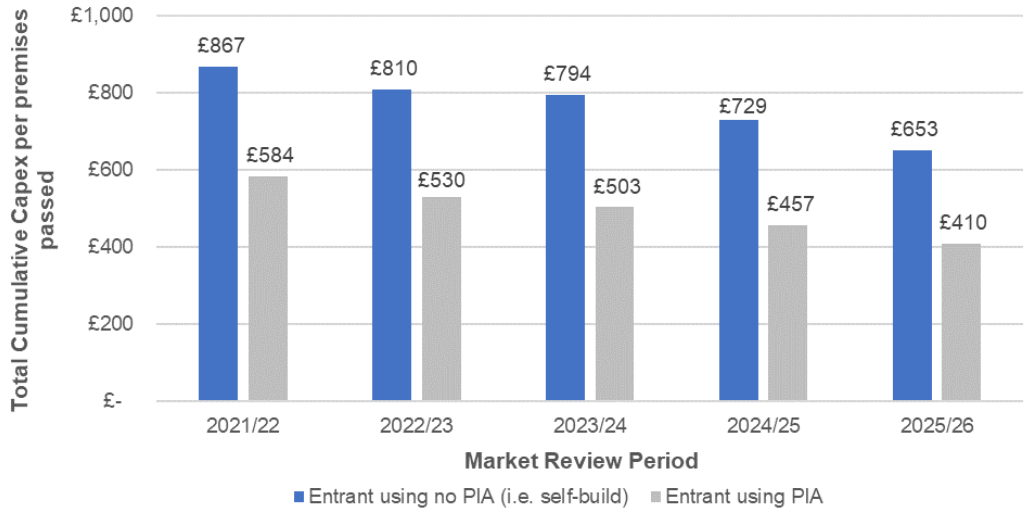
5.46 We see that the cost differential varies over time however is significant in all years, for example it is £282 (corresponding to a 33% saving)[140] in 2021/22 and £243 (corresponding to a 37% saving)[141] in 2025/26.

[139] 5.1 As such, these 'large-scale new entrant full fibre provider' scenarios target a 5 million premise network footprint which until recently was CityFibre's own ambition.

[140] (867 – 584) = 283 / 867 = 33%.

[141] (653 – 410) = 243 / 653 = 37%.

Figure 5.2 Cost estimate (average cost per premise passed) under Ofcom's modelled scenarios of a large-scale entrant: with and without using PIA



Source: Inputs from Ofcom Fibre Cost Model. (2020) [Link]. Final Capex per premises output calculated using ancillary CityFibre model.

Notes: CAPEX per premises data is taken from Ofcom Fibre Cost Model with default inputs as per the published version on its website [Link]. The CAPEX per premises passed figures are calculated by dividing the 'total cumulative CAPEX' over the market review period by the 'cumulative premises passed' over the same market review period.

5.47 To understand how effective the current PIA product is, we then need to compare the above with 'ii' (i.e. the cost savings actually being delivered by PIA). To do this we have undertaken analysis of our own business plan. We focus this analysis on our 2nd – 5th million tranche of our rollout as the 1st million has already commenced and therefore would not be forward looking.

5.48 In the first instance, we simply compute the average cost per premise passed in our business plan, on the basis of the already assumed levels of PIA that we expect to use going forward. Under this scenario we get an estimated average cost per premise passed of £[✂]. We can compare this with a scenario of pure self-build, in which we assume in our business plan that we don't use any PIA. Under this scenario we get an estimated average cost per premise passed of £[✂]. We present this evidence in Figure 5.3 (below).

Figure 5.3 Estimated cost per premises passed (CPP) saving from PIA in CityFibre's own business plan

[Confidential figure – redacted from public version]

Source: [✂]

Notes: [✂]

5.49 As a result of the above analysis, we estimate that using PIA in its current form will deliver us cost savings of less than £150 per premise passed [✂]. This is less than half of the potential costs saving that PIA could deliver according to Ofcom's own modelling.

5.50 On the basis of the above, while we consider that PIA does have the potential to transform the business case by delivering very significant cost saving, we consider that in its current form, PIA is falling well short of its potential.

5.51 In addition to cost saving, PIA also has the potential to significantly reduce deployment times, when compared to self-build.[142] We estimate an effective PIA product would deliver a 12 to 18-month acceleration of rollout in a typical medium-sized city. Furthermore, an effective PIA product would materially reduce disruption, in particular because reusing ducts and poles minimises the need for road closures.[143] However, currently these benefits are not being realised, due to many ongoing issues with the product, such as those we set out in Table 5.2 (below).

CityFibre's assessment of the specific prevailing issues with PIA

5.52 Despite existing for a decade, with prolonged industry negotiation and progressive regulatory interventions (as set out in paragraphs 5.18 - 5.36), PIA has so far failed to become a mass-market solution for network deployment.

5.53 We consider that, if left unresolved, the prevailing fundamental flaws and inefficiencies inherent in PIA will directly reduce the roll out of full fibre. In contrast, a properly functioning PIA product would allow CPs to significantly speed up network deployment and cut costs allowing more fibre to be deployed.

5.54 We therefore believe it is important to draw to Ofcom's attention the full breadth and depth of these issues, particularly as we feel there is a gulf between the claimed success in bringing PIA into effect and the actual usability of the product.

5.55 Firstly, we wish to highlight that there is a considerable degree of disadvantage for CPs making use of PIA as a result of the systems used to deliver PIA as compared with those used by Openreach. For example:

- Openreach has advance visibility of the programme of pole testing.
- Openreach can clear blockages as they are encountered, thereby ensuring rollout is much faster than anything which even the most efficient PIA CP can achieve.
- Openreach is allowed to move bass steps on poles to fit in fibre equipment – something with CPs are not permitted to do. However, we acknowledge the changes to CP08 make this less critical.

[142] And hence making more geographic parts of the UK economic to rollout full fibre to.

[143] As an example, we note that we would submit poles to Openreach which are out of test, this is then done within a three-month period. After this Openreach do not action poles which are identified as 'D poles' until we raise a Network Adjustment. The replacement of a D pole often takes around 3 months, meaning in total it takes 6 months to get a pole which is out of test into a safe and usable condition. When this occurs, we can choose to delay deployment on that span (i.e. 100 homes will not be served) or seek permission to install our own pole beside the Openreach one. In such cases, PIA provides no time saving when compared to self-build. However, if such issues were addressed, we would see very significant time saving from using PIA compared to suing self-build.

- Openreach can quickly identify redundant copper and use it as a draw wire – simultaneously freeing up space and speeding the installation of fibre, both of which are forbidden for PIA CPs to do.

- When congestion occurs on a pole, Openreach is permitted to move existing copper infrastructure to make better use of the space and accommodate fibre installation, whereas PIA CPs must wait 5 days for a decision on whether such a move is possible and then a further indeterminate period for Openreach to allocate staff to carry out the work.

5.56 Secondly, the PIA product and associated processes (such as the network adjustment process, ordering processes, wayleaves, and billing) continue to frustrate CPs. As an example, there is currently far too much reliance on the manual submission of spreadsheets and communication through chains of email correspondence between the CP and Openreach.[144]

5.57 The inconsistent application of the audit function is also an issue. We have seen for example widespread breach by Openreach of some aspects of the engineering principles. Instances such as this need to be identified and remedied. But recently some CPs have been failing audits conducted by Openreach for spurious reasons, in some cases CPs have failed for not working in ways which are in fact prohibited by the contract and product description. Examples such as this undermine confidence and trust and cause additional delay and bureaucracy.

5.58 In Table 5.2 (below) we summarise the specific PIA issues causing problems for CPs today, as well as our proposed tactical solutions:

[144] Protracted communications back and forth between a CP and Openreach often arises in response to the processing of network adjustment orders, with the Openreach operative carrying out a desk-based validation asking for unnecessary or unexpected information from the CP, and in some cases closing the network adjustment order incorrectly. This results in extensive back and forth communications between the CP and Openreach, and much wasted time and resources.

Table 5.2 List of outstanding issues with PIA, along with the impact of the issue and our proposed solution

Category	The issue	The impact	The solution
Systems	Ordering and using PIA is inefficient, time-consuming and expensive. There is currently a manual process for all parts of the ordering process including updating and uploading key documents during build. Even when a degree of automation is delivered, Openreach has indicated it wants to delay moving billing related functionality to the new API system. This will result in a twin track process (i.e. partly manual and partly automated). It will mean network adjustments can be ordered via the API but the CP will then have to manually add a record into the billing system. This is an extra and unnecessary administrative burden and creates scope for human error. Openreach have a track record of pushing the manual burden onto CPs where they do not wish to invest in automation or decent systems.	Under the current process, we have had to commit a number of people full time to do nothing other than make manual orders and submit updates for each city where we are making use of PIA. We note that under current process each individual build order can take three hours to complete. Nationwide, it is estimated we will need to employ a further 150 administrative staff to make use of the PIA product if Openreach's systems are not updated.	The most efficient solution would be an API which automates most of the processes (rather than employing significant numbers of additional administrative staff to resolve the problem). Openreach have received an SoR, but is some way off implementing a solution; even under fairly optimistic estimates, an effective API delivering all of the functionality CPs have asked for is unlikely to land before 2021.
The network adjustment ('NA') process	The current NA process is heavily flawed and inefficient whereby a CP's network build activity is frequently and significantly interrupted by the need to report blockages, lack of pole capacity, pole decay and other damages. CPs are required to have Openreach complete desk based (and in some cases field) verifications and submit to the CP a cost estimate and a Customer Confirmed Date (CCD).[145] The CP must then decide whether to opt for Openreach to carry out the work or to the undertake the work itself.	The current process allows Openreach up to 13 working days before the CP knows when a network problem which the CP has encountered will be fixed (i.e. when the accurate CCD is issued). The actual resolution could be much later if the solution to the problem takes longer, such as due to traffic management or other factors.	A more efficient approach would be to have a system that allocates PIA capacity to CPs and allows CPs to resolve problems in the Openreach network (such as blockages) as they are encountered. The costs incurred by the CP can then be reclaimed from Openreach after the event, evidenced with well-documented details and photos as appropriate. This would mirror the approach that Openreach currently permits its contractors to follow when rolling out Openreach fibre where the contractor is allocated

[145] CCD refers to the date on which Openreach will provide the Network Adjustment Service.

Category	The issue	The impact	The solution
	If the CP chooses the former, there is then a separate delay while Openreach carries out the relevant work before the CP can resume with their network build (for example, pole replacement can take three months).	Put simply, the current network adjustment process is cumbersome and costly to operate for all concerned and erodes the time savings which PIA in theory offers over CPs building network itself. This highly disruptive process wastes both time and money and is not conducive to the efficient deployment of networks.	a permitted rate of £X per km to cover the clearance of blockages that are encountered along the relevant route. Ofcom should also consider a project style submission for network adjustments on poles for citywide roll outs and the freedom for CPs to carry out work on Openreach poles. This would allow a CP, in advance of raising an order, to specify the assets it intends to use which will enable Openreach to do a city/area wide sweep of network adjustments and pole tests that need to be carried out to enable the build to proceed. The additional benefits of this solution include: • Overcoming the uncertainty and difficulty with Openreach interpreting CP forecasts to predict the number of network adjustments expected and the resource required, as has been the case to-date (Openreach reported having achieved 42% accuracy and viewed this as a good result);[146] • For Openreach, overcoming the operational challenge of managing the peaks and troughs in network adjustment submissions and rectification

[146] Openreach (2020) 'PIA Forecasting: Mid-term review'. 9th January 2020. Slidedeck provided to industry. Slide 4.

Category	The issue	The impact	The solution
Wayleaves	Industry has consistently requested that Openreach confirm where there are BT wayleaves entered into under the 2017 Electronic Communications Code – i.e. in which the Code's sharing rights apply. Openreach has long resisted making this wayleave information available, and the current proposal for revealing only the postcodes (and not the full address) is not useful for CPs. Openreach has cited data protection (GDPR) issues as the reason for which they cannot reveal the full address. Industry believes this argument is legally incorrect.	The government changed the law in 2017 to remove the need to go through the time consuming and costly business of identifying the landowner, negotiating and then signing a wayleave agreement to install equipment. Since we have no way of identifying which properties have such new form shareable wayleaves in place, we have no option but to assume that we need a new wayleave in each and every case. This can take up to six months to negotiate.	The Information Commissioner's Office has told us that there is no foundation to Openreach's claim that GDPR prevents them sharing the necessary information. We have legal advice which confirms this. Openreach refuses to elaborate on why they believe GDPR is a barrier. The only obvious solution is for Ofcom to direct Openreach (e.g. through a regulatory obligation) to confirm in relation to any address query from a CP, whether a post 2017 wayleave is in existence.
System SLAs	Industry has long been pushing for a systems SLA to give assurance and protection to CPs that the systems they are required to use in order to consume PIA are robust and fit-for-purpose. Another connected point is that there needs to be a well-documented and clearly understood workaround process that would apply if the system concerning safety fails or otherwise becomes unavailable.	Systems are critical to the functionality of the product. The impact of long periods without systems, would result in the temporary use of old spreadsheet/email-based systems, resulting in high volumes of administrative work.	System SLAs which provide the same level of resilience and restoration as the Openreach EMP (i.e. EMP equivalence) which it uses for its own deployment.
Forecasting regime	Industry has long objected to the forecasting regime. The inability to agree a process prior to 1 April 2019 that was mutually acceptable was in part behind industry's	CPs are required to provide detailed forecasts for the amount of PIA they plan to consume. If they do not do so	We have proposed to Openreach solutions to the network adjustment process which would eliminate

Category	The issue	The impact	The solution
	suggestion for a 12-month bedding-in period that could assess the Openreach-proposed process in light of real-world use. Many CPs were concerned about: a) the onerousness of the forecasting rules — particularly given the high number of regions into which forecasts much be split; b) the inherent difficulty of translating usage of PIA into the likely number of network adjustments that may occur; c) the uncertain usefulness of forecasting data to Openreach; and d) the (eventual) linkage between forecasting accuracy and SLGs that is unfair and unproven. Openreach recently revealed that CPs were generally forecasting very well (better than anticipated) but that Openreach's accuracy in predicting the level of network adjustments was just 42%. This means that even if all PIA CPs forecast perfectly, Openreach's own forecasting ability is not that useful (due to the difficulty of such prediction rather than any poor performance by Openreach) and further throws into doubt the usefulness of CPs forecasting in the first place.	then the SLGs (inadequate as they are) cease to apply and the CP cannot qualify for a more streamlined Network Adjustment process known a Path to Collaboration.	much of the bureaucracy and remove the need for the detailed forecasting currently mandated. As also described above this includes our suggestion to have a system that allocates PIA capacity to CPs and allows CPs to resolve problems in the Openreach network (such as blockages) as they are encountered. The costs incurred by the CP can then be reclaimed from Openreach after the event, evidenced with well-documented details and photos as appropriate. Such allocations would have to be contingent on the CP building within a specified period in order to avoid CPs conducting land grabs and preventing use by their rivals of whole sections of the Openreach network.
Mid-term reviews	It was agreed that a review of certain topics should be held at the half-way stage of the 12-month 'bedding in period'. Openreach's approach to the first session (on forecasting) was overly focused on presenting statistics rather than sharing details of the lessons they had learned since the forecasting regime had been in place.	Openreach do not appear to have heard the issues raised by CPs and instead prefer to present their conclusions without having engaged in any discussion with industry. This has eroded industry trust in the process of engagement with Openreach and the	We encourage Ofcom and the OTA to consider requiring annual reviews during the lifetime of the product, with a requirement on Openreach to provide points of reflection and improvement in these reviews.

Category	The issue	The impact	The solution
	The scope for improvement and consideration of doing things differently appeared to be entirely lacking from Openreach's approach to that first session.	development and improvement of the PIA product. Without further effective reflection from Openreach, product development is likely to remain stagnant.	
Billing (Rentals)	The current process Openreach has in place for PIA billing is not fit for scale use. CP's are currently subject to a non-transparent billing process for what should be a simple exercise of tallying up clearly distinguishable assets (i.e. ducts, +3 bore etc) to a clearly defined price list. The current billing process however lacks the transparency and predictability required for an efficient audit process, particularly one at scale. CP's are currently unable to see their estimated total rental exposure on NoI's when placing orders, and instead have to wait until after build is complete and invoices are issues. Whilst CP's can in theory keep their own running total, this would involve a huge and inefficient exercise of manually transposing all the assets and list prices onto a separate worksheet every time an NoI is submitted, and then monitor these as build progresses.	The billing process is clunky, lacks transparency and results in an unreasonable administrative burden. CP's are required to keep a manual record of all usage and also to anticipate cost per asset. This results in unnecessarily duplicating work and leaving margin for recording error. The lack of transparency in terms of costs and the potential for recording errors creates an unnecessarily large administrative burden on finance departments and audit teams who then have to check long-list invoices against what is thought to have been used, after what is very often many months after the initial NoI was placed.	There are two possible solutions: i. **Strategic** – the long-term solution is systems development integration as described in the comments in this table (above). This allows the removal for recording errors and for efficient processes to be put in place. ii. **Tactical** – a short-term solution is to provide CP's with a running total (shopping basket function) on the Openreach portal per NoI (or Project). This total would represent the expected rentals for the NoI and would allow CP's to have at least a starting point to cross-check their final invoiced costs.

Category	The issue	The impact	The solution
	When the CP finally receives their invoice for the month, due in large part in the manual exercise above and the lack of automated systems integration (see comments above on systems) and in equal part due to the long list of items which are itemized in scale use of the product, this results in an inefficient and opaque billing process which has knock-on effects on finance and audit departments within CP organizations.		
Contract Duration	Currently, the lease period Openreach is providing for spine network is 5 years. This has been an ongoing point of debate since the original PIA product was first introduced in 2011. Initially PIA was offered on a five- or ten-year term. CPs requested greater choice of term and Openreach responded by withdrawing the ten-year option. Since then CPs seeking to consume PIA have consistently asked Openreach for a range of longer and shorter contractual periods to be made available to reflect the asset life of the product, and to enable public funding to be drawn down to capitalize the asset and increase investor confidence in terms of contractual security of tenure. Openreach has been unwilling to move on this issue and remained with a uniform 5-year term.	In terms of spine network deployment, contractual periods with a range of longer tenure lengths would allow CPs to better plan their financing requirements, and to improve the business case for scale use of the PIA product.	We encourage Ofcom to consider requiring Openreach to provide a range of lease periods with payment terms which reflect the duration of the CPs contractual commitment.

5.59 In addition to the above, we set out in Annex 2 (and as a summary in paragraph 5.38) the progress that has been made to date in addressing issues such as those set out in the above table. The key conclusion we draw is that even after many years of proactive effort by those using or wanting to use PIA, many of the outstanding issues remain unaddressed. We consider that these issues could be quickly and easily resolved if Openreach was so minded and appropriately incentivised to do so.

5.60 In recent years, progressive intervention by Ofcom to compel Openreach to develop and improve the PIA product has led to some modest improvement, and today the product is noticeably better than it was 2-3 years ago. But as we set out above (see paragraphs 5.40 - 5.51) PIA continues to fall well short of it potential.

5.61 Furthermore, recent history (as noted in Annex 2) suggests that addressing all the remaining PIA issues (including those in Table 5.2) will likely take many years and will involve long and painful industry negotiations which act to further frustrate CPs.[147]

5.62 All these issues would be addressed at a stroke by the imposition of a 'strict equivalence' requirement (EoI) on Openreach rather than the lesser standard of no undue discrimination which currently applies. True equivalence would require real parity in the process and functionality that both Openreach and CPs follow in deploying fibre using the Openreach network.[148]

5.1.2 Ofcom's proposed non-pricing remedies for PIA

5.63 Ofcom is proposing that a number of non-pricing remedies apply to Openreach as the SMP operator in the physical infrastructure access market. These are:

- Requirement to provide network access on reasonable request (including network adjustments and ancillary services)
- Requirement for no undue discrimination (NUD)
- Requirements for transparency of charges, terms and conditions (i.e. requirements to: publish a Reference Offer (RO); notify changes to charges, terms and conditions; and notify technical information)
- Requirement for quality of service (QoS)
- Requirement to publish and operate a process for requests for new forms of network access (SoR)

5.1.3 CityFibre's views on Ofcom's proposed non-pricing remedies for PIA

5.64 As we set out above, PIA continues to fall well short of it potential and we do not see how the remaining issues can be resolved within a reasonable period of time (i.e. by the start of the market review period in April 2021), given how long it has taken to resolve such issues historically.

[147] Openreach is at best slow, at worst unwilling to resolve the issues with PIA, not because it does not have a commercial incentive to do so and because none of these issues impact on BT's ability to use its own infrastructure, as it is not consuming the same (PIA) 'product'.

[148] The achievement of better parity between CPs and Openreach could also be delivered by the functional separation of the 'Ducts and Poles' section of Openreach into a separate business unit.

5.65 In addition, even if these outstanding issues were resolved there still remains the fundamental issue of Openreach not using its infrastructure on an equivalent basis.

5.66 Ofcom previously consulted on whether to impose EoI (i.e. in the 2019 PIMR) and concluded that EoI was not appropriate at that time:[149]

> *"We consider that the application of the strict EOI obligation in relation to network access in physical infrastructure markets would not be appropriate at this time, given the cost, disruption and time involved in Openreach re-engineering its existing legacy processes and systems in order to comply with the obligation. The difficulties involved in implementing a strict EOI obligation would make an immediate obligation disproportionate.*
>
> *Consequently, we have considered the extent to which a more limited form of non-discrimination obligation might be appropriate to be applied in relation to the network access obligation."*

5.67 Instead, Ofcom decided to implement a no undue discrimination obligation, and provided some clarifications as to how it would interpret this obligation:[150]

> *"We proposed to impose a 'no undue discrimination' condition on BT that applies to all forms of network access provided by BT in each Physical Infrastructure market. We said that we would interpret this condition as requiring strict equivalence in respect of all processes and sub-products that contribute to the supply and consumption of network access services in each Physical Infrastructure market, unless BT can demonstrate that a difference is justified in any particular case. We also proposed to impose a requirement on BT to publish such information on non-discrimination in relation to network access as we may direct."*

5.68 At the time of the 2019 PIMR market review, we agreed that EoI would have been disproportionate, however we did clarify in our consultation response that in order to achieve an effective PIA product "*Ofcom needs to be more assertive in its implementation of the no undue discrimination requirement*".

5.69 In Ofcom's WFTMR Consultation, Ofcom proposes to apply the exact same form of no undue discrimination, indeed with precisely the same wording (as in the 2019 PIMR) around how it should be interpreted:[151]

> *"While we do not consider it is appropriate or proportionate to impose an EOI requirement in the physical infrastructure market, we propose to impose a no undue discrimination requirement on Openreach in that market that applies to all forms of network access provided by Openreach. We would interpret this condition as requiring strict equivalence in respect of all processes and sub-products that contribute to the supply and consumption of network access services in the physical infrastructure market, unless Openreach can demonstrate that a difference is justified in any particular case.*
>
> *Given the lack of progress since the 2019 PIMR statement, CityFibre is not confident that continued application of Ofcom's no undue discrimination*

[149] Ofcom (2019) 'Promoting competition and investment in fibre networks: review of the physical infrastructure and business connectivity markets Volume 1: market analysis, SMP findings, and remedies for the Physical Infrastructure Market Review (PIMR)' Volume 1. Pages 72-73. Paragraph 4.77 [Link].

[150] Ofcom (2019) PIMR Statement. Volume 1. Page 68. Paragraph 4.54.

[151] Ofcom (2020) WFTMR Consultation. Volume 3. Page 35. Paragraph 3.33. [Link].

requirement will address the fundamental issues with the PIA product, and indeed Openreach's incentive and ability to frustrate those seeking to make use of it."

5.70 For the reasons we have set out in this section, we do not agree that continuing to adopt the 'no undue discrimination' regime is sufficient to ensure that PIA is effective from the start of the 2021 – 2026 market review period.

5.71 As such, on the basis of the ongoing issues with PIA, and the ineffectiveness of the no undue discrimination obligation imposed since 2019, we now consider that EoI is in fact necessary to achieve a workable PIA product, within a reasonable time period.

5.72 Imposing EoI will also address the non-compliance by Openreach with the Engineering Principles, some examples of which have been high profile and relatively extensive.[152] Such non-compliance has allowed Openreach to deploy its fibre network much faster than any rival network builder could hope to achieve on the basis of re-using Openreach's infrastructure through the current PIA product.

5.73 Without EoI we fear that a piecemeal, evolutionary approach isn't going to be sufficiently effective in the timeframe required. Although some limited progress has been made, Ofcom has previously said it expects this to take at least five years, and this has been echoed by the OTA. This timeline is incompatible with the Government's stated ambition of a UK wide full fibre to the premise deployment by 2025. It's important to keep in mind that the timing of this intended deployment has recently been brought forward from 2033 — further underlining the need for changes which will deliver a workable PIA product which CPs can use to deliver on the policy objectives set by Government.

5.74 While we are now firmly of the view that EoI is required, if Ofcom is minded to continue with the 'no undue discrimination' regime, we consider that this must only be done on two conditions:

- Firstly, that there is a commitment from Ofcom to ensure that all the significant outstanding issues with PIA are addressed within a reasonable time period, e.g. by the end of 2020, and by no later than the start of the market review period in April 2021.

- Secondly, in order for Ofcom and industry to monitor the extent of any discrimination between Openreach's re-use of its own infrastructure for deploying fibre and the PIA product, we consider that Ofcom would need to introduce an end-to-end service delivery KPI, which would set out the time (e.g. in days) for the PIA service to be delivered. This would cover the period from the date at which the order was placed, to the date in which the operator's equipment was installed and could be utilised. Such a KPI would enable industry and Ofcom to monitor the effectiveness of the PIA product as well as any undue discrimination taking place. Without this KPI there is no way to know if rivals to BT are being put at a competitive disadvantage vis-à-vis the delivery of PIA services.

5.75 Finally, we urge Ofcom to consider imposing an obligation on Openreach to allow operators to reserve space/capacity within infrastructure (i.e. ducts and poles), ahead of their actual deployment. This would recognise the fact that duct and pole capacity is a scarce resource.

[152] Openreach eventually accepted that it was in breach but not before suggesting that we were mistaken in our complaint. This example underlined to us the shortcomings of relying on a no undue discrimination obligation.

As such, a rationing mechanism for access to this asset would help to promote its effective and efficient use.

5.76 Without such a rationing mechanism, network builders will increasingly find that their planned routes are not possible as while there may have been capacity when they originally undertook network planning, this has capacity has subsequently been taken.[153] Rationing could be conducted via a merit-based assessment of the uses to which the asset would be put, and the overall contribution this would make to the achievement of the Government's full fibre targets. Such a regime would provide much needed certainty and predictability to full fibre builders and substantially accelerate full fibre deployment.

5.2 WLA

5.77 In this section we set out our views on Ofcom's proposed non-price remedies in the WLA, we structure this section by first setting out Ofcom's proposals (in Section 5.2.1), and then explaining our views on those proposals (in Section 5.2.2).

5.78 As we set out in this section, we consider that Ofcom must focus attention on promoting infrastructure competition and that achieving this is more important that lowering short-run retail prices. To the extent that Ofcom wishes to ensure access seekers continue to have regulated broadband access, we agree that it is reasonable to continue to impose wholesale obligations.

5.79 However, in doing so, we commend Ofcom for recognising the need to promote competition and investment in fibre by keeping the anchor product at 40/10 and also departing from cost-based price regulation, at least in Area 2.

5.2.1 Ofcom's proposed non-pricing remedies for WLA

5.80 Ofcom is proposing a number of general remedies which would require Openreach to provide network access plus any necessary ancillary services in the markets where Ofcom has provisionally identified BT as having SMP, including the wholesale local access (WLA) market in both Area 2 and Area 3 (as well as in the LL Access market and IEC market, which we discuss in Section 5.3). These proposed general remedies are similar to those imposed in the 2018 WLAMR.

5.81 We list below Ofcom's proposed set of general remedies:

- Requirement to provide network access on reasonable request
- Requirement to publish and operate a process for requests for new forms of network access (SoR)
- Requirements for equivalence of inputs (EOI) and no undue discrimination (NUD)
- Requirement to publish a Reference Offer (RO)
- Requirement to notify changes to charges, terms and conditions
- Requirement to notify technical information

[153] We wish to flag that Openreach are currently looking into methods to make more efficient use of the space on the pole, however Openreach has chosen to employ electronic equipment which is of much larger size than used previously which has caused issues with regard to the available space.

- Requirement for quality of service (QoS)

5.82 In addition to these, Ofcom sets out some 'specific' remedies for the WLA market. Some of these relate to legacy copper broadband services, namely Local Loop Unbundling (LLU) and sub-loop unbundling. Given these are legacy services and are becoming increasingly less relevant in the market, we do not comment on these explicitly here.

5.83 Instead we focus below on Ofcom's proposals regarding partial-fibre services (i.e. FTTC). Specifically, Ofcom proposes to retain an obligation on BT to provide network access in the form of VULA, including relevant ancillary services, as well as an obligation on BT to supply a VULA 40/10 service.

5.2.2 CityFibre's views on Ofcom's proposed non-pricing remedies for WLA

5.84 We recognise that absent regulation, BT would give it the ability and incentive to engage in various forms of conduct that could distort competition and/or harm consumers. This includes exclusionary or exploitative behaviour, such as a refusal to supply access and setting anti-competitive prices/terms.

5.85 While Ofcom notes in the WFTMR Consultation that it is especially concerned about BT setting excessive prices,[154] we consider that in light of the need to support ongoing and future investment in fibre networks, Ofcom's priorities should be on securing long-term competition through investment.

5.86 This is entirely consistent with what the UK Government stated in its 'Statement of Strategic Priorities' (SSP) in terms of the need to promote investment over interventions that reduce prices:[155]

> *"The Government's aim is to promote investment and competition in world-class digital networks, to as many people and businesses as possible. Investment in new networks by BT and alternative providers is key to improving consumer outcomes, in terms of choice, service quality, and innovation. The Government's view is that promoting investment should be prioritised over interventions to further reduce retail prices in the near term."*

5.87 As a result, we consider that in considering pricing practices by BT, Ofcom should be less concerned about higher short-term national prices (which are necessary to support the fibre investment case) and more concerned about anti-competitive pricing practices (such as geographic discounts and other commercial offers) that act to foreclose rivals network builders. We acknowledge that Ofcom is considering how to address these issues (as set out in Annex 15 of the WFTMR Consultation) and we provide our response to Ofcom's proposals in Section 7 of this document.

5.88 To the extent that Ofcom is worried about excessive pricing in the short run, we are pleased to see that in Area 2 Ofcom is not proposing to implement a cost-based price cap, but instead proposing to continue to adopt anchor product regulation, and to keep the anchor at the 40/10Mbps variant.

5.89 By adopting an anchor pricing approach and keeping this at 40/10 Ofcom implicitly are allowing pricing flexibility for higher speeds. As such, there is the opportunity for those investing in new fibre networks to recover their costs from consumers who have a higher

[154] Ofcom (2020) WFTMR Consultation. Volume 3. Page 2. Paragraph 1.3 (bullet 2).

[155] DCMS (2019) 'Statement of Strategic Priorities for telecommunications, the management of radio spectrum, and postal services'. Paragraph 28. [Link].

willingness to pay for faster connectivity. This is a crucial feature of Ofcom's proposals that must be in place in order to deliver the Government's ambitions of promoting investment in fibre networks.

5.90 In making this proposal, we consider that Ofcom has had due regard to the fact that if it did constrain the scope for investors to charge higher prices for new services, this would limit the scope for recovering of the (very significant) costs of fibre network deployment, thereby reducing investment incentives. We discuss further how such price regulation affects incentives to invest in Annex 1.

5.91 In Area 3, Ofcom's regulatory approach:[156]

> *"aims to balance the desire for Openreach to invest and upgrade its network with the need of ensuring that it does not set excessive prices in these areas. To this end we propose to require Openreach to continue to provide wholesale access to its WLA and leased line services*
>
> *In the WLA market we propose to have a cost-based charge control. However, to provide Openreach with the right incentives to invest, we propose that the cost base used to set regulated charges includes both the costs of the existing copper network and any necessary costs associated with upgrading the network to fibre."*

5.92 We consider that Ofcom is making the unsubstantiated assumption that in 'Area 3' only Openreach is likely to deploy fibre networks. We consider that at present there is great uncertainty as to who will deploy in 'Area 3', where they will deploy and when.

5.93 To the extent that the many rural locations can support a single fibre operator, there is no reason why in many cases this cannot be a rival to BT, such as CityFibre, Virgin Media, Hyperoptic or Gigaclear. This is not least because all of these operators are able to equally compete for government subsidies and gap funding mechanisms which could result in significant network deployment in rural areas by rivals to BT.

5.94 Ofcom's proposed approach to "*provide Openreach with the right incentives to invest*" directly undermines good regulatory practice of promoting investment in a competitor neutral way, i.e. not 'picking winners'.

5.95 Given this we consider that Ofcom must reconsider its approach to regulating Area 3 in order to ensure that it does not effectively hand BT the market by imposing regulation that disproportionately incentivises BT to deploy fibre networks, over other operators.

5.3 BCM (LL Access and IEC)

5.96 In relation to non-price remedies in business connectivity markets (namely LL Access and IECs) we do not have substantive comments at this time as we have chosen to focus our attention for this response on other areas.

5.97 However, we do note that on the basis of finding BT to have SMP, it is reasonable to impose some forms of wholesale access. Notwithstanding this however (and as set out above in relation to WLA) Ofcom must ensure it gives due consideration to the impact of access obligations on achieving Ofcom's overarching objective of promoting competition and investment in fibre networks.

[156] Ofcom (2020) WFTMR Consultation. Volume 3. Page 7, Paragraph 1.28 – 1.29.

5.4 Dark fibre

5.98 Dark fibre is a service providing access to unlit strands of optical fibre between two points in a network. This allows third-party telecoms providers to take the unlit fibre and attach their own electronic equipment to deliver services. This differs from network access to "active" leased line services, which require the telecoms provider to use the network operator's electronic equipment.

5.99 We provide both dark fibre and leased line services to customers and in doing so recognise the benefits that dark fibre services can bring over leased lines, e.g. by giving telecoms providers greater flexibility over the equipment and services they can offer. This service flexibility can result in a lower cost of provision and service innovations. Not all customers need or want this flexibility, and many prefer to consume active products, but we see significant demand for this additional flexibility from, for example, MNOs.

5.100 Historically, Ofcom has required Openreach to offer leased line access circuits, the characteristics of which were determined by Openreach (in consultation with industry). Ofcom is now proposing to require Openreach to offer two regulated dark fibre products, an access dark fibre product in Area 3, and an inter-exchange product.

5.101 The primary concern of introducing a dark fibre remedy (as recognised by Ofcom) is that it could weaken incentives for rival providers to invest in networks and services. We consider that this is a very important issue that Ofcom must fully consider and assess. In our view, introducing dark fibre in the way Ofcom is proposing could have very significant detrimental impacts on investment incentives.

5.4.1 Ofcom's previous assessments of regulated dark fibre

5.102 This is not the first time Ofcom has sought to impose a regulated dark fibre access remedy. In 2016 (as part of the BCMR) Ofcom proposed a dark fibre access remedy which was subsequently challenged by BT and us, leading to an appeal in the Competition Appeal Tribunal (the CAT) with the CAT finding Ofcom had made some specific errors in relation to its proposed market definition, and remitting the process of market definition (and subsequent remedies which flow(ed) from this market definition) back to Ofcom to reconsider.

5.103 As a result of this, Ofcom invoked Temporary Conditions in the BCM in 2017.[157] While through this Ofcom reinstated a number of remedies which had been successfully challenged in the appeal, Ofcom decided not to re-instate dark fibre,[158] instead opting to defer the question to the next (i.e. 2019) market review.[159]

[157] Ofcom (2017) 'Business Connectivity Markets: Temporary SMP conditions in relation to business connectivity services'. 23rd November 2017. [Link].

[158] Ofcom (2017) 'Dark Fibre Consultation, Consultation on adding dark fibre to the remedies for business connectivity markets'. 23rd November 2017. [Link].

[159] Which at the time of the statement there was 1 year left in the relevant market review period.
See: Ofcom (2018) 'Statement on adding dark fibre to the temporary remedies for business connectivity markets'. 12th April 2018. [Link]

5.104 Whilst not explicitly stating the underlying reason for its decision, Ofcom did note that its decision was made *"following input from stakeholders"*[160] and that it recognised the *"potential stifling of investment in rival infrastructure".*[161]

5.105 In the 2019 BCMR Ofcom's views on the matter were clarified further with Ofcom making clear that it would not be obligating Openreach to provide a regulated dark fibre access product (outside of the scope of IECs) on the basis that doing so would negatively impact investment:[162]

> *"We are not imposing dark fibre in the CI Access services market in this review. This reflects our decision to impose the unrestricted PIA remedy and is in line with our objective to stimulate competition higher up the value chain in rival infrastructure in the light of the dynamic benefits which that will bring […] Imposing access to dark fibre (in addition to unrestricted PIA) in those areas subject to competitive investment or potential future competitive investment could negatively affect current and future network investments.*

5.106 In March 2019 Ofcom published a consultation on its proposed approach to remedies in respect of the wholesale fixed telecoms markets, which would take affect from 2021. Ofcom in that consultation proposed to introduce regulated dark fibre in 'non-competitive' areas.163 In response to this, we made clear that:[164]

> *"our concern is that Ofcom's proposed approach may (inadvertently) deter competitive investment in alternative fibre products, despite Ofcom's stated intentions. The problem here is the combination of a geographic market segmentation which we believe risks substantially underestimating the footprint of potential competitive fibre investment on the one hand, and the setting of regulated prices based on OR's own costs (factoring in its economies of scale)".*

5.107 As noted above, Ofcom has in this current market review consultation sought to differentiate the introduction of a dark fibre access remedy, dependent on the propensity and likelihood of competition arising in a particular geographic area. This is based on the impact Ofcom considers a dark fibre access remedy will have on network competition and investment.

5.108 We discuss below the rationale for regulated dark fibre, along with our assessment of Ofcom's proposals in each of Area 2 and Area 3.

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[160] Ofcom (2018) 'Statement on adding dark fibre to the temporary remedies for business connectivity markets'. Paragraph 1.1. Page 1.

[161] Ofcom (2018) 'Statement on adding dark fibre to the temporary remedies for business connectivity markets'. Paragraph 1.17. Page 3.

[162] Ofcom (2019) BCMR Statement. Volume 2. Page 202. Paragraph 10.47.

[163] Ofcom (2019) 'Promoting competition and investment in fibre networks: Initial proposals – Approach to remedies'. 29th March 2019. Page 16. Paragraph 2.26. [Link].

[164] CityFibre (2019) 'CityFibre's response to Ofcom's approach to remedies consultation.' Non-confidential Version. 12th June 2019.. Paragraph 1.1.10. Page 3. [Link].

5.4.2 Ofcom's proposal not to impose dark fibre in Area 2

5.109 In assessing the geographic scope of a dark fibre remedy, Ofcom has placed significant weight on *its "strategic objective to encourage investment in very high capacity networks."*[165] As a result, Ofcom states in regard to Area 2 that:[166]

> *"we have evidence of significant planned network build in Area 2, facilitated by the duct and pole access remedy we are imposing. This planned build includes networks focussed on leased lines and networks offering both broadband and leased lines.*
>
> *Introducing a regulated dark fibre product now risks undermining these plans, and therefore the opportunity for network competition to emerge and become established. Given the benefits of dark fibre, existing and potential purchasers of leased lines would be more likely to rely on regulated Openreach products than consider alternatives. This would remove an important source of demand (and revenue) for telecoms providers looking to deploy rival networks."*

5.110 We fully agree that introducing a regulated dark fibre product into Area 2 at this time would significantly undermine investment incentives. This is precisely for the reason Ofcom identifies, that once a regulated dark fibre product exists, access seekers would likely rely on that over and above rivals' service offerings, directly reducing revenues to rival network investors (like CityFibre).

5.111 Ofcom notes specifically in regard to the role that leased lines and dark fibre plays in the revenue streams of rivals to BT:[167]

> *"There is evidence that large customers of Openreach's active wholesale leased line products are actively considering opportunities to source leased lines, including dark fibre, from alternative networks (including those not yet built). For example, with increasing demand for mobile data and the roll out of 5G, some MNOs are looking at alternatives to Openreach's existing products to meet their demand for higher capacity backhaul circuits to mobile sites."*

5.112 This is entirely correct, and in fact we have just been chosen as the preferred provider of full fibre capacity for Three's 5G rollout nationwide, including providing Three with dark fibre in order to meet the growing demand for mobile data.[168]

5.4.3 Ofcom's proposal to impose regulated dark fibre in Area 3

5.113 In regard to Area 3, Ofcom states that:[169]

> *"Although the proposed requirement on Openreach to provide unrestricted access to its ducts and poles to address its market power in the Physical Infrastructure market is central to our objective of promoting greater investment and competition in fibre networks, we do not expect the deployment of rival networks to be economic in all parts of the UK. In areas*

[165] Ofcom (2020) WFTMR Consultation. Volume 3. Page 98. Paragraph 6.10.

[166] Ofcom (2020) WFTMR Consultation. Volume 3. Page 99. Paragraphs 6.19 – 6.20.

[167] Ofcom (2020) WFTMR Consultation. Volume 3. Page 99. Paragraph 6.21.

[168] CityFibre (2020) 'CityFibre chosen as a preferred provider of full fibre capacity for Three's 5G rollout nationwide'. 18th February 2020. Press Release. [Link].

[169] Ofcom (2020) WFTMR Consultation. Volume 3. Page 99. Paragraph 6.16.

> *where material investment in rival networks is unlikely (i.e. Area 3), the DPA remedy is not, in our assessment, sufficient to address BT's SMP in the downstream markets. Therefore, it is appropriate to impose additional remedies to promote competition downstream based on access to Openreach's network. Given the advantages that it offers over active leased lines products, we consider that dark fibre should be the primary focus of our regulation in the leased lines access market in Area 3."*

5.114 We have a number of concerns about this proposal:

- An effective PIA product is likely to be sufficient to address Ofcom's concerns in Area 3, and so making PIA fully effective should be Ofcom's focus before considering other regulatory measures;
- Ofcom is speculatively asserting that Area 3 will not see material investment by rival networks to BT, and therefore there is no material risk that competition and investment in fibre networks will be undermined by regulated dark fibre;
- Introducing regulated dark fibre in Area 3 will likely have spill-over effects into Area 2, affecting investment across the UK.

5.115 Given the above points, we consider that Ofcom must reconsider its proposal to implement regulated dark fibre in Area 3.

5.116 Notwithstanding this, we consider that if Ofcom is minded to impose a dark fibre remedy in Area 3, this must not be based on BT's own costs, but rather the costs of a reasonably efficient entrant. This is because, owing to BT's significant scale and scope economies, a regulated dark fibre price set at BT's own costs will likely fall significantly below those of rival networks, effectively foreclosing them from the market. We discuss this specific point in Section 6.1.

5.117 We now turn to discuss the above three bullet-points in turn.

An effective PIA product is likely to be sufficient to address Ofcom's concerns in Area 3

5.118 PIA has the potential to significantly reduce the cost of providing individual point-to-point connections. This is not least because pricing for such connections are typically distance related, and connection distances in rural areas are typically fairly long. This means that such areas would benefit greatly from the use of PIA. In addition, users benefit from the ability to use the remedy for point-to-point connectivity without having to be combined with a pre-specified volume of applications for broadband connectivity.

5.119 Furthermore, Ofcom itself recognises the negative impact on investment incentives, from introducing a national dark fibre access remedy alongside PIA:[170]

> *"Imposing access to dark fibre (in addition to unrestricted PIA) in those areas subject to competitive investment or potential future competitive investment could negatively affect current and future network investments and therefore impact the effectiveness of the upstream remedy [in this case DPA]"*

5.120 We consider that a dark fibre access remedy should be considered only once the limits of competitive infrastructure deployment enabled by PIA have been established.

[170] Ofcom (2019) BCMR Statement. Volume 2. Page 203. Paragraph 10.47.

5.121 If infrastructure competition stalls for whatever reason within the market review period, that decision could of course be revisited. We are sympathetic to arguments advanced by the MNOs in particular that the current mobile backhaul market is not functioning effectively. We provided extensive commentary and evidence on the barriers to competition in the mobile backhaul market during the 2018 BCMR Consultation. It remains our view that Ofcom should carefully examine the current barriers to competition in that market before reaching for regulated dark fibre as a solution.

Ofcom is speculatively asserting that Area 3 will not see material investment by rival networks to BT

5.122 As we set out in paragraphs 5.92 - 5.95, we consider that Ofcom is making the unsubstantiated assumption that in Area 3 only Openreach is likely to deploy fibre networks. We consider that at present there is great uncertainty as to who will deploy in Area 3, where they will deploy and when.

5.123 To the extent that the most rural locations can support a single fibre operator, there is no reason why in many cases this cannot be a rival to BT, such as CityFibre, Virgin Media, or Gigaclear. We note that the Government's policy, as explicitly set out in the FTIR, is that the opportunity to build fibre networks in rural areas should be contestable. We fully agree, and therefore see no reason why the provision of full fibre in rural areas should automatically default to BT.

Introducing regulated dark fibre in Area 3 will likely have spill-over effects into Area 2

5.124 We consider that there is a real risk that, upon being forced to provide dark fibre in Area 3, BT could as a result opt to introduce dark fibre nationally. This would for example be logical if the costs of implementing the product nationally are not significantly higher than introducing it only in Area 3, which may well be the case given that many of the necessary systems implementation costs will be fixed.

5.125 There is also the reputational impact for BT given its desire to be seen as a national provider of telecoms services and to provide consistent national pricing and products wherever possible. Given this, BT may feel pressure reputationally to deploy dark fibre nationally (at a uniform national price) following an obligation to provide it in Area 3.

5.126 As we set out above (in Section 5.4.2) Ofcom make clear in the WFTMR Consultation that introducing dark fibre in Area 2 would have a significant detrimental impact on investment incentives in Area 2. Given this, we consider Ofcom must give regard to the risk of Openreach voluntarily expanding the availability of the dark fibre remedy into Area 2 as a direct result of being obliged to provide dark fibre in Area 3.

5.127 We consider that if this did happen, Openreach would likely adopt a price in Area 2 for dark fibre that is closely aligned to the Area 3 (regulated) price. In other words, the Area 3 price cap on dark fibre would anchor the price in the rest of the UK.

5.128 It is critical that Ofcom consider these risks and the likelihood of Openreach opting to launch a dark fibre product in Area 2, and how this likelihood is increased by being obliged to provide regulated dark fibre in Area 3.

5.129 In addition to the risk of Openreach actually launching dark fibre in Area 2, there is also the risk of continued hold-up effects on downstream consumers' purchasing decisions, e.g. MNOs seeking to buy dark fibre for backhaul links. If an Area 3 regulated dark fibre product is introduced, MNOs may adopt a wait-and-see approach in Area 2, in light of the potential

that Openreach may voluntarily deploy dark fibre in Area 2. In doing so MNOs would be refusing to give their business to entrant operators who are able to serve them today.

5.130 This 'hold up' problem has, in our direct experience, had a material negative effect on downstream consumers' purchasing strategies since the prospect of a regulated dark fibre remedy first surfaced in the 2015 BCMR. Even now 'wait and see' continues to be the preferred strategy of some MNOs, as evidenced by continued efforts to expand the scope and extent of a regulated DFA remedy.

5.131 We therefore believe that there is a material risk of hold-up in Area 2 as a result of introducing dark fibre in Area 3.

6 Pricing remedies

6.1 In this section we set out our response to Ofcom's proposed pricing remedies for each of, PIA, WLA, LL Access and dark fibre. We briefly summarise our key points below:

- **PIA:** we consider that the proposed price reductions for pole rentals are unlikely to help achieve an effective PIA product. This is for two reasons: i) the major issue with PIA is not the price, but the service quality (as we discussed in Section 5.1), and ii) lowering the price reduces Openreach's incentives to improve the quality of the PIA product, particularly in the absence of strict EoI. We consider that Ofcom must focus its attention on ensuring the PIA product is effective.
- **WLA:** we strongly welcome Ofcom's proposals in Area 2 to keep the anchor product at the 40/10 variant (i.e. not move it to higher speeds) and its proposals to move away from cost-base regulation, and to instead impose a CPI-0% price cap. We also welcome Ofcom's proposal to adopt a full fibre pricing premium. We consider that this approach will support Ofcom's objective of promoting competition and investment in fibre networks by providing much needed pricing flexibility for investors. Notwithstanding this, we remain concerned that high prices are not the only possible anti-competitive concern that Ofcom should consider, since Openreach could adopt many different pricing strategies in an attempt to foreclose rivals. We wish to stress the importance of addressing these concerns, and we set out our comments in Section 7 of this document.
- **LL Access:** consistent with what we set out in respect of WLA, we welcome Ofcom's proposal that from 2021 onwards, the price cap for LL Access should be set at CPI-0%. This will support investment and provide important cross-market regulatory consistency and certainty.
- **Dark fibre:** notwithstanding all the points we make in Section 5.4, and our view that Ofcom must consider more fully the implications of introducing a regulated dark fibre product in Area 3, on the assumption that Ofcom does proceed to implement this proposal, we consider that Ofcom's proposal to set the price cap based on BT's own costs is not reasonable or appropriate. In order to avoid irreparable harm to competition, we consider that if Ofcom does impose a regulated dark fibre product in Area 3, the price cap must be is set on the basis of a reasonably efficient operator's (REO) costs and economies of scale.

6.2 We discuss each of these in turn below.

6.1 PIA

6.3 We agree with the Government (and their statements in the FTIR) that PIA has the ability to transform the business case for investing in competing full fibre networks. However, as we set out in Section 5.1, there are a number of critical issues with the current PIA product, and the evidence shows that in its current form PIA is not delivering its potential cost and time savings. As such, we urge Ofcom and Government to consider all options to ensure compliance (consistent with the Government's own assessment in the FTIR).

6.1.1 Ofcom's proposed PIA pricing remedies

6.4 Ofcom is proposing to apply price caps for key PIA products, namely; duct services, footway box services and pole services. In respect of duct and footway boxes, Ofcom's proposed price caps are broadly aligned with prevailing prices as Ofcom itself states:[171]

> *"For duct and footway box services our calculations indicate that maximum charges in 2020/21, the start of the new control period, will not be that dissimilar to those when the current charge control period ends, in March 2021."*

6.5 In sharp contrast, Ofcom is proposing very significant price reductions for pole rentals. In Table 6.1 (below) we show Ofcom's proposed pole rental price caps, compared to prevailing charges, which show that under Ofcom's proposals, pole rentals would fall by 65-67%:

Table 6.1 Ofcom's proposed price reductions for pole rentals[172]

PIA Service	Current charge	Proposed charge from April 2021	% reduction
Facility on pole for Multi-end-user attachment	£11.39	£4.02	65%
Facility on pole for Single-end-user attachment	£4.87	£1.63	67%
Pole top equipment (manifolds)	£3.53	£1.22	65%
Cable up a pole (per cable)	£2.30	£0.79	66%

Source: Ofcom data and CityFibre analysis

Notes: Figures rounded. Current charge taken at prices for financial year 2019/20

6.6 Ofcom justifies these significant price reductions on the basis of now having more accurate costing information:[173]

> *"The main reason for the reduction in poles costs is that, following work we have undertaken with Openreach, the estimated unit cost of installing a pole is now much lower. A key reason is that these estimates now exclude the cost of re-cabling activities when a pole is replaced: these were included in our previous assessments. In addition, using the "PIA market" scenario approach described reduced operating costs, mainly by applying a more consistent approach to the treatment of overhead costs and indirect capital expenditure."*

[171] Ofcom (2020) WFTMR Consultation. Volume 4. Page 83. Paragraph 5.61.[Link]

[172] Ofcom (2020) WFTMR Consultation. Volume 4. Page 85. Table 5.7.

[173] Ofcom (2020) WFTMR Consultation. Volume 4. Page 85. Paragraph 5.68.

6.1.2 CityFibre's views on Ofcom's proposed PIA pricing remedies

6.7 In deploying our fibre network, we seek to make use of PIA wherever possible, on the basis that PIA can reduce deployment costs and increasing the speed of deployment, relative to self-build.

6.8 [✂]

6.9 On this basis, it might appear that Ofcom's proposed (significant) price reductions for pole rentals are very helpful to operators like CityFibre, on the basis that we would be able to more cheaply use poles for our network deployment.

6.10 But we do not consider the proposed price reductions on pole rentals by Ofcom to be helpful in themselves for the achievement of the overarching objective of promoting investment and competition in competing fibre networks, for the following two reasons:

i. The major issue with PIA is not the price, but the service quality; and

ii. Lowering the price reduces incentives on Openreach to improve the quality of the PIA product, particularly in the absence of strict EoI.

6.11 In regards to reason 'i', as set out extensively in Section 5.1, the prevailing PIA product has a great many issues. However, these issues mostly relate to the fundamental service quality, and the systems and process for ordering PIA and for those orders to be delivered. In other words, until these issues are addressed, and PIA becomes an effective and functional product, the price is of secondary importance.[174] We do however stress that the cost of PIA (and deployment in general) is of critical importance for supporting the fibre investment case, especially in rural. However, as we say above, until PIA is able to be used effectively at scale, it will continue to fall short of its potential.

6.12 In regard to 'ii', notwithstanding the fact that Openreach had little or no incentive to provide PIA in the first place, lowering prices will result in even less incentive on Openreach to make the product usable, on the basis that they stand to make less money from it.

6.13 We therefore consider that Ofcom's proposals regarding price remedies on PIA are of limited benefit at this time in achieving the overarching objective of promoting investment and competition in competing fibre networks, given the need to ensure the existence of an effective and usable PIA product to support rival network deployments.

6.14 We therefore propose first and foremost that Ofcom focus its attention on addressing the fundamental issues with the current PIA product (as we set out in Section 5.1).

6.15 If Ofcom considers that the prices Openreach are charging for PIA services are in excess of cost (i.e. for pole rentals), then we consider that prices should be adjusted, however we consider that to simply reduce prices all the way down to cost is not helpful for achieving Ofcom's overall objective. Instead we might propose that Ofcom considers portioning off some of the 'excess' (between prevailing prices and costs) and to allocate that money to a PIA 'service improvement fund'. Under such a scenario we would expect that the users of PIA (such as CityFibre), and not Openreach in isolation, would be able to determine how those funds are spent in order to improve PIA.

[174] Put another way, even if the PIA prices fell 95%, we would still be unable to effectively use PIA in many locations for the various reasons we set out in Section 5.1. That is, the price is one factor for investors to consider, but at present the key issue is the ability to use the product effectively and at scale.

6.2 WLA

6.16 As we discussed in Section 3.2.2, Ofcom is proposing to allocate UK postcode sectors to one of two geographic WLA markets. As we noted in that section, we consider that Ofcom's proposal to allocate to Area 3 all UK locations (postcode sectors) which are commercially attractive, but for which there are no current deployment plans, creates a very material risk of regulatory failure.

6.17 This is because such locations would, absent regulatory intervention, be very likely to see commercial investment. We set out in Section 3.2.2 why Ofcom must therefore revisit its approach to market definition, and ensure that no postcode sectors that are commercially attractive for fibre deployment are allocated to Area 3.

6.18 As Ofcom notes in the WFTMR Consultation when discussing remedies, it gives less weight in Area 3 to setting price caps that incentivise rival network investment, as Ofcom does not believe that there will be material competitive fibre deployment in these areas.[175] Ofcom's current proposed postcode sector mapping is incongruous with this statement since (as we set out previously) many of the postcode sectors Ofcom is proposing to allocate to Area 3 are likely to be commercially attractive.

6.19 In the remainder of this section we proceed on the assumption that Ofcom will correct this oversight and allocate postcode sectors in a consistent way with its remedy objectives. In other words, we proceed on the assumption that Area 3 contains only postcode sectors for which there is unlikely ever to be material commercial deployment by rival networks to BT.

6.20 Over the last few years Ofcom has moved away from its long-held approach of setting strict cost-based price caps, on the basis of the need to now prioritise the objective of promoting competition and investment in fibre networks.

6.21 In light of this, Ofcom is proposing in Area 2 to keep the anchor at 40/10 (i.e. not move it to higher speeds) and to move away from cost-base regulation, by imposing a CPI-0% price cap on the anchor. Ofcom is also proposing to allow a pricing premium (of between £1.50 - £1.85) on 40/10 provided over FTTP (once full fibre coverage within an area has been achieved). We fully agree with Ofcom that these proposals will support the objective of promoting competition and investment in fibre networks.

6.22 We consider that, in addition to these measures providing much needed pricing flexibility for investors, they also critically provide pricing certainty for the market review period, which we stress is now five years (as opposed to three years). This is critical for supporting investment.

6.23 Notwithstanding this, we consider that high prices are not the only possible concern that Ofcom should consider. This is because Openreach could adopt other pricing strategies (including low-prices) in an attempt to foreclose rivals. To this point we recognise the Ofcom proposals in Annex 15, we set out our response to these proposals in Section 7.[176]

6.24 In Area 3 Ofcom proposes to introduce a cost-based price cap on Metallic Path Facility (MPF) and FTTC rental charges across all bandwidths, with a RAB charge control to support Openreach's investment in fibre networks whereby MPF and FTTC charges are marked-up

[175] Ofcom (2020) WFTMR Consultation. Volume 4. Page 34. Paragraph 2.7

[176] We stress that Annex 15 must stand firm to address this material risk, and essentially force Openreach to lower prices everywhere if it does wish to engage in a predatory pricing strategy. If Ofcom does such a thing, we would expect swift intervention from Ofcom (e.g. under Competition Law) to address such an abuse before it has material detrimental effects on competition.

to allow the recovery of BT's fibre investment costs where pre-specified investment targets are met.

6.25 As we noted above in paragraph 6.19, we are operating on the assumption that Ofcom correctly allocates postcode sectors, in order to ensure that no postcode sectors allocated to Area 3 are likely to be commercially attractive. On the basis of this, i.e. if Area 3 comprised only postcode sectors that were not commercially attractive, then we consider that a RAB approach could be used to provide investment incentives, however our concern is that the RAB is based entirely on Openreach. This leads directly to market distortion given that Openreach has been effectively 'selected' as the default provider of broadband in these areas, foreclosing others who could provide services, on the basis of the same RAB-type model.

6.26 The remainder of this section is structured as follows:

- In Section 6.2.1 we set out how Ofcom has previously approached price regulation in the WLA market, and the significant move Ofcom has now made in seeking to promote competition and investment in fibre networks
- In Section 6.2.2: sets out our comments in regard to the proposals for WLA Area 2
- In Section 6.2.3: sets out our comments in regard to the proposals for WLA Area 3

6.2.1 Ofcom's evolving approach to price regulation in light of its strategic shift to promote competition and investment in fibre

6.27 In 2014 Ofcom published its FAMR Statement which followed the theme of the numerous previous market reviews whereby Ofcom imposed a cost-based price cap on Openreach in respect of WLA services. In making that determination, Ofcom gave some weight to investment incentives by Openreach buy appeared to give little to no weight to investment incentives by rivals to Openreach.[177]

6.28 To the extent that Ofcom did consider in 2014 the role of price regulation for promoting investment by Openreach, it did so on the basis of promoting FTTC (and not full fibre). Furthermore, Ofcom set out no measures to actively support the investment case for new network deployment, instead relying on the features of the CPI-X approach to provide Openreach with 'incentives for efficient investment'.[178]

6.29 To the extent Ofcom discussed 'promoting competition' in the 2014 FAMR, Ofcom only considered downstream (retail competition) and not infrastructure competition. This can be seen by Ofcom's discussion on how it took into account its specific policy objectives when setting the price controls. Indeed, in that passage of the document, the only use of the word 'competition; is in reference to retail competition: *"This should promote efficient and*

[177] Ofcom (2014) FAMR. Volume 2. Page 9. Paragraph 1.20 [Link] [In setting out the consumer benefits of Ofcom's charge control approach, it refers only to Openreach when mentioning investment incentives: "*We consider that these charge controls will benefit consumers by […] ensuring that Openreach has the incentives to continue to invest and innovate where it is efficient to do so*."]

[178] Ofcom (2014) FAMR Statement. Volume 2. Page 18. Paragraph 3.7 [Link] ["*Price cap regulation can also provide incentives for efficient investment. The level of the charge control is set to allow the firm to earn a reasonable rate of return (the cost of capital) if it is efficient, and a consistent approach can be taken over charge control periods to encourage such investment*."]

sustainable competition in the delivery of downstream services which rely on LLU and WLR services."[179]

6.30 In 2016 Ofcom made a strategic shift to promoting infrastructure competition, as set out in its DCR.[180] As a result, Ofcom stated in 2016 that: *"Our strategic objective in relation to fixed networks is to encourage the large scale deployment of new fibre networks over the next decade, driving the widespread availability of competing ultrafast broadband services*."[181]

6.31 Subsequently, DCMS published in 2018 its FTIR which noted that Ofcom should ensure *"Stable and long-term regulation that incentivises competitive network investment"*.[182] The Government also made clear that "*promoting investment should be prioritised over interventions to further reduce retail prices in the near term, recognising these longer-term benefits.*"[183]

6.32 Ofcom's first significant move to implement its new strategy took place in its market reviews in 2018 and 2019. The first one of these was the WLAMR (published in 2018) in which Ofcom noted the need to promote competition and investment in fibre networks.

6.33 However in the 2018 WLAMR Statement, Ofcom continued to adopt a cost-based approach to regulation. Furthermore, Ofcom introduced a price cap for the first time on fibre-based broadband in the form of the 40/10 variant of FTTC. This led to significant price reductions of the 40/10 variant (which over the market review period has been the most popular wholesale broadband product on the Openreach network) across the market review period of over 50%.[184] We considered then and consider now that such substantial price reductions did not effectively support investment in fibre networks.

6.34 A year later (in 2019) Ofcom published its BCMR and gave much stronger signals of its willingness to stand behind its own objective. As an indicator of this, the title of the Statement was: 'Promoting competition and investment in fibre networks – review of the physical infrastructure and business connectivity markets'. In that Statement, Ofcom moved away from its historic use of cost-based price controls, instead opting to prioritise long-term consumer benefits by promoting network competition:[185]

> *"In our judgement the long-term interests of consumers are best served by promoting network-based competition, in line with our duties, by securing investment in fibre networks, while also providing an appropriate level of protection for access seekers who rely on wholesale products from Openreach.*
>
> *In deciding on a pricing approach […] we have prioritised investor confidence in current and planned investments over the static benefits of keeping prices tightly aligned to costs, while ensuring BT cannot use its market power to set excessive prices."*

[179] Ofcom (2014) FAMR Statement. Volume 2. Page 12. Paragraph 2.6 [Link].

[180] Ofcom (2016) 'Initial conclusions from the Strategic Review of Digital Communications'. [Link].

[181] Ofcom (2016) 'Initial conclusions from the Strategic Review of Digital Communications'. Page 32 [Link].

[182] DCMS (2018) FTIR. Page 5.

[183] DCMS (2018) FTIR. Page 7.

[184] Ofcom (2020) WFTMR Consultation. Page 17. Paragraph 2.13.

[185] Ofcom (2019) 'Promoting competition and investment in fibre networks: review of the physical infrastructure and business connectivity markets Volume 3: Leased Lines Charge Control (LLCC)'. Page 7. Paragraphs 2.5-2.6 [Link].

6.35 In the run up to the January 2020 WFTMR Consultation, Ofcom published a number of consultations, including a preliminary consultation on its proposed approach to remedies for this market review period, in March 2019. In that document Ofcom outlined that one of its key objectives of the WFTMR is "*Ensuring BT's competitors have appropriate conditions to support their investments.*" Ofcom also set out that it was minded to set prices for WLA services above costs, as well as to provide pricing flexibility for faster speed broadband services, to provide the right investment incentives.

6.36 We have been especially pleased to see Ofcom's growing confidence over the past few years in its strategy to promote competition and investment in fibre networks, as seen by its progressive statements and increasingly pro-investment interventions.

6.37 For Area 2 Ofcom considers that there is already some competition, and that further competitive investment is likely to take place in the market review period. As a result, Ofcom proposes that its regulatory approach should seek to provide a stable and consistent environment, stating that:[186]

> *"we propose to focus our charge controls [for WLA in Area 2] only on the provision of the FTTC 40/10 product (until such time as it is appropriate to switch regulation to FTTP) with no charge control on higher speed services"*

6.38 Ofcom is therefore proposing not to increase the anchor to higher speed variants and are also proposing to depart from strict cost-based pricing, in favour of keeping prices constant. We also not that Ofcom is proposing to introduce a full fibre premium of between £1.50 and £1.85.

6.39 In contrast, for Area 3, Ofcom states that there is "unlikely to be material commercial deployment by rival networks and the use of the duct and pole remedy is expected to be limited. With little prospect of network competition our regulatory approach seeks to promote retail competition and prevent Openreach from setting excessive prices."

6.40 Ofcom goes on to state that:

> *"we propose [for WLA in Area 3] to have a cost-based charge control. However, to provide Openreach with the right incentives to invest, we propose that the cost base used to set regulated charges includes both the costs of the existing copper network and any necessary costs associated with upgrading the network to fibre. This approach to setting regulated prices is generally referred to as a Regulatory Asset Base (RAB) approach"*

6.41 We do not think Ofcom's proposals in Area 3 follow best regulatory practice in that they are effectively picking Openreach as the 'winner' and handing them the market. We consider Ofcom must regulate in a competitor-neutral way and provide equal opportunities for all investors in the market.

6.2.2 WLA pricing proposals in Area 2

6.42 In Area 2, Ofcom is proposing to set price caps on MPF as well as to continue to adopt anchor pricing on FTTC in regard to the 40/10 FTTC product.

6.43 As Ofcom notes in the WFTMR Consultation, over the course of the upcoming market review period, most broadband consumers are expected to move to services which offer at least 30Mbps, i.e. consumers will stop purchasing broadband utilising MPF (which is unable to

[186] Ofcom (2020) WFTMR Consultation. Volume 3. Page 6. Paragraph 1.24.

offer speeds above 24Mbps). Ofcom forecast that by December 2021 (the first year of the market review period) only 14% of broadband customers will be taking a sub-30Mbps broadband product. By December 2025, this is expected to be below 5%.[187]

6.44 We agree that over the coming years, consumers are likely to move away from MPF broadband services, as they seek higher speed connectivity. As a result, and because of the implications for promoting competition and investment in fibre networks, we focus our comments in this section on the pricing proposals for fibre-based broadband services (i.e. FTTC and FTTP).

6.45 In the remainder of this subsection we cover the following topics in turn:

- Ofcom's objectives and approach to charge controls in Area 2
- Anchor pricing
- CPI-0% price cap
- Price floors
- The 'Fair Bet' Principle
- Copper switch over and the 'fibre premium'

Ofcom's objectives and approach to charge controls in Area 2

6.46 In considering the right approach for price regulation in Area 2, Ofcom correctly identifies the key trade-off between the risk of Openreach employing anti-competitive prices in Area 2 (e.g. excessively high prices or by imposing a margin squeeze) with the need to promote competition and investment in fibre networks (in line with Ofcom's overarching strategy). Ofcom states that:[188]

> *"we propose to exercise our discretion in setting these controls in favour of an approach that supports investment in fibre networks through promoting network competition, while protecting consumers from excessive pricing or a loss of retail competition in the short term."*

6.47 We fully agree with this approach given that promoting competition in fibre networks will lead to significant consumer benefits over the long-run. As such, it is entirely appropriate for Ofcom to prioritise investment incentives over short term price reductions. This is precisely what the UK Government stated in its 'Statement of Strategic Priorities for telecommunications, the management of radio spectrum, and postal services' (SSP):[189]

> *"The Government's aim is to promote investment and competition in world-class digital networks, to as many people and businesses as possible. Investment in new networks by BT and alternative providers is key to improving consumer outcomes, in terms of choice, service quality, and innovation.* ***The Government's view is that promoting investment***

[187] Ofcom (2020) WFTMR Consultation. Volume 2. Page 15. Figure 2.4.

[188] Ofcom (2020) WFTMR Consultation. Volume 4. Page 1, Paragraph 1.4.

[189] DCMS (2019) 'Statement of Strategic Priorities for telecommunications, the management of radio spectrum, and postal services'. Page 10. Paragraph 28 [Link].

> ***should be prioritised over interventions to further reduce retail prices in the near term**." [emphasis added]*

6.48 We are pleased to see Ofcom explicitly recognising this fact, when it states in the WFTMR Consultation that:[190]

> *"we consider the long-term benefits of increased network competition supported by our proposals will outweigh any higher prices paid by consumers in the short term."*

6.49 We full support regulation that promotes competition and investment in fibre networks, since we consider that consumer interests over the long-run are best served by having access to high-capacity connectivity services. Delivering these new networks involves significant investment cost and risk, which is why it is necessary for regulation to prioritise investment incentives at this time.

6.50 While Ofcom is seeking to support investment in fibre networks, it is proposing to impose some form of price control on fibre services, in order to protect consumers from excessive prices and maintaining retail competition in the short term while network competition develops.

6.51 In deciding its proposed charge control design for fibre-based broadband services, Ofcom examined four options:

- **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.
- **Cost-based controls** – setting prices caps on Openreach's wholesale prices across all services in line with costs.
- '**Adaptive regulation'** – this would have two parts: i) cost-based controls before rival fibre rollout has occurred in an area; and ii) a price floor (with reference to an entrant's cost) once rival fibre rollout has occurred in an area.
- **A 'copper wedge'** - introduce a gap between the price charged to access seekers for services delivered over the copper network and the price received by Openreach and use the resulting funds to promote FTTP rollout in competitive and non-competitive areas.

6.52 Ofcom concluded in favour of pricing continuity, on the basis that this will likely better promote network competition, compared to the other three: [191]

> *"we are of the view that maintaining the current level of price regulation would be effective to achieve our objective of supporting investment in fibre networks through promoting network competition, while protecting consumers from excessive pricing or a loss of retail competition in the short term.*
>
> *Cost-based controls and adaptive regulation would provide more protection to consumers and retail competition in the short-run. However, we consider*

[190] Ofcom (2020) WFTMR Consultation. Volume 4. Page 28. Paragraph 1.136.

[191] Ofcom (2020) WFTMR Consultation. Volume 4. Page 16-17. Paragraph 1.73 – 1.75.

> *that these approaches would be unlikely to promote network competition, which would deliver benefits to consumers in the longer term. […]*
>
> *The copper wedge approach could provide some support for network competition, while protecting consumers from excessive pricing or a loss of of retail competition in the short term. However, our view is that there are also legal issues associated with this approach and, even if it were possible to implement, it would be disproportionate."*

6.53 As such, Ofcom concludes that:[192]

> *"Our preferred option is therefore to maintain pricing continuity in the WLA market in Area 2. We consider this option would be effective to achieve our objective of supporting network competition through promoting network competition, while protecting consumers against excessive pricing and maintaining retail competition in the short term. We also consider it to be the least onerous effective option. In particular, this option provides appropriate incentives to market players (including regulatory certainty) but leaves competition, rather than regulation, to drive outcomes. […]*
>
> *Accordingly, we are proposing that for WLA services in Area 2 currently subject to charge controls, price caps will remain constant in real terms, and that there will be no new charge controls on services currently subject to a fair and reasonable condition."*

6.54 We agree with this approach. We now set out (below) our comments on Ofcom's specific pricing proposals.

Anchor pricing

6.55 Ofcom is proposing to continue to use anchor pricing in respect of FTTC services, by imposing a price cap on FTTC 40/10 rental charges but allowing pricing flexibility (subject to a fair and reasonable condition), on rental charges for higher bandwidths.

6.56 We consider that it is critical that such pricing flexibility is available to investors since the prices for 40/10 services have been significantly reduced over the past few years as a result of regulatory intervention meaning there is very little available margin to be made from selling such products.

6.57 In Annex 1 we set out evidence as to how price regulation directly impacts investment incentives. We consider that if Ofcom were to increase the anchor (e.g. to 80/20) then this would have a very significant and detrimental effect on incentives to invest in fibre networks, across the industry.

CPI-0% Price Cap

6.58 As set out above, Ofcom is proposing that the price control on FTTC 40/10 be set equal to current price levels, adjusted for inflation on an annual basis. In other words, a CPI-0% price cap.

6.59 In the WFTMR Consultation Ofcom notes the merits of pricing continuity:

> *"setting price caps somewhat above Openreach's costs better support investment in* competing networks" *[Volume 4, paragraph 1.16]*

[192] Ofcom (2020) WFTMR Consultation. Volume 4. Page 17. Paragraph 1.76 – 1.77.

> *"there is a significant and positive relationship between higher wholesale prices and network build, or that higher wholesale prices are supportive of investment by competitors". [Volume 4, paragraph 1.21]*

6.60 We fully agree with these statements. Furthermore, we consider that the medium to long-term dynamic benefits that can be expected from infrastructure competition are likely to significantly outweigh any short-term static benefits from price reductions.

6.61 When considering a particular investment, we need to make a future-facing assessment as to whether we will be able to earn an adequate return. If BT's prices – and, in turn, our prices (since Openreach prices set a baseline for the industry) – are continually driven down according to the costs of BT's large-scale business, the ability of a challenger such as CityFibre to build a competitive network is severely limited.

6.62 Falling prices mean higher project risk on the basis of lower expected revenues, which ultimately makes the investment case harder to justify. To put it another way, we cannot extend our network and challenge BT in the longer term unless, over the short to medium term, we have confidence that a particular build will be viable, which in turn requires a degree of predictability as to the prices we will be able to charge.[193]

6.63 Falling prices magnify the challenge for MSNs such as us because if the investment case does not make sense in one market then we may be unable to deploy altogether which means we cannot bring the benefits of competition to adjacent markets that we would otherwise seek to enter at the same time.

6.64 As such, any regulation applied during this critical rollout and market expansion period that stabilises BT's regulated prices (e.g. CPI-0% price caps) will stimulate further investment. Over time, as infrastructure competition emerges, this will itself lead to downward pressure on prices through the normal competitive process.

6.65 In Annex 1 of this document we set out evidence showing how Ofcom's strategic shift to promoting investment in fibre networks (e.g. by departing from cost-based price regulation) promotes investment.

6.66 Given the above, it is our view that Ofcom is taking the right approach by setting price caps in WLA Area 2. By seeking to stabilise price levels over the period covered by the control, Ofcom recognises the substantial economic benefits that will derive from investment in competing networks and the competition on innovation, quality and pricing that will result from that.

6.67 In addition to this, it is our position that any further drops in broadband prices risks severely undermining investment incentives. We draw Ofcom's attention to two pieces of evidence.

6.68 Firstly, we are already offering a very competitive price in the market [✂]. This is necessary for us to incentivise consumers onto our network as we seek to expand our presence.

6.69 Secondly, evidence from BT's Regulatory Financial Statement (RFS) suggests that WLA prices may already be set too low. In its 2018/19 RFS BT Group reported a return on capital employed (ROCE) for its regulated 40/10 product of 7.7%. This is significantly lower than the pre-tax WACC Ofcom assumed in its 2018 WLAMR of 9.3%.[194]

[193] [✂]

[194] Ofcom (2018) WLAMR: Statement. Volume 2. Page 64. Paragraph 4.44.

6.70 For the above reasons we fully support Ofcom's proposal to move to CPI-0% in respect of the 40/10 GEA-FTTC anchor.

The Fair Bet

6.71 In the WFTMR Consultation, Ofcom discusses (albeit briefly) the implications of its proposals in regard to the fair bet principle. The fair bet principle relates to corporate finance theory, and the consideration that investments will only take place if the investor expects to make a reasonable return. In this context, a 'fair bet' is one where the firm making an investment should, in expectation, be allowed to earn a rate of return equal to that project specific cost of capital.

6.72 For an investment to be a fair bet, the investor should be allowed to enjoy some of the upside benefit (i.e. be allowed returns higher than the cost of capital) when the outcome of the investment is favourable in order to account for the risk it faced in terms of returns being below the cost of capital in a 'downside' scenario (e.g. if demand turns out to be low that expected or costs high than expected).[195]

6.73 We fully support the fair bet principle and consider it a critical consideration for Ofcom when imposing any regulatory obligations. As an investor in a proposition involving significant downside risk (i.e. full fibre networks), we consider it essential that any interventions by Ofcom do not undermine efficient investment, by violating the fair bet principle.

6.74 While Ofcom in the WFTMR Consultation only discusses the fair bet in reference to Openreach, we wish to highlight that the concept is relevant for any firm who may be impacted by regulation (directly or indirectly), both now and at some point in the future.

6.75 Ofcom therefore must factor into its assessment not only the impact of its regulation on Openreach's fair bet, but also how Ofcom's interventions will impact investments by all operators in the industry.

6.76 In short, Ofcom has a duty of care to ensure that its interventions do not violate the fair bet for any telecoms operator who will be impacted (even indirectly) by Ofcom's regulatory interventions.

6.77 Furthermore, we expect that in the future there will likely be great diversity across the UK in respect of fibre networks, with some areas (likely in rural areas) having only a single full fibre network (which may or may not be Openreach), and other areas having multiple competing fibre networks. Given this, come the next market review (i.e. in 2026) Ofcom may need to consider applying SMP regulation not just to Openreach, but also to other operators. At that time Ofcom will need to consider for any proposed regulatory intervention, how it will honour the fair bet for the specific SMP operator in question.

6.78 In light of this possibility, we wish to draw to Ofcom's attention an important distinction between the upfront risks faced by Openreach and those faced by other investors in fibre networks.

6.79 As we discuss in Section A1.3, we consider that the copper switch-over provides an enormous incumbency advantage to Openreach which would, relative to other operators, significantly reduce its downside risk from its fibre network investments. This is because

[195] Oxera (2017) 'Does Ofcom's approach in the WLA market review honour the fair bet principle?' Page 4. [Link]

Openreach would be able to effectively eliminate all take-up risk on its full fibre network by leveraging its existing broadband market dominance.

6.80 Ofcom itself note this in the WFTMR, "*Our approach of supporting Openreach in transitioning consumers from its copper network to its fibre network will significantly reduce the risk that customers will not migrate to its fibre network*."[196]

6.81 Given this, we consider that the risks currently facing Openreach in respect of its fibre network deployment are significant less than those faced by rival wholesale-only network operators like CityFibre, who rely entirely on downstream CPs (e.g. ISPs, business customers and MNOs) to make use of our network.

6.82 In contrast, BT is a vertically integrated business with a significant retail presence through its downstream entities (e.g. BT Retail). Furthermore, Openreach accounts for 70-80% of all wholesale broadband connections.[197] This provides an enormous incumbency advantage to BT Group when making investment decisions.

6.83 Given the above, we would very much welcome greater clarity and certainty from Ofcom about how it intends to honour the fair bet going forward, and specifically how Ofcom will ensure a fair bet for all investors in the industry (not just Openreach).

Copper switch-over and the 'fibre premium'

6.84 As part of Ofcom's package of proposals in the WFTMR Consultation, Ofcom is setting out how regulation will adapt once copper-services are withdrawn through Openreach's planned 'copper switch-over'.

6.85 Under the existing obligations set out in the 2017 WLAMR Statement, Openreach is required to provide wholesale access for copper-based broadband services (e.g. FTTC). Ofcom proposes to continue with this approach however sets out in the WFTMR Consultation what would happen once Openreach rollout its full fibre network. Ofcom's proposals have two phases based on the level of full fibre coverage achieved by Openreach in a given BT exchange area:

- **75% fibre coverage**: Once Openreach have achieved 75% coverage of full fibre within a given exchange area, Openreach are able to trigger a 'stop-sell' for new copper-services. This means that, where full fibre is available, Openreach would no longer be required to offer copper or partial-fibre services (e.g. FTTC) to customers seeking new connections or even for migrations. Instead Openreach could choose to offer only full fibre services.

- **'Complete' coverage**: Once Openreach has 'completed' fibre coverage in a BT exchange area, Ofcom proposes to remove the price cap for copper services for premises where full fibre is available, and instead move the 'anchor' FTTC 40/10 product onto the equivalent FTTP product with an allowable 'fibre premium' of £1.50 - £1.85 (over the respective regulated FTTC price).

6.86 In regard to the stop-sell provision, while we consider that this introduces benefits in the form of encouraging migration to full fibre services, we consider that it raises very significant risks

[196] Ofcom (2020) WFTMR Consultation. Volume 4. Page 20. Paragraph 1.89

[197] Ofcom (2020) WFTMR Consultation. Volume 2. Page 123. Paragraph 8.97

of anti-competitive foreclosure, in that it provides Openreach with a significant advantage over rival operators who are not able to utilise this pro-migratory mechanism.

6.87 In other words, where a rival to BT achieves 75% full fibre coverage in a BT exchange, it is not able to benefit from this provision. Furthermore, we note that Ofcom is not proposing to enable such pro-migration mechanisms in parts of the country where a rival to BT has deployed fibre. In other words, only Openreach would be able to benefit from the stop-sell provision. We discuss this in more detail in Section A1.3.

6.88 In regard to the definition of 'complete' coverage, Ofcom clarifies in the WFTMR Consultation that this need not mean 100% of premises since this may be difficult given ongoing new building developments as well as the complexities around deploying fibre to certain types of dwelling. However, Ofcom clarifies that:[198]

> *"Our proposals to require Openreach to complete coverage in an exchange area as a condition for the copper charge control to be lifted should have the effect of providing the incentive on Openreach to complete coverage in an area, rather than either just deploying fibre where there is a competing network in an area, or just providing sufficient ultrafast coverage to deter competitor investment, and then shifting resources to another area and thus cumulatively deterring competitor investment across a wider area."*

6.89 In regard to the fibre-premium, we are very pleased that Ofcom recognises the importance of supporting investment by allowing a premium on full fibre. Specifically, Ofcom states that the premium:[199]

> *"reflects the additional benefits of a FTTP 40/10 product in comparison to the FTTC 40/10 product, both to consumers (e.g. receiving a speed closer to headline speed) and retail providers (e.g. through cost-savings resulting from being able to provide a more reliable service).*
>
> *We consider that adding the premium is necessary to achieve our objective of supporting investment in fibre networks through promoting investment in competing networks whilst protecting consumers"*

6.90 We fully agree that there are significant benefits from full fibre services. In addition, we consider that Ofcom's is entirely correct to give significant weight to its overarching objective of promoting investment when deciding such price control matters. Adding a premium will absolutely support investment in fibre networks. In Annex 1 we set out evidence to explain why this is the case.

6.91 Finally, the range for the fibre premium being consulted on of £1.50 - £1.85 is consistent with our own modelling of the additional value that a 40/10 FTTP service would provide when compared to a 40/10 FTTC service.

6.92 We in fact (ahead of the WFTMR Consultation publication) undertook our own independent assessment of an appropriate FTTP premium based on a number of possible approaches including a simple linear uplift based on the speeds offered by a FTTP 40/10 Mbps product (which should deliver the exact headline speed) compared to the actual real-world speeds experienced for an FTTC 40/10 Mbps service. Ofcom's own broadband speed evidence

[198] Ofcom (2020) WFTMR Consultation. Volume 3. Page 22. Paragraph 2.31.

[199] Ofcom (2020) WFTMR Consultation. Volume 4. Page 18. Paragraph 1.83 – 1.84

indicates the speed experienced from a FTTC 40/10 Mbps service is significantly below the headline level (in many cases more than 20% below).[200]

6.93 On the basis of this evidence we estimated that a reasonable wholesale price uplift for a 40/10 Mbps equivalent on FTTP should be at least £0.80-£1.50. We flag that this is a highly conservative range as this analysis only considered 'speed' (i.e. the impact of increasing the actual bandwidth, from say a download speed of 32Mbps currently being experienced over a FTTC connection to 40Mbps over a FTTP connection).

6.94 This therefore does not account for the various non-speed benefits that FTTP can deliver (including for example; jitter, packet loss, latency, network up-time and repair times). Notwithstanding the significant comparative and incremental benefits of these non-speed factors for FTTP services, we consider that Ofcom's range of £1.50-£1.85 as reasonable.

6.2.3 Ofcom's proposals – Area 3

6.95 We consider that Ofcom is making the unsubstantiated assumption that in 'Area 3' only Openreach is likely to deploy fibre networks. We consider that at present there is great uncertainty as to who will deploy in 'Area 3', where they will deploy and when.

6.96 To the extent that the rural locations will see deployment by a single fibre operator, there is no reason why this cannot be a rival to BT, such as CityFibre, Virgin Media, Hyperoptic or Gigaclear. This is not least because all of these operators are able to equally compete for government subsidies and gap funding mechanisms which could result in significant network deployment in rural areas by rivals to BT.

6.97 Given this we consider that Ofcom should not target regulation in Area 3 solely around promoting investment by Openreach but should instead consider promoting investment in a competitor-neutral way. This will require a fundamental re-thinking of Ofcom's approach to regulation in Area 3.

6.3 BCM (LL Access and IEC)

6.98 We set out in this section our comments in respect of Ofcom's BCM pricing proposals, focussing on LL Access.

6.3.1 LL Access

6.99 We cover in this section:

- Price cap level
- Basket design

[200] Ofcom (2019) 'UK Home Broadband Performance: The performance of fixed-line broadband delivered to UK residential customers.' 8th May 2019. [Link].

Price Cap level

6.100 Consistent with what we set out above in respect of the WLA market, we welcome Ofcom's proposal that from 2021 onwards, the price cap should be set at CPI-0%.[201] We also note that for LL Access this would apply across Area 2 and Area 3.

6.101 Setting a charge control that has the objective of keeping pricing stable in a period where stability and transparency is paramount to maximise investment in new fibre networks is the right regulatory approach and we applaud Ofcom for taking this stance in the face of what will undoubtedly be strong calls for further aggressive price reductions from wholesale access seekers.

6.102 Furthermore, we consider that it is imperative that Ofcom adopt a consistent approach to regulation across all markets which are able to be served by MSNs. We discuss why below.

6.103 We operate a wholesale-only, 'open access' network, which is built entirely with fibre elements. This provides the highest possible scope for delivering high bandwidth services to our downstream customers and, ultimately, to end-users.

6.104 Our aim is to provide high quality fibre-based connectivity services to any downstream customer who would like to use our network. As a result, we have a variety of different customers, who fall broadly into four market segments:

i. residential and small business users – through service providers who predominantly wish to purchase mass-market FTTP products for onward retail;

ii. larger businesses;

iii. public sector customers; and

iv. MNOs.

6.105 Customer types (ii) to (iv) typically wish to purchase point-to-point fibre connectivity in the form of either dark fibre or 'lit' leased lines, the regulation of which historically formed the subject of Ofcom's BCMR. In contrast, products and services provided to customer type (i) have historically been assessed under Ofcom's WLA or WBA market reviews.

6.106 Given that our network is able to provide services to customers in many different market segments (e.g. business leased lines, FTTP, backhaul for mobile networks), when making decisions as to where and when to invest, we take into account the overall potential revenues across all downstream market segments.

6.107 A key consideration in our business model is that each of these customer segments generates a contribution to the shared costs of building new infrastructure, as this reflects the considerable economies of scope in building a single, multi-purpose fibre network that serves them all.

6.108 Given this, we are very pleased to see Ofcom undertaking a holistic approach to regulation, and on the basis of this, proposing to ensure consistency in regulatory approaches across

[201] As noted in the response of the IIG to the 2018 BCMR consultation, a CPI-0% charge control avoids the risks of uncertain levels of inflation; in an environment of economic uncertainty, the effects of Brexit, global "trade wars", the unknown world post-COVID-19 and a potential global economic slow-down could all feasibly result in an increase in inflation which would result in more aggressive real-terms price reductions in the wholesale leased lines market than would be predicted. Alternatively, a deflationary environment under a nominal control would result in real-terms price increases. CPI-0% would therefore appear to be a more rational approach, which we strongly support.

markets, including by moving away from pure cost-based price regulation and instead adopting a policy of pricing consistency (CPI-0%) across WLA and LL Access services. This will (for reasons set out in detail in Annex 1) directly support investment in full fibre networks.

Basket design

6.109 Ofcom is proposing a single broad leased lines basket for ethernet and WDM services across all bandwidths for connection, rental and Main Link charges. This would apple across LL Access Area 2, Area 3 and the IEC market. However, Ofcom is proposing that Main Link charges are subject to a CPI-0% sub-cap within this broader basket.

6.110 In the 2019 BCMR, adopted a two-tier basket design, one for the lower speed leased line CISBO products (1Gbps>=) and one for the higher speed products (1Gbps<).

6.111 By proposing a single broad basket, Ofcom is implicitly granting Openreach greater pricing flexibility across its product set, which raises risk of exploitative and anti-competitive pricing practices. For example, under a broad basked Openreach would have greater ability to price in a manner that favours its own downstream operations.

6.112 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 price cap basket without further restrictions could give BT the ability to behave in a way that harms competition.

6.113 Furthermore, a broad basket could enable Openreach to exploit differences in the intensity of competition that it 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. In addition, the fact that rental and connection charges are in the same basket would allow Openreach significant scope to manipulate charges, such as by

6.114 We consider this a risk, and flag that Ofcom must consider fully the implications on competition and investment in fibre networks as a result of implementing a broad-basket approach.

6.115 Notwithstanding this, we agree with Ofcom that BT's ability to increase LL Access charges in Area 3 would be constrained by the introduction of a cost-based dark fibre access obligation in Area 3.

6.116 Furthermore, we consider Ofcom is right to recognise the importance of Main Links to connectivity spanning BT exchanges, and therefore to propose to mitigate the risk of sharp price increases in Main Link charges by subjecting Main Link charges to a CPI-0% sub-cap.

6.3.2 IEC

6.117 We have not undertaken an in-depth assessment of Ofcom's proposals; however they seem to be reasonable on the basis that BT faces limited competition in those exchanges where it faces no more than one PO, noting that in the vast majority of these BT faces no nearby competition.

6.4 Dark fibre

6.118 We set out in this section our comments in respect of Ofcom's dark fibre pricing proposals. We set out in Section 5.4 our views covering the proposed introduction of a regulated dark fibre in Area 3, and so only cover below pricing considerations.

6.119 Ofcom set out in the WFTMR Consultation that:[202]

> *"We are proposing that dark fibre prices are set to cost. Given we do not expect material competitive network build (and therefore we are not seeking to promote rival investment) we do not consider it appropriate to set charges above cost. We consider that setting dark-fibre charges to cost will increase take-up relative to charges being above cost and thereby increase consumer benefits.*
>
> *We propose to set charges with reference to the cost of the relevant components of BT's underlying passive infrastructure"*

6.120 Notwithstanding all the points we make in Section 5.4, and our view that Ofcom must consider more fully the implications of introducing a regulated dark fibre product in Area 3, on the assumption that Ofcom does proceed to implement this proposal, we consider that a price cap based on BT's own costs is not reasonable or appropriate.

6.121 Adopting a price cap in Area 3 based on BT's costs will (owing to its scale) result in a price significantly below that which is sustainable for an emerging rival to BT.

6.122 [✂]

6.123 As such, in order to avoid irreparable harm to competition, we propose that if Ofcom does impose a regulated dark fibre product in Area 3, the price cap is set on the basis of a reasonably efficient operator (REO). Doing this would ensuring that the remedy is priced such as to not disincentivise infrastructure investment from efficient rivals to BT. This is because an REO-based price cap would provide emerging competitors to BT with sufficient economic headroom (both in Area 3, and also in Area 2 in the event the product is made available nationally by Openreach).

[202] Ofcom (2020) WFTMR Consultation. Volume 4. Page 46. Paragraphs 2.84 – 2.85.

7 Anti-competitive wholesale pricing

7.1 This section sets out our views in respect of Ofcom's proposals (in Annex 15 of the WFTMR) to address the concern that BT, via Openreach, may adopt wholesale pricing structures which would deter, hinder or prevent alternative network rollout.

7.2 We are very pleased that Ofcom recognises that Openreach has the ability and incentive to use its dominant market position to foreclose rival network operators, through wholesale pricing structures. We consider it vital that Ofcom comprehensively address this competition concern. Failure to do so would undermine the investment incentives of rival operators to BT, and shield Openreach from competition and thereby directly curtailing the achievement of Ofcom's strategic objective of 'promoting competition and investment in fibre networks.'

7.3 As they stand currently, Ofcom's proposals do not fully address the competition concern. This is because, if implemented, Ofcom's proposals would result in significant scope for Openreach to deter alternative network rollout through wholesale pricing structures that are not addressed by the measures proposed in Annex 15 or through 'workaround' strategies that lead to the same outcome by different means. We set out in this section actions that Ofcom can take to firm up its proposals and to address the identified competition concern as effectively as possible.

7.4 This section is structured as follows:

- **Section 7.1:** sets out an overview of Ofcom's proposals in Annex 15 of the WFTMR Consultation and our high-level comments.
- **Section 7.2:** sets out our views on the relevant competition concerns, in respect of wholesale pricing structures by Openreach.
- **Section 7.3:** sets out our views that *ex ante* regulation is the right tool to address the competition concerns (i.e. competition law would be ineffective).
- **Section 7.4:** sets out our assessment of Ofcom's specific proposals regarding geographic discounts.
- **Section 7.5:** sets out our assessment of Ofcom's specific proposals regarding other commercial terms.

7.1 Overview

7.5 In Annex 15 of the WFTMR Consultation, Ofcom sets out its concern that BT, through Openreach, may adopt wholesale pricing structures which would deter alternative network rollout.

7.6 Overall, we are very pleased that Ofcom has recognised the fact that Openreach has the ability and incentive to use its dominant market position to foreclose rival network operators, through wholesale pricing structures. As Ofcom explains:[203]

> *"Openreach could use wholesale pricing structures to reduce the returns available to investors in new fibre networks and undermine their investment incentives."*

7.7 We consider that it is vital that Ofcom comprehensively address this risk.

[203] Ofcom (2020) WFTMR Consultation. Annex 15. Page 111. Paragraph A15.6. [Link].

7.8 Ofcom identifies two broad types of conduct by Openreach that raise concerns:

- **Geographic discounts**: Ofcom's concern is that Openreach may use geographically targeted price reductions, in order to deter rollout in areas where others are starting/planning to roll out new fibre networks.[204] This strategy would benefit Openreach in the longer term, if its actions deter alternative network rollout and as a result it faced reduced competition in that area, going forward.
- **Other commercial terms**: Ofcom's recognises that Openreach could design commercial terms which mean access seekers face a significantly higher price for services purchased from Openreach if they also purchase from an alternative network operator. This could undermine the business case for alternative network operators which operate on a wholesale business model as they need to attract access seekers to achieve scale and financial viability.[205]

7.9 Ofcom proposes to address each of these concerns through targeted *ex ante* regulation.

7.10 In regard to geographic discounts Ofcom states that:

> *"We have considered the appropriate form of ex ante regulation and propose to restrict Openreach's ability to make geographically targeted price reductions by imposing a specific provision in the SMP conditions providing that such conduct would amount to undue discrimination (we refer to this as the non-discrimination condition below). This makes it clear that Openreach is prohibited from discriminating by targeting geographic discounts except where we explicitly consent."*

7.11 In regard of other commercial terms, Ofcom states that it "*would expect to prohibit any commercial terms which created a barrier to using alternative network operators which Openreach could not justify.*"

7.12 We are pleased to see Ofcom setting out so clearly the concern that Openreach's conduct threatens effective competition, as well as Ofcom's proposals to tackle these issues with *ex ante* regulation. In terms of addressing these concerns, we recognise that it is not appropriate to impose outright bans on all possible wholesale offers, and therefore that a case-by-case approach should be adopted for determining whether Openreach should be allowed to launch a particular offer. This is not least because some such offers could be beneficial to consumers and competition.

7.13 Notwithstanding this, we consider Ofcom must ensure it does not allow Openreach to launch offers which, while potentially affording some short-run consumer benefits (e.g. in the form of lower pricing) have at their heart, the strategic objective of foreclosing rival operators.

7.14 Ofcom's proposed *ex ante* approach to addressing the identified commercial practices that could be problematic includes a description of how Openreach can seek to apply for exemption from this regulation.

7.15 In respect of geographic discounts, Ofcom proposes to require Openreach to bear the burden of setting out the objective justification for the offer, as part of the 'Process for granting consent for geographic price variations'.

[204] Ofcom (2020) WFTMR Consultation. Annex 15. Page 112. Paragraph A15.7.

[205] Ofcom (2020) WFTMR Consultation. Annex 15. Page 112. Paragraph A15.12.

7.16 Ofcom states that the purpose of the consent process is to provide Openreach with additional pricing flexibility (on a consent basis) where appropriate. In assessing whether to consent to differential geographic pricing Ofcom states that it would consider:

i. Whether Openreach had provided objective justification for the differential pricing; and

ii. Whether it is consistent with Ofcom's overarching policy objectives (including its strategy to promote network competition).

7.17 Similarly, Ofcom proposes to allow other commercial terms by Openreach, even when they create a barrier to using alternative network operators, provided that it can be shown that:

i. the impact on nascent network competitors is unlikely to be material; and

ii. the arrangements will generate clear and demonstrable benefits, such as:

- the arrangements are essential to Openreach's business case for fibre roll-out; or
- the arrangements are necessary to offer more efficient prices that would deliver benefits for consumers.

7.18 While we are supportive of an effects-based approach for assessing such offers, and thereby the undertaking of case-by-case assessments, we consider that Ofcom's proposals do not yet fully address the stated competition concerns set out in the consultation. If implemented in their current form, Ofcom's proposals would result in significant scope remaining for Openreach to deter alternative network rollout through wholesale pricing structures.

7.19 Furthermore, Ofcom's proposals, while providing *some* reassurances to rival network operators such as CityFibre about ways in which Openreach's ability to exclude competitors will be limited, do not deliver sufficient clarity and certainty on the precise forms of wholesale pricing that may be adopted. This is also (we assume) a source of uncertainty for Openreach.

7.20 To address these issues, we consider that Ofcom should provide more detailed guidance as to the types of terms and pricing that will be permitted, as well as that which will not be permitted. This form of guidance we feel is particularly apt for a regulatory intervention that seeks to *prevent*, not just respond to, anti-competitive conduct.

7.21 There are many examples of such guidance being used as a tool to supplement regulatory rules in many other contexts, including by Ofcom itself, in fields spanning the waterfront of communications regulation, including consumer issues (such as additional charges[206] and unfair consumer contracts[207]), general regulatory issues (such as security requirements)[208] and matters relating to competition (how to apply rules against margin-squeeze[209] as well as non-discrimination[210]).

7.22 A critical feature of this guidance we think Ofcom should produce is that it could address the question of how Ofcom would approach the question of the *existing* price offers (e.g. the LMO, which we discuss in Section 7.2.1). Without fettering Ofcom's discretion to consider

[206] Ofcom's 'Review of Additional Charges' guidance. [Link].

[207] Ofcom's 'Guidance on unfair terms in contracts for communications services.' [Link].

[208] Ofcom's 'Guidance on security requirements in sections 105A to D of the Communications Act 2003' [Link].

[209] Ofcom (2015) 'Fixed Access Market Reviews: Approach to the VULA margin'. 19th March 2015. [Link].

[210] Ofcom (2015) 'Undue discrimination by SMP providers'. 15th November 2005. [Link].

any future offers that Openreach seeks to launch, we consider that existing offers in the market can serve as useful case-studies, in order to allow Ofcom to set out its framework for assessing such offers going forward. We consider that doing this would provide much needed clarity and certainty for the industry as a whole, including by providing clarity about whether such offers will be permitted going forward (i.e. from April 2021 onwards).[211]

7.23 Providing such clarity and guidance will not simply make the remedy more effective; it will also make the remedy more predictable in its application, thereby reducing regulatory uncertainty across the industry. This should be in the interests of Openreach itself and Ofcom, by reducing the likelihood that there will be costly and distracting disputes about particular pricing or terms down the track. Avoiding any wasted resources (time, attention and money) arising from such disputes will undeniably be in the interests of consumers.

7.2 Ofcom's competition concerns

7.24 Ofcom sets out its competition concerns in paragraphs A15.5 and A15.6 of the WFTMR Consultation:

> *"Over recent years the fibre investment case has improved, and significant scale deployment plans by Openreach and others have been announced […] However, nascent alternative network deployment is relatively fragile while it establishes scale and reputation. In these early stages we consider that it is potentially vulnerable to conduct on the part of Openreach. Openreach faces a substantial erosion of its market share where new networks are built, and therefore it is likely to have incentives to deter new build.*
>
> *Openreach could use wholesale pricing structures to reduce the returns available to investors in new fibre networks and undermine their investment incentives. We have identified geographic discounts as a particular concern in the context of this review. We also consider that concerns may arise from other commercial terms."*

7.25 We strongly agree with Ofcom's assessment that Openreach could use wholesale pricing structures to reduce the returns available to investors thereby undermining their investment incentives. Such anti-competitive pricing structures would clearly harm the interests of consumers and compromise Ofcom's statutory and strategic objectives.

7.26 It is vital that these findings are endorsed and adopted in Ofcom's final statement, and that they are not qualified or watered down in any way. In fact, for reasons set out below, we consider that Ofcom's proposals ought to be strengthened in a number of important respects.

7.2.1 Many Openreach offers in the market are having anti-competitive effects today

7.27 Over the past few years, Openreach have launched a number of wholesale offers which have had a materially detrimental effect on rival network operators (such as CityFibre) in respect

[211] Worked examples that illustrate that, for example, Openreach's LMO (described below) would require objective justification in order to remain open (and the type of evidence that would be required to support such a justification) does not limit or restrict Ofcom's future freedom, but would help focus Openreach and those affected by its conduct on the most important issues, improving the efficiency of the regulatory process.

of investment incentives. We consider (in line with Ofcom's proposals) that such offers should not be allowed going forward.[212] We list below some examples:

- **FTTC GEA Offer**: Openreach announced its GEA Offer in July 2018, which has been available to ISPs since 21 August 2018. The GEA Offer is somewhat complex, but its main features are that:

    a. A participating ISP is eligible for discounts for a three- or five-year term on their existing and additional GEA customers (with the larger discounts available on the five-year term).

    b. Eligibility for discounts depends on the ISP meeting (i) minimum volume commitments, (ii) a required mix of customers on different speeds, and (iii) targets for order forecast accuracy.

    c. Different ISPs qualify for different discount levels, depending on the composition of their broadband base and the number of new fibre orders they place each week with Openreach. The bigger discounts appear to be available only to the larger ISPs who could act as 'anchor tenants' for Openreach competitors (e.g. the bigger discounts are neither available to BT Retail nor to smaller ISPs).

    d. A participating ISP can count superfast services ordered from an Openreach competitor towards the minimum volume commitments, but only if the competitor provides services to less than 25% of premises in Great Britain.

    In effect, leaving aside the 'Volume Target Relief' mechanism, the GEA Offer is a retroactive loyalty rebate, enabling Openreach to 'lock in' ISPs through a combination of (i) very high minimum volume commitments; and (ii) discounts applied across the ISP's entire customer base with Openreach (not just incremental additions). Because almost all ISPs will be reliant on Openreach for the majority of their needs in the short to medium term, major ISPs had no choice but to take the GEA Offer in order to keep their cost bases competitive.

    The most significant detrimental effect of the GEA Offer is the restriction on the contestable segment of the market. [✂]. In other words, the object/effect of the GEA Offer is to limit the size of Openreach competitors' growth in the market.

- **Localised Marketing Offer (LMO):** Openreach published the LMO on 5 November 2019. In summary, under that offer:

    a. Openreach will offer connection and rental discounts within a limited footprint (minimum 10k premises and maximum 500k premises) chosen by the ISP in a maximum of four conurbations.

    b. ISPs must notify Openreach by no later than 30 June 2020 if they wish to participate in the LMO, which has been effective since 1 January 2020.

    c. The eligibility criteria set out in the LMO is that ISPs must commit to: (i) having GEA cablelinks in place or on order in the areas that they select; (ii) having a minimum ARPU to Openreach of £16.28 across the LMO

[212] We believe that these offers ought to be the subject of intervention by Ofcom immediately (and indeed, prior to this point). The comments here relate to the use of those offers as examples that can inform the period after the new market review is implemented and are without prejudice to the question of what action Ofcom might take now with respect to these offers.

term; and (iii) demonstrating that they are carrying out local marketing activities in the selected areas.

d. The greatest discounts for ISPs are available for 'New to Openreach Network' connections, i.e. signing up customers who are taking services from rival network operators to BT.

The direct effect of the LMO has been to enable Openreach to offer targeted discounts in specific areas without bearing the cost of dropping its prices nationally. The LMO is (already) having a chilling effect on competition (and network investment), [✂].

The indirect and wider effect of the LMO is to create uncertainty about what further discounts might be offered, [✂]. As Openreach is an unavoidable trading partner for ISPs, Openreach maintains a high degree of market power going forward, which it can seek to leverage strategically to deter its rivals, as no major ISP can afford to have a structural cost disadvantage vis-à-vis its competitors.

- **FTTP trial prices**. On 1 February 2019, Openreach announced its GEA-FTTP selected exchange trial offer. In summary, the main features of the offer are that:

  a. It is a 24-month trial available to ISPs in four areas of Openreach's 'Fibre First cities programme' (Whitchurch in Cardiff, Corstorphine in Edinburgh, Childwall in Liverpool, and Swinton in Manchester).

  b. It is available to ISPs for a rental price of £15.00 per month, with a £0 connection fee. The rental price is applicable from 1 March 2019, until 28 February 2021. The offer was open for ISPs to sign up to for 12 months from 1 March 2019.

  c. The offer covers Openreach's GEA-FTTP Ultrafast services, with internet connection speeds from 40/10Mbps-330/50Mbps.

  Openreach's list pricing under the offer is up to 36% lower than its previous list pricing. Much like the LMO, the direct effect has been to enable Openreach to offer targeted discounts in specific areas without bearing the cost of dropping its prices nationally. The indirect or wider effect is to create uncertainty about what *further* discounts might be offered given that even offers that have a negligible direct impact on competition can have much more significant and wider reaching effects by creating uncertainty for ISPs [✂].

  One of the most egregious parts of the announced offer was in the notes, which said '*CPs having signed the FTTP NDA can continue to engage with Openreach in* ***bilaterals*** *to discuss possible commercial models, including specifically those eventually requiring a form of commitment in exchange for pricing discounts*'. This note suggested some ISPs may be able to get bespoke terms, thus creating further uncertainty, as well as a lack of transparency and fairness.

  The table shows the published prices of the FTTP trial prices with the standard prices for the equivalent products published on Openreach's website.

Table 7.1 Openreach Price Comparison: Exchange Trial Price v Standard FTTP Price

Product	Offer Rental Price	Offer Connection Fee	Current* Published Rental Price	Current Published Connection Fee

40/10 Mbps	£15.00 per month (£180.00 per annum)	£0	£14.28 per month (£171.36 per annum)	£98.48
55/10 Mbps	£15.00 per month (£180.00 per annum)	£0	£16.79 per month (£201.48 per annum)	£98.48
80/20 Mbps	£15.00 per month (£180.00 per annum)	£0	£17.28 per month (£207.36 per annum)	£98.48
160/30 Mbps	£15.00 per month (£180.00 per annum)	£0	£21.39 per month (£255.36 per annum)	£98.48
330/50 Mbps	£15.00 per month (£180.00 per annum)	£0	£24.28 per month (£291.36 per annum)	£98.48

Source: Openreach price list [Link]. *As accessed 19/05/2020

Notes: both the offer and published price products are data variants of the FTTP-GEA product.

Table 7.2 Saving resulting from the trial price offer compared to standard FTTP price

Product	Monthly Rental Saving (Nominal)	Rental Saving (%)	Connection Fee Saving (Nominal)	Connection Fee Saving (%)
40/10 Mbps	-£0.72	-5%	£98.48	100%
55/10 Mbps	£1.79	11%	£98.48	100%
80/20 Mbps	£2.28	13%	£98.48	100%
160/30 Mbps	£6.39	30%	£98.48	100%
330/50 Mbps	£9.28	38%	£98.48	100%

Notes: calculations based on inputs in Table 7.1 (above).

7.28 These existing Openreach offers directly undermine the investment incentives of rivals to BT. This is precisely the concern Ofcom sets out in its WFTMR Consultation (see paragraph A15.6).

7.2.2 Addressing anti-competitive Openreach offers in the critical period leading up to April 2021

7.29 We anticipate that Openreach plan to launch further such offers over the next 12 months (i.e. ahead of April 2021), especially in regard to FTTP services. To the extend Openreach plan to launch new offers, we consider Ofcom must be able and willing to act during the interim period.

7.30 Ofcom briefly discuss the period ahead of April 2021 in the WFTMR Consultation, noting that:[213]

> *"We are concerned that the risk that Openreach could design commercial terms which undermine alternative network operator rollout is not confined to the forward look period of this review but exists today. The powers we*

[213] Ofcom (2020) WFTMR Consultation. Annex 15. Page 123. Paragraph A15.73.

> *are proposing in this consultation to use to address this risk are already available under the SMP conditions imposed in the 2018 WLA and 2019 BCMR market reviews. Therefore, we will monitor any commercial arrangements proposed by Openreach on an ongoing basis and would expect to use these existing powers to intervene to prohibit any arrangements which we consider would deter alternative network rollout. In deciding whether to intervene we would apply the 'analytical framework' set out previously."*

7.31 It is positive that Ofcom is mindful of the interim period and considers that it has already the requisite powers to address such anti-competitive offers. But these sentiments and signals are only worth what stands behind them, in terms of Ofcom's willingness to act. We highlight that next 12 months will be critical for the industry and investors seeking to ramp up their network deployments.

7.32 We consider that Openreach have very strong incentives to lock-up FTTP commitments from as many ISPs as it can, in order to deny rivals access to customers. On this point we note that BT has already a very strong retail presence, and as of Q3 2019 BT's downstream retail entities have a 34% market share of all broadband connections.[214] As such, BT is starting from a significantly advantageous position when compared to wholesale-only operators such as CityFibre who rely entirely on access agreements with retail ISPs to make use of our network. We also wish to note that [✂].

7.33 Furthermore, we anticipate that over the next 12-18 months, most ISPs will have established their strategic alliances with regard to fibre network owners. As such, the incentives for Openreach to use wholesale pricing offers to deter alternative network rollout is likely to be strongest in the short-run i.e. in the period leading up to April 2021.

7.2.3 Indirect anti-competitive effects of wholesale Openreach offers

7.34 While anti-competitive wholesale offers (such as those discussed in Section 7.2.1) will have material direct (first-order) impacts on rival network operators; these offers also have wide-reaching indirect (second-order) effects, especially for wholesale-only operators such as CityFibre.

7.35 As a wholesale-only operator (i.e. not being vertically integrated), we rely entirely on downstream service providers to secure users for our network. Each ISP itself is a rival to the others in the vigorously competitive retail broadband market, and none could afford to allow a situation to develop where one or more key strategic rivals enjoy a structural cost advantage over it.

7.36 Openreach is the incumbent network operator with a position of market dominance: around 70-80% of all UK fixed broadband connections are on the Openreach network.[215] Furthermore, and critically, Openreach's is the only UK operator with a ubiquitous fixed telecoms network across the UK. Given this, for ISPs who wish to offer comprehensive coverage of services across the UK, there is no scope to refuse to deal with Openreach.

7.37 This means that Openreach is not only dominant in the sense of possessing an overwhelming share of supply, but also dominant in the sense that it is an essential supplier to every ISP wishing to cater to a national customer base. The obligatory nature of the ISPs' relationship with Openreach means that Openreach has the ability to leverage market power, by using its

[214] Ofcom (2019) 'Telecommunications Market Data Update: Q3 2019'. 30th January 2020. Page 1 [Link].

[215] Ofcom (2020) WFTMR Consultation. Volume 2. Page 123. Paragraph 8.97

national coverage to incentivise ISPs not to use alternative networks in areas where rival network operators have (or could) deploy their FTTP networks.

7.38 A clear example of this is the FTTC-GEA offer in which Openreach has effectively constrained the contestable market to 25% of the UK, on the basis that ISPs have no choice but to ensure that their non-Openreach suppliers do not serve more than 25% of the UK (in other words, that they must use Openreach for at least 75% of their volumes), in order to receive the greatest discount – which is an essential 'defensive' stance for them to take, given the intense nature of competition between ISPs.

7.39 This leveraging of market power need not manifest itself through a specific offer but can instead be achieved through pure signalling. Openreach has the ability to *signal* to ISPs that future offers will be able to deliver greater discounts. For the reason noted above about Openreach being the only national network, ISPs seeking national service coverage have little bargaining power today in regard to threatening to walk away from Openreach entirely.

7.40 [✂]

7.41 On the basis of the above, while Ofcom has identified a key competition concern, we consider that the manifestations of that concern are actually broader than those set out by Ofcom and show themselves in more nuanced ways.

7.42 Ofcom must therefore consider the implications of allowing an Openreach offer to be launched beyond just the immediate impacts from that offer, but also the various indirect-impacts, including in regards to signals to ISPs and the impact of those signals on the abilities of rival network operators to BT, to effectively competed for ISPs customers.

7.3 Competition law is inadequate for addressing the concerns

7.43 Having identified a competition concern in a relevant market, Ofcom must assess whether *ex ante* regulation is warranted, or whether competition law or other remedies would address the concerns(s).

7.44 Our strong view (for the reasons set out below) is that competition law would be inadequate for addressing the identified competition concerns and therefore the imposition of *ex ante* remedies is required.

7.45 Firstly, Ofcom has set out a clear strategic objective of 'promoting competition and investment in fibre networks.' Furthermore, Ofcom states that it is 'seeking to support competitive build during the early phase of roll out.'[216]

7.46 As Ofcom recognises in the WFTMR,[217] competition law is not the right tool for *promoting* competition. Competition law requires an ex post assessment, after the harm has already been caused. Investigations generally take many years, as they require complex analysis of evidence, meaning the harm to competition cannot be characterised – let alone corrected - until many years later, often when it is too late or irreversible.

7.47 By contrast, the exercise of Ofcom's regulatory functions occurs in response to particular market conditions as they stand today, and with a view to influencing events in the market over a well-defined forward-looking period. For example, Ofcom's current rules apply until

[216] Ofcom (2020) WFTMR Consultation. Annex 15. Page 113.

[217] Ofcom (2020) WFTMR Consultation. Annex 15. Pages 112-115. Paragraphs A15.13 – A15.28.

April 2021. During that period, investment in new FTTP networks across the UK is at a critical juncture; it will either happen now, or not at all.

7.48 That is why *ex ante* regulation is necessary to (as Ofcom put it) '*prevent targeted action on the part of Openreach that has the potential to reduce the scope of efficient competitive entry*.'[218] An ex post assessment which seeks to establish whether failed entry due to Openreach's anticompetitive conduct was efficient, or not, is simply too little, too late. Customers need and deserve choice, and if Ofcom's strategy is to promote the interests of consumers via infrastructure competition, then this must be safeguarded '*ex ante'* rather than policed after the fact via competition law.

7.49 Through its decisions on fixed broadband networks, Ofcom is not trying to set out general principles that can be applied in relation to a population of markets in different sectors – it is trying to secure a good outcome in one specific market. Failing to do that now, and subsequently explaining clearly what Ofcom ought to have done some years down the track have little or no impact on whether Ofcom achieves good outcomes for consumers in fixed broadband in years to come. Putting the point another way: if Ofcom's strategy is (as it says) to promote the interests of consumers via infrastructure competition, then this must be safeguarded *ex ante* rather than policed ex post via competition law.

7.50 This logic explains why ex post action is not an adequate alternative to regulatory action in this market. *Ex ante* regulation provides more clarity and certainty, in a more immediate way, which is critical for investors, and most especially new entrants making an inherently risky investment by providing greater regulatory clarity – which permits investors to continue raise capital and reduces the risk premium. We discuss this in more detail in Annex 1.

7.4 Geographic discounts

7.51 Ofcom specifically identify geographic discounts as particularly likely to be incompatible with the development of effective and sustainable competition. To address its concerns, Ofcom is proposing to restrict Openreach's ability to make geographically targeted price reductions by imposing a specific provision in the SMP conditions providing that such conduct would amount to undue discrimination. Ofcom state that:[219]

> *"This makes it clear that Openreach is prohibited from discriminating by targeting geographic discounts except where we explicitly consent (see "Process for granting consent for geographic price variations").*
>
> *We consider that this non-discrimination condition is relatively simple to implement and monitor. It promotes transparency and regulatory certainty and will give a clear signal to potential entrants/investors.*
>
> *We consider that it will directly address the potential harm we have identified and reduce the risks faced by potential entrants and therefore improve the prospects for competing network investments"*

7.52 We are pleased that, at the level of principle, Ofcom is proposing a clear and simple *ex ante* approach to regulation of geographic discounts. However, we are concerned that Ofcom's proposals still provide significant scope for Openreach to engage in anti-competitive conduct,

[218] Ofcom (2020) WFTMR Consultation. Annex 15. Page 126. Paragraph A15.92.

[219] Ofcom (2020) WFTMR Consultation. Annex 15. Page 115, Paragraph A15.29 – A15.31.

since Ofcom is proposing to allow Openreach to continue to offer geographic discounts in respect of ancillary charges (e.g. connection fees).

7.53 Furthermore, the "Process for granting consent for geographic price variations" provides great uncertainty for fibre investors (such as CityFibre), given that it is entirely unclear at this time what form of geographic discount offers would be permissible by Ofcom through this process.

7.54 We recognise that not all possible forms and types of geographic discount offer can be anticipated and set out in succinct guidance. However, any clarity – whether through examples, case studies etc. – that Ofcom is able to provide would give investors, emerging competitors, ISPs and Openreach alike, a better understanding and confidence in the kind of geographic discount offers that might be permissible, and impermissible, under this regulatory process.

7.55 Finally, we note that Ofcom proposes not to impose the geographic discount restriction in Area 3. For the reasons we set out in Section 3.2.2, we note that many areas (postcode sectors) that Ofcom is proposing to allocate to Area 3, would be commercial attractive for rival operators to BT. This is entirely inconsistent with Ofcom's objectives. We consider however that this issue arises out of an incorrect market definition and would propose that the issue is addressed there. On the basis of a correctly defined Area 3, for which there is no prospect of commercial investment by rival network operators to BT, then we agree that the need for a prohibition on geographic discounts is not necessary.

7.56 In the remainder of this section we set out the two above key issues in respect of *ex ante* regulation of geographic discounts by Openreach:

- *Section 7.4.1* sets out why Ofcom must include ancillary charges within the prohibition;
- *Section 7.4.2* sets out why Ofcom must provide more clarity and certainty about the form of geographic discounts that Openreach will be allowed to offer.

7.4.1 Ofcom must include ancillary charges within the geographic discount prohibition

7.57 Ofcom sets out in the WFTMR Consultation that it does not consider it appropriate to include ancillary charges (e.g. connection fees) within this prohibition:[220]

> *"We currently consider that it is sufficient to apply the remedy to the rental charge alone. We acknowledge that discounted connection charges may have some impact on competition. However, given the charge is a one-off and, in some cases (such as mass migration), will not apply, we do not currently consider that the impact on competition would be significant enough to justify it being subject to the prohibition on geographic discounts."*

7.58 We strongly disagree with this proposal and consider that ancillary charges must be included within the scope of the prohibition on geographic discounts. There are four main reasons for this:

- **Connection fees are today a material proportion of overall costs:** Ancillary charges (e.g. connection fees) can make up a significant portion of an ISP's costs of providing services to end-consumers, and therefore discounts to connection fees have the potential to significantly reduce its cost base. These charges are therefore

[220] Ofcom (2020) WFTMR Consultation. Annex 15. Page 115. Paragraph A15.35.

sufficiently material that they influence ISP behaviour and hence, need to be included within the prohibition. We note that Openreach routinely offer discounts on connection fees through its promotions, which demonstrates the value placed on them by ISPs.

- **Connection fees have been growing as a proportion of costs:** Over time the proportion of service costs represented by ancillary charges (as opposed to rental charges) has been growing. This trend suggests that in the future ancillary charges will make up an even greater proportion of an ISPs cost basis for providing services.
- **Cash flow impact.** Discounts on up-front components like connection fees have a disproportionately larger impact on cash-flow of ISPs.

7.59 We discuss each of the above three points in turn below.

Connection fees make up a significant proportion of an ISPs access service costs

7.60 On the basis of Openreach's published price list, we see that connection fees for FTTP services are a material proportion of an ISPs costs. In Table 7.3 (below) we present the current Openreach FTTP rental and connection fees:

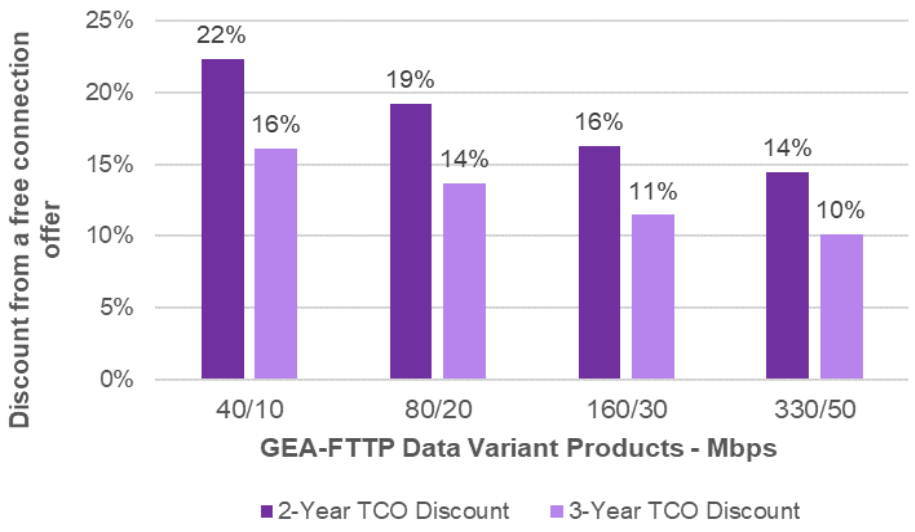
Table 7.3 Openreach GEA-FTTP (Data Product Variant) price list rental and connection fees

Variant	Annual Rental	Connection
40/10 Mbps	£171.36	£98.48
80/20 Mbps	£207.36	£98.48
160/30 Mbps	£253.68	£98.48
330/50 Mbps	£291.36	£98.48

Source: Openreach website [Link]. As accessed 19/05/2020.

7.61 If we assume a two- or three-year customer lifetime, then we can compute the proportion of an ISP's costs which are attributable to connection fees. We do this by computing the total cost of ownership (TCO) for a 2-year and 3-year scenario, and then calculating the discount that would be effective if the connection fee was waived. We set this out in Figure 7.1 below:

Figure 7.1 TCO discount resulting from a free connection offer for a range of Openreach GEA-FTTP products



Source: CityFibre analysis based on Openreach's GEA-FTTP price list. [Link]. As accessed 19/05/2020.

7.62 The above figure shows that the impact of the saving from a free connection offer varies considerably by FTTP bandwidth product variant, with the most significant discounts being for the 40/10 Mbps and 80/20 Mbps variants. This is because the rental charges increase with the variant speed, however the connection fee (currently £98.48) stays the same for each. As such, a free-connection offer on the 40/10 variant can deliver a very substantial savings for ISPs of 22% (assuming a two-year contract). Similarly, the 80/20 variant would experience a 19% effective discount (assuming a two-year contract) following a free connection offer.

7.63 Critically, Ofcom itself considers that over the next few years, the vast majority of broadband customers will remain on variants of 80/10 Mbps or less. Indeed, Ofcom sets out in the WFTMR Consultation that even by December 2023 (i.e. half-way through the upcoming market review period), only 12% of broadband customers are expected to be taking variants above 80/20 Mbps.[221]

7.64 What this illustrates is that ancillary charges make up a material or significant proportion of ISPs' costs. Put another way, no ISP can afford to simply ignore the question of connection fees in any prospective deal under which it might commit itself to an FTTP network. All the available evidence is to the opposite effect, ISPs are in fact very concerned with connection fees and seek to negotiate them down or otherwise incorporate them into their commercial planning and assessment of network contracts.

7.65 Given that ancillary charges (e.g. connection fees) play a key role in shaping ISPs purchasing decision, there is scope for Openreach to offer discounts on these charges in order to influence ISPs purchasing decisions and to incentivise them way from competing networks.

[221] Ofcom (2020) WFTMR Consultation. Volume 2. Page 18. Figure 2.8.

7.66 In other words, the necessary factual conditions are met in relation to ancillary fees for them to fall within the scope of Ofcom's reasoning in relation to connection fees, and on that basis, they must be included within the same rule.

7.67 As well as being non-discriminatory (and less distorting) as a matter of policy, it also makes intuitive sense: why would one charge be a source of risk to the process of competition and require regulation and yet another charge that forms part of the same contract between the same parties not be regulated?

7.68 We also note that the above theory is consistent with that we see in practice: Openreach offers routinely include discounts on connection fees. There are numerous examples, including the FTTP trial prices offer (see table above), which waived connection fees.

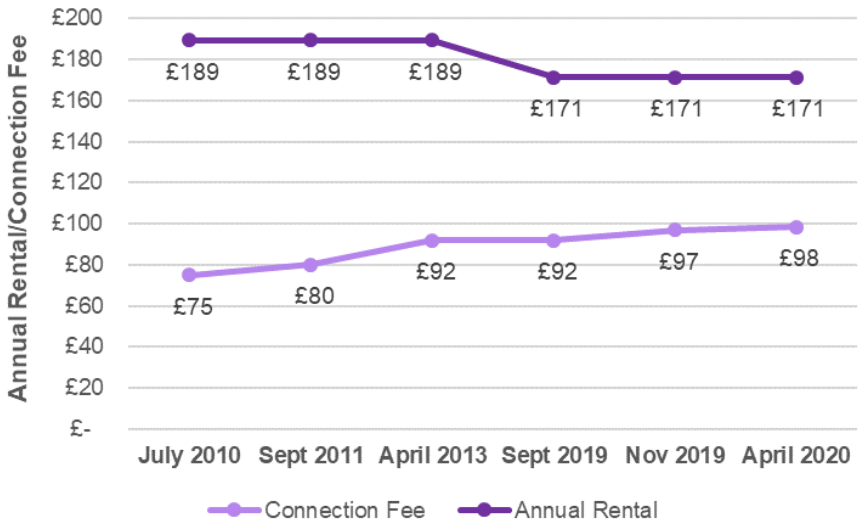
7.69 Another example is the LMO (also discussed above) in which Openreach offer free connection for FTTP services in certain geographic regions. A condition for free connection is that the connection is 'New to the Openreach Network' meaning that ISPs are incentives to target customer acquisitions at rival networks to BT (i.e. alternative network operators). The ability to discount or waive connection fees in key geographies in the UK is one of many pricing strategies we believe Openreach could deploy to deter its emerging competitors. If Openreach were required to notify Ofcom of its pricing strategies in advance of launch, Ofcom would be better equipped to stop, *ex ante*, targeted price discounts on connection fees.

Connection fees have been growing over time, in contrast rental charges have been decreasing

7.70 In addition to connection fees being a significant proportion of costs today, we note that this significance has actually been increasing over time. That is over the past few years, connection fees have been increasing and rental fee's decreasing. This trend has been consistent across all FTTP variants.

7.71 As a case in point, we show in Figure 7.2 (below) this trend for the Openreach 40/10 GEA-FTTP product:

Figure 7.2 Trend in annual rental and connection fees for the Openreach 40/10 Mbps GEA-FTTP product



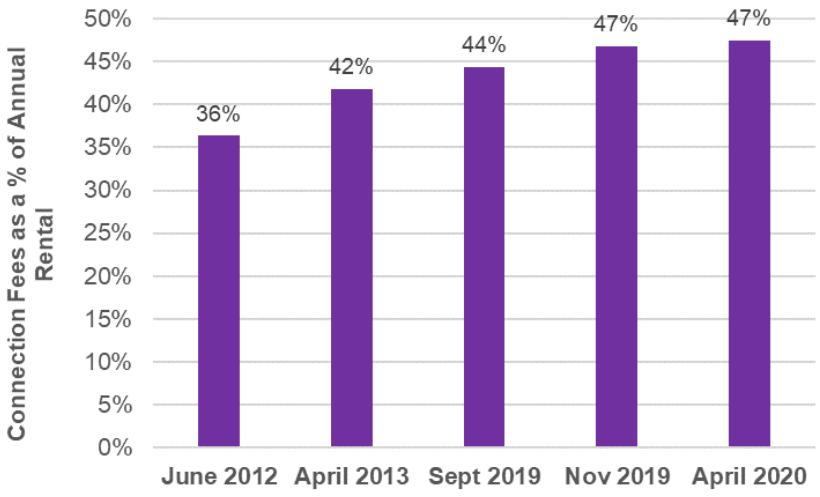
Source: CityFibre analysis based on Openreach published price list [Link]. As accessed 19/05/2020.

7.72 Given these trends, we can compute the changes in the relative importance of connection fees as a proportion of the service costs for access seekers (ISPs). We do this by comparing the connection fee to the annual rental fee over time. This provides a comparable metric over time of the relevant importance of connection fees. We do this below for the 80/20, 220/20 and 330/30[222] Openreach GEA-FTTP variants.

7.73 For 80/20 Mbps variant we see a significant increase over time in the relative importance of the connection fee, increasing from a little over a third of the annual rental fee in 2012, to almost half by 2020.

[222] We have above referred to the 330/50 variant as this is a product Openreach now offer, however this has only existed since October 2017. As such in the below analysis (which stretches back to 2012, we use the 330/30 product which has existed for much longer.

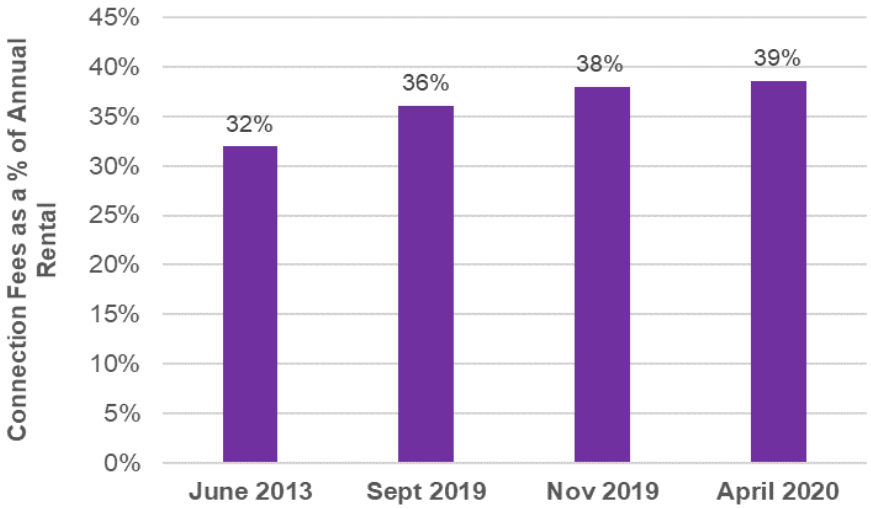
Figure 7.3 80/20 Mbps Openreach GEA-FTTP: Connection fee as a proportion of annual rental



Source: CityFibre analysis based on Openreach published price list [Link]. As accessed 19/05/2020.

7.74 For the 220/20Mbps variant the increase is less significant, and indeed there have been fewer instances of price changes. However, we can still see the increasing trend over time and therefore the increasing relative importance of the connection fee.

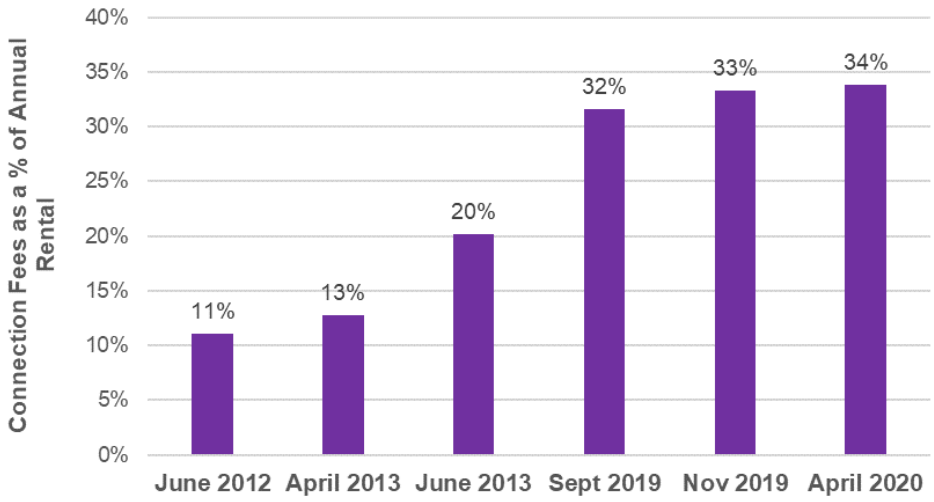
Figure 7.4 220/20 Mbps Openreach GEA-FTTP: Connection fee as a proportion of annual rental



Source: CityFibre analysis based on Openreach published price list [Link]. As accessed 19/05/2020.

7.75 For the 330/30 Mbps variant, we see a very significant increase the relative importance of the connection fee. From 2012 to 2020, the relative importance has increased over time.

Figure 7.5 330/30 Mbps Openreach GEA-FTTP: Connection fee as a proportion of annual rental



Source: CityFibre analysis based on Openreach published price list [Link]. As accessed 19/05/2020.

7.76 This trend in increasing connection fees is likely to continue. Of critical relevance to this is the fact that Ofcom is not proposing to impose material price caps on ancillary charges. Openreach currently sets connection fees for GEA at around £98. Under Ofcom's proposals, from 2021 this can increase with inflation.

7.77 Going forward, Openreach will have the ability to introduce even more significant discounts on the basis of connection fees alone and could easily evade Ofcom's overall objective of restricting anti-competitive geographic discounts by heavily discounting or waiving connection fees in specific geographic locations in key geographies for network infrastructure competition.

7.78 It follows that the correct stance for Ofcom to adopt is to include all fees within the scope of its requirement for consent, and not treat connection fee discounts as being necessarily benign without due consideration.

Discounts up front are more valuable for ISPs

7.79 In addition to being a material proportion of costs, connection fees offer an additional benefit for ISPs in that they are up-front discounts.

7.80 This is a very important consideration for ISPs who in many cases will have to cover the cost of connection themselves, and then seek to recover those costs from the customer over the life of the contract, which could be two or three years or more. Connection fee discounts therefore provide the ancillary benefit of being more cash-flow beneficial for ISPs.

7.81 In addition, the up-front discount is more material given the time value of money. For instance, an upfront saving of £120 is more valuable than a £5 saving per month over 24 months. The

degree to which it is more valuable will depend on the assumed discount rate, however on the basis of an assumed 2% discount rate the net present value (NPV) of the stream of income would be £117.50, compared to the upfront saving of £120.[223]

7.4.2 Ofcom must provide more clarity and certainty about the form of geographic discount offers that will be permissible

7.82 We agree with Ofcom's proposal that Openreach should be prohibited from discriminating by making targeted geographic discounts. Given Openreach's significant market power, targeted geographic discounts are an obvious lever it could pull to deter alternative network rollout. We welcome Ofcom's recognition of this potential anticompetitive conduct, and its plans to incorporate the targeted geographic discount prohibition in Openreach's SMP Conditions.

7.83 However, despite the clear articulation of the competition concern, and the indicative proposals made by Ofcom, it is still not clear to us what sort of geographic offers would get through the "Process for granting consent for geographic price variations". In regard to this process, Ofcom must provide greater clarity and certainty.

7.84 Without greater clarity, the value of the 'prohibition' on geographic discounts for investors is largely neutralised, given that there will be little confidence ahead of any actual formal decision being taken by Ofcom in response to an Openreach request to launch an offer. In addition, without greater clarity, it is difficult for us to comment on the relative merits of allowing any form of geographic pricing to be implemented by Openreach at all.

7.85 Public law and regulatory best practice require that Ofcom's activities are transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed.[224] Having identified a clear risk where action is needed, it is critical that Ofcom secures the right regulatory interventions, and provides more transparency and certainty through guidance.

7.86 There are many examples of guidance being used as a tool to supplement regulatory rules in many other contexts. Ofcom could also address existing offers through such guidance. For instance, Ofcom's approach to the LMO, could be used as a worked example to demonstrate how Ofcom will assess such cases, or similar cases, going forward.

7.87 Such guidance could also usefully set out the type of process that Ofcom anticipates undertaking when it considers when deciding whether to grant consent. This could include, for example:

i. What material Ofcom would anticipate being provided by a dominant provider who wished to seek Ofcom's consent, including the minimum necessary impact analysis and relevant previously-existing internal governance documents that set out the rationale and anticipated impact of the pricing (and, in keeping with Ofcom's existing practice in relation to the analogous filings for submissions seeking a decision from Ofcom, setting out that Ofcom would require a suitable senior individual from the

[223] For instance, if we assume a discount rate of 1%, then in the above scenario the net present value (NPV) of the £5 monthly saving over 24 months is £118.8. If we assume a 2% discount rate we get £117.5, and if we assume a 3% discount rate we get £116.3.

[224] Section 3 Communications Act 2003.

dominant provider's business that there is no element of anti-competitive intent informing the decision to propose that pricing)

ii. What role there would be for affected third parties, such as CityFibre and other rivals who might face exclusion as a result of Ofcom's decision? We appreciate that Ofcom will want to strike a balance between an open and transparent process (which it is required to have as a matter of clear statutory duty and in any event under administrative law) whilst reaching decisions quickly.[225]

iii. What the process will be once a decision is reached – the obvious assumption is that pricing for which Ofcom has given consent must still go through the necessary notice period (which cannot commence until the legal clarity provided by Ofcom's decision).

7.88 To be clear, all of these procedural issues are surmountable and raise issues that are dealt with routinely in other parts of Ofcom's work, so none of them are arguments against the adopt of Ofcom's proposed approach.

7.5 Other commercial terms

7.89 Ofcom states that, in addition to geographic discounts:

> *"There are other ways that Openreach might structure its contracts that could have a significant impact on deterring entry, such as loyalty discounts or pricing contingent on large volume commitments from wholesale customers."226*

7.90 Ofcom goes on to provide some clarity on the sorts of commercial terms that it would be concerned about:

> *"An example of our concern is commercial terms which disincentivise access seekers from moving volumes from Openreach to an alternative operator and, in so doing, undermine investment in alternative networks. A contract with a loyalty discount could mean access seekers face significantly higher average charges for services purchased from Openreach if they also purchase from an alternative network. This could create a barrier to using alternative network operators, undermining the business case for entry."*

7.91 We agree that there are many possible ways that Openreach could seek to achieve the same outcome, and that broad vigilance will be required.

7.92 Ofcom states that they will prohibit any commercial terms which created a barrier to using alternative network operators which Openreach could not justify. Ofcom proposes two options for *ex ante* regulation to deal with its concerns:

- **Option 1** – Prohibit upfront specific commercial terms which Ofcom considers would deter alternative network rollout, unless Ofcom explicitly consent.
- **Option 2** – Rather than imposing an upfront prohibition, Ofcom would use its powers under SMP conditions to intervene to prohibit commercial terms which Ofcom

[225] We anticipate that submissions from third parties will need to be provided on a time-limited (but still reasonable) period, and that there may be a role for confidentiality rings to ensure that sensitive pricing information is only transferred to the minimum extent necessary to achieve the carrying out of Ofcom's regulatory function.

[226] Ofcom (2020) WFTMR Consultation. Annex 15. Page 120. Paragraph A15.59.

considers would deter alternative network rollout where these might arise. To facilitate the effectiveness of this option, Ofcom proposes to adopt a 90-day notification period for changes to commercial terms where the price or other contractual conditions are conditional on the volume and/or range of services purchased.

7.93 Ofcom has set out Option 2 as its preferred option, with Option 1 as a 'backstop', because:[227]

> *'This approach would be timelier than relying on competition law because we could prohibit problematic commercial terms relatively quickly. It would provide alternative network investors with reassurance that we would act swiftly.'*

7.94 In reality, the choice between the two options is not binary: Option 2 is capable of being applied as a tool of wide and general application, with Ofcom's 90-day window giving it a good opportunity to act as the 'regulator' in the truest sense, limiting harmful action before it can occur and acting to reduce any market activity that might undermine Ofcom's statutory goals. Option 1 recognises that it is possible to offer an even greater degree of clarity in those cases where the likelihood of a specific clause being objectionable is so high that, as a pragmatic step, it is better for all concerned simply to say so.

7.95 We also fully support Ofcom's desire to have a process that is timely. Alternative network investors, such as CityFibre, need assurance and certainty that Ofcom is able, *ex ante*, to act swiftly to prevent any anticompetitive offers by Openreach. We agree that the preferred option should be Option 2, as Option 2 will likely be required in almost all instances, given the uncertainty about what possible offers could be launched that could have a significant impact on deterring entry. Whilst 'Option 1' could be used to ease the administrative burden on Ofcom in more clear-cut cases, ultimately all offers will most likely need to be assessed on a case-by case basis, to understand their likely *effects*.

7.96 Ofcom's principal duties are to further the interests of citizens in relation to communications matters, and further the interests of consumers in relevant markets, where appropriate by promoting competition.[228] We therefore agree with Ofcom's preferred Option 2, and considers it is the best option for fulfilling Ofcom's principal duties, given that:

- Competition concerns have been identified due to Openreach's clear ability and strong incentive to deter alternative network rollout;
- These concerns will clearly impact on consumers, who will have less choice, and never be able to gain choice if Openreach succeeds in deterring its competitors. The long-term detrimental effects of market power are well-documented (for example, a dominant market player will most likely (absent price regulation) impose higher prices on customers in the long term, and have less incentive to provide/maintain service quality);
- Openreach is required to notify many of its references offers in any event,[229] so this will not be a new or novel procedure for them to implement (more advanced notice on a wider range of commercial terms will simply be required);

[227] Ofcom (2020) WFTMR Consultation. Annex 15. Page 122-123. Paragraphs A15.71 - A15.72.

[228] Section 3 Communications Act 2003.

[229] BT's SMP Condition 9.4 requires it to notify price changes 28 days in advance.

- Openreach will not be prevented by Ofcom from competing on the merits, but it would be prevented from anticompetitive activity which creates an unlevel playing field and permanently establishes an anticompetitive wholesale network.

7.97 To the extent that there are clearly anticompetitive components in Openreach's plans, that can be anticipated, and which would fall within the Option 1 'backstop', it would be helpful for Ofcom to provide clarity on what those (we will call them, 'red-line items') would be.

7.98 In relation to Option 2, we appreciate that not all scenarios could be covered in guidance, as it is difficult to anticipate all of the strategies that Openreach might deploy to deter competitor rollout. However, providing guidance with as many scenarios, case studies etc, as possible will create some measure of transparency and clarity for all stakeholders, particularly emerging competitors to Openreach, such as CityFibre, who currently are making significant investments in fibre networks. Ofcom should also provide clarity on what happens during the 90-day notification period, and the role that stakeholders, including CityFibre, will play during that process.

7.99 As a starting point, we would propose that the following contractual terms (in addition to geographic discounts) should be items covered in Ofcom guidance:

- Retroactive rebates.
- Any commitments (contractual or otherwise) that limit or place restrictions on the amount of alternative network connections an ISP may take.
- Volume discounts which are: not reflective of genuine cost savings; and/or may amount to predatory pricing; and/or have a loyalty inducing aspect.
- Tariff segmentation, in which tariffs are created purely for self-selection reasons, e.g. only one ISP would ever be eligible or be willing to use it.
- Creation of products with BT Wholesale or BT Retail in mind, i.e. bespoke products to support downstream entities.

7.100 We do not request such guidance lightly. It is necessary given:

- **The offers Openreach has made to date.** Since competition became a real threat to Openreach, it has made offers (which Ofcom recognises Openreach did not do before) to dissuade ISPs from using its competitors - through loyalty rebates, and targeted geographic pricing, all with loyalty-inducing effects. Guidance will set clearer parameters on what Ofcom considers permissible/impermissible.
- **Openreach is an unavoidable trading partner.** Openreach maintains a high degree of market power going forward, which it can seek to leverage strategically to deter its rivals, as no major ISP can afford to have a structural cost disadvantage vis-à-vis its competitors. Guidance can set out, even at a high level, the kinds of conduct (e.g. loyalty rebates) that Ofcom will find unacceptable and Openreach should not even consider.
- **Market uncertainty.** Due to high sunk costs and the need for 'anchor tenants', investor support is critical for network expansion. Without greater certainty provided by Ofcom through guidance, the processes that Ofcom is consulting on do not provide sufficient market certainty.
- **This is a critical time for network infrastructure competition.** Infrastructure competition is at a critical juncture, so it is vital that Ofcom acts now to protect competition. We do not ask for permanent measures to be put in place; this is a short-

term measure to promote competition in the long term to the benefit of consumers. Ofcom has made the right findings; it is now critical that these are cemented with clear regulation and guidance.

7.101 Finally, we wish to flag a specific concern we have regarding Ofcom's proposals and the scope within them for Openreach to launch predatory prices, for example for FTTP services, on a national basis.

7.102 Firstly, we recognise that under the proposed prohibition regarding geographic discounts, if Openreach did wish to lower prices (e.g. for FTTP services) it would have to do so nationally. This would mean Openreach in seeking to deter rival entry would have to cut prices in locations where rivals are not planning to enter, making this strategy very expensive to execute. However, we do not discount that such a strategy may be rational for Openreach, given the scale of market share loss that it may otherwise incur.

7.103 We consider that such a national predatory pricing strategy would be especially rational for Openreach if they were to believe that the commitments Ofcom make under the fair bet principle would effectively allow Openreach to recover any losses incurred during the investment phase (including as a result of undertaking a predatory pricing strategy).

7.104 While we recognise that competition law can be used to assess instances of predatory pricing, we note that (consistent with what we set out above in Section 7.3), competition law is unlikely to be adequate for addressing this concern.

7.105 We therefore consider Ofcom must include within its proposed *ex ante* regime, provisions to identify and quickly stop any predatory wholesale terms. This must involve ongoing monitoring by Ofcom of Openreach's national pricing policies, and the readiness to act swiftly in the face of any attempt by Openreach to employ predatory strategies.

7.106 Finally, Ofcom must incorporate into its ongoing fair bet assessment (in light of the current and planned FTTP investments by Openreach) the conduct of Openreach to ensure that Openreach is not handed a 'loaded fair bet', by being able to recover losses incurred from a predatory pricing strategy

8 Demand-side considerations

8.1 In this annex we call out the need for Ofcom and Government to give greater attention to demand-side barriers, and to act now to address them. Failure to do so will distort competition in the market and directly undermine incentives to deploy fibre networks, delaying the delivery of the ambition for ubiquitous full fibre connectivity.

8.2 We fully support Ofcom and Government efforts to use policy and regulatory interventions to support investment in fibre networks. But we note that, to-date, these efforts have been largely focussed on addressing 'supply-side' issues, such as the engineering and cost barriers to network deployment. We consider that an equally important consideration for fibre investors is the demand-side, i.e. the demand for network services, how much people are willing to pay for them, and the barriers to consumers exercising informed choice to take up and use full fibre products.

8.3 Addressing demand-side barriers will be essential to achieve Ofcom's strategic objective of promoting investment and competition in fibre networks. This is because as full fibre networks are rolled out, maximising the number of people using them will; a) underpin the investment case, and b) secure the full benefits of the technology. Achieving this will involve ensuring timely migration of customers off of legacy networks and onto new fibre networks. However, at present, there are a number of barriers to this.

8.4 Specifically, we consider that there are two demand-side obstacles that require urgent regulatory action since they are standing in the way of the UK achieving its full fibre ambitions:

i. **Removing barriers to consumers' ability to assess and understand the benefits of full fibre broadband (including advertising practices that make it difficult for consumers to comprehend what is on offer):** Ensuring that consumers understand the benefits of full fibre, and are able to make informed choices, is critical to increasing the take up of full fibre to its full potential. A precondition to achieving this is to ensure that advertising practices do not create confusion, i.e. making it difficult for consumers to distinguish between services and technologies according to reliability and quality of experience. Ofcom should explore the possibility of using the General Conditions of Entitlement to mandate advertising practices that enable consumers to easily distinguish full fibre broadband from other offerings.

ii. **Making consumer switching easier:** The industry is currently in dialogue to agree the process for fixed (phone and broadband) switching that will apply from 2021 onwards, to bring it in line with the Gaining Provider Led standard. The ambition is to ensure that consumer switching (especially across networks) is seamless and quick. Achieving this will ensure that consumers see there being minimal barriers to switching provider and thereby being able to easily migrate off legacy broadband services and onto full fibre. Ofcom is being presented with two options, one of which is likely to significantly increase propensity of consumers to switch. We believe that this option must prevail and be effectively implemented in order to ensure switching becomes easier.

8.5 These barriers act to directly limit the amount of consumer switching that takes place in the market. In fact, Ofcom's own switching tracker shows that consumer switching is low in the broadband sector, and that this low level of switching has persisted for many years. For example, Ofcom's 2019 Core Switching Tracker survey showed that only 7% of respondents had switched their fixed broadband service in the previous 12 months. If only 7% of

consumers switch from legacy broadband to fibre broadband each year, then it will take over 14 years to migrate all customers.

8.6 We consider that migration onto fibre networks should not be forced, and that all reasonable efforts must be made to support voluntary migration. However, to address the remaining 'non switchers' we agree that the copper switch-over has a key role to play. As a starting point, we fully recognise that the copper switch-over is a key component in supporting investment in fibre networks, in that it can help stimulate demand for fibre, to enable new networks to achieve scale quicker, and to ensure a smooth transition process for customers.

8.7 However, we are surprised that Ofcom does not appear to have considered how the copper switch-over can help to stimulate demand in areas of the UK where Openreach is not planning to deploy fibre networks. To the extent Ofcom wishes to promote UK-wide migration to fibre services, we would expect Ofcom to set out in its consultation, how the copper switch-over could work in areas where an alternative network (and not Openreach) has deployed fibre, and indeed how the copper switch-over can help support that alternative operator's investment case.

8.8 Notwithstanding this specific point, we consider that overall the copper switch-over raises a significant risk of anti-competitive effects which could have very detrimental impacts on competition in the market. This is because the switch-over will allow Openreach to all but eliminate take-up uncertainty for its fibre network deployment. Take-up uncertainty is one of the biggest risks facing fibre investors, and directly impacts incentives to invest.

8.9 This concern arises because Openreach has today a strongly dominant position in the market for broadband services, with around 70-80% of UK broadband customers currently on the Openreach network. Given this, the switch-over could allow Openreach to simply leverage its existing dominant market position from copper services to fibre services.

8.10 The manifestation of the concern would be to distort market incentives for fibre investment, in a way that would favour Openreach over other operators. This is based on the following logic:

- The investment case for deploying fibre networks (by any operator) critically relies on the assumption that there will be sufficient consumer demand for fibre services.
- The vast majority (~80%) of UK broadband customers are today on the Openreach network (most of these take copper-based services).
- If Openreach is able to quickly and easily bulk-migrate its existing customer base, the copper switch-over would allow Openreach to eliminate take-up risk in respect of its fibre network. In sharp contrast, the take-up risk for alternative networks remains very significant.
- This significant divergence in take-up risk between Openreach and entrant network operators would provide Openreach with a significant (unfair) advantage in respect of the investment case for fibre network deployment, compared to its rivals.
- If this occurs, Openreach's market dominance will likely be further entrenched and the scope for a competitive market will be destroyed.

8.11 In short, the copper switch-over as currently conceived provides an enormous incumbency advantage to Openreach which will, relative to other operators, reduce their investment risk given that it is effectively able to eliminate take-up risk on its full fibre network by leveraging its existing overall broadband market dominance.

8.12 While we consider this to be a very significant risk, we recognise that addressing this concern directly through the copper switch-over (i.e. Ofcom imposing obligations on Openreach in respect of the switch-over process) may not be practical. One reason for this is that Ofcom does not have powers to instruct Openreach as to where, when and how it deploys its fibre network. Another reason, as noted above, is that the copper switch-over does have a key role to play in promoting migration of customers onto full fibre networks.

8.13 Given this, we consider that a careful balancing act is required in order to seek to preserve the benefits of copper switch-over (e.g. migrating customers onto fibre services) while addressing the anti-competitive risk of Openreach further entrenching its dominant position. In other words, there is a direct tension between the two components of Ofcom's overarching strategy; that of promoting *investment* and *competition* in fibre networks.

8.14 In the first instance we consider that the risk of any harm to competition would be significantly mitigated if BT Retail was operating genuinely independently from Openreach in relation to its network purchasing strategy. In such a scenario, when Openreach has not deployed fibre in an area, BT Retail (in seeking to provide its customers with full fibre services) would be incentivised to mass migrate its customers away from Openreach and onto rival networks, which would by proxy act to facilitate a switch-over.

8.15 We see no reason why a legally-separated and independent BT Retail would not want to purchase access from rivals to Openreach. Its willingness to do so (as we noted above) would mitigate anti-competitive effects from the switch-over process.

8.16 Regardless of whether BT Retail is willing to depart from its prevailing sole reliance on Openreach we consider that there are two broad actions that Ofcom must take to mitigate the risk of anti-competitive effects from the copper switch-over (as outlined above) while preserving the benefits from it. These two actions are:

- **Ensuring Openreach is unable to lock in ISP customers through wholesale agreements:** The risk that Openreach will leverage its existing market dominance as part of the switch-over is greatly reduced if regulation is in place to ensure that Openreach cannot use wholesale pricing to lock in ISPs (e.g. through promotions and loyalty inducement mechanisms). This is a critical issue as if Openreach is in fact able to lock in ISPs then this directly deters alternative network rollout. This issue is being considered as part of Ofcom's proposals set out in Annex 15 of the WFTMR. We consider Ofcom's proposals do not go far enough, although they do capture the correct concerns and the need to address them with *ex ante* regulation. We set out our detailed views on these proposals in Section 7 of this document.
- **Promoting consumer engagement and making voluntary switching quicker and easier**: The risk of Openreach's leveraging its existing high market share and entrenching its dominance is significantly mitigated if consumers are engaged in the market and able to switch provider quickly and easily. Recent research shows that broadband consumers are not engaged and do not frequently switch supplier. For example, Ofcom's switching tracker shows that each year, only about 7% of broadband customers switch provider. This is significantly lower than switching levels observed in other sectors. If consumers were more engaged, and switching easier, alternative operators would be able to more effectively compete for these customers and therefore the divergence in take-up risk between Openreach and alternative operators would decrease. We note that in addition to addressing anti-competitive concerns from the copper switch over, removing consumer engagement and switching

barriers has significant implications for promoting investment across the industry, as it helps stimulate market-wide demand for fibre services.

8.17 Overall, we consider it is critical that Ofcom and Government work proactively with industry to address any and all demand-side barriers, in order to support the achievement of the objective of promoting investment and competition in fibre networks, including to address the risk of anti-competitive effects (e.g. from the copper switch-over).

8.18 The remainder of this annex is structured as follows:

- **Section 8.1:** sets out how operators (such as us) think about making investments in fibre networks and demonstrates that demand-side considerations are just as important as supply-side considerations (and in some cases more important).
- **Section 8.2**: sets out Ofcom's overarching regulatory objective and the misalignment between Ofcom's historic approach to addressing demand-side and supply-side barriers.
- **Section 8.3:** sets out a number of specific demand-side barriers that, left unaddressed, will limit the scope for fibre investment across the market. We set out what actions by Ofcom and Government we believe are required to address these issues.
- **Section 8.4:** sets out the copper switch-over creates specific demand-side issues, in the form of anti-competitive foreclosure, which will ultimately distort the competitive market, undermine investment, and allow Openreach to entrench its dominant position.

8.1 Ensuring sufficient demand is critical for the full fibre investment case

8.19 The UK Government has set a clear and ambitious target of achieving ubiquitous fibre connectivity, by no later than 2033, and ideally by 2025. To support this, Ofcom has made a clear strategic shift to move away from regulation focussed on lowering prices, to regulation focussed on promoting investment and competition in fibre networks.

8.20 To achieve the Government's ambition, over £30bn will need to be spent by network operators on installing new fibre networks across the UK.[230] This is more than ten times the amount of investment seen in the UK fixed telecoms market over the preceding ten years (i.e. from 2010 – 2020).[231]

8.21 In light of the Government's ambition, there has been growing momentum behind investment in new full fibre networks by a number of UK operators:

- We have recently increased our ambition planned deployment of full fibre from 5 million UK premises to up to 8 million.[232]

[230] DCMS (2018) FTIR. 23rd July 2018. Page 4

[231] BT's CEO, Philip Jansen, was quoted as saying in July 2019 that it would cost roughly £400mn to £600mn in capital expenditure (capex) a year to meet their FTTP ambition of 15 million UK premises by around 2025, equivalent to £2.4bn – £3.6bn in total capex taken from 2019.

Source: Jackson, Mark (2019) 'BT Ponder More Cost and Dividend Cuts to Fuel FTTP Broadband Rollout'. 11th July 2019. ISPreview (news article). [link].

[232] CityFibre (2020) 'CityFibre acquires FibreNation and adds TalkTalk as strategic customers, increasing its rollout plans to pass up to 8 million premises'. 21st January 2020. Press Release. [Link]

- Hyperoptic has announced that its fibre network now covers 350,000 premises. It further plans to cover two million urban homes by 2022 and five million by 2025. [233]
- Gigaclear's network reaches 60,000 premises in rural areas and it plans to expand to 150,000 premises by 2020. [234]
- Virgin Media is continuing to expand its network and aims to reach a further four million premises, half of which will be connected using full fibre. [235]
- BT has announced plans to speed up its deployment of full fibre, with a commitment to reach up to three million premises by 2020. It has also outlined plans to reach 15 million by the mid-2020s.[236]

8.22 Given the above context, we set out below the role that demand plays in the full fibre investment case, and therefore in the achievement of the objective of investment and competition in fibre networks. The analysis below shows the importance of addressing demand-side barriers for promoting investment in fibre networks, and that even very small increases in demand, can substantially improve the investment case.

The investment case for fibre critically relies on both supply and demand-side considerations

8.23 Consistent with corporate finance theory, investments will only take place if the investor expects to make a reasonable return on that investment. In the case of full fibre broadband, or indeed any investments in large capital infrastructure, there are broadly two phases to the investment. Firstly, there is the build phase in which assets are deployed and the functional network is rolled out. Secondly, there is a recovery of build costs by selling network services (e.g. to business and residential customers), to pay off the upfront (sunk) capital for that investment.

8.24 Before proceeding, both of these phases will be considered, in order to determine whether, over the lifetime of the investment, sufficient revenues can be generated to pay-back the requisite capital and operating expenses. As such, the anticipated future revenues, based on anticipated take-up and willingness to pay for the service will determine whether or not the investment proceeds.

8.25 In most cases, the above assessment involves undertaking a forward-looking discounted cash flow (DCF) analysis over the lifetime of the investment, to compare the anticipated costs that will be incurred, with the expected revenues that will be generated.[237]

8.26 The critical output of DCF analysis is an estimate of the expected return across the lifetime of the investment, this is often defined as the internal rate of return (IRR). According to

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

[233] Ofcom (2018) WLAMR Statement. Volume 1. Page 7. Paragraphs 1.19-1.20

[234] Ofcom (2018) WLAMR Statement. Volume 1. Page 7. Paragraphs 1.19-1.20

[235] Ofcom (2018) WLAMR Statement. Volume 1. Page 7. Paragraphs 1.19-1.20

[236] https://www.openreach.com/fibre-broadband/fibre-for-developers. As accessed 17/03/2020

[237] These constitute the private costs and benefits from the investment and does not account for social costs or benefits.

corporate finance theory, investments will go ahead whenever the expected return from an investment (IRR) is greater than the firm's cost of capital.[238]

8.27 The DCF implicitly involves assessing both the supply-side and demand-side:

- **Supply-side:** Relates to all the factors affecting the supply of services, in the case of telecommunications, this largely means the deployment of the physical network. In broad terms, this constitutes the network operator's (i.e. private) **costs** of network deployment; and
- **Demand-side**: Relates to the take-up and usage of the network (once it is built). For instance, the number of people taking services, as well as the price they are willing to pay for those services. In broad terms this constitutes the network operator's (i.e. private) **benefits (in terms of revenue)** of network deployment.

8.28 Both factors influence the investment case. For example, in regard to the supply-side, obviously if the anticipated costs fall (e.g. as a result of improvements in efficiency or falling input prices) then, all else being equal, the expected returns (IRR) will go up.

8.29 Similarly, if, all else being equal, the expected demand increases (e.g. as a result of greater consumer interest or awareness) then this will also cause the IRR to go up. In other words, both supply and demand-side considerations are critical for the underlying investment case. Failure to consider both demand and supply-side facts would lead to a flawed analysis.

Small changes to demand can have a very material impact on the investment case for fibre

8.30 We now set out the impact of demand-side barriers on the investment case for full fibre. We start with a stylised example, before setting out an estimate for the demand-side impact for our full fibre investment case.

8.31 This analysis shows that even seemingly small demand-side barriers could be having a very large detrimental impact on the full fibre investment case. Setting out their impact (as we do below) shows why interventions (by Ofcom or Government) to address demand-side barriers, even to only a small degree, could have a very significant positive impact on the achieving of the ambition for ubiquitous fibre.

8.32 In Box 1 (below) we have produced a stylised example in which we model the impacts of small changes to demand on the IRR for a hypothetical investment. While this example is hypothetical, it does mimic closely the key components of the fibre investment case in terms of up-front sunk capital costs, significant demand risk and long pay-back periods. These are the key features of the fibre investment case as noted by the Government in its FTIR:[239]

> *"Investment in full fibre networks is risky which means that investors will need to secure higher, long-term rates of return to be willing to invest. This is because:*

[238] In the real world, investments are rarely made on such a 'knife edge' and instead higher levels of expected return simply mean that the investment is more likely to proceed. This is because even if the IRR was in excess of a firms WACC, there could be other factors which mean the investment doesn't proceed immediately, including; alternative and more attractive opportunities, as well as access to the required resources (e.g. labour) and capital. It could also be that the investment decision involves other (e.g. qualitative) considerations which are not factored into the IRR analysis.

[239] DCMS (2018) FTIR. Page 24. Paragraph 27.

- ***Sunk costs**: A high proportion of the costs of building networks are sunk (i.e. 'one-off costs' incurred in assets that cannot be diverted to other uses) and incurred before sales;*

- ***Demand risk**: Whilst the industry appears confident about the long-term demand for higher quality, reliable broadband services, there are substantial demand risks. Uncertainty remains about mass market willingness to pay for higher speeds. This can be expected to impact on the pace at which people migrate to full fibre services and on the price premium that networks can charge. Individual networks also face the risk of competition from rival full fibre networks.*

- ***Long pay-back periods and regulatory uncertainty**: Full fibre networks are long-lived assets, the costs of which investors can expect to recover over a long period. This could be 15 to 20 years, or even longer. Risks associated with uncertainty about future market conditions is inevitable over such long periods. Long pay-*

- *back periods are made more risky by the possibility of regulatory change"*

8.33 The below scenario therefore seeks to mirror the key facets of the fibre investment case, and in that context, demonstrate how small increases in demand in the early years of the investment can significantly increase the overall IRR and thereby the chance of the investment going ahead.

Box 1: Stylised example of demand-side impact on IRR

To show the effect of demand stimulation on a long-run investment case, we have created a stylised example, based on the following assumptions:

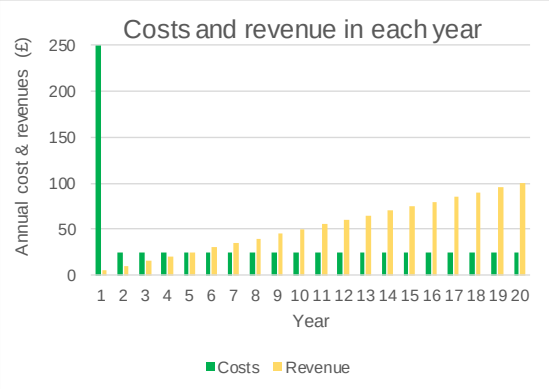
- An investment case over a 20-year period
- An upfront sunk capital cost (such as fixed telecoms) of £250, incurred in year 1, with annual ongoing running costs of £25 per year (i.e. 10% OPEX:CAPEX ratio), for the remaining 19 years
- A market in which there are 100 customers, each will pay £1 per year to use the service. Customers migrate to using the service over a period of time, however by the end of the 20-year period all (100) customers are using the service (e.g. network).

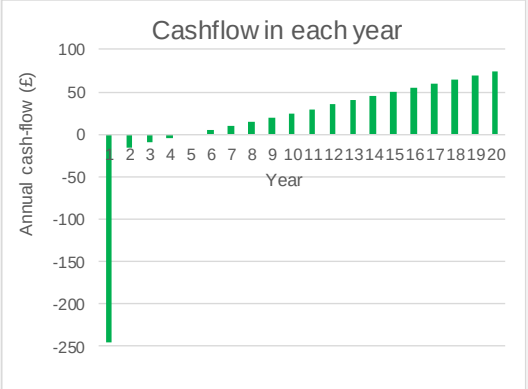
As a starting point, it could be assumed that customers migrate to the service in a linear way, across the 20-year assessment period. That is, in year 1 we have 5 customers, in year 2 we have 10 customers in year 3 we have 15 customers, and so on. At this rate, only in year 20 will all (100) customers be using the service.

Since it is assumed that each customer pays £1 per year, under this scenario the total revenue starts in year 1 at £5, then becomes £10 in year 2, £15 in year 3 and so on. We assume costs are entirely independent of usage/take-up and are simply £250 in year 1 (to represent CAPEX), with ongoing costs of £25 per year for the remaining 19 years (e.g. for network maintenance).

We present the above scenario visually below in terms of costs, revenue and cashflow. It shows the negative cashflows in early years with positive cashflows in later years:

Forecasted cost, revenue and cashflow in each year





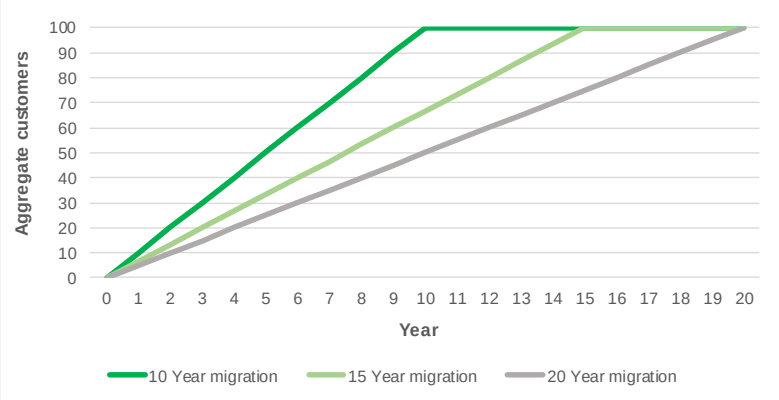
On the basis of this scenario, and the forecasted 20-year cashflow (shown above) we can compute the IRR, which in this case is 5.8%.

In order to see the impact of small changes in demand, we can alter the assumption of how quickly customer migrate to the service. In the above scenario we assumed customers migrate to the service (linearly) over 20 years (i.e. at a rate of 5 per year). We could however assume a faster rate of migration.

For instance, if we assume customers migrate (linearly) over a 10-year period, then we would have 10 customers in year 1, 20 customers in year 2, 30 customers in year 3, and so on. This would mean that by year 10 all (100) customers are taking the service. From this point we assume the customer profile is flat (since all customers are already consuming the product and we assume that no customers churn away).

Below we present visually this scenario, along with the original scenario discussed above (i.e. 20-year migration period). For contrast we also show the middle scenario of a 15-year migration period. The figure shows that all scenarios use a simple linear migration path. For the 10-year and 15-year scenarios, we can see that once all (100) customers are taking the service, the line is flat for the remainder of the assessment period.

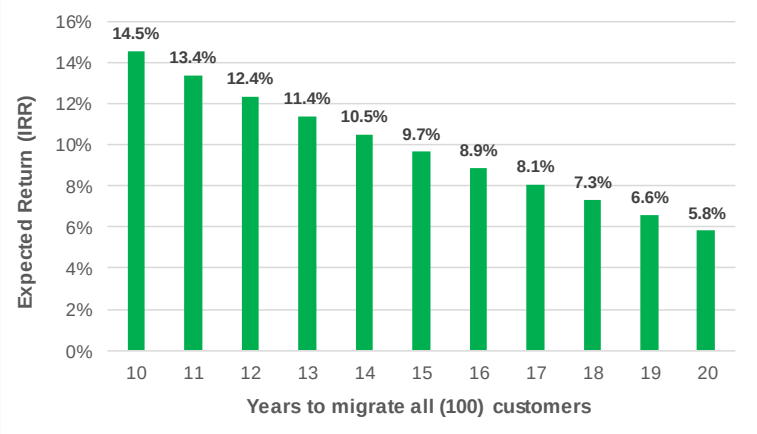
Stylised customer migrations over a 10, 15 and 20-year period



We can model the above scenarios (and others) in respect of the resulting IRR values. We already set out above that for the scenario where migration of customers took 20 years, the IRR of the investment case was 5.8%. In sharp contrast if we assume consumers migrate much more quickly over say a 10-year period, we get a much higher IRR, of 14.5%.

In the figure below we present all scenarios from 10 to 20 years. The figure shows that even across a single year, the IRR impact is very significant. Indeed, the difference in IRR between 11- and 12-year migrations is 1% point, as is the IRR difference between 12 and 13 years.

IRR values for different speeds of customer migration



This shows that small levels of demand stimulation could improve the business case for fibre investment significantly.

Furthermore, and for comparison, on the basis of the 12-year assumption, in order to achieve a 1% increase in the IRR through cost reduction alone, the assumed upfront costs (of £250) would need to go down by £23 (a 9.2% decrease). This shows how small changes in demand can outweigh fairly large changes in supply-side characteristics.

8.34 In addition to the above hypothetical investment case, we have also undertaken some modelling analysis to assess the impact in our business model, from changes in demand. We see a similar result to that set out above in that our expected returns across our entire investment is highly sensitive to changes in demand. For instance, our long-range business plan shows that a [✂]% change in assumed penetration for services, leads to a [✂]% change in expected IRR.[240] This is a very material impact.

8.35 Furthermore, this level of IRR impact is very material when compared to supply-side sensitivities. For example, if we assume in our long-range business plan, an increase PIA usage of [✂]%, across our initial 5 million network deployment, this only leads to an increase in our overall IRR of less than [✂]%.

8.2 Ofcom's approach to demand-side issues

8.36 Ofcom's 2015 Digital Communications Review[241] marked a significant change in Ofcom's regulatory strategy, as it moved to placing a greater emphasis on infrastructure competition as the principal means to drive better outcomes for consumers. Central to this is the need to provide the right market incentives to promote investment in fibre networks.

8.37 Ofcom has underlined the importance of full fibre investment and network competition in its WFTMR, with regulatory proposals intended to create "the conditions to transform the business case for investment in full fibre broadband [and] removing barriers to help the rollout of fibre networks right across the UK".[242] We interprets this as meaning all barriers, which would mean supply-side barriers and demand-side barriers.

8.38 Given this, we set out below how Ofcom's approach to addressing demand-side barriers does not appear to link back to its overarching regulatory strategy of promoting investment and competition in fibre networks. This approach is inconsistent with how Ofcom has sought to address supply-side barriers (such as in the WFTMR Consultation) given that Ofcom has sought to link proposed supply-side interventions back to the overarching regulatory objective.

Misalignment between Ofcom's approach to addressing demand-side and supply-side barriers

8.39 Over the past five years, Ofcom's market reviews have increasingly focussed on providing the right market conditions to achieve Ofcom's core regulatory objective of promoting investment and competition in fibre networks.

8.40 This underlying objective has underpinned the proposed remedies in the WFTMR, as noted by Ofcom:[243]

> *"This document explains how Ofcom is creating the conditions to transform the business case for investment in full-fibre broadband through how we regulate BT. We are removing barriers to help the rollout of fibre networks right across the UK – including areas that are hard to reach."*

[240] [✂]

[241] Ofcom (2015) "Strategic Review of Digital Communications – Discussion Document". 16th July 2015. Page 84. Paragraph 9.6 [Link]

[242] Ofcom (2020) WFTMR Consultation. Volume 1. Page 1.

[243] Ofcom (2020) WFTMR Consultation. Volume 1. Page 3.

8.41 In sharp contrast, Ofcom's most recent consultation on demand-side matters 'Fair treatment and easier switching for broadband and mobile customers – Proposals to implement the new European Electronic Communications Code' did not once mention this overarching objective. In fact, the word 'investment' only appears four times in the c.200-page consultation. In contrast, 'investment' appears over 500 times in WFTMR.[244]

8.42 We consider that there must be complete alignment across Ofcom in regard to its overarching strategic policy objective. As such, it must apply both when Ofcom considers supply-side and demand-side issues. Any process or obligation Ofcom intends to implement should be linked back to this principle and assessed as to how it supports the achievement of the overarching objective.

8.43 We encourage Ofcom to take the necessary steps to ensure that; a) Ofcom give demand-side issues the attention they need, and b) Ofcom ensure that any intervention that impacts the demand-side is motivated and informed by the overarching regulatory objective of promoting investment and competition in fibre networks.

8.44 We now set out some specific demand-side issues that we consider require further attention from Ofcom. In section A1.3 we discuss a number of specific demand-side barriers that Ofcom should consider how it can support addressing them. In Section A1.4 we consider the implications of Openreach's proposed copper switch-over and call out the very material risk that the copper switch over will (as proposed) undermine the achievement of Ofcom's overarching regulatory objective.

8.3 Industry-wide demand-side barriers

8.45 For markets to work effectively and deliver good outcomes for consumers, certain conditions need to be in place that cover both the supply-side and the demand-side of the market.

8.46 On the supply-side, for example, if a single firm has exclusive control of a key input of production then, absent regulatory action, consumers will fail to reap the benefits that would be generated in more competitive markets. In the same way, if there are demand-side obstacles that prevent consumers from exercising effective choice, then the market will not provide the incentivises for providers to invest and innovate and thereby produce the quality products that consumers require.

8.47 Experience has shown that market interventions cannot focus exclusively on addressing the supply-side of the market, under the presumption that, if we can create an effectively competitive market, consumers will engage, make rational choices, and reap the benefits.

8.48 As such, demand-side obstacles, if left unaddressed, will prevent the realisation of the full benefits that markets are able to deliver. A good example of this is the recently identified lack of consumer engagement and switching across a number of markets (including broadband, mobile and energy[245]), which has forced regulators to intervene and introduce measures to encourage consumers to assess their options and switch providers.

8.49 For instance, in 2016, the Competition and Markets Authority completed the Energy Market Investigation and recommended that Ofgem (the sector regulator) should take forward a number of activities to address low levels of consumer engagement. Following this, Ofgem

[244] In the WFTMR, the word 'investment' appears: 25 times in Volume 1, 51 times in Volume 2, 79 times in Volume 3, 254 times in Volume 4 and 111 times across the Annexes. This totals to 520.

[245] https://www.ofgem.gov.uk/consumers/household-gas-and-electricity-guide/how-switch-energy-supplier-and-shop-better-deal/prompting-engagement-energy-tariff-choices

have undertaken research which shows how consumers are not engaged in energy markets, which found that:

> *"Almost all domestic energy customers are aware they can switch tariff and depending on a customers' tariff choice and circumstances, they could save over £300 by switching tariff. Despite this just over 50% of customers are on expensive default energy tariffs. This is not because most of these customers are trying to change tariff and failing, they simply are not engaging in the first place- these customers are disengaged from their energy tariff choices."*

8.50 Given that the investment case for deploying full fibre rests critically on people actually using the services once available, from both a commercially and policy perspective, addressing demand-side barriers is essential.

8.51 The network operators and retail CPs have a key role to play in addressing demand-side issues, and we are working proactively with industry players (including BT, TTG, Hyperoptic, Vodafone) to implement improvements.

8.52 However, there remain significant demand-side obstacles to a take up of full fibre broadband that we believe represent a considerable risk to Government and Ofcom objectives to secure widespread fibre availability and take up.

8.53 There are a number of features of the broadband market that make it susceptible to harm from demand-side barriers. We discuss these below:

- **Broadband is an experience good** – it is difficult for consumers to know how much the service quality and reliability of their online connectivity until they have taken up the service. Furthermore, consumers are unlikely to wish to have two simultaneous broadband services so they can compare and contrast directly. As a result, consumers face a significant unknown when contemplating switching to a new service/provider, i.e. they don't really know whether their new service will be better or worse.

- **The difficulty in understanding the benefits of fibre broadband** - the characteristics that allow consumers to distinguish full fibre broadband from legacy copper-hybrid services can require an appreciation of technical terms that are difficult for consumers to understand. This makes it difficult in the abstract for consumers to understand that full fibre broadband is qualitatively different from the product they have already.[246]

- **Perceived risks of service interruption from switching** – in addition to consumers concerns about the quality of a new service, there is also the perception that the switching process will involve service down-time and delays (e.g. for engineer installation). If there is a perception that the process for changing supplier or product carries any kind of risk of disruption, then it is likely that a significant number of consumers will stick with the status quo (current supplier and product), even if they consider the alternative on offer would provide a better online experience.

[246] These issues are further exacerbated by the tendency, in markets that exhibit these features, for those firms providing an inferior service to advertise their product in ways that make it harder for consumers to compare. The market will fail to develop a simple consistent and standard description of products, making it near impossible for all but the savviest consumers to distinguish higher quality products from lower quality alternatives, or to understand how these different products may impact the quality of experience of using the service.

8.54 In addition to the above, the nature of broadband contracts, with their minimum subscription periods and penalties for changing supplier within those periods, introduces an additional friction to consumer switching.

8.55 These are obstacles that, taken together, mean that, as network providers risk capital to roll out full fibre networks, they will find that demand for services is significantly depressed relative to the level that would be observed without such demand-side barriers/frictions.

8.56 If demand-side obstacles continue to go unaddressed then, this will impact the investment case for full fibre networks, likely leading to much slower and less extensive commercial roll out.[247]

8.57 It is imperative therefore that Ofcom – in conjunction with Government – acts with urgency to address these demand-side obstacles. There is now significant effort being put in by Ofcom to remove supply-side obstacles to fibre build. But this is not being matched by a similar effort to remove demand-side obstacles.

8.58 In the remainder of this sub-section, we set out the areas where regulatory action is urgently needed to counter significant demand-side obstacles that are standing in the way of the UK achieving its full fibre ambitions. Specifically, we consider that there are two key demand-side barriers:

i. **Removing barriers to consumers' ability to assess and understand the benefits of full fibre broadband (including advertising practices that make it difficult for consumers to comprehend what is on offer):** Ensuring that consumers understand the benefits of full fibre, and are able to make informed choices, is critical to increasing the take up of full fibre to its full potential. A precondition to achieving this is to ensure that advertising practices do not create confusion, i.e. making it difficult for consumers to distinguish between services and technologies according to reliability and quality of experience. Ofcom should explore the possibility of using the General Conditions of Entitlement to mandate advertising practices that enable consumers to easily distinguish full fibre broadband from other offerings.

ii. **Making consumer switching easier:** This includes addressing barriers such as minimum contract periods and early termination charges which act to 'lock-in' consumers for extended periods. Furthermore, the industry is currently in dialogue to agree the process for fixed (phone and broadband) switching that will apply from 2021 onwards, to bring it in line with the Gaining Provider Led standard. The ambition is to ensure that consumer switching (especially across networks) is seamless and quick. Achieving this will ensure that consumers see there being minimal barriers to switching provider and thereby being able to easily migrate off legacy broadband services and onto full fibre. Ofcom is being presented with two options, one of which is likely to significantly increase propensity of consumers to switch. We believe that this option must prevail and be effectively implemented in order to ensure switching becomes easier.

8.59 In addition, and to complement the above measures, Government demand-stimulation (e.g. voucher schemes) could be used in order to support take up of services, including in advance of consumers catching on to its significant benefits.

8.60 We now discuss each of the above issues in turn.

[247] Unless public subsidies are provided.

Removing barriers to consumers' ability to assess and understand the benefits of full fibre broadband

8.61 There is a critical need to remove obstacles to consumers' ability to easily distinguish between different broadband products. Intervention needs to focus on enabling consumers to tell apart those offerings which bring the benefits of full fibre delivery from those that do not (but which are often advertised in a way that suggests to consumers that they do).

8.62 In this context, we note recent research by Which?, that shows how UK consumers are generally less engaged in the broadband market when compared to many other sectors of the economy. The study identifies a number of barriers to engagement with the broadband market, calling out that:[248]

> *"there is a common perception [among consumers] that broadband is a technical topic that is challenging to understand, impacting willingness to explore the market. This can manifest itself in consumers as 'not knowing where to start' when researching alternatives and a fear of making the 'wrong choice'."*

8.63 This lack of consumer engagement in the broadband market is of particular concern given the planned investments in full fibre, as Which? itself notes:[249]

> *"the barriers that consumers currently face when engaging in the broadband market is of particular interest given the future vision for the sector. Infrastructure providers are rapidly rolling out full fibre broadband connections and the Government's ambition is for nationwide coverage by 2033. However, a critical aspect of rolling out these connections is ensuring consumer adoption of them. This will require consumers to engage in the market. Ofcom itself has said that "competition will help ensure investment in new full fibre networks". Therefore, it is important to find solutions to address many of the engagement barriers that consumers face today."*

8.64 Ensuring consumers are engaged in the market is not a simple problem to solve, however we consider that Ofcom must act to prevent practices that make it difficult for consumers to distinguish between products which offer full fibre service, from those which do not, and to understand the benefits that these products will bring.

8.65 It is not surprising that consumers find this difficult, given the nature of broadband advertising and the incentive for those with lower quality offerings to use terminology in a way that makes it harder for consumers to understand the difference between available products. One reason for such confusion is likely to be the great number of different technical phrases and jargon used by the industry to describe services. It is unsurprising that, when faced with all of these terms, consumers are unable to effectively compare the costs and benefits of differing services. Examples of such technical jargon used to describe particular broadband services include:

- 'Fixed' broadband
- 'Standard' broadband
- 'Superfast' broadband

[248] Which? (2019) 'Consumer engagement with broadband'. 18th October 2019. Page 4 [Link]

[249] Which? (2019) 'Consumer engagement with broadband'. Pages 7 – 8.

- ‘Ultrafast’ broadband
- Very high capacity networks
- Copper broadband
- Fibre broadband
- FTTC/H/P/x
- Full fibre
- Gigabit capable
- Hybrid Fibre Coax (HFC)/Coaxial cable/Coax
- DOCSIS 3.0/3.1/4.0/4.1

8.66 We can see this sort of confusing language on popular broadband price comparison website broadbandchoices.co.uk, where it lists the various providers of ‘fibre broadband’, despite the noted speeds being almost all below 100Mbps. We see a wide array of wording including: ‘Superfast Fibre’, ‘Unlimited Fibre’, ‘Super Fibre’, and ‘Fibre Plus’. We show examples of this in Figure 8.1 (below).

Figure 8.1 Screenshot from broachbandchoices.co.uk regarding providers offering 'fibre broadband'

Which providers offer fibre broadband?

Most providers, including BT, Virgin Media, Plusnet, TalkTalk and EE, offer fibre optic broadband. So if you're interested in a superfast package, you've got a lot of providers to choose from.

You might want to consider the likes of.

Provider	Speeds*
BT Fibre	Average of **67Mbps** with **Superfast Fibre 2**
Virgin Media	Average of **362Mbps** with **M350**
Sky	Average of **59Mbps** with **Superfast**
TalkTalk	Average of **67Mbps** with Superfast Fibre
Plusnet	Average of **66Mbps** with **Unlimited Fibre Extra**
EE	Average of **67Mbps** with **Fibre Plus Broadband**
SSE Broadband	Average of **63Mbps** with **Unlimited Fibre Plus**
Post Office Broadband	Average of **67Mbps** with **Fibre Broadband Plus**
John Lewis	Average of **66Mbps** with **Fibre Extra**
Vodafone Broadband	Average of **63Mbps** with **Superfast 2**
Gigaclear	Average of **300Mbps** with **Ultrafast 300**
Now Broadband	Average of **63Mbps** with **Super Fibre**
Onestream	Average of **76Mbps** with **Xstream Superfibre Unlimited**
Shell Energy	Average of **63Mbps** with **Superfast Fibre Plus**

Source: Screenshot from broadbandchoices.co.uk, captured on 10 May 2020[250]

8.67 This is in addition to the technical terms that describe differences in performance of networks and services, such as upload speed, download speed, (both measured in Mbps or Gbps), download allowance (measured in gigabytes, GB), latency, jitter, ping and packet loss. There is also complexity (for those not taking full fibre) of variations in service according to geographic location, network load and weather conditions, in addition to differences in the reliability and resilience of the service.

8.68 Furthermore, even with identical service characteristics, consumers could have completely different user experiences due to, for example; internal home wiring and internal Wi-Fi

[250] https://www.broadbandchoices.co.uk/broadband/fibre-optic

propagation characteristics, location of Wi-Fi router, thickness of walls, selected Wi-Fi channel, and selected frequency (e.g. 2.4Ghz or 5Ghz band).

8.69 We believe that a new system is needed to cut through all this complexity and the conflicting incentives of different network owners and communications providers. For example, mandating the use of a small number of simple standard terms to describe different broadband technologies and services when advertising them.

8.70 On way to provide such clarity would be to adopt a traffic-light system such as has been implemented in Italy. Since 2018, the Italian regulator AGCOM has required a mandatory traffic light labelling system for advertising broadband products. For fixed networks, ADSL offers are marked in red, FTTC offers are marked in yellow and FTTP offers are marked in green. Only FTTP services are allowed to be advertised as fibra/fibre. The traffic light system used is show in Figure 8.2 (below):

Figure 8.2 Traffic light system for advertising broadband in Italy

Source: Agcom (2018): Allegato C alla delibera n. 292/18/CONS [Link]

8.71 Similarly, the French Government has adopted a decree to limit the circumstances in which "fibre" may be used in advertising to FTTP (including fibre for the in-building wiring) and required the indication of upload speeds in addition to download speeds.

8.72 We believe that Ofcom cannot rely solely on industry working voluntarily and in collaboration to develop and introduce a new scheme. This is because there will not be consensus of purpose given that the interests of different players will not be aligned. Some (those investing in new networks) will want to make it easier for consumers to distinguish broadband products according to quality while others (those relying on legacy products) will want precisely the opposite. Ofcom leadership and, most likely, mandatory action, will be required.

8.73 While leadership and regulatory design in this area sit with Ofcom, we recognise of course that there may be a role for the Advertising Standards Authority, as expert in the advertising industry and primary enforcer of advertising standards. There is also a role for Government, setting the strategic direction for Ofcom as it has already done in its Statement of Strategic Priorities:

> *"In the context of the strategic objective to secure the roll-out of full fibre broadband, Government would ask Ofcom to consider whether the information available to consumers about the characteristics of different types of broadband services, and in particular full fibre broadband, is helping consumers make informed choices."*

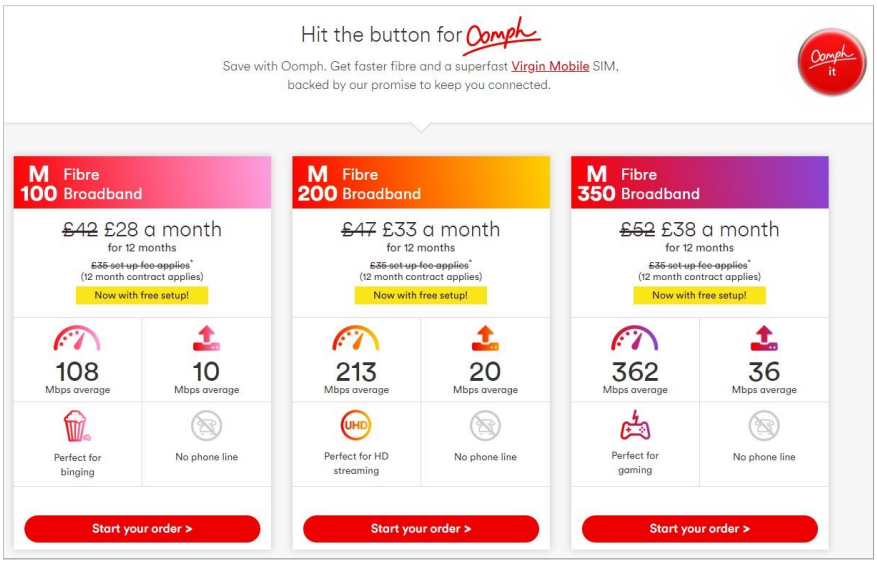
8.74 While we consider that Ofcom should primarily consider action using its own powers under the General Conditions of Entitlement, we recognise that there could also be an additional role for Government, in a last resort, to legislate to secure simple, honest and comparable advertising of broadband services in a way that allows consumers to distinguish full fibre service from legacy copper-hybrid alternatives.

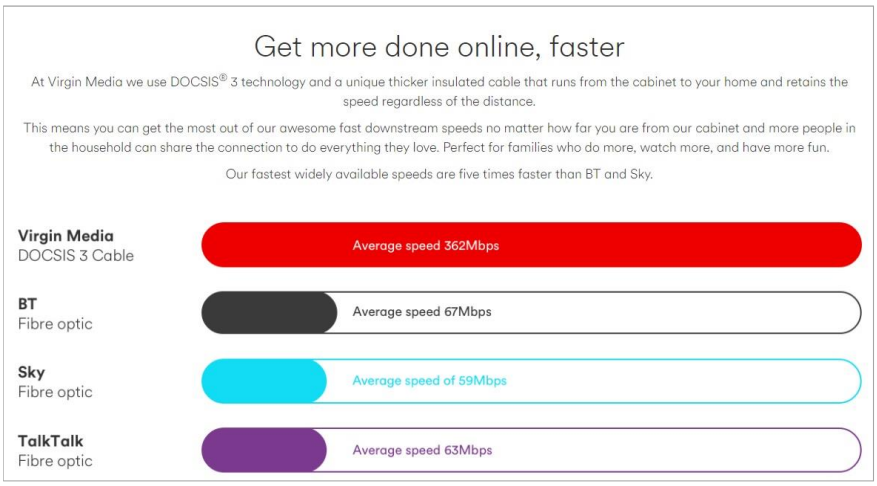
8.75 We finally wish to flag that the recent announcement of a transaction between O2 and Virgin Media redoubles the importance of early action to clarify the rules around fibre advertising. The parties to that transaction have made clear that they see the transaction as paving the way for further aggressive marketing of services across the HFC network. This will intensify the prevalence of advertising part-copper services as 'fibre broadband'.[251]

8.76 We show in Figure 8.3 (below) examples of Virgin Media's current advertising and their use of 'fibre' to advertise their products. In the second case we can see they indicate that their product is significant faster than 'Fibre optic' which is likely to significantly confuse and mislead customers given that 'fibre optic' more accurately describes full fibre technology.

[251] Whereas other market participants will have some incentive to make a clear distinction between part-copper and full fibre services as their inventory of the latter increases, this will not be the case for VM/O2, and hence there will be continued misalignment of industry incentives and the broader public interest in allowing consumers to navigate between the different technology choices available to them.

Figure 8.3 Examples of Virgin Media advertising 'fibre' broadband





Source: https://www.virginmedia.com/shop/broadband, captured on 10 May 2020

Making switching easier

8.77 Ensuring that consumers are able to quickly and easily switch provider is critical for an effectively competitive market. We consider that there are two critical levers to supporting this initiative. The first relates to minimum contract periods and early termination charges, the second relates to the actual switching process. We discuss both below.

Minimum contract periods and early termination charges

8.78 Minimum contract periods and early termination charges act to 'lock-in' consumers for extended periods, and act as a direct and material barrier to switching. Ofcom consulted on this in its recent consultation on 'Fair treatment and easier switching for broadband and mobile customers: Proposals to implement the new European Electronic Communications Code'.

8.79 While Ofcom did consider in that consultation the appropriate regulation regarding minimum contract periods and early termination charges, Ofcom did not appear to consider the extent to which the current practice – of forcing fixed broadband consumers onto 18- or 24-month contracts with very high charges for early termination – is itself a significant disincentive to switching providers.

8.80 We consider that minimum contract periods with high charges for early termination place a significant burden on consumers' freedom to change provider. This is particularly damaging in the context of roll out objectives for new full fibre networks, where take up is inhibited if a significant proportion of the customer base is unable to take the service due to this artificial contractual restriction. Ofcom should not assume, therefore, that the practice of imposing minimum contract periods with high termination charges is an "acceptable" restriction of trade.

8.81 When a new fibre rollout is in progress, incumbent operators are aware of the imminent arrival of competition and have a commercial incentive to sign up their existing customer base to a further contract term. This is a perfectly natural pattern of behaviour which the current system of 18- and 24-month contracts facilitates, and which incumbents can and do use to reduce the impact of new entrants on their business.

8.82 Ofcom should challenge broadband providers to explain why this practice is not a "condition and procedure for contract termination" that "act[s] as a disincentive to switch". Absent a convincing explanation of the consumer benefit (which of course differs from the case in mobile markets, where the consumer is benefiting from a subsidised handset), it is our view that the practice of minimum contract periods with high early termination charges may actually be inconsistent with Article 105(1).

Consumer switching process

8.83 With regard to the process that consumers use to switch retail providers, we note the findings of the Which? report regarding the negative perceptions of the existing switching process and belief in risk of service loss:[252]

> *"Participants also reported being concerned about losing service as a result of switching broadband either as part of the switching process, or by mistake during this process.*
>
> *Some weren't familiar with the idea of switching being 'provider-led', and that this could avoid a service gap. When told about this, not all were confident that when switching to and from providers, they or their providers would successfully ensure that there was no gap in service. Some commented that the amount of downtime on the day itself could potentially be large.*
>
> *Other concerns were mentioned about the switching process. Having to arrange a time for an engineer to visit and having to be at home for a longer window of time than was actually required for an engineer to complete the work were both seen as an inconvenience. When told about the option to self-install certain kinds of broadband, some questioned their own abilities to do this successfully. It's worth noting that those in the research sample who had self-installed broadband before had had mixed success at doing this."*

[252] Which? (2019) 'Consumer Engagement in Broadband'. Page 42 [Link]

8.84 In fact, Ofcom's own switching tracker shows that consumer switching is low in the broadband sector, and that this low level of switching has persisted for many years. For example, Ofcom's 2019 Core Switching Tracker[253] survey showed that only 7% of respondents had switched their fixed broadband service in the previous 12 months.[254] This same level of switching (i.e. 7%) was also observed in the 2018 Core Switching Tracker.[255] If only 7% of consumers switch per year, then migrating all consumers to full fibre (and off legacy services) will take over 14 years.

8.85 The Government called out in its FTIR the critical role for Ofcom is supporting switching (including across platforms):[256]

> *"Ofcom will continue to have a role in ensuring that switching processes are easy and reliable for consumers. This should include, in future, where customers switch between ISPs on different fibre networks (what is termed 'cross-platform' switching)."*

8.86 Ofcom is currently considering the implementation of a new process for switching fixed broadband customers. The key driver behind this is the EECC, which sets out the requirement of ensuring that switching communications services adheres to the "Gaining Provider Led" (GPL) standard. In short, GPL means that the switching process must be driven by the gaining CP, and not the losing CP.

8.87 Ofcom has been taking this work forward through its recent consultation on 'Fair treatment and easier switching for broadband and mobile customers: Proposals to implement the new European Electronic Communications Code'.[257] The EECC includes the requirement that GPL is implemented for both intra-network switches (i.e. between CPs on a single network, such as a customer moving from Sky to TalkTalk on the Openreach network) as well as inter-network (i.e. between CPs on different infrastructure networks, such as a customer moving from Virgin Media to Vodafone/CityFibre).

8.88 The shift to extending GPL to cross-network switches is crucial to encouraging competition between networks. This, in turn, is needed to drive speedy investment in full fibre roll out and to increase take up.

8.89 Whilst Ofcom acknowledges the importance of GPL to network competition in its consultation on 'Fair treatment and easier switching', we are concerned with some of the switching proposals it is considering as candidates for securing compliance with the EECC that all switches be GPL.

8.90 Our concern is that (contrary to the objective of the EECC) some of the industry proposals being considered by Ofcom is not GPL and do not remove barriers to network competition and full fibre deployment.

8.91 We have been engaging in extensive industry discussions, facilitated by The Office of the Telecommunications Adjudicator (OTA), since mid-2019 to discuss/agree what potential

[253] Ofcom (2019) 'Ofcom Core Switching Tracker 2019. 17th July to 21st August 2019.' [Link]

[254] Ofcom (2019) 'Ofcom Core Switching Tracker 2019. 17th July to 21st August 2019.' See page 12, which shows that 111 out of 1500 respondents stated that they had not switched their fixed broadband in the previous 12 months.

[255] Ofcom (2019) 'Ofcom Core Switching Tracker 2019. 17th July to 21st August 2019.' See page 9 which shows that 110 out of 1500 respondents stated that they had not switched their fixed broadband in the previous 12 months.

[256] DCMS (2018) FTIR. Page 48. Paragraph 150.

[257] Ofcom (2019) 'Fair treatment and easier switching for broadband and mobile customers: Proposals to implement the new European Electronic Communications Code'. 17th December 2019. [Link]

switching options could be practicable for industry. We acknowledge that Ofcom is not consulting as part of the WFTMR on the options being discussed within industry, but we nevertheless wish to use this response to address some of the high-level issues we have. We do this in recognition that demand-side obstacles present challenges to the UK's full fibre ambitions in the same way as the supply-side obstacles being addressed through the WFTMR.

8.92 Following many months of industry discussions, there are currently two proposed fixed switching options being considered. One option involves the consumer having to request a code from their existing retail provider. We strongly believe that this approach is not GPL, and therefore should not be considered by Ofcom. On the basis of this, we fully support the other (no-code) proposed switching process. In the table below we briefly summarise the two options.

Table 8.1 Key features of the two possible broadband switching processes being proposed by industry to Ofcom

Code-based switch	No-code required
The code-based switch process requires the customer to contact their current retail provider – the Losing Retailer (LR) - and request a switch code which they would give back to the gaining retailer (GR) to authenticate the switch. The process is long-winded and requires API developments across the whole value chain. The LR pings their wholesaler who then pings their network provider (if any) who identifies the asset in question and requests a Switch Code from a HUB for the asset and relays this back the same chain to the End Customer.	This option switches the order of things and puts the onus on the retailer to raise a switch request. In this scenario the end customer requests a switch from the GR and provides mandatory information in designated field boxes which include: • Customer Name • Current Retailer • Service requiring switch • Address information. The GR pings a HUB which sits at the retail level with the other parts of the value chain only getting involved in delivery.

8.93 We do not consider that the code-based solution would promote effective switching, not least because it would introduce an extra level of administrative burden on consumers. Behavioural economics studies show that even small hurdles for consumers can have very large impacts on actions.

8.94 As such, we consider there to be a significant risk of the end-user being reluctant to apply for a switch code or choose not to switch because the process is too difficult or time consuming, with the complexity tending to arise where services are split by different providers.

8.95 For the reasons outlined above, we urge Ofcom to disregard any proposed switching options which will likely lead to a reduction in the propensity to switch, especially given the low levels of switching currently taking place in the fixed telecoms sector. Failure to do so may put the UK's full fibre ambitions in jeopardy.

Government-sponsored full fibre broadband demand stimulation

8.96 The demand-side measures we discuss above co-exist with a range of possible measures that the Government could put in place to stimulate demand for full fibre. This includes the

use of voucher schemes as well as more general demand stimulation activities, such as information campaigns and supporting digital activities overall.

8.97 We consider that the Government has an important role to play in supporting demand stimulation, and the activities of Ofcom. However, we do flag that Government measures complement, but do not supplant, the need for Ofcom to stimulate mass market fibre broadband demand through the measures we have outlined above.

8.98 Ofcom should, however, ensure that further Government interventions (such as the proposed 'Outside In' programme to connect uneconomic households to full fibre) dovetail with Ofcom's own proposed interventions.

8.4 Anti-competitive risks from the copper switch-over

8.99 In the FTIR, the UK Government set out the critical role the copper switch-over will play in ensuring there is sufficient demand for fibre services. The Government also identified a number of policy conditions that must support the switch-over:[258]

> *"As full fibre networks are rolled out, maximising the number of people using them will secure the full benefits of the technology. This will involve customers moving onto new fibre networks and retiring the legacy copper networks. […] A fibre switchover strategy is necessary to stimulate demand for fibre, to enable new networks to achieve scale quicker, and to ensure a smooth transition process for customers. This should be led by industry, working closely with Ofcom and Government.*
>
> *The Government will set up a mechanism with Ofcom and industry for planning the switchover process. Switchover should meet a number of policy conditions:*
>
> - *Plans support a timely switchover;*
> - *Efficient, so that switchover is smooth with minimal consumer disruption;*
> - *Transparent, so that customers have the information they need to make informed choices and clearly signalled via notice periods so operators have certainty;*
> - *Consistent, with existing regulatory and consumer obligations;*
> - *Pro-competitive, so processes are in place to support easy switching between networks; and*
> - *A fair deal for consumers, including adequate safeguards for vulnerable customers"*

8.100 The above makes clear that the Government sees the copper switch-over as a critical component of supporting the fibre investment case, in terms of demand stimulation. Furthermore, the Government calls out the need to ensure that the switch-over is 'pro-competitive'. On this point, the Government clarified in the FTIR that *"Ofcom will have an*

[258] DCMS (2018) FTIR. Pages 8 - 9

important oversight role in ensuring industry readiness for switchover. It will need to protect the interests of consumers and guard against any anti-competitive behaviour."[259]

8.101 We fully accept that the copper switch-over can help migrate customer onto fibre networks, and thereby can support the objective of promoting investment in fibre services, once they are available. As such, we agree that the copper switch-over is a critical component for achieving the overarching objective of supporting investment in fibre networks.

8.102 Given this, we are surprised that there is no consideration in the WFTMR Consultation for how the switch-over should work in parts of the UK where Openreach have not deployed fibre. To the extent Ofcom wishes to promote migration to fibre services across the UK, we would expect Ofcom to consider how the copper switch-over will support demand stimulation in areas where an alternative network (and not Openreach) has deployed fibre.

8.103 Under this scenario, it would seem plausible that BT Retail would wish to purchase wholesale services from whichever network has deployed fibre in that area (and therefore move away from its current sole reliance on Openreach for network services). In this case it would seem entirely appropriate to engage in a copper switch-over process akin to that in Openreach fibre build areas.

8.104 In addition to the above point, we consider that the copper switch-over raises a significant risk of anti-competitive effects, which could have very detrimental impacts on competition in the market.

8.105 This anti-competitive concern arise because Openreach has today a very dominant position in the market for broadband services; 70-80% of UK broadband customers are today on the Openreach network.[260] [261] Given this, the switch-over could allow Openreach to simply leverage its existing customer base, and further entrench its dominant position.

8.106 The manifestation of the concern would be to distort market incentives for fibre investment, in a way that would favour Openreach over other operators. This is based on the following logic.

- The investment case for deploying fibre networks (by any operator) critically relies on there being sufficient consumer demand for those (fibre) services.
- The vast majority (70-80%) of UK broadband customers are today on the Openreach network (most of these take copper-based services).
- The copper switch-over (as currently proposed by Openreach) would allow Openreach to eliminate take-up risk in respect of its fibre network. In sharp contrast, the take-up risk for alternative networks remains very significant.
- This significant divergence in take-up risk between Openreach and entrant network operators significantly distorts fibre investment incentives, in favour of Openreach.

[259] DCMS (2018) FTIR. Page 9

[260] Ofcom stated in its 2018 WLAMR Statement [Link, Paragraph 4.27], that Openreach 'has a very high share of the WLA market in the UK excluding the Hull Area, currently around 80%'. Ofcom went on to state that they expect this very high market share to prevail going forward: "[w]e forecast that BT's market share will remain high at around 80% by 2020/21". This is consistent with Ofcom's findings in the WFTMR Consultation in which Ofcom sets out that Openreach currently have around a 79% market share in the WLA market. (Ofcom sets out in Volume 2, Table 8.2 of the WFTMR Consultation that, Openreach have c.70% share of Area 2 (comprising 21.3 million premises) and c.100% share in Area 3 (comprising 9.2 million premises). This gives: 21.3 * 70% + 9.2 * 100% = 24.1 million premises, which is 79% of the assumed 30.5 million premises)

[261] Ofcom (2020) WFTMR Consultation. Volume 2. Page 123. Paragraph 8.97

- If this occurs, Openreach's market dominance will be further entrenched and the scope for a competitive market will be destroyed.

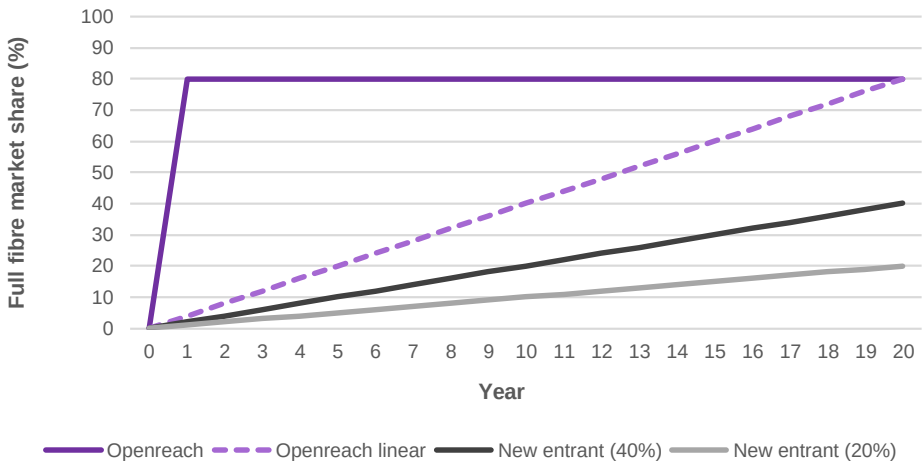
8.107 In short, the copper switch-over provides an enormous incumbency advantage to Openreach which would, relative to other operators, reduce their risk of fibre deployment given that it is effectively able to eliminate all take-up risk on its full fibre network by leveraging its existing overall broadband market dominance.

8.108 We can show the situation visually using the same methodology we set out in Box 1. We show in the below figure, a comparison of the market shares for full fibre customers. The scenario assumes that Openreach migrates is existing broadband customer base onto its fibre network in year 1. In that same year a rival (fibre) operator begins acquiring market share. For simplicity, we only model these two operators, and assume that the outstanding market share is owned by other operators.

8.109 We assume that each year the rival grows its market share by 1%, entirely at the expense of Openreach. This is likely to be an overly optimistic assumption in that a) the rival may not acquire 20% share (given Openreach have maintained a high market share for many years) and b) the rival may in fact acquire share from non-Openreach operators, enabling Openreach to maintain its high share.

8.110 We present this scenario visually below:

Figure 8.4 Stylized example of forecasted full fibre market shares



Source: CityFibre analysis

8.111 As set out in Box 1 (page 148), the impact on investment returns is highly sensitive to changes in demand. As such, Openreach's ability to migrate its entire customer base onto its fibre network from year 1, as opposed to having to acquire those customers incrementally, would result is a very substantial increase in, we can use the investment framework set out in Box 1 to compute the expected return on investment (IRR), keeping all assumptions equal other than the assumed market shares (as set out in the above figure).

8.112 On the basis of this scenario we see a very significant divergence in expected IRR. For the rival, who starts with zero market share and grows its share at 1% each year, the expected IRR is

8.113 Ofcom does not appear to recognise this competition concern in the WFTMR. To the extent Ofcom is worried about the impact of the copper switch over on competition, Ofcom appears to be more focussed on the risk that Openreach strategically deploys its fibre networks in such a way as to deter rivals:[262]

> *"Our concern is that Openreach may have the incentive to deploy fibre in a way that deters competitor investment: by either targeting just those parts of an exchange area where competitors are present, or by deploying ultrafast in part of an area just sufficient to deter competitor investment in that area in the short term and then redeploying resources to provide coverage elsewhere. This could cumulatively deter competitor investment across a wider area. If this were to result in less network competition, Openreach would then have less incentive to return and complete ultrafast coverage in an area."*

8.114 However, this concern is not about the copper switch-over, but instead about where Openreach deploy their fibre network. We set out our views in respect of this proposal as part of our response on non-pricing remedies proposals in Section 5.

8.115 On the basis of the anti-competitive risk we have outlined above (i.e. Openreach leveraging its existing broadband market dominance to improve its investment case for fibre, relative to rivals) we recognise that addressing this concern through the copper switch-over process is not simple.

8.116 However, we consider that there are two broad actions that Ofcom can take that, which while seemingly unrelated to the copper switch-over, will address the concerns of anti-competitive effects from the copper switch-over. These two actions are:

- **Ensuring Openreach is unable to lock in ISP customers through wholesale agreements:** The risk that Openreach will leverage its existing market dominance is reduced significantly if regulation is in place to ensure that Openreach cannot use wholesale pricing to lock in ISPs (e.g. through promotions and loyalty inducement mechanisms). This is a critical issue as if Openreach is in fact able to lock in ISPs then this directly deters alternative network rollout. This issue is being considered by Ofcom as part of its proposals in Annex 15 of the WFTMR. We consider Ofcom's proposals are broadly the right one but, in some places, do not go far enough. We set out our detailed views on these proposals in Section 7 of this document.
- **Promoting consumer engagement and making switching quicker and easier**: Openreach's existing high market is less of a concern if consumers considering taking fibre services are engaged and able to switch provider quickly and easily. This would mean that alternative operators are more easily able to compete for these customers and therefore the divergence in take-up risk between Openreach and alternative operators would decrease.

8.117 The second point we have already discussed previously in Section A1.3 where we set out the specific actions that Ofcom can take to address demand-side barriers, which will have positive implications for investment and competition in fibre networks.

[262] Ofcom (2020) WFTMR Consultation. Volume 3. Page 16. Paragraph 2.6

Annex 1 Evidence on the impact of Ofcom's strategic shift to promoting investment in fibre networks

A1.1 To complement many of the comments we make in the main body of our response we wish to set out below, evidence showing why Ofcom's pro-investment strategy is in fact leading to greater levels of competitive investment and will ensure the market continues to do so.

A1.1 Impact of regulated prices on CityFibre's network build activity

A1.2 In order for us to be able to compete effectively against BT, we cannot over rely on offering a superior product. This is because BT's long-standing market dominance, and significant brand mean that consumers are unwilling to switch away from BT unless they believe they will both save money and benefit from an improved service in doing so. This statement is supported by independent market research, as presented for example in the 2018 GOS Consulting study[263] which looked at the purchasing behaviour of customers in the business connectivity market.

A1.3 The GOS Survey showed that on average, a new entrant has to offer a discount of at least 20% for an enterprise customer to consider switching away from an incumbent such as BT with respect to leased line products.[264] Given this, the way in which BT's prices move over time is of crucial concern to us.

A1.4 When considering our investment case for full fibre network deployment, we need to make a future-looking assessment as to whether we will be able to earn an adequate return. If BT's prices – and in turn, our prices – are continually driven down according to the costs of BT's larger-scale business, the ability of a challenger such as ours to build a competitive network is severely limited.

A1.5 This is because falling prices mean higher execution risk, which makes network investment significantly harder. To put it another way, we cannot extend our network and challenge BT in the longer term unless, over the short to medium term, we can have some confidence that a particular build will be viable. This in turn requires a degree of predictability as to the prices we will be able to charge.

A1.6 In our view, one of the main reasons why there has historically been little build by BT's competitors, is because end prices during network investment phases have been too low to justify investment. For us, falling prices magnify the challenge for our business model because if the investment case does not make sense in one fixed market then we cannot bring the benefits of competition to adjacent consumer markets that we would otherwise seek.

A1.7 All of these factors mean that 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.

[263] GOS Consulting (2018) 'Telecommunications Buyer Behaviour Survey'. August 2018. [A copy can be provided upon request],

[264] Furthermore, these market-wide survey results are borne out in reality by our own data. For instance, across all of our current wholesale broadband contracts for a 1Gbps symmetric FTTP connection, as of 16th June 2020 the average rental price paid per month by our customers is [✂]. This is significantly lower than Openreach's non-symmetric 1Gbps product (non-symmetric as it offers a 115Mbps upload speed) which carries an annual rental charge of £375.36, equivalent to £31.28 per month. In other words, [✂].

Over time, as infrastructure competition emerges, this will itself to lead to downward pressure on prices through the normal competitive process.

A1.2 Long-term market conditions (including regulatory policy) affect our ability and incentive to invest

A1.8 Aside from the relatively obvious link between the ability to charge higher prices and the ability to roll out network infrastructure more quickly, it is also important to understand how significantly our competitive decision-making is influenced by Ofcom's approach to the regulation of BT's prices.

A1.9 Investments in large capital infrastructure such as full fibre telecommunications networks need to be planned and financed across a number of years. However, fundamentally the process of network investment can be thought of in two phases. Firstly, there is a build phase in which assets are deployed and the functional network is rolled out. Secondly, there is a recovery of build costs by selling network services (e.g. to business and residential customers), to pay off the upfront (usually sunk) capital for that investment.

A1.10 In respect of the first phase, from 2014 we commenced a process of rolling out fibre ring networks and connectivity to business connectivity markets customers. We then announced in 2018 our plan to expand these networks also to provide FTTP coverage in a second and more expensive capital deployment phase. We intend to complete this second wave FTTP build programme across more than 60 towns and cities, covering 5 million premises by 2025 [✂].

A1.11 [✂]

A1.12 Drawing the above together, our programme of investment, from the initial deployment of fibre ring networks in 2014 to the eventual completion of our deployment and delivering reasonable pay back, is anticipated to take at least [✂] years.

A1.13 The above does not account for the recently announced acquisition of FibreNation and wholesale agreement with TalkTalk, on the back of which we have increased our ambition to up to 8 million premises. This will further lengthen the overall investment programme.[265]

A1.14 All this means that we, like any investor in telecommunications infrastructure, must take a long-term perspective in considering whether market conditions are conducive to investment.

A1.15 In general, the regulatory system for telecoms has historically not provided for long-term regulatory commitments of the kind that are applicable in some other regulated sectors that give investors multi-year certainty on the future regulatory treatment of their investments. Given this, both the CityFibre management team and our owners have historically place considerable weight on the broad 'direction of travel' in Ofcom's regulation. By 'direction of travel' we mean the priorities, strategic goals and intended route to those goals that inform all of Ofcom's market reviews not only over time but across the various relevant telecommunications markets (e.g. WLA, leased lines, PIA).

A1.16 Our perspective is that in 2016 Ofcom made a radical change to its long-term regulatory policy, to proactively support infrastructure-based competition in the fixed telecommunications market and to create the necessary conditions for positive returns on

[265] We also note that we anticipate the lifetime of the assets we install to exceed 40 years in total.

investment in full fibre networks. Since Ofcom's Strategic Review of Digital Communications in 2016, each public statement from Ofcom has subsequently reinforced this message.

A1.17 Although we appreciate that Ofcom cannot fetter its future discretion, it appears very clear to us (not least having seen Ofcom's proposals in the January 2020 WFTMR Consultation) that Ofcom's new pro-investment regulatory strategy will continue at least through the 2021-2026 market review period. This would mean that there has been at least a ten-year period (2016-2026) during which Ofcom would have expressed a consistent message that it intends to pursue a regulatory policy of promoting investment.

A1.18 Furthermore, given the wider ambitions of the UK Government to achieve full fibre coverage by 2033 (with a clear desire to reach this sooner) and the Government's clear identification of the need for pro-investment regulation to achieve that target, we anticipate that Ofcom's pro-investment regulatory approach is likely to continue beyond the 2021 – 2026 market review period, and at least until the 2033 target date. If implemented, this would represent a 17-year span (2016 – 2033) of consistent regulatory policy priorities. This sort of duration is (as noted above) broadly comparable with the durations involved in achieving payback on full fibre networks.

A1.19 We wish to also highlight that, [✂].

A1.3 Ofcom's signals on its regulatory policy to promote investment have encouraged our investment decisions for several years

A1.20 In our view, Ofcom has been signalling clearly since at least 2015 that it intends to move away from cost-based price regulation of the incumbent to a new model that allows scope for rival investment. As we explain in this section, we have observed those signals and have prepared and reacted accordingly, which we believe other operators will also have done.

A1.21 As early as July 2015, Ofcom published a discussion document on the Strategic Review of Digital Communications which discussed regulatory policies to promote investment. Ofcom specifically stated that its strategy "must provide the right incentives for private sector investment and innovation".

A1.22 In the same year, we took the decision to acquire the network infrastructure assets of KCOM. In a December 2015 document published to support the debt raising for that transaction, we recognised the nascent shift to a more favourable regulatory environment, stating that: [✂].

A1.23 The discussion documents were followed in February 2016 by Ofcom's Initial Conclusions from the Strategic Review of Digital Communications. In the Initial Conclusions Ofcom explained its "*strategic shift to encourage large-scale deployment of new ultrafast networks, including fibre direct to homes and businesses*".[266]

A1.24 This theme of encouragement continued into the following year in Ofcom's Consultation on PIA Remedies of April 2017 in which it stated that "*regulated pricing for wholesale superfast and ultrafast broadband services should ensure the incentives are there for operators to build new networks rather than relying overly on buying access from BT*".[267]

[266] Ofcom (2016) 'Initial conclusions from the Strategic Review of Digital Communications.' 25th February 2016. Page 3. [Link].

[267] Ofcom (2017) 'Wholesale Local Access Market Review: Consultation on Duct and Pole Access remedies.' 20th April 2017. Page 2. Paragraph 1.5. [Link].

A1.25 Shortly after this (in July 2017) Ofcom published its WLAMR Consultation, noting that one of the key elements to encourage new network build was giving "*both BT and its competitors incentives to invest in new networks*" and that "*given the potential for significant consumer benefits, we want to incentivise operators to build new networks rather than rely on buying access from BT*." [268]

A1.26 Taking note of Ofcom's clear signalling, in a Capital Raising Prospectus for a 2017 equity fundraising, we made a number of statements which indicated that we considered the UK regulatory environment to be supportive of investment:[269]

> *"The Directors believe that the current policy and regulatory environment in the UK is supportive of full fibre investment and an increased level of infrastructure alternatives to Openreach. The Company is well positioned to expand its operations to more towns and cities as well as deepen the supply of connectivity services in its existing footprint." [page 65]*
>
> *"In February 2016 the communications regulator, Ofcom, published its Digital Communications Review, outlining its strategy to promote investment in new fibre infrastructure whilst reducing the industry's dependence on Openreach…The Directors believe the changes to regulation to promote fibre infrastructure competition, supported by recent government policies and funding to stimulate further investment in new full fibre infrastructure, provide a positive backdrop for CityFibre to expand its operations to address the supply of fibre infrastructure to service the growing demand for high speed fibre connectivity from its Channel Partners." [page 69]*
>
> *"The Group operates within a UK market that the Directors believe is widely regarded as having an advanced and sophisticated regulatory and policy environment for telecommunications and broadband. A recent focus of government and regulatory policy has been to accelerate both the capability and the speed of construction of full fibre networks by promoting effective competition, accompanied by targeted public intervention." "Ofcom's strategy, as set out in its Digital Communications Review (DCR) of 2016, is to transition the market from dependence on the legacy network of Openreach towards a 'full fibre' future spearheaded by competitive FTTP investment." [Page 79]*

A1.27 In the final DCMS Future Telecoms Infrastructure Review ("FTIR"), published on 23 July 2018, the UK Government stated:

> *"A telecoms market that promotes competition between rival networks where possible is best placed to deliver the Government's objectives of extending full fibre coverage across the country as rapidly as possible" and that "It is the Government's view that promoting investment should be prioritised over interventions to further reduce retail prices in the near term, recognising these longer-term benefits." [270]*

A1.28 Ofcom published a connected Strategic Policy Position the following day entitled 'Regulatory certainty to support investment in full fibre broadband – Ofcom's approach to future

[268] Ofcom (2017) 'Wholesale Local Access Market Review: Consultation on the proposed market, market power determinations and remedies.' 31st March 2017. Volume 1. Page 2. Paragraph 1.5. [Link].

[269] CityFibre (2017) 'Capital Raising Prospectus 2017' [Link]

[270] DCMS (2018) FTIR. Page 7.

regulation. In that paper, Ofcom announced that it would consolidate its market assessments into a single holistic review:

> *"[I]nvestors in full-fibre networks are increasingly looking to offer a range of services over a more common underlying fibre infrastructure…Since the same underlying fibre network will increasingly be used to deliver a range of different services for business and residential customers, it no longer makes sense to consider residential and business access markets separately."*[271]

A1.29 Our decision to invest £2.5bn to reach 5 million homes was taken in the light of, and prompted in part by, the July 2018 FTIR and Ofcom's Strategic Policy Position. [✂].

A1.30 [✂]

A1.31 In the last year Ofcom has continued to implement its strategy, including in the 2018 BCMR Consultation as well as giving a clear signal about future regulation:

> *"By 2021, we intend to implement a consolidated review of residential and business telecoms markets and physical infrastructure. Before then, we are taking certain steps to both facilitate our new consolidated review and to implement certain key elements of our strategy more quickly […] Given the regulation in business markets will expire in March 2019, we need to refresh it before we carry out a single market review for business and residential markets holistically in 2021. This is a short review as we transition to our longer-term model for regulation, but we have included elements to ensure consistency with our longer-term direction.*[272]*"*

A1.32 In addition, Ofcom's March 2019 Consultation on its approach to remedies (entitled, "Promoting competition and investment in fibre networks: Initial proposals – Approach to remedies") set out its intention to focus regulation for the 2021-2026 period on promoting competition and investment in fibre networks.[273]

A1.33 Finally, Ofcom's most recent publication, its January 2020 WFTMR Consultation continues to reiterate Ofcom's focus on encouraging competition and investment in fibre, and indeed propose remedies (e.g. moving away from cost-based price regulation in Area 2) in order to support the achievement of this overarching strategic objective. [274]

A1.34 Given the considerable strategic momentum that Ofcom's statements have achieved, we are confident to proceed with our ambitions to deploy fibre networks covering up to 8 million homes.

A1.35 This growing ambition is heavily dependent on our assumption that Ofcom continue its direction of travel, including ensuring the right investment environment, e.g. through allowing sufficient pricing headroom as well as acting swiftly to address any anti-competitive conduct by Openreach.

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[271] Ofcom (2018) 'Regulatory certainty to support investment in full-fibre broadband.' 24th July 2018. Pages 6-7. Paragraph 1.9 [Link].

[272] Ofcom (2018) BCMR: Consultation. 2nd November 2018. Volume 1. Page 4, Paragraph 1.4. [Link].

[273] Ofcom (2019) 'Promoting competition and investment in fibre networks – Initial proposals – Approach to remedies'. 29th March 2019. [Link].

[274] CityFibre (2019) 'CityFibre's response to Ofcom's approach to remedies consultation.' Non-confidential Version. Paragraph 1.1.10. [Link].

A1.36 In summary, in the period where Ofcom has sought to create the right investment incentives for new fibre construction, the economic conditions and investor confidence that has been generated by Ofcom's approach has allowed us to make significant new network investments. This regulatory environment must continue if further investment is to be made.

Annex 2 Examples of the lack of progress in recent years on specific PIA issues

A2.1 In this section, we set out examples of the clear lack of progress that has been made by Openreach over the past few years in regard to addressing the outstanding issues with the PIA product.

A2.2 We set out below five specific examples of PIA product issues and the current status as well as recent developments. This shows how despite great efforts from industry to suggest product improvements, these issues still exist today.

A2.3 In this section we cover five specific examples of PIA issues:

- PIA pole testing
- Wayleaves
- Systems development
- Systems SLAs/SLGs
- Pole Top Capacity for Customer Drop and TBC's

A2.1 PIA Pole Testing

Date issue was first raised: January 2019

Date Solution Provided (if any): Part solutions (SDED file provided – October 2019; Pole Testing Product provided – November 2019)

A2.4 Openreach's network uses poles extensively. These are of widely varying age. Being made of wood and exposed to the elements, Openreach has for many years had in place a programme of testing its poles to ensure they remain safe and fit for purpose. Industry identified as an issue the fact that the programme of testing had fallen badly behind and that a significant number of poles were out of test date and could not therefore be used. What this meant(-s) for PIA consumers like us is the cost for rollout significantly increases, as does the time taken to deploy, due to the lack of scalability of the product and the significant increased use of cherry pickers need for deployment.

A2.5 We first raised this as an industry in January 2019, a request which we repeated in subsequent bilateral meetings and correspondence with Openreach. One of the solutions we put forward was for Openreach to provide us (and industry) with a dataset which allows CPs visibility of which poles were out of test and therefore unavailable for use which would allow them to align aerial network build in a manner which allows them to rollout to areas where it is feasible to do so.

A2.6 Openreach's consistent position was that this process was (and is) independent of its own fibre rollout plan and that it would use expensive 'truck rolls' for all its installs to overcome the problem. We argued that this was an expensive and unnecessary solution and that Openreach ought to resolve the problem rather than requiring expensive and inefficient work around solutions.

A2.7 The two solutions which Openreach eventually put forward were:

i. SDED - bulk file transmission to CPs, periodically updated, on poles and pole information (including test dates), to allow CPs to better adjust the network rollout accordingly;

ii. A pole testing product which would allow industry (as a whole) to request up to 5,000 pole tests per annum, 1,250 per financial quarter with no means of rollover between quarters.

A2.8 Whilst we welcome this development, the utility of the solutions provided remain limited in overcoming the real problem of a test programme which has fallen badly behind schedule leading to a large number of out of date poles. This is a barrier to large scale rollout. The SDED file transmission is a clunky solution which relies on manual data transfers, whilst the pole testing annual cap of 5,000 remains significantly below the requirement for a scale provider. For example, in a single city (e.g. Coventry) there can be more than 10,000 poles which a PIA provider may wish to use.

A2.9 Our principal position remains, that ultimately Openreach has responsibility to start proactively resolving these issues and for it to potentially co-ordinate its test programme along CP deployments.

A2.2 Wayleaves

Date issue was first raised: 20 September 2012 (an industry proposal was put to BT by the OTA)

Date Solution Provided (if any): No solution

A2.10 The very first reference offer contract presented in 2012 required CPs to provide their own wayleaves but Openreach refused to tell CPs who the existing BT wayleave was with, making it difficult for CPs to obtain their own wayleave since they did not know whose land the Openreach network was on. CPs suggested that refusing to share information about the relevant landowner made it needlessly complicated for them to negotiate a second wayleave. Industry worked with the OTA to develop a compromise proposal which was put to Openreach on 12 September 2011. The proposal was rejected by Openreach.

A2.11 Ever since, CPs have repeatedly requested that Openreach shares details of BT's wayleaves, in order to make it simpler for them to obtain a duplicate wayleave with the relevant land occupier.

A2.12 In 2017, after lobbying from UKCTA, the Government reformed the law (by introducing a revised Electronic Communications Code) making null and void any prohibition in a wayleave on sharing the rights with a third party. This means that for any agreement signed from December 2017 onwards, any wayleave holder can share their infrastructure without having to rewrite their wayleave agreement.

A2.13 Because the right to share only applies to wayleaves signed from December 2017, CPs repeated their request to Openreach for details of those addresses at which the PIA infrastructure benefitted from one of the shareable wayleaves. CPs requested this in May 2018 at the passive infrastructure IWG meeting.

A2.14 To benefit from the Code's sharing provisions, it follows that CPs must be able to identify the land in respect of which new style wayleaves apply (so the CP can determine the land at which a separate wayleave is truly needed). Openreach initially denied that the Code had been changed to permit sharing. Having maintained this position for some months it was then conceded that reform had taken place but Openreach then refused to confirm at which addresses new form wayleaves had been signed. This was justified on the basis that a postal address on its own is personal data and therefore cannot be disclosed due to the terms of the General Data Protection Regulation (GDPR)

A2.15 The information is offered if CPs are prepared to pay a time-based charge for finding the information. CPs argue that this is a necessary part of being able to use the PIA product and so should be included without any additional charge.

A2.16 In mid-2019, Openreach amended their CP-facing system so that postcodes (rather than the full address) were made available to CPs. However, postcode information on its own is not useful for CPs; the precise land in respect of which the wayleave applies must be identified as there could be dozens of plots of land within a postcode area. Openreach has cited data protection issues as the reason for which they cannot reveal the full address in respect of which BT holds a new style wayleave, although such information can be provided if CPs pay for it.

A2.17 Having taken legal advice — and sought the views of the ICO — industry believes this argument is specious and legally incorrect. Industry wrote to Openreach in January 2020 setting out the legal arguments in favour of this information being provided. In March CPs asked for an update in Openreach's view but Openreach have refused to even include discussion of this on the agenda for industry meetings. It is difficult to say that negotiations on wayleaves are continuing since - Openreach has given no indication so far that it will change its position, in refusing to even provide an update on the consideration they have given to our arguments on this issue it seems clear that without intervention by Ofcom, it is highly unlikely anything will change.

A2.3 Systems Development

Date issue was first raised: June 2019

Date Solution Provided (if any): No solution

A2.18 Current PIA systems continue to be inefficient and unsuited for large-scale use. For instance, they require significant amounts manual input for each item and element of the PIA product. A good example of this is the system to submit build complete information which involves manually selecting and adding significant numbers of infrastructure records and means the task is so time consuming that Openreach have been complaining vociferously about the lack of build complete information being submitted. This also impacts Openreach because the rental payments do not start until all build complete information has been submitted.

A2.19 The following are some of the issues we encounter most frequently when trying to confirm to Openreach what we have built:

i. The system logs the user out without either prior warning or warning that the user has been logged out, meaning the changes made by the user cannot be saved and the work has to be repeated, sometimes multiple times.

ii. The system slows down dramatically in the afternoon making it much more difficult to do any work in the afternoon.

iii. System errors are frequent occurrences meaning the user has to log out and then back in.

iv. The system sometimes allows the user to add duct sections or structures to a submission but despite appearing to accept them, the changes are not in fact saved but this is not apparent at the time.

v. The system sometimes has incomplete register of BT data (i.e. missing assets), meaning the report cannot be completed until Openreach rectify the error in their asset register (this usually takes around 1 week)

vi. Minor changes needed to reflect changes to what has been built are time consuming (for example moving a structure from route 1 to route 2 requires the user to edit route 1, submit it and wait for Openreach to approve the change. Only then can the user go back in, select route 2 and add the structure and again wait for approval from Openreach.

A2.20 We raised the issue of scale with existing systems back in [DATE]. Specifically, we raised our concerns that the manual exercise of inputting these (and other volume-dependent requests) were becoming a highly labour- intensive task.

A2.21 We proposed at that time that all this could easily be replaced with an API to scale. We subsequently submitted an SoR (8556) on 22nd August 2019 on this point and have since raised and discussed this extensively in both our bilateral meetings with Openreach and our industry discussions at the IWG.

A2.22 In response to this SoR, Openreach begun an agile working group in February 2020, as part of the agile working group, Openreach have made a simple Sandbox environment live. This does not provide any temporary relief but shows that work is ongoing and allows mutual input in development process. The first part of the API is due to go live in July 2020, this will enable NoI's to be raised without the need for duplication of planning works.

A2.23 However, the fact remains we need an API across the entirety of the product and its sub-processes which will enable all data transfers between Openreach and PIA CPs to be handled via the API rather than using manual systems reliant on email and excel spreadsheets. This will ensure the PIA product is fit for at scale use. Our experience has shown manual data handling has even led to a breach of confidentiality with our data being sent to our competitors in error on more than one occasion.

A2.24 We remain concerned as to the level of priority Openreach is providing this SoR, with Openreach being largely non-committal in delivery dates. Our experience with other products suggests that even where Openreach does provide delivery dates these tend to be missed and delivery slips behind schedule. The AOI it should be noted would deliver efficiency benefits not just for CPs but also for Openreach and would address many of the complaints they make about industry being slow to provide information.

A2.4 Systems SLAs/SLGs

Date issue was first raised: April 2018

Date Solution Provided (if any): No solution

A2.25 Since the publication of the 2018 WLAMR, the industry has been pushing for systems SLAs to give assurance and protection to CPs that Openreach has a suitable incentive to maintain and repair the systems required to use to consume PIA and to ensure they are robust and fit-for-purpose. Even for those SLAs which do exist, Openreach refuses to compensate CPs for their direct losses caused by breaches of SLA. It is normal in commercial contracts to exclude indirect losses but Openreach goes further and excludes both direct and indirect losses. This is commercially unacceptable, but CPs have no choice of alternative supply to which they can turn.

A2.26 Openreach offers the systems and processes which CPs need to use to consume PIA on an "as is" basis. CPs believe that these are so vital that there has to be an SLA and accompanying SLG to ensure that Openreach is incentivised to have robust systems which perform to the required standard. Openreach does not consume PIA, though it does consume all the discrete elements which taken together are known as PIA, s it has no incentive to ensure the PIA systems are as robust and capable as those it uses for its own purposes.

A2.27 In February 2019, industry detailed proposals to Openreach on the scope and nature of a systems SLA that it would like to see implemented, but many months elapsed before Openreach started looking at the possibility of implementing such an SLA. Openreach will say nothing more definitive than that they are considering it internally, industry feels CPs need to be more closely included in the process and that Openreach ought to give details of what consideration and discussion is taking place, and commit to provide regular updates on the progress of such consideration.

A2.28 Another connected point is that there needs to be a well-documented and clearly understood workaround process that would apply if the system concerning safety fails or otherwise becomes unavailable.

A2.29 We believe that systems SLAs are a vital requirement for PIA to be workable product in line with Ofcom's intention. CPs will be entirely reliant on the availability and efficiency of the Openreach systems for their effective consumption of PIA. Without the availability of those systems being assured through an SLA and SLG regime, CPs' use of PIA is likely to be inefficient and cumbersome — and this cannot possibly give effect to the outcome contemplated by Ofcom when it set the access remedy in the WLAMR and PIMR statements.

A2.5 Pole Top Capacity for Customer Drop and TBC's

Date issue was first raised: July 2018 (date when initial SoR 8515 was raised)
Date Solution Provided (if any): November 2019

A2.30 An ongoing issue we have frequently raised to Openreach since July 2018, in meetings, correspondence and SoR requests, is the issue concerning capacity assurance, particularly at the customer drop.

A2.31 [✂]

A2.32 For us, this latter point has been an ongoing issue of debate and discussion since the Summer of 2018. We raised an SoR (8515), to address and ensure an "efficient delivery of DPA Aerial Drop",[275] which at the time was, amongst other things, focussed on the issue of fibre swaps, i.e. alleviating capacity constraint by removing what Openreach terms "redundant cables". This came to be superseded in the discussions by what was (and remains) the more immediate issue, regarding capacity alleviation for the extensive copper networks taking up space on congested poles and preventing customer connections.

A2.33 For clarity, the issue here is around connecting customers to our network deployed using PIA and the inability to do so due to capacity constraints from redundant copper wiring at pole top. The only solution available at the time was to request a network adjustment post customer service request, which as discussed elsewhere in this document is a slow and cumbersome process, and not fit for what is a time (and in failure or significant delay, commercially) sensitive task of getting customers onto our network.

A2.34 To address these concerns, in our February bilateral session with Openreach (and in the March IWG) agreed to a TBC process allowing a CP to load the pole and request a retrospective network adjustment , with specific caveats as to the priority of health and safety regulation and requirements. After months of Openreach doing little to progress the issue we came to a compromise of a trial to test the solution in October 2019. We are currently engaged in the trial process, although it remains unclear whether the solution will continue to exist post-trial and more importantly does not address the principle issue of capacity constraints and congestion on the PIA network.

[275] IWG Slides. December 2018. Slide 49.

Annex 3 CityFibre Oct 2019 geographic markets submission

[See separate attachment]

Annex 4 List of announced CityFibre towns and cities

A4.1 We set out in the table below the 62[276] towns and cities that we have so far announced for full fibre deployment which make up our initial 5 million home deployment.[277] We order the below list by date that they were publicly announced

#	City/Town	Announcement Date
1	Milton Keynes	Jan-18
2	Aberdeen	Feb-18
3	Peterborough	Mar-18
4	Coventry	Apr-18
5	Edinburgh	Apr-18
6	Huddersfield	Apr-18
7	Stirling	Apr-18
8	Cambridge	Oct-18
9	Leeds	Oct-18
10	Southend	Oct-18
11	Batley	Jul-19
12	Bournemouth	Mar-19
13	Bradford	Jul-19
14	Derby	Jul-19
15	Dewsbury	Jul-19
16	Doncaster	Jul-19
17	Inverness	Jul-19
18	Ipswich	Jul-19
19	Leicester	Jul-19
20	Lowestoft	Jul-19
21	Newcastle upon Tyne	Jul-19
22	Northampton	Mar-19
23	Rotherham	Jul-19
24	Slough	Jul-19
25	Swindon	Jul-19
26	Worthing	Jul-19
27	Arun	Mar-20
28	Barnsley	Mar-20
29	Bath	Mar-20
30	Blackpool	Mar-20
31	Bracknell	Mar-20
32	Brighton & Hove	Mar-20
33	Bury St Edmunds	Mar-20

[276] CityFibre's press release (6th March 2020) [link].

[277] There are 62 which have been announced and 3 which are yet to be announced publicly. [✂].

34	Charlton Kings	Mar-20
35	Chatham	Mar-20
36	Cheltenham	Mar-20
37	Chester	Mar-20
38	Chichester	Mar-20
39	Christchurch	Mar-20
40	Crawley	Mar-20
41	Dundee	Mar-20
42	Eastbourne	Mar-20
43	Gateshead	Mar-20
44	Gillingham	Mar-20
45	Glasgow	Mar-20
46	Gloucester	Mar-20
47	Halifax	Mar-20
48	Horsham	Mar-20
49	Maidenhead	Mar-20
50	Middlesbrough	Mar-20
51	Norwich	Mar-20
52	Nottingham	Mar-20
53	Poole	Mar-20
54	Portsmouth	Mar-20
55	Preston	Mar-20
56	Reading	Mar-20
57	Sheffield	Mar-20
58	Solihull	Mar-20
59	Stoke on Trent	Mar-20
60	Weston-super-Mare	Mar-20
61	Wolverhampton	Mar-20
62	Worcester	Mar-20

Annex 5 Mapping of consultation questions

We set out in the table below the section or paragraph references to this document, for where we respond to each of Ofcom's specific consultation questions. Whilst the index below proves as a useful reference point to a section or quote, it is not exhaustive and so we strongly recommend reading the whole document and taking passages and/or statements in the context of the section and document in which they are made.

WFTMR Consultation Volume 2 (Market Definition and SMP)

Consultation question	Location in CityFibre response
Question 2.1: Do you agree with our description of retail markets? Please set out your reasons and supporting evidence for your response.	**Direct Response:** Section 8 (Paragraphs: 8.1 - 8.117) **Analysis supporting response:** Section 8 (Paragraphs: 8.1 - 8.117)
Question 3.1: Do you agree with our provisional conclusion on physical infrastructure product market definition? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 3.1 (Paragraph 3.11) **Analysis supporting response:** Section 3.1.1 (Paragraphs 3.13 - 3.27)
Question 4.1: Do you agree with our provisional conclusion on physical infrastructure geographic market definition? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section: 3.1 (Paragraph: 3.11) **Analysis supporting response:** Section 3.1.2 (Paragraphs 3.28 - 3.33)
Question 4.2: Do you agree with our provisional conclusion on the application of the three criteria test to the physical infrastructure market? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section: 4.1.1 (Paragraph: 4.14) **Analysis supporting response:** Section: 4.1.1 (Paragraphs: 4.5 - 4.13)
Question 5.1: Do you agree with our provisional finding on SMP and resultant competition concerns in the physical infrastructure market? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section: 4.1.2 (Paragraph: 4.32) **Analysis supporting response:** Section: 4.1.2 (Paragraphs: 4.15 - 4.31)
Question 6.1: Do you agree with our provisional conclusions on product market definition for wholesale networks? Please set out your reasons and supporting evidence for your response.	**Direct response:** WLA - Section 3.2 (Paragraph: 3.36) LL Access – Section 3.3 (Paragraph: 3.134) IEC – Section 3.4 (Paragraph: 3.1693.168)

	Service markets (WBA, WFAEL) – Section 3.5 (Paragraph 3.175) **Analysis supporting response:** WLA – Section 3.2.1 (Paragraphs: 3.38 - 3.40) LL Access – Section: 3.3.1 (Paragraphs: 3.136 - 3.159) IEC – Section 3.4.1 (Paragraph 3.168) Service markets (WBA, WFAEL) – Section 3.5 (Paragraphs: 3.173 - 3.174)
Question 7.1: Do you agree with our provisional conclusions on geographic market definition for wholesale networks? Please set out your reasons and supporting evidence for your response.	**Direct response:** WLA – Section 3.2 (Paragraph: 3.36) LL Access – Section 3.3 (Paragraph: 3.134) IEC – Section 3.4 (Paragraph 3.172)3.168) Service markets (WBA, WFAEL) – Section 3.5 (Paragraph 3.175) **Analysis supporting response:** WLA – Section 3.2.2 (Paragraphs: 3.41 - 3.133) LL Access – Section 3.3.2 (Paragraphs: 3.160 - 3.167) IEC – Section 3.4.2 (Paragraphs: 3.170 - 3.171) Service markets (WBA, WFAEL) – Section 3.5 (Paragraphs: 3.173 - 3.174)
Question 7.2: Do you agree with our provisional conclusion on the application of the three criteria test to the wholesale inter-exchange connectivity market? Please set out your reasons and supporting evidence for your response.	CityFibre provides no further comment on this at this time.
Question 8.1: Do you agree with our provisional SMP findings and resultant competition concerns for wholesale networks? Please set out your reasons and supporting evidence for your response.	**Direct response:** WLA – Section 4.2.2 (Paragraphs: 4.68 - 4.69) LL Access – Section 4.3.1 (Paragraph: 4.76, 4.80, 4.89, 4.91, 4.101) IEC – Section 4.3.2 (Paragraph 3.1723.168) Service markets (WBA, WFAEL) – Section 3.5 (Paragraph 3.175)

	Analysis supporting response: WLA – Section 3.2.2 (Paragraphs: 4.33 – **Error! Reference source not found.**) LL Access – Section 4.3.1 (Paragraphs: 4.73 – 4.101) IEC – Section 4.3.2 (Paragraph 4.102)
Question 9.1: Do you agree with our proposal not to regulate WFAEL, ISDN2 and ISDN30 markets on the basis that they no longer fulfil the three-criteria test set out in the EC Recommendation? Please set out your reasons and supporting evidence for your response.	CityFibre provides no further comment on this at this time.
Question 10.1: Do you agree with our proposal not to regulate WBA market on the basis that it no longer fulfils the three-criteria test set out in the EC Recommendation? Please set out your reasons and supporting evidence for your response.	CityFibre provides no further comment on this at this time.

WFTMR Consultation Volume 3 (Non-pricing remedies)

Consultation question	Location in CityFibre response
Question 1.1: Do you agree with our proposed approach to remedies? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 1.3 (Paragraphs: 1.21 – 1.24) **Analysis supporting response:** Section 5, Annex 1
Question 2.1: Do you agree with our proposed approach to Copper retirement? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 1.3; 1.4 (Paragraphs: 1.24; 1.80 – 1.83;) Section 8.4 (Paragraph 8.116) **Analysis supporting response:** Section 6.2.2 (Paragraphs: 6.84 - 6.88) Section 8.4 (Paragraphs: 8.99 - 8.117)
Question 3.1: Do you agree with our proposed general remedies? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 1.3 (Paragraphs: 1.21 – 1.24) **Analysis supporting response:** Section 5 (Paragraphs: 5.1 - 5.131 Section 7.5 (Paragraphs: 7.89-7.106) Annex 1
Question 4.1: Do you agree with our proposed specific PIA remedies? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 5.1.3 (Paragraphs: 5.64-5.76) **Analysis supporting response:** Section 5.1 (Paragraphs: 5.10 - 5.76)
Question 5.1: Do you agree with our proposed specific remedies in the WLA, LL Access and IEC markets? Please set out your reasons and supporting evidence for your response.	**Direct response:** WLA – Section 5.2.2 (Paragraphs: 5.84 – 5.95)

	LL Access – Section 5.3 (Paragraph 5.96) IEC – Section 5.3 (Paragraph: 3.168 5.96) **Analysis supporting response:** WLA – Section: 5.2 (Paragraphs: 5.77 – 5.95) LL Access – Section: 5.3 (Paragraphs: 5.96 - 5.97) IEC – Section: 5.3 (Paragraphs: 5.96 – 5.97)
Question 6.1: Do you agree with our proposed dark fibre access and dark fibre inter-exchange remedies? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 5.4 (Paragraph: 5.101) **Analysis supporting response:** Section 5.4 (Paragraphs: 5.98-5.131)
Question 7.1: Do you agree with our proposed approach to QoS? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 5.1.3 (Paragraphs: 5.64-5.76) **Analysis supporting response:** Section 5.1 (Paragraphs: 5.10 - 5.76)

WFTMR Consultation Volume 4 (Pricing remedies)

Consultation question	Location in CityFibre response
Question 1.1: Do you agree with our proposals for charge controlling WLA and LL access services in Area 2? Please set out your reasons and supporting evidence for your response.	**Direct response:** WLA - Section 6.2 (Paragraphs: 6.21 – 6.22) LL Access – Section 6.3.1 (Paragraphs: 6.100 - 6.101, 6.108, 6.114) **Analysis supporting response:** WLA - Section 6.2.2 (Paragraphs: 6.42 - 6.91) LL Access – Section 6.3.1 (Paragraphs: 6.98 - 6.116)
Question 2.1: Do you agree that a RAB based control will achieve our objective in Area 3? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 6.2.3 (Paragraphs: 6.95 – **Error! Reference source not found.**) **Analysis supporting response:** Section 6.2.3 (Paragraphs: 6.95 – **Error! Reference source not found.**)
Question 2.2: Do you agree that is appropriate to impose a post-build RAB charge control in Area 3? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 6.2.3 (Paragraphs: 6.95 - **Error! Reference source not found.**) **Analysis supporting response:** Section 6.2.3 (Paragraphs: 6.95 - **Error! Reference source not found.**)
Question 2.3: Do you have any comments on our proposed design and method for calculating the proposed post-build RAB charge controls? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 6.2.3 (Paragraphs: 6.95 - **Error! Reference source not found.**) **Analysis supporting response:**

	Section 6.2.3 (Paragraphs: 6.95 - **Error! Reference source not found.**)
Question 2.4: Do you agree with our proposals to charge control LL access services and dark fibre in Area 3? Please set out your reasons and supporting evidence for your response.	**Direct response:** LL Access – Section 6.3.1 (Paragraphs: 6.100 - 6.101, 6.108, 6.114) Dark Fibre specific – Section 6.4 (Paragraphs: 6.123 - 6.123) **Analysis supporting response:** LL Access – Section 6.3.1 (Paragraphs: 6.98 - 6.116) Dark Fibre specific – Section 6.3.1 (Paragraph 6.118 - 6.123)
Question 3.1: Do you agree with our proposals in relation to charge control design and implementation? Please set out your reasons and supporting evidence for your response.	**Direct responses:** Sections 1.3; 6.2; 6.3.1 (Paragraphs: 1.21 - 1.24; 6.21 - 6.22; 6.100 - 6.101, 6.108, 6.114) **Analysis supporting response:** Section 5; 6.2.2; 6.3.1 (Paragraphs: 5.1 - 5.131; 6.42 - 6.91; 6.98 - 6.116) Annex 1
Question 4.1: Do you agree with our proposals for charge controlling in the IEC markets? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 6.3.2 (Paragraphs: 6.117) **Analysis supporting response:** Section 6.3.2 (Paragraphs: 6.117)
Question 5.1: Do you agree with our proposals relating to calculating PIA rental charges? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 6.1.2 (Paragraphs: 6.15) **Analysis supporting response:** Section 6.1.2 (Paragraphs: 6.4 - 6.15)
Question 5.2: Do you agree with the above proposal to introduce the PIA simplified underground lead-in service	CityFibre provides no further comment on this at this time.

and the associated timings? Please set out your reasons and supporting evidence for your response.	
Question 6.1: Do you agree with our proposed approach to charge controls for ancillaries? Please provide evidence to support your views. Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 1.3; 7.4 (Paragraphs: 1.24; 7.52) **Analysis supporting response:** Section 7.3 (Paragraphs: 7.43 – 7.106)
Question 6.2: Do you agree with our proposals for fair and reasonable obligations for ancillaries not covered by a charge control? Please set out your reasons and supporting evidence for your response.	**Direct response:** Section 1.3; 7.4 (Paragraphs: 1.24; 7.52) **Analysis supporting response:** Section 7.3 (Paragraphs: 7.43 - 7.106)