UK fibre: a fork in the road

Telecoms Access Review

Non-confidential pre-consultation submission

nexfibre

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1 Executive Summary

1. nexfibre is an important platform to unlock the growth opportunity presented by ultra-fast, future-proof, full-fibre broadband. The company was launched in December 2022 and to date has a network which passes in excess of one million premises with Ready for Service (RFS) fibre.[1] This places nexfibre among the top five fibre networks in the UK in less than 18 months and on track to become the second-largest rival alternative network (altnet) to Openreach[2] in just its second year of operation.

2. Since the last market review, there has been significant progress in deployment of fibre, supported by major investment. This has in part been underpinned by the the Physical Infrastructure Access (PIA) regime, originally created by Ofcom in the Wholesale Local Access (WLA) review in 2018, the Physical Infrastructure Market Review in 2019 and significantly updated in the 2021 Wholesale Fixed Telecoms Market Review (WFTMR). It has been a vital development to support investment by independent networks.

3. However, this progress cannot be taken for granted in the future. Today the wholesale fibre network market[3] is at a fork in the road and the decisions Ofcom makes in the 2026 Telecoms Access Review (TAR) are crucial for investment, competition and consumers. In 2024 investment by fibre operators in network build is slowing to a halt and there have been over 1,600 redundancies announced by altnets. This slowdown has coincided with a steep rise in interest rates and with actions by BT that appear to have the effect of deterring market entry and expansion by rivals.

4. Ofcom cannot affect interest rates, but it can support the development of sustainable competition by ensuring regulatory consistency and preventing actions by the SMP operator that harm emerging competition. In this paper, we examine the approach to definition of geographic markets, detail issues regarding exclusionary behaviour by BT and the regulation of PIA and outline concrete steps that Ofcom can take to mitigate or remedy these issues.

1.1 Geographic markets

5. In the WFTMR, Ofcom found three geographic markets: Areas 1, 2 and 3. Ofcom defined Area 1 as having "two established rivals to BT" but also found that no parts of the UK met this definition. Our analysis of the market today finds that this is still the case and so Ofcom is still likely to find no parts of the country are in Area 1.

6. We argue that to be "established" for the purpose of fulfilling the Area 1 definition, a rival must have a significant presence in a geographic area and that the two rivals together need enough market share to constrain BT's ability to behave independently of

[1] nexfibre press release, 17 April 2024

[2] Throughout this paper we refer to "BT" and "Openreach" interchangeably for convenience

[3] References to "the market" are always to the wholesale local access market, unless qualified by "retail" or "PIA".

competitors and consumers. Our survey of the premises passed and connected by rival networks indicates that it is still unlikely that any area fulfils the criteria of this definition today. On a forward-looking basis, the financial vulnerability of altnets means that this position is unlikely to change by 2026. Therefore, our view is that Ofcom will still not find any area of the UK that complies with the definition of Area 1 and thus no area that can be subject to deregulation.

7. We are strong believers in regulatory stability and want to see as few changes to the current framework as necessary. However, we have identified two developments that need to take place.

1.2 Regulating anchor product pricing and Economic Replicability Test

8. First, in the WFTMR, Ofcom regulated BT's prices for the "anchor product" in Areas 2 & 3, allowing pricing freedom on higher speed variations. This is an effective form of regulation when the competition problem is the dominant firm's ability to exploit consumers and when pricing freedom is needed to allow the market to find the efficient price level.

9. However, we identify the main problem affecting the further development of sustainable competition is not consumer exploitation but the exclusionary effect of BT's behaviour, in particular its pricing behaviour.

10. The most significant action taken by BT consistent with an exclusionary effect was the introduction of the Equinox and Equinox 2 price packages. In the period after Equinox 2 was announced, investment and employment by altnets declined sharply. Although this reduction also coincided with a steep increase in interest rates, we argue that Equinox 2 had an incremental effect that was consistent with a market exclusion. We therefore argue that regulation should be developed to address the competition problem that exists in the market: namely exclusion.

11. Specifically, we propose that Ofcom should regulate prices based on an Economic Replicability Test between the regulated price of PIA and the anchor product. BT should not be allowed to drop WLA prices below that of the anchor product as it did in Equinox 2, nor should it be able to leverage copper switch-off to entrench its SMP position. This will prevent BT designing any future price packages that deter entry and expansion.

1.3 Regulating PIA – the issues with no undue discrimination

12. Second, under the regulation Openreach is required to make PIA available under a no undue discrimination obligation. Examining BT's Regulatory Financial Statements, we see a massive disparity between the internal cross charge for PIA within Openreach and the price paid by competitors that clearly favours Openreach and amounts to undue

discrimination. This is an issue that needs more detailed investigation, and we will be submitting a more detailed paper on this subject.

13. We, therefore, propose that the supply of PIA by Openreach should be more transparent and, if necessary, made available under an Equivalence of Input (EOI) basis, rather than no undue discrimination. It is an anomaly of the current structure that PIA is self-supplied by Openreach to itself and to rival operators as an input to fibre networks that compete with Openreach WLA. PIA is an essential input for BT's rivals, and it is vital that they get it under the same terms as Openreach itself and that these terms are fully transparent.

2 Introduction

Since the last market review in 2021 there has been significant deployment of fibre to the home networks. However, there are key issues affecting competition: the continuing dominance of BT in the wholesale market, price regulation that does not deter exclusionary behaviour, an unsustainable number of market participants with unsustainable business plans and an inadequate approach for the regulation of PIA. These are the main issues that Ofcom must address in the forthcoming Telecommunications Access Review.

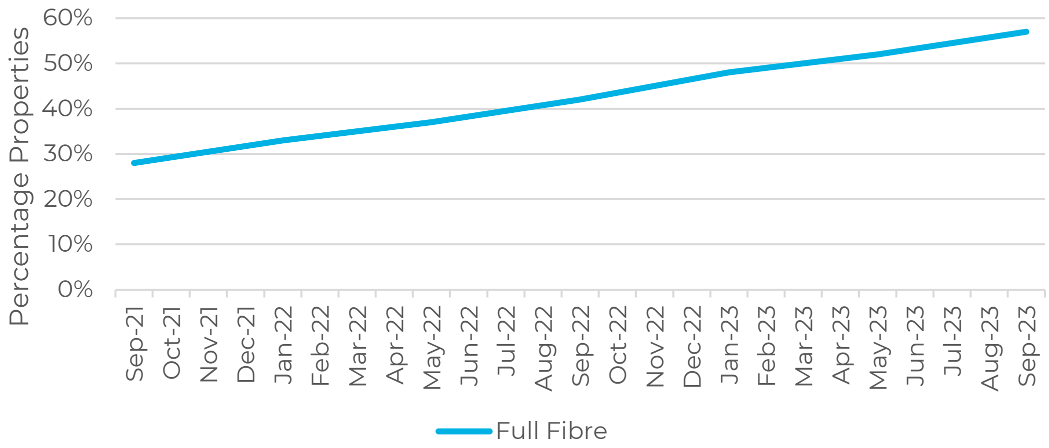
14. nexfibre, a wholesale-only fibre network builder launched in December 2022, welcomes the opportunity to submit this paper to Ofcom in advance of the forthcoming Telecommunications Access Review (TAR). In our first 18 months we have already passed more than one million homes, making us one of the largest fibre operators in the UK.
15. Our experience to date suggests that the wholesale local access (WLA) market is at a critical juncture, a fork in the road, which could result in the continued dominance of BT or the development of sustainable competition. The decisions Ofcom makes in the TAR will be decisive on which road is taken.
16. We are keen to see sustainable competition develop in the wholesale market for the benefit of consumers and ultimately the UK economy as a whole. This paper sets out our experience of the wholesale market and the steps we believe are necessary for Ofcom to take under this TAR to safeguard the development of sustainable competition in the WLA market.

2.1 Market developments

17. Despite a challenging macroeconomic environment of higher interest rates and inflation, FTTP availability has doubled from under 30% of households in September 2021 to just under 60% two years later. The period 2021-2023 has seen the UK as one of the fastest growing FTTP markets in Europe, measured by percentage of homes passed.[4]

[4] FTTH Council Europe (2022) *FTTH/B Market Panorama in Europe: Update September 2022*

Figure 1: Fibre Availability 2021 - 2023



Source: Ofcom Connected Nations Reports

18. This growth is based on both Openreach and independent network operators entering the market and expanding their networks. By 2023, some £30 billion had been committed to investment in fibre networks: £16 billion[5] by over 100 independent network operators, and £15 billion by BT[6]. Once nexfibre's £4.6 billion of committed investment is added in, at least £35 billion will have been invested in the UK's fibre networks. Although the UK is still in the bottom quartile of European countries measured by proportion of premises passed, it has been moving up the rankings rapidly.[7]

19. Commercial fibre rollout has extended beyond the areas of the country where Ofcom thought there was scope for material and sustainable competition to Openreach into areas where Ofcom thought competition was unlikely (the Area 3[8] geographic market). According to INCA data, at the end of 2022 there were over 2.3 million Area 3 premises passed by alternative fibre networks.[9] We would expect this number to have grown since then and may now be around 3 million.

20. Much of that growth is facilitated by the physical infrastructure access (PIA) regime that was originally created by Ofcom in the Wholesale Local Access (WLA) review in 2018, updated in the Physical Infrastructure Market Review in 2019 and significantly enhanced in the 2021 WFTMR. Building networks using PIA is considerably more efficient for alternative networks operators (altnets) than building their own infrastructure and so

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[5] Enders Analysis (2024) *UK Altnets: The beginning of the end? February 2024*

[6] BT Annual Report 2022, p. 21.

[7] FTTH Council Europe (2022) op. cit.

[8] In the 2021 WFTMR Ofcom identified three geographic markets: Areas 1, 2 & 3. Area 3 was where Ofcom did not expect there to be any sustainable competition to BT.

[9] INCA & Point Topic (2023) *Metrics for the UK Independent Network Sector*.

allows for more rapid and cost efficient roll-out of fibre networks. We congratulate Ofcom on the work it has done on PIA.

21. However, the level of investment by altnets is rapidly declining. According to Enders Analysis, it shrank from £7.2 billion in 2022 to £2.6 billion in 2023.[10] Our own analysis suggests there have been over 1,600 redundancies announced since late 2022. Several altnets are carrying large amounts of debt that make them vulnerable to higher interests than they had priced-in to their business plans.

22. Although macroeconomic factors have a role in this decline, they are not the sole cause. Enders Analysis notes that higher interest rates are "unlikely to be the full explanation, with financial markets having far from closed off completely and the higher interest rates still being fairly modest by historical standards". They go on to say that a "major driver" of the reduction in investment is "challenges to the altnet business model becoming increasingly apparent, with many companies either underperforming their initial business models, or these business models found wanting after being put under increased scrutiny".[11]

23. Subscriber acquisition, at both wholesale and retail level, is a big problem for altnets which are achieving less than half the level achieved by Openreach through its established customer base of large Internet Service Providers (ISPs), including Sky, TalkTalk and BT Retail[12]. Smaller altnets are unable to reach the scale necessary to reduce operating costs to more sustainable levels.

24. However, interest rates and business models account for only part of the difficulties facing altnets. We must also look to endogenous factors, in particular the behaviour of BT.

2.2 nexfibre

25. nexfibre was launched in December 2022 and is a platform to unlock the growth opportunity of Fibre to the Premises (FTTP) by driving the switch to ultra-fast, future-proof, full-fibre broadband. Our commitment to progress is driven by three key differentiators:

- **First, we operate as a wholesale-only network builder.** We focus solely on creating the best possible full-fibre infrastructure, accessible to all internet service providers (ISPs) and businesses. This allows them, and ultimately consumers, to enjoy unmatched connectivity and choice.
- **Second, we have solid financial backing.** Our world-class investors (Infravia Capital Partners, Liberty Global and Telefónica) not only provide significant funding (£4.5

[10] Enders Analysis 2024 op. cit. Figure 5

[11] ibid.

[12] See paragraph 127.

billion) but also bring extensive experience in the telecom industry. This translates to a clear commitment: reaching 5 million homes with full-fibre by 2026 and bringing market leading products to the market thanks to cutting-edge XGS-PON technology.

- **Third, we are a partner of choice.** Virgin Media O2, the UK's second-largest ISP, acts as our anchor tenant. This strategic alliance grants us a solid foundation to build upon, while fostering healthy competition in the market.

26. By April 2024 nexfibre announced that we had already passed 1,000,000 premises with Ready for Service (RFS) fibre.[13] This places nexfibre amongst the top five fibre networks in the UK in less than 18 months and on track to become the second-largest altnet rival to BT in just its second year of operation. Our network has been built using a mix of PIA and building our own infrastructure where PIA was not available. It is part of our strategy to create high network contiguity in towns and areas where we deploy, rather than being restricted to the part of an area where PIA is available.

2.3 Market Issues

27. Despite this successful start, our experience suggests that the wholesale access market is dysfunctional and faces significant threats that we urge Ofcom to address in the TAR. These threats can be divided into three broad categories:
    - First, the continued dominance of BT in the WLA market across the whole United Kingdom. We can see this in the low penetration rates of altnets in their own network footprints, and average of less than 15% compared to 33% by Openreach and in the limited number of major wholesale deals signed by altnets. We are concerned that BT will be able to leverage its dominance on the copper network into the fibre network through an asymmetric copper switch off process that advantages Openreach to the detriment of other fibre builders.
    - Second, pricing regulation that protects consumers from exploitation but allows BT to deter further entry and expansion by rivals. Specifically, Equinox 2 has forced wholesale prices down and reduced independent network operators' ability to earn revenues from their prime asset and therefore reduced investor appetite for continued deployment.
    - Third, whilst PIA has been vital, its regulation, in particular the price regulation, is problematic and raises risks for investors.
28. Deploying capital in electronic communications networks is characterised by high upfront investment with a view to long term payback. Companies require scale to generate the revenues needed to earn a return on capital to satisfy debt and equity investors. The squeeze on revenues in the wholesale local access (WLA) market and the

[13] nexfibre press release, 17 April 2024

uncertain costs of PIA make it increasingly challenging to achieve this return. However, without the opportunity to win customers, altnets will not reach the scale necessary to challenge the dominance of BT. The market today is characterised by a high number of altnets with unsustainable business plans, which in any event will be unlikely to deliver successful investment returns for existing investors.

29. Looking forward, therefore, we expect consolidation to be a key feature of the market over the next few years as companies seek to become economically sustainable. Analysis by SPC Network shows that cost and demand conditions differ across different geographic areas. The number of economically sustainable competitors also differs.

30. Based on this analysis, our view is that when Ofcom and the Competition and Markets Authority (CMA) and other policy makers and stakeholders assess consolidation in the market they should not focus on a perceived minimum number of competitors needed, but should instead allow mergers so that competition is sustainable according to specific circumstance of the area where the merger will occur.

2.4 Implications for the 2026 TAR

31. nexfibre sees the market at a fork in the road. The decisions that Ofcom makes in the 2026 Telecoms Access Review (TAR) are crucial for investment, competition and consumers. Ofcom has the choice of furthering competition between economically sustainable fibre networks, delivering high quality broadband to consumers, or of allowing BT to continue to use its existing market power to behave in ways that discourage competitive investment. The road it takes will determine the long-term trajectory of competition in the market.

32. In this paper we argue that Ofcom should take the following actions in the TAR:

- First, it should ensure regulatory consistency and only make changes to the regulatory framework where that is justified by circumstances. For example, this means maintaining the same geographic market criteria as used in 2021.
- Second, Ofcom should recognise the conditions do not yet justify finding any area of the UK to be effectively competitive in the WLA market. This means that the UK will still be comprised of only Areas 2 and 3.
- Third, although the anchor product pricing regime Ofcom introduced in 2021 to encourage investment in higher speed access products may have been justifiable, recent experience has shown that the main competition problem in the wholesale market is BT's ability to set exclusionary prices. We therefore propose that Ofcom complement the anchor product price with an Economic Replicability Test (ERT) between PIA and the anchor price, effectively setting the anchor as the price floor.
- Fourth, Ofcom needs to address certain issues in the regulation of PIA. If necessary, Ofcom should change the terms under which PIA is supplied from no-undue discrimination to Equivalence of Input (EOI).

- Finally, to support economically sustainable competition, Ofcom should not seek to impose a minimum number of competing networks in a market but allow consolidation to the sustainable number of rivals on a localised basis.

33. This paper is structured as follows:

- Section 3 discusses whether the Area 1 geographic market Ofcom identified as a potential market in 2021 now exists.
- Section 4 discusses the main competition problem we face and why we think the charge control process adopted by Ofcom in 2021 in good faith is proving to be the wrong remedy.
- Section 5 discusses PIA and why we think the basis of regulation of PIA should now be EOI.
- Section 6 proposes a new regulatory settlement for Areas 2 & 3 based on EOI and an Economic Replicability Test between PIA and WLA.
- Section 7 concludes.

3 Does Area 1 Exist Today?

In 2021 Ofcom defined Area 1 as having "two established rivals to BT" and found that no areas of the country complied with this definition. We contend that to be considered "established" a rival must have a significant presence in a geographic area and that the two rivals together need enough market share to constrain BT's ability to behave independently of competitors and consumers. Our survey of the premises passed and connected by rival network indicates that it is unlikely that any area fulfils the criteria of the definition today. On a forward-looking basis, the financial vulnerability of altnets means that this position is unlikely to change by 2026. Therefore, our view is that Ofcom will not find any area of the UK that complies with their definition of Area 1 and thus there are no areas that can be subject to deregulation on that basis.

3.1 Two Established Rivals to BT

34. In the WFTMR, Ofcom identified three geographic markets (outside the Hull area) in the WLA product market, which it labelled Areas 1, 2 and 3. Our primary concern in this paper is Areas 1 and 2. Ofcom described Area 1 as *'where there are at least two established rival networks to BT'*[14], which contrasts with Area 2 where there would be "*potential for material and sustainable competition to BT*".[15] In this section, we discuss the definition of Area 1 for the purpose of this market review.

35. The process of a market review means that, whilst Ofcom may find a geographic market exists based on heterogeneous competitive conditions, it cannot be assumed at the market definition stage that a particular geographic market is effectively competitive. Nevertheless, Ofcom did say later in the Statement that it would be likely to *'deregulate, or at least significantly reduce regulation in, Area 1'*.[16] Thus it is very likely that Area 1 would be found to have effective competition.

36. Ofcom did not define what "established" means but did provide certain clues in the Statement and in the Consultation Document.[17] First, it indicated that it would only consider a network operator present if it covered at least 50% of the premises in the postcode sector (the smallest geographic area assessed). Thus, any operator that

[14] Ofcom (2021) *WFTMR Statement Vol. 2 Market Analysis* Para. 7.29

[15] ibid Para 7.7

[16] ibid Para 7.69

[17] Ofcom 2020 *WFTMR Consultation Volume 2: Market assessment* Para. 7.48

covered less than 50% of premises passed in a postcode sector cannot be "established" as it would not even count as present.

37. Ofcom provided data about the number of postcode sectors where both Virgin Media O2 and CityFibre were present, which were the only networks it considered could have constrained BT.[18] It found that there were 34 postcode sectors covering just 100,000 premises (0.4% of the UK total) where both operators were present. Ofcom pointed out that the 100,000 premises was the overall total in the 34 postcode sectors and they were not all necessarily covered by Virgin Media O2 and CityFibre.

38. However, we do not think that such an implied definition is detailed enough to be used in a market definition that may result in the removal of, or significant reduction in, regulation in a relevant market. We, therefore, consider below what could be a more operational definition.

3.2 Defining "Established Rivals"

39. A well-established company is one that is likely to have been in existence for some time relative to other companies in the market. In itself though, this is not enough, and we would need to consider whether it has a substantial presence in the market. To be an established rival to BT, the firm would need individually or collectively with the second rival to be a constraint on BT's market power and prevent BT from acting independently of competitors, customers and consumers – the definition of SMP.

40. Table 1 below shows the time since the largest altnets were founded and number of premises passed and connected. We have extended the group of networks analysed beyond Virgin Media O2 and CityFibre to include all networks reporting more than 500,000 premises passed as of February 2024.

41. Apart from Virgin Media O2, all potential rivals were founded more than 25 years after BT was incorporated in 1981. BT had, of course, existed for many decades before that as part of the Post Office and as a separate government owned entity.

42. To assess whether a company has a substantial presence in the market, the table includes the number of premises passed and the connected. Only CityFibre, with 3.2 million homes passed, has passed substantially more than one million homes and even then only 11.3% of UK households.

[18] ibid Table 7.2 p. 135

Table 1: Fibre Network Builders Indicators of Established

Company	Founded	Premises Passed (Gigabit capable) ('000)	Premises Connected ('000)	Take up
BT	1981	11,852	3,871	33%
Virgin Media O2	1980s as local cable companies 1998 as ntl 2006 as Virgin Media 2021 as Virgin Media O2	17,000	5,800	34%
CityFibre	2011	3,200	337	10.5%
Community Fibre	2013	1,100	225	20%
Hyperoptic	2010	1,000	250	25%
Netomnia	2019	850	80	9%
Gigaclear	2010	500	90	18%

Source: company reports, ISP Review, fibreprovider.net, Think Broadband

43. The question for purpose of Ofcom's definition of Area 1 then becomes whether any two rivals, were they operating in the same area, could constrain BT's behaviour.

44. At a national level, it is clear that the newer fibre network builders do not have the coverage necessary to constrain BT's behaviour in the wholesale market. However, at the local level, Ofcom will be able to establish whether there are any postcode sectors where two rivals have both the coverage necessary to count as present, as it did in 2021. It would then need to assess whether such presence translates into an ability to constrain BT's behaviour and so means the rival is established.

45. The starting point for assessing whether a firm has SMP is its market share in the relevant market. Ofcom has traditionally used a market share of 50% as in itself evidence of SMP.[19] This suggests that the two rivals need to have at least a 50% market share between them, reducing BT's share to below 50%. We would expect a somewhat more nuanced definition whereby, for example, both rivals would need a minimum 20% market share, to avoid a situation where the second rival has a very small market share.

46. In Annex A we present a list of other European countries and how they define competitive geographic areas. In most cases the regulator requires the presence of at

[19] Ofcom op cit Para A1.35

least two rival operators *and* the former SMP operator to have lost a minimum of 50% market share.

47. There are other criteria that can be used alongside the potentially SMP operator's market share to determine whether it has SMP even if it has a less than 50% market share.[20] In the Consultation, Ofcom says that it will examine barriers to entry and expansion, countervailing buyer power and pricing.[21] We think that Ofcom should also assess: absolute and relative size of the undertakings, easy or privileged access to capital markets/financial resources, economies of scale or scope, status quo advantage through established relationships with no switching costs and a highly developed distribution or sales and distribution network.

48. Looking at some of the other criteria listed above, BT is clearly larger than its rivals. In the year to March 2023, BT plc had a group turnover of £20,681 million and profits before tax of £1,789 million. By contrast, CityFibre, the largest altnet, had revenues in the year 31st December 2022 of £81 million and a loss of £223 million. BT had a total balance sheet value (assets less current liabilities) of £42,360 million against £3,024 million for CityFibre on the same basis. This difference in size also gives BT privileged access to capital not available to any altnet.

49. Access to capital is important as it indicates companies' capacity for extending their network coverage: the more easily firms can access capital, the more they can extend their networks.

50. BT has not announced the future capital expenditure it will make in its fibre network but has said that it is targeting passing 25 – 30 million homes by FY28 – FY30 compared with its current level of around 10 million homes and £15 billion of investment. It could therefore be investing around £30 billion to extend its network to 20 million more homes. This level of funding is not available to other fibre network builders.

51. Looking at four fibre network builders specifically, Redburn Atlantic show that three of the largest altnets have less than one year's worth of debt headroom with which to continue their rollout.[22] Without additional funding, this restricted headroom is likely to significantly limit these altnets's ability to extend their networks further and so provide further competitive constraint to BT.

52. It has been argued, for example by UKCTA and Axione in the 2021 WFTMR, that Ofcom should determine whether a network is present in an area based on planned rather than actual build. Although market reviews are forward-looking we support the position Ofcom took in 2021 when it rejected their proposal to include prospective network build

[20] ibid Para A1.36

[21] Ofcom 2020 op cit Para. 8.75

[22] Redburn Atlantic (2023) *UK Fibre: Alt.net Material Uncertainty November 2023*

in its definition of Area 1 and to only count actual build. In rejecting the proposal, Ofcom stated:

"We are likely to deregulate, or at least significantly reduce regulation in, Area 1 and it would be risky to do this on the basis of prospective build. In addition to the uncertainty of prospective build plans we would be concerned about the time in could take for an operator to build a network and become established. We will capture any such build in future reviews after is has occurred."[23]

53. We agree with Ofcom's statement and its reasoning. There is always uncertainty about future actions and many unforeseen circumstances can delay network build and Ofcom will be able to compare the projections provided at the time of the 2021 WFTMR with actual build since then. For this reason, we think Ofcom should not change the way it measures the number of premises in Area 1 and stick to the number of premises actually passed, rather than prospective build. By sticking to the same approach, Ofcom will be reinforcing regulatory consistency, which is important to investors in the market.

54. Even the largest altnets are vulnerable to interest rate rises given their high level of indebtedness and this position is likely to be much worse for smaller altnets with business plans that may not stand the economic conditions in the market today. Whatever their planned build was, it is more than likely that companies with unsustainable business models will not reach these targets and so, if Ofcom took their original build plans into consideration, it would be making assumptions about prospective build that are very unlikely to materialise.

3.3 Conclusion on Competitive Conditions

55. We conclude from the above that for the purpose of defining Area 1 in this market review, that it is extremely unlikely that BT faces competition from two *established* rivals in the vast majority of postcode sectors across the UK. This does not preclude the presence of two or more rivals in the same postcode sectors but given the relative size of BT and rivals in the wholesale market we would be very sceptical that these rivals can place a sufficient competitive constraint on BT to count as "established" under this regulatory framework.

56. We anticipate that Area 1 either does not exist at all or is too small to have significantly different competitive conditions to Area 2. Therefore, our assessment of the market conditions is that an insufficient number of postcode sectors comply with the definition

[23] Ofcom op cit. Para 7.69

of Area 1 for a separate market to be found to exist in practice. The whole of the UK therefore remains in either Area 2 or Area 3.

57. Given the need for regulatory consistency to facilitate investment by all players in the market, any change to the definition of Area 1 would increase risk for competitors and so raise their cost of capital. We also believe that Ofcom should not seek to interpret its definition of Area 1 in a manner that weakens the definition and allows it to find Area 1 exists in practice. Maintaining a consistent definition is vital so that regulation is not seen as a risk which could drive up investors' cost of capital and so reduce network build still further.

58. There remains a question as to why sustainable competition has been so slow to develop, especially as BT has been investing in its fibre network and there are 100 or so builders of fibre networks in the country. Our experience over the past year is that BT continues to enjoy SMP and has both the incentive and the ability to exclude rivals from the market to protect its market position. Even if its actions are not designed to exclude rivals, exclusion is the effect of those actions. We explore this matter in the next section of our paper.

4 The Competition Problem: Exclusion

Regulation should always be designed to address the competition problem that exists in a market. We argue that the main problem affecting the development of sustainable competition is the exclusionary effect of BT's behaviour.

The most significant action taken by BT which has had an exclusionary effect was the introduction of the Equinox and Equinox 2 offers. In the year after the announcement of Equinox 2, the level of announced investment by altnets fell precipitously and industry redundancies amounted to over 1,600. This data is consistent with exclusionary behaviour by the dominant firm.

In the WFTMR, Ofcom regulated BT's prices for the "anchor product". This is an effective form of regulation when the competition problem is the dominant firm's ability to exploit consumers and when pricing freedom is needed to allow the market to find the right price level. However, it is not designed to protect competitors from exclusionary effects. Therefore, there is a need to supplement the regulation of prices to address the problem the market faces today. As copper switch-off advances, it is essential that it is not leveraged by BT to entrench their SMP position in fibre.

59. We regard exclusion as the major competition problem in the WLA market and ask that Ofcom take action in the TAR to address this problem. Specifically, we believe that Openreach's Equinox and Equinox 2 price packages have made it harder for altnets to gain sufficient wholesale customers for them to reach the scale needed to be sustainable in the market. This exclusionary effect is incremental to the challenging financial environment which are faced by all network operators.

60. As the dominant wholesale access provider, Openreach's prices affect the pricing of the retail and wholesale markets, including those vertically integrated companies that do not offer wholesale access. Therefore, if Openreach reduces its pricing then the rest of the market needs to reduce pricing to remain competitive. If such price reductions cannot be offset by cost reductions, then their return on investment is decreased, potentially reducing the incentive to invest, resulting in less competition. For BT, therefore, there is a strong incentive to reduce short term pricing and disincentivise investment by others to preserve its dominant position.

61. Even a market with free entry does not guarantee that industry structure will become less concentrated over time. Markets with high barriers to entry can make it difficult for new firms to challenge the dominant incumbent even if the latter does not behave strategically. If the incumbent does behave strategically, things may be even more difficult for the entrant and so *"competition authorities should be vigilant and promptly*

intervene whenever monopolists impede entry through practices whose profitability derives only from their ability to keep entrants off the market".[24]

62. The WLA market has the high barriers to entry that Motta refers to as entrants incur high network build costs, higher cost of capital and face lower economies of scale on operating costs. They are therefore at an immediate disadvantage in relation to the incumbent even if the incumbent does not price below its own costs. Ofcom needs to tread a careful path between the long-term interests of consumers that come from effective competition and the short-term lower prices the incumbent can charge but which have the effect of excluding effective competition.

4.1 Evidence of Exclusion

63. As we are not privy to decision making processes within BT, we cannot present any evidence of actions being taken with the objective of consolidating its position by excluding rivals or deterring expansion. However, we can present evidence from the market that is consistent with exclusionary effects.

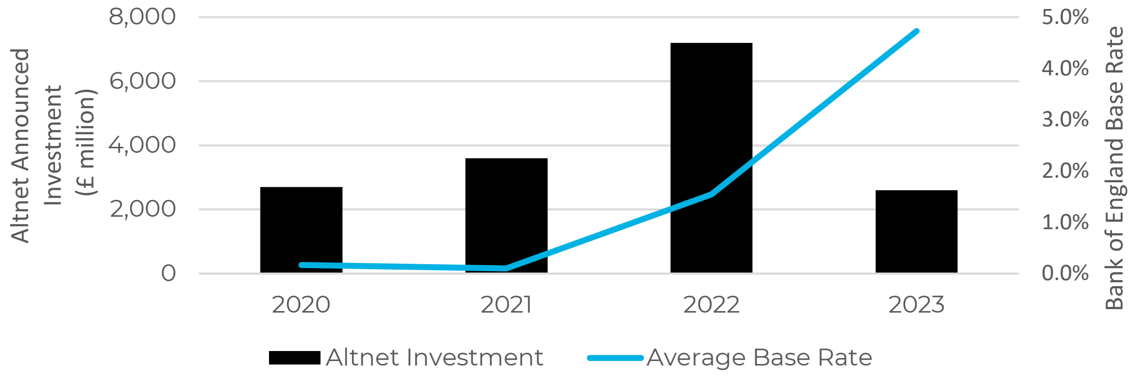
64. Equinox 2 was announced in December 2022 and then introduced in June 2023 at the same time as Bank of England base rates were increasing rapidly. Figure 2 below shows that between 2022 and 2023 there was a 64% decline in announced investment by altnets from £7.2 bn to £2.6bn as the Bank of England base rate increased to 5.25%.

65. This suggests that providers of capital to altnets became markedly less willing to risk further funds. However, as we referenced earlier25, Enders Analysis suggests that higher interest rates "unlikely to be the full explanation, with financial markets having far from closed off completely and the higher interest rates still being fairly modest by historical standards". We would expect rational investors to price-in interest rate variability and so to have allowed for at least some increase in rates into their business plans. Therefore, we need to look for explanations for this marked slowdown amongst other factors that are not related to economic conditions.

[24] Motta, M. (2004) *Competition Policy: Theory and Practice* Cambridge University Press, p.88-89.

[25] See paragraph 122

Figure 2: Altnet announced funding & Interest Rates



Source: Enders Analysis & Bank of England

66. Further evidence that is consistent with exclusionary effects taking hold in the market is the number of job losses amongst fibre builders. Multiple fibre builders have announced redundancies since February 2023, with total announced redundancy numbers from public announcements in excess of 1,650.[26].

67. In addition to the number of redundancies, a signficant number of fibre builders have announced a slowdown in network construction, which is consistent with the reduction in funds available shown in Figure 2.

68. The evidence presented above may not be conclusive evidence of BT's behaviour having a direct exclusionary effect on altnets. Other factors, such as higher bank base rates, have also contributed to this reduction in investment and employment. However, this evidence is consistent with Equinox 2 having such an exclusionary effect, resulting in a cumulative negative impact on the development of competition.

69. More evidence would be needed to confirm that there has been an exclusionary effect of Equinox 2 and we therefore suggest that Ofcom uses its information gathering power during the TAR process to investigate further evidence of exclusion that is not in the public domain. For example, Ofcom should investigate BT's internal documents relating to its discussions with ISP customers in relation to Equinox 2 to ascertain whether any exclusionary intentions or effects exist. Ofcom could ask to see discounted cash flow analyses before and after the introduction of Equinox 2 to see how it has impacted fibre network builders' anticipated Internal Rates of Return.

70. Ofcom will then be in a better position to determine whether exclusion is the main competition problem in the market and what actions should be taken to remedy the problem.

[26] Enders Analysis, Press announcements

71. In the remainder of this Section, we examine the current regulation of Openreach; current thinking on exclusion as a competition problem and the features of Equinox 2 that are having an exclusionary effect.

4.2 Current Regulation of Openreach

72. In 2021, Ofcom found BT to have SMP in the national PIA market and WLA market in Areas 2 and 3. As a result it imposed the remedies shown below in Table 2.

Table 2: Remedies imposed on BT 2021

Market	Network Access	Transparency	Charge Control	Quality of Service	EOI/Non-discrimination	No geographic discounts
PIA	✓	✓	Cost based	× Voluntary KPIs	Non-discrimination	×
FTTC 40/10 Anchor (Area 2)	✓	✓	Flat prices in real terms	Repair, provision and appointments standards. KPIs	EOI	✓
FTTP or G.Fast (All bandwidths) (Area 2)	✓	✓	× 40/10 where no copper service is available	× KPIs only	EOI	×
FTTC 40/10 Anchor (Area 3)	✓	✓	Flat prices in real terms	Repair, provision and appointments standards. KPIs	EOI	✓
FTTP or G.Fast (All bandwidths) (Area 3)	✓	✓	× 40/10 where no copper service is available	× KPIs only	EOI	×

Source: Adapted from Ofcom WFTMR Statement 2021, Vol 1, Tables 2.1, 2.2 & 2.3

73. The obligation to provide network access removes the ability of BT to simply refuse to supply wholesale services to its rivals where it has SMP. This resolves the immediate problem of exclusion. The EOI obligation is designed to ensure that Openreach must provide WLA access on the same terms to external customers as it does to BT's own downstream divisions.[27] In theory, this should prevent exclusion of rivals whilst allowing BT to operate profitably in the retail market. However, as we will argue below, regulating the anchor price only has led to exclusionary effects. Likewise, making PIA available on a no undue discrimination basis, without effective separation, has led to some perverse

[27] Ofcom (2005) *Final statements on the Strategic Review of Telecommunications, and undertakings in lieu of a reference under the Enterprise Act 2002 Statement*. Page 61 – Definitions

effects on the internal and external pricing of PIA, to the disadvantage of purchasers of PIA.

4.3 Practices that Exclude Competitors

Exclusionary Effects and Anchor Pricing

74. The charge control introduced in the 2021 WFTMR was the regulated price of the anchor product, which was deemed to be 40/10 Mbps. Many stakeholders considered this was the wrong anchor product, as it was too slow. This appears to have been the view of Openreach as well as with Equinox 2 it lowered the price of 80 Mbps and 115 Mbps below that of the anchor product and priced their 160 Mbps product at the same level as the anchor product. By implication, therefore, it considers 160 Mbps to be the anchor product.

75. Regardless of what is the appropriate anchor product, our view is that anchor pricing is, in fact, not sufficient price control on its own as it is designed to address consumer exploitation, whilst allowing the market to find the "right" price for higher quality product variations.

76. This function of anchor pricing was recognised by Ofcom as far back as 2008 when it stated that one of the main advantages of anchor pricing was that "*the ability to charge excessive prices is limited because the anchor product's price constrains the prices of all other products offered*". Ofcom also saw that anchor pricing would allow investors in fibre networks to trial different price points for superior products and change prices to earn a return on their investment.[28]

77. The most important point to note is that anchor pricing was not designed to protect competitors from exclusionary pricing and so not designed for the key problem facing the market today. We, therefore, think that it is necessary that Ofcom adapt its price control approach in the 2026 TAR to one designed to prevent exclusion, whilst still encouraging investment in fibre networks by both BT and its rivals such as nexfibre. Our view is that PIA should be priced at cost with an Economic Replicability Test between the PIA cost and the anchor product. We explain in more detail in Section 6.2 below.

Current Thinking on Exclusionary Effects

78. There are many behaviours of a dominant firm that can have the effect of deterring competitors from market entry or expansion. These include setting prices below cost, foreclosing rivals' access to essential facilities and price and non-price discrimination. In a market where Ofcom and the government are seeking to promote competition, it is important that Ofcom is vigilant and intervenes to prevent such behaviours, even if it may sometimes be difficult to differentiate genuine competitive strategies from

[28] Ofcom (2008) *Delivering Superfast Broadband in the UK* Para. 7.18

exclusionary ones. In theory Ofcom has taken actions that address exclusion with the current set of remedies, but as shown in Section 4.1, there is evidence that is compatible with Equinox 2 having an exclusionary effect and this needs to be addressed to meet Ofcom's objective of promoting competition.

79. A recent contribution by Fumagalli and Motta[29] to the literature on exclusionary abuse draws a useful distinction between horizontal foreclosure practices that reference rivals and those that don't. They define a practice that references rivals as: "exclusive dealing and rebates conditioned on buyers purchasing a large part of their needs from the dominant firm".

80. They go on to say that these practices:

> *"do not necessarily require profit sacrifices on the side of the dominant firm and have a high anti-competitive potential. Accordingly, they should be treated as presumptively abusive and the burden of proving otherwise should fall on the dominant firm. For this category of cases, a price-cost test does not shed light on the lawfulness of the practice. Accordingly, if the defendant showed that it is setting prices above cost, this should not be treated as discharging its burden of proof."*[30] (Emphasis added)

81. This is a somewhat more nuanced approach than the traditional Areeda-Turner approach which presumes that prices above cost (usually marginal cost or average variable cost) are non-exclusionary.[31]

82. The authors refer to economic literature that shows that exclusive dealing and market share contracts have particularly strong exclusionary effects when the rival/entrant needs to achieve efficient scale to operate profitably, as is the case in the WLA market. These contracts involve a commitment by the buyer for the duration of the contract and this facilitates exclusion by allowing a dominant firm to benefit from a first-mover advantage and deter further entry.

83. Finally on this point, the authors do not rule out the possibility that such behaviours could increase consumer welfare and hence call for a rebuttable presumption of harm and not a *per se* prohibition.[32]

84. Beyond practices that reference rivals, the authors discuss the role of price-cost tests in predatory contracts and make the point that that below cost pricing is not necessary for an exclusionary effect. In doing so they give the example of the deep-pocket theory of

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[29] Fumagalli, Chiara, and Massimo Motta. *Economic Principles for the Enforcement of Abuse of Dominance Provisions*. Centre for Economic Policy Research, 2024.

[30] ibid. Pages 2-3

[31] Phillip Areeda and Donald F. Turner *Predatory Pricing and Practices Under Section 2 of the Sherman Act,* 88 Harv. L. Rev. 697 (1975).

[32] ibid. Pages 11-12 and references therein.

predation that limits rival's profits enough that it will not be able to raise external financing.

85. In the paper on the deep pockets theory of predation referred to by the authors[33] there are two competing firms: an incumbent which has access to internal capital and an entrant that requires external funding. The incumbent firm seeks to limit the profits the entrant can earn to a level below that which investors require to make capital available to continue with its investment plans. The exclusionary prices set by the dominant firm would require it to sacrifice profit in the short-run but not necessarily incur an actual loss. Thus, the dominant firm's prices would "pass" a price-cost test, but still be exclusionary.

86. The authors conclude this point by stating that "economic theory does not suggest that the criterion to distinguish prices that are predatory from those that are simply the result of fierce competition is generally a price-cost test."[34]

87. The overall conclusion from the Fumagalli and Motta paper is that even a price above cost may be exclusionary. In cases where the practice references rivals, the behaviour should be subject to a rebuttable presumption that it is exclusionary. Even where they do not reference rivals, passing the price-cost should not always be regarded as a "safe harbour" for the dominant firm.

88. Our reason for summarising Fumagalli and Motta in the detail we have is that we believe that Openreach's behaviour, and in particular its Equinox price packages, meet the paper's tests for being exclusionary and so need a different regulatory approach than the one adopted by Ofcom in the 2021 WFTMR.

The Exclusionary Effects of Equinox

89. First, it is clear that Equinox 1 referenced rivals by setting the required minimum proportion of orders placed with Openreach to be on its FTTP network, where available, to qualify for the discounts (the "Fibre Only Measure"). The creation of Failsafe Mechanism in Equinox 2 was designed to correct this by excluding "overbuild areas" areas from the renamed Order Mix Targets (OMT).

90. However, an area is only counted as an overbuild area where there is an alternative fibre supplier to Openreach and the Equinox 2 customer (the ISP) has placed at least one order with the specified network supplier to at least one address passed by the supplier in the relevant period.[35] In our view, this second requirement has the effect of negating the overbuild areas as a means to prevent exclusion.

[33] Bolton, Patrick, and David S. Scharfstein. *A theory of predation based on agency problems in financial contracting.* The American economic review 93-106 (1990)

[34] Fumagalli and Motta op cit. page 12

[35] BT Openreach Presentation (December 2022) *Equinox Failsafe Mechanism – Overview* Slide 4

91. In addition to the advantages enjoyed by BT due to its scale and scope, it has "status quo" advantages through its established relationships with ISPs due to its legacy dominant position. ISPs have in the past had no option other than to use BT as their supplier. Today, as competition emerges, ISPs have to actively seek to switch away from BT and their established supply arrangements. As outlined below, ISPs incur cost when choosing to order with altnets, including technical, operational and system change costs.

92. Before an ISP can place an order with a supplier it needs to have a commercial agreement in place. The ISP will also have a material IT investment cost to integrate into a new wholesale access provider as well as management and operational resources required to make it happen. The ISP can only recover this investment if it receives a significant discount from the alternative fibre network supplier relative to the Openreach price. Further, the ISP would have to place enough orders with the altnet so that the cashflow it receives from lower prices paid to the altnet compared with BT recovers the fixed costs at an appropriate discount rate.

93. These costs, and the revenue required to recover them, would be replicated for each additional network it seeks to use as a wholesale supplier. Any lack of operational homogeneity between network providers would result in an inconsistent experience for ISP customers that could reduce switching.

94. As pointed out by Enders Analysis:

> *"The critical issue seems not to be price or service level, but having enough scale to make the extra systems work and hassle of having two or more suppliers worthwhile, bearing in mind the huge emphasis that scale ISPs put in simplicity in order to keep their operating costs low".*[36]

95. This means that ISPs will need to be confident that the supplier's network is large enough to recover the investment costs and of good enough quality not to create reputational harm and lost customers. It also means that the altnet's price discount relative to the BT price will remain large enough to recover the investment costs. As a result, we would not expect to see substantial multi-sourcing of fibre networks by ISPs. Network switching by ISPs is likely to be limited.

96. In order to remain competitive with BT, the price discount that altnets must offer to attract ISP switching puts them at a financial disadvantage to BT.

97. Second, we raised in our response to the Equinox 2 consultation our concern with BT drip feeding price cuts that set an expectation of further reductions. In their Annex to our submission Keystone wrote:

> "*As Equinox 2 does not change the benchmark ISPs have to outperform in terms of their order ratios, the additional discounting of wholesale prices can only be described as a 'drip-feed 'change to the existing price mechanism. Rather than*

[36] Enders Analysis op. cit. p. 24

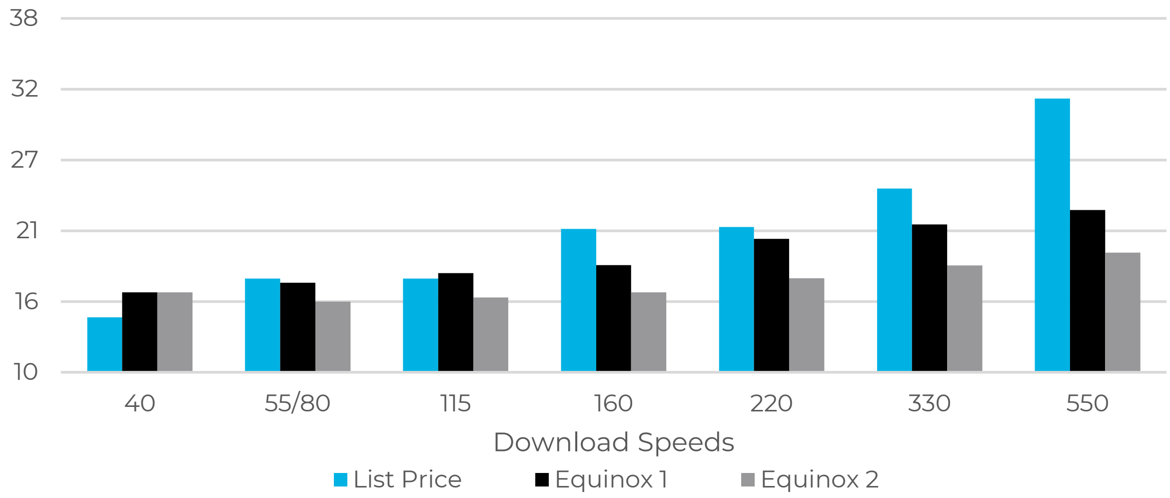
promoting more competition in the market and accelerating the migration of customers from legacy products to full-fibre, by focusing on lowering its prices again at this point in time, Openreach merely appears to be seeking to retain ISPs (preventing the loss of substantial order volumes to altnets). Whilst it introduces some further connection discounts, beyond this it does not contain any new provisions to incentivise migration of existing FTTC customers to FTTP despite its stated aim. Therefore, the new pricing scheme outlined in Equinox 2 gives ISPs a further incentive not to switch to altnets, even in areas where full-fibre infrastructure other than Openreach is available."[37]

98.

99.

Figure 3 below shows the BT list price of various WLA speeds at the beginning of the market review period (1st April 2021), along with the prices for Equinox 1 (1st October 2021) and Equinox 2 (originally scheduled for 1st April 2023) in nominal terms. The price of 1Gbps has been excluded for presentational reasons as the list price was £80 per month which dwarfs the other prices and makes the chart difficult to read. The Equinox 1 and 2 prices for 1Gbps were £20.48 and £21.30 respectively.

Figure 3: Drip feed pricing



Source: BT Openreach price lists

100. The two Equinox price schemes were introduced six months and 24 months after the market review and could set a reasonable expectation amongst ISPs and altnets of additional price reductions in the near future. This could lead ISPs to wait for any future reductions before making the investment needed to dual source fibre providers and buy access from an altnet. For altnets, this expectation could lead to a concern that

[37] Keystone (2023) *The effect of BT Openreach's Equinox 2 on altnets*

future Openreach prices will make it even harder for them to compete and so scale back their investment.

101. As part of the agreement with Ofcom to allow Equinox 2, BT committed not to introduce further price cuts until the 2026 market review. However, in a period of relatively high inflation, holding prices the same in nominal terms is a price cut in real terms. The CPI in March 2024 rose by 3.2%, reducing the Equinox 2 prices in real terms by a further £0.49 - £0.68 per month.

102. It may well be hard for Ofcom to determine whether the price reductions introduced by Equinox 1 and 2 were designed to be exclusionary. However, given that (i) the price reductions in Equinox are intentionally structured as short term benefits, with higher indexation offsetting the reductions in the medium term; and (ii) the subsequent reduction in investment and employment by altnets the effect appears to have been to deter further entry and expansion.

103. Third, provided the ISP meets the OMT outside the overbuild area, and if the adjusted measure is greater than the standard measure then the adjusted Fibre Only Measure is used to set discounts across the whole of the Openreach FTTP footprint, which would of course include any overbuild areas.[38]

104. So, if the ISP were to place minimal number orders with Openreach outside overbuild areas it would qualify for the discount across the whole of Openreach's FTTP footprint, including overbuild areas. Alternative fibre network operators in the overbuild areas would then have to compete with the Equinox 2 prices, which for some higher speeds are below the anchor price.

105. Research by Goldman Sachs finds networks need to supply to 40 – 50% of the premises passed by their network to achieve profitability and that this hurdle is likely to be rising[39]. By closing some of the local market to entrants through lock-in contracts, Openreach is making it harder for its rivals to meet this threshold.

106. Fourth, rivals entering the market are highly dependent on external financing and do not have the financial reserves built up by BT, as evidenced by public accounts.

107. The data suggests that it would not take much for the external financiers supporting these companies to cease to provide further financial support to most of these companies. As these altnets have to compete with the lower prices in Equinox 2, and the "status quo" advantage enjoyed by BT as the existing supplier to most ISPs, it is conceivable that their ARPU could fall below the interest costs per user. This inevitably

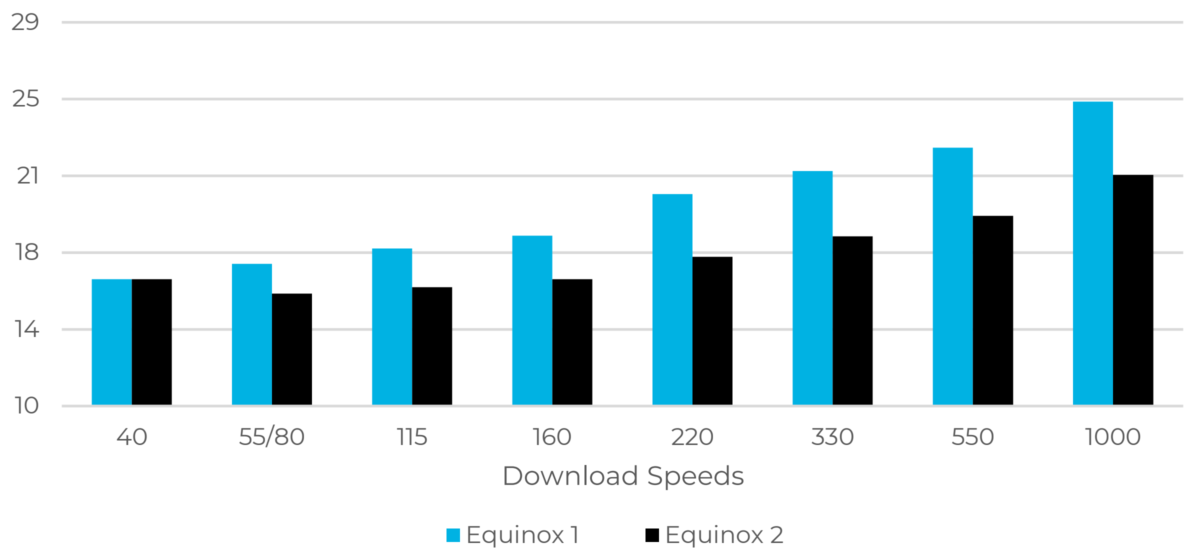
[38] ibid Slide 3

[39] Goldman Sachs Equity Research (2023) BT Group 11 January 2023, p. 11

has the effect of reducing the value of network investment and makes it harder for altnets to raise external capital.

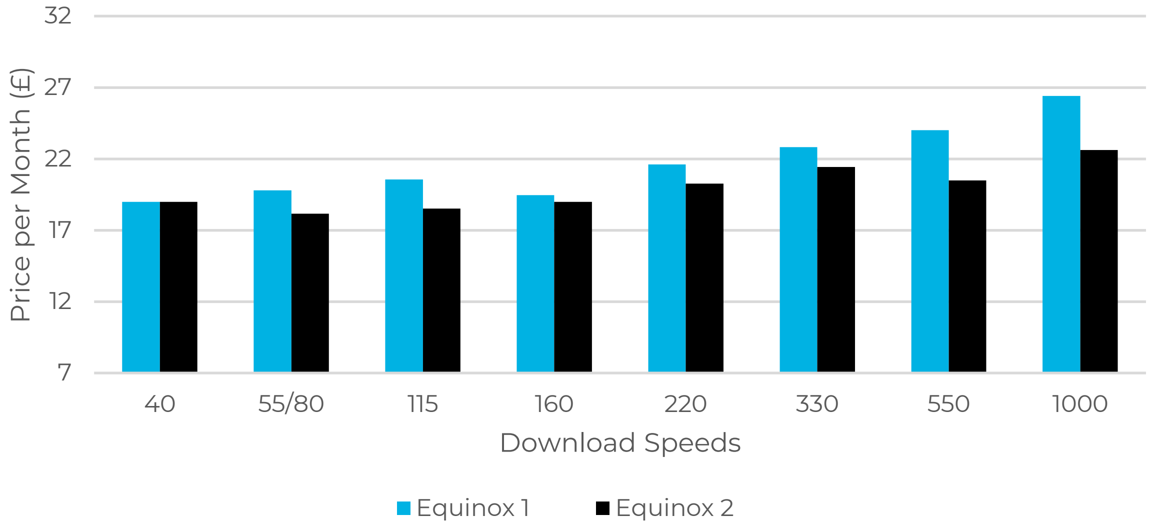
108. Finally, Equinox 2 has decreased the price gradient across the bandwidths compared with Equinox 1 both at launch and over time. Figure 4 shows the Openreach rental prices for each download speed at the launch of Equinox 2 in 2023 and compares the prices of Equinox 1 and 2. Setting the intercept at the anchor price of £16.20 for both price packages, the coefficient of the gradient for Equinox 1 is 0.89 against 0.38 for Equinox 2. i.e. the price gradient is shallower for Equinox 2 than Equinox 1.

Figure 4: Equinox 2 vs Equinox 1 Price Gradients at Launch



109. We have produced a similar chart to Figure 4 projecting prices forward to 2031 using BT indexation for Equinox 2 and assuming a CPI of 2% for each year. These projected prices show an even shallower gradient for Equinox 2 which also does not increase linearly across the bandwidths. Instead, we see that the price increases between 80 Mbps and 330 Mbps before dropping down at 500 Mbps and then increasing again. This is caused by a change in the indexation between 330 Mbps and 550 Mbps from CPI or 0% whichever is highest to CPI – 1.25% or 0% whichever is highest. Provided CPI is greater than 1.25%, which it is in normal circumstances, then prices of higher speeds will increase more slowly than prices of lower speeds.

Figure 5: Projected Equinox 2 vs Equinox 1 Price Gradients 2031



110. At first sight this looks beneficial for consumers as the marginal price of higher speed access decreases across the bandwidths making it more attractive for consumers to upgrade to a higher speed product. However, for the ISP the marginal cost of trading up a speed band is lower for Equinox 2 than for Equinox 1 and continues to decline into the future. This gives the ISP more incentive to trade up on Openreach than by switching to an alternative supplier.

111. Anchor pricing is not able to prevent such exclusionary effects. Indeed, we have seen that BT is able to ride roughshod over the anchor pricing regime by setting the price of higher speed services below the anchor price which lowers the price rivals have to compete against. Alternative remedies are therefore needed targeted at the competition problem that actually exists. In Section 6 below we set out a set of actions that Ofcom can introduce in the TAR that address the immediate exclusionary effects of Equinox 2 and a longer term solution to make the market more competitive through an economic replicability test (ERT) between PIA and wholesale fibre.

Exclusionary Effects and Copper Switch-Off

112. As mentioned, as Openreach rolls out its fibre network it will be retiring the old copper network, a process known as "copper switch off". Once 75% of the homes and businesses connected to a particular exchange can get full fibre it will not be possible for customers to buy copper products if full fibre is available at their premises. As a builder of full fibre networks, we understand the technical and financial reasons for Openreach to retire the copper network and support the need for Openreach to decommission its legacy network.

113. However, we have concerns regarding the potential for BT to leverage copper switch-off to its own advantage. Ofcom should ensure that a competitively neutral approach to copper switch-off is adopted as part of this market review. BT has enjoyed SMP through

its copper network for a long period and it is vital that switch off is not used as an opportunity to entrench SMP on its fibre network.

114. Equinox 2 introduced a reduction on customer connection charge for migration from Openreach copper networks to fibre networks, discounting by more than 50%. This incentive to migrate to Openreach fibre acts as a disincentive to switch to fibre provided by altnets. Together with the pricing schemes discussed above, the impact of this is to create migration incentives which have an exclusionary effect on other operators.

115. An additional concern is that Openreach unilaterally decides when an exchange area will be switched to fibre on the terms noted above. It can then target exchanges where there is little or no build by competing fibre network operators, which means that ISPs who want to switch to fibre will have to use Openreach in that exchange area. This will give Openreach a significant first mover advantage and may well foreclose that exchange area to alternative fibre providers.

116. This advantage is not replicable by altnets who have built out their fibre network to 75% of properties in the exchange area, where Openreach has little or no fibre coverage. So altnets cannot themselves benefit from the same first mover advantage.

4.4 Ofcom's Analytical Framework

117. In the WFTMR, Ofcom set out an analytical framework for assessing other commercial terms offered by BT, which it then deployed in its assessment of Equinox 1 and 2. In this framework, it stated that the creation of a barrier to using alternative network operators would only be justified where "the arrangements are essential to Openreach's business case for fibre roll-out".[40]

118. We objected to this wording at the time as we do not think it is Ofcom's role to allow barriers to switching to emerge if they support Openreach's business case.

119. However, part of Openreach's business case for fibre roll-out will be that Ofcom allows Openreach to progress with copper switch-off and so it would want to migrate customers to fibre to allow it to decommission the copper network. Naturally, we do not object to customers moving to fibre. However, this needs to be done in a manner that is competitively neutral and does not allow Openreach to deter customers choosing alternative networks.

120. Ofcom should be vigilant that Openreach's commercial terms do not disproportionately favour itself when progressing with copper switch-off.

[40] Ofcom (2021) *WFTMR Statement Vol. 3* Para. 7.154

4.5 Conclusion on Exclusionary Effects

121. There is evidence that investment and employment by altnets has decreased since the introduction of Equinox 2. Although this is not conclusive evidence that Equinox caused the downturn, it is consistent with an exclusionary effect of Equinox 2. We consider that this has compounded the issues stemming from the macroeconomic factors and unsustainable business plans described above.

122. There are five ways in which we consider that Equinox 2 could have the effect of excluding rivals to BT: increasing switching costs, drip feeding of price cuts creating the expectation of more cuts to come, leveraging the Equinox 2 discount from non-overbuild areas to overbuild areas, reducing prices to a level where altnets will find it harder to obtain external finance, and flattening the price gradient giving ISPs less incentive to switch suppliers as they move up through the bandwidths.

123. Further, the current process for copper switch off unduly favours Openreach as it can use migration incentives to disincentivise switching to fibre networks of other operators and is in control of when copper is no longer available in an exchange area. This gives Openreach a first mover advantage that cannot be replicated by altnets. The migration incentives included in Equinox further disincentivise switching to alternative suppliers.

124. Anchor product pricing is a regulatory remedy designed to prevent exploitative pricing by the dominant firm whilst allowing pricing freedom for higher speed products. History shows, however, that the competition problem in the market is exclusion of rivals and not exploitation of consumers. An alternative approach is therefore needed, which we will discuss later in this paper. Before then, we address problems with the differential treatment of Openreach and alternative fibre networks in relation to PIA.

5 Physical Infrastructure Access and No Undue Discrimination

PIA has been the most important regulatory change introduced by Ofcom, facilitating investment and competition in this market. Effective regulation of PIA is vital for the future development of the market. Under the regulation Openreach makes PIA available under a no undue discrimination obligation. Examining BT's Regulatory Financial Statements, we see a material disparity between the internal cross charge for PIA within Openreach and the price paid by competitors that clearly favours Openreach. This is an issue that needs more detailed investigation.

125. As we have already noted, PIA has been the single most important regulatory change that has facilitated fibre investment over the past few years by dramatically reducing the cost to build and increasing build speed. However, competitive network operators are now dependent on PIA pricing and on being treated equally by BT. In the extremely fragile investment environment noted above, an increase in PIA pricing and/or discrimination in the supply of PIA would be a strong disincentive to further investment and competitive network build.

126. PIA is a critical input for nexfibre which helps to make us more efficient in the way we rollout our network. Under the current set of remedies, it is provided under the obligation of no undue discrimination.[41] This means that it can be provided by Openreach to itself on different terms to those under which it is supplied to external customers, provided such different treatment is justified and does not unduly discriminate against external customers.

127. Ofcom's predecessor, Oftel, set out its interpretation of the meaning of non-discrimination in 2002, when the obligation was introduced into the regulation of the communications sector. It stated:

"'Non-discrimination' does not necessarily mean that there should be no differences in treatment between undertakings, rather that any differences should be objectively justifiable, for example by:

a) differences in underlying costs, or

b) no material adverse effect of competition."[42]

[41] Except where Openreach supplies PIA to other downstream divisions of BT when it must supply under EOI. (See *WFTMR 2021 Vol. 3* Para 3.77)

[42] OFTEL, 2002. *Imposing Access Obligations under the new EU Directives*. Section 3.8

128. This was interpretation was updated by Ofcom in 2005 to become:

> *"...undue discrimination describes when an SMP provider does not reflect relevant differences between (or does not reflect relevant similarities in) the circumstances of customers in the transaction conditions it offers, and where such behaviour could harm competition."*[43]

The two definitions are similar in that the first half concerns unjustifiable differences in treatment and he second half concerns harming competition.

129. An examination of BT's Regulatory Financial Statements shows a discrepancy between the internal "price", or transfer charge, that Openreach charges itself for PIA products and the regulated price charged to other fibre providers.

Table 3: Internal and External PIA Price and ROCE 2022-2023

Product	Measure	Average Internal Price	Internal ROCE	Average External Price	External ROCE
Lead-in duct	Lead-ins	(1.23)	6.80%	9.94	50.7%
Spine duct - 1 bore	km	(6.25)[44]	6.80%	310.00	30.5%
Spine duct - 2 bore	km	(3.35)	6.80%	200.00	33.7%
Spine duct - 3+ bore	km	(2.92)	6.80%	140.00	29.7%
Facility hosting (per manhole entry)	entries	(1.92)	6.80%	9.43	10.8%
Facility hosting (per joint box entry)	entries	(0.33)	6.80%	2.24	321.8%
Poles - multi-end user attachment	attachments	6.74	6.80%	5.65	11.6%
Poles - single-end user attachment	attachments	1.84	6.80%	2.21	16.5%
Pole top equipment	attachments	1.90	6.80%	1.66	17.5%
Cable up pole	attachments	1.50	6.80%	1.10	21.3%

Source: BT Regulatory Financial Statements 2023 (Extract from Table 6.1.1)

130. Table 3 shows that Openreach is charging itself a negative price for the duct elements of PIA, whereas it is charging nexfibre and other external customers the regulated price

[43] Ofcom (2005) *Undue discrimination by SMP Providers*" Para 3.5.

[44] Although not material to our argument here, we note that there is a mathematical error in the calculation of the spine duct single internal price, which should be $\frac{Total\ Internal\ Revenue}{Total\ Internal\ Volumes} = \frac{-42.8m}{0..756m=} = -£56.6$

set in the 2021 WFTMR, adjusted for the charge control. On its internal transfer charges, Openreach earns the ROCE of 6.8%, slightly below the WACC of 7% set by regulation. On external prices the ROCE ranges from 10.8% to 321.8%.

131. This difference in prices appears to be discriminatory. However, bearing in mind Ofcom's interpretation of non-discrimination, we have to ask whether this difference in treatment is objectively justifiable and has no material effect on competition.

132. To be objectively justifiable, Openreach would need to be providing itself with a different product to that which it supplies to other fibre network builders. This cannot be the case as it using the same ducts and poles that make up PIA as used by other fibre network builders. Further, the regulated, external price of ducts and poles is based on other operators using the same infrastructure as BT.

133. It may be argued that Openreach does not actually supply itself under a commercial relationship and so uses a different product. We would disagree with any such suggestion for the same reason as set out above: both Openreach and the altnets are using the same Openreach infrastructure.

134. To understand why there is a discrepancy we need to look to the introduction to the RFS which in relation to PIA market performance states:

> *ROCE was consistent year on year at 7.0%. Currently only about 1% of PI revenue is external. Internal revenue is a notional "recharge" to downstream markets at cost plus an allowable return (7.0% of MCE). This treatment of PI costs results, by design, in a ROCE of 7.0%, consistent with Ofcom's determined WACC of 7.0% used in cost modelling for WFTMR.*[45]

135. The reason the internal prices for duct products are negative is the revaluation of assets for Current Cost Accounting (CCA) from which Openreach benefits, but which are not reflected in the price charged to external customers. So Openreach has the double benefit from low internal cross charges and very high profits (ROCE) on external prices.

136. Finally, PIA, there seems to be no connection with the data provided in Table 6.1.1 with that shown in the tables covering WLA in Section 7 of the RFS. We therefore cannot tell where PIA feeds in as an input cost to WLA.

137. nexfibre will submit a more detailed paper on the pricing PIA in due course.

[45] BT RFS 2023, page 4.

6 Proposed Price Regulation in Areas 2 & 3: Economic Replicability

Changes to regulation are necessary to protect the development of competition. PIA should be made available on more transparent terms and, if necessary, under Equivalence of Input, rather than no undue discrimination. Ofcom should regulate prices based on an Economic Replicability Test between PIA and the anchor product and that BT should not be allowed to drop WLA prices below that of the anchor product. BT should be prevented from engaging in patterns of behaviour, including discounting and drip-feed pricing, which have an exclusionary effect and there should be transparency in copper switch off to prevent it being levaraged to entrench BT's SMP position.

138. In this section we propose a change to regulation in Areas 2 and 3 to address the issues of exclusion in the WLA markets and discrimination in the PIA market. Our thinking on the matter is still developing, so in this submission we set out the broad principles and will follow up with more detail in a separate submission at a later stage. Our proposal has two main parts. First, increasing the transparency of PIA terms and conditions, especially pricing, and if necessary providing PIA on the basis of EOI. Secondly, setting an economic replicability test (ERT) between PIA and the anchor product in the WLA market where the price of the anchor product is the minimum price BT can charge.

139. In addition, we propose that Ofcom use the TAR to address the patterns of behaviour that can have an exclusionary effect and ensure that copper switch-off is not leveraged to entrench BT's SMP in fibre.

6.1 Improving the Transparency of PIA

140. To take account of longer-term issues related to PIA, we propose that PIA is provided by Openreach internally and to other fibre network builders under much more transparent terms and, if necessary, on the basis of EOI.

141. PIA is "supplied" by Openreach for use by Openreach in its own WLA service, as opposed to supplying to another part of BT, is under an obligation of no-undue discrimination. This is interpreted by Ofcom as "*requiring strict equivalence where possible with discrimination permitted only in cases where Openreach can demonstrate that a difference in respect of a specific service, system or process is justified.*"[46]

[46] Ofcom (2021) *WFTMR Statement Vol. 3* para 3.74.

142. However, there is a lack of transparency in the price and other conditions of supply of PIA within Openreach that makes it hard for other providers to determine whether they are competing on equal terms.

143. We propose that Ofcom uses the 2026 TAR to improve the transparency of supply conditions, specifically, that the internal cross-charge for PIA elements by Openreach is the same as the price to external altnets. This would immediately avoid the anomalous situation at the moment where internal prices are set to achieve as specific ROCE and external prices are based on the regulated charge control, resulting in significant price differences.

144. Should such an increase in transparency not result in a more equal competitive position and pricing certainty, then Ofcom should consider changing the terms of supply to EOI, even when that supply is within Openreach.

145. In 2021 neither BT nor Ofcom had the data on network infrastructure and usage necessary to implement EOI. It is understandable, therefore, that the cost of implementing the full set of remedies that make up EOI as defined in the Undertakings[47] would have been considered disproportionate.

146. However, today both BT and Ofcom have far more evidence of the use of PIA by BT and altnets. Our view, therefore, is that the appropriate data is or should be available and, as BT and altnets use the same infrastructure and its use is growing, EOI would be the proportionate and appropriate remedy.

147. Further, since the telecoms strategic review held by Ofcom in 2004 - 2005, there has been a move to implement regulation at the deepest level of the network with competition working downstream. In 2005 this meant Local Loop Unbundling (LLU), which allowed ISPs to put their own equipment in the exchange and manage the copper line to the customer premises.

148. Today, the deepest level is the physical infrastructure, which fibre network operators can use to build their own networks and have complete control over their own fibre infrastructure, whether GPON, XGSPON or point to point. Just as it was vital to provide LLU based on EOI in 2005 to stimulate investment in xDSL broadband, so today it is vital to provide PIA on that basis to prevent exclusionary behaviour and to stimulate investment in Gigabit broadband.

149. The clearest benefit of requiring Openreach to provide PIA on EOI terms is that it would mean BT and its rivals have access to the same infrastructure on exactly the same terms. It would also increase the transparency available to Ofcom and BT's rivals. This would allow stakeholders to be better able to assess whether BT is gaining any unfair competitive advantage from its level of vertical integration based on data in the RFS.

[47] Ofcom (2005) *Final statements on the Strategic Review of Telecommunications, and undertakings in lieu of a reference under the Enterprise Act 2002 Statement*. Page 61 - Definitions

150. PIA is now an essential input for many altnets who are dependent on it to build their networks and it is not possible to envisage a deregulated, effectively competitive PIA market even in the long term. Therefore, a long term solution to the problems highlighted in this paper is required.

151. We recognise that EOI will take time to implement. However, both BT and Ofcom have experience of implementing EOI and as the products are passive, we would expect implementation to be much easier than it was with the active product set available in 2005. Given the long term importance of PIA as an input product to a competitive fibre WLA market, we believe it is vital that EOI is implemented as part of the 2026 TAR.

6.2 Economic Replicability

152. To complement the provision of PIA under EOI terms, we propose that the difference between the price of the PIA and the relevant Openreach WLA products should be economically replicable by a reasonably efficient rival.

153. As we have noted above, the only currently regulated price is the anchor WLA product. Whilst this provides some protection to consumers against exploitation by the SMP operator, it does nothing to help ensure that wholesale CPs can compete effectively with Openreach WLA when using Openreach's PIA products.

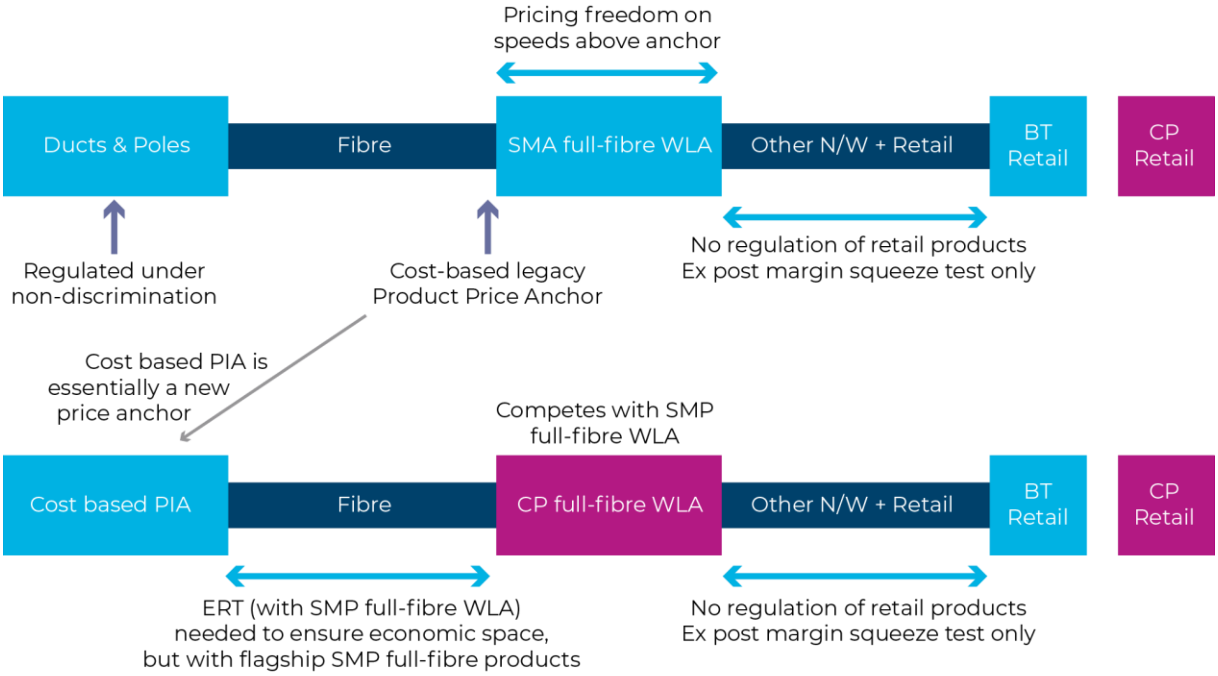
154. We therefore propose that Ofcom continues to regulate the price of the WLA anchor product but also ensures there is economic space between PIA and wholesale on an *ex ante* basis, as illustrated in the diagram below.

155. The top half of the diagram in Figure 6, represents the current situation where Openreach supplies PIA to itself and WLA to BT's retail divisions and other ISPs. At the WLA level the price of the regulated anchor product is set by BT and Openreach has pricing freedom over other variations of WLA, which are provided to downstream operators on EOI terms. There is no regulation of retail prices and so any margin squeeze test would only be conducted on the basis of an *ex post* competition law complaint.[48]

156. The bottom half of the diagram represents our proposal. Under this scheme regulation would be moved to the physical infrastructure. PIA would be supplied on EOI terms by Openreach to itself and to other fibre networks. Openreach would have to ensure a sufficient margin between PIA and the anchor WLA product such that the anchor product is economically replicable by a reasonably efficient rival. Openreach would not be able to set any price below the anchor price. There would then be pricing freedom between WLA and retail FTTP.

[48] See Ofcom (2021) *WFTMR Statement Vol. 4,* footnote 1

Figure 5: PIA - WLA Economic Replicability



157. This is an outline proposal and some elements will need further consideration.

158. First, what does a reasonably efficient operator look like? Our assumption would be that a reasonably efficient operator (REO) would use PIA wherever it was available and only build its own infrastructure where it could not purchase PIA from Openreach. Therefore, the REO would look very like Openreach where PIA is available and if PIA were available everywhere, the price of PIA within an economic replicability test (ERT) would reflect that availability.

159. Where PIA is not available, then the REO would have to build its own network, which is more expensive than buying PIA from Openreach. The REO would therefore want to minimise the extent of its own build, but may need to build some network to cover the UK. Assuming that at least some network build is necessary, the regulated price of PIA used in the ERT would need to take account of a reasonable proportion of own build.

160. Second, what is the relevant downstream Openreach WLA anchor product the fibre builder should be able to economically replicate? Our initial opinion here is that a similar process should be followed to that used by Ofcom when selecting the Flagship Products for the current ERT analysis between Openreach WLA and BT full-fibre retail products. Thus, Ofcom should consider which Openreach WLA products are of primary interest to the CPs using BT Openreach WLA, and should keep this selection under review to reflect how the market develops.

161. We would, of course, also emphasise the importance of ensuring that the ERT test is still passed when available Openreach WLA discounts (such as Equinox 1 and Equinox 2) are taken into account.

162. Again, we recognise that our proposal requires further development. However, we think the principles set out here would be more effective at addressing the problem of exclusion, whilst still maintaining the pricing freedom needed to encourage investment in Gigabit-speed services.

6.3 Addressing the risk of exclusionary behaviours

163. In addition to the proposals above, to reduce the immediate risk of exclusion issues caused by Equinox 2 or similar exclusionary actions, we propose that Ofcom use the TAR to implement regulation that prevents such behaviour. In its Annex to our response to the Equinox 2 consultation, Keystone Strategy made the following suggestions and we consider these to still be valid:

- Put in place guidance and subsequently introduce a requirement for BT Openreach not undertake any pre-announcements before official notice given to Ofcom.
- Ofcom to set expectations that Openreach should not make continued amendments to Equinox and that any further amendments must be supported by clear, evidence-based reasoning as to why they are necessary.
- Modify SMP conditions so that the burden of proof is on Openreach to prove that its proposals are not anti-competitive.
- Impose a "cooling-off" period following the announcement of change to prices and other commercial terms, before the changes can be implemented.

6.4 Remedy to Prevent Exclusionary Effects of Copper Switch Off

164. To ensure competitive neutrality in the copper switch off process, nexfibre would like to see the rules regarding copper switch off changed to allow altnets to trigger the same process that BT can when its FTTH network has reached 75% of premises within the exchange area. Openreach should be required to cease providing new copper services regardless of whether it is Openreach or an altnet that has reached 75% of premises with FTTH.

165. This more symmetric process would incentivise investment and benefit consumers in such exchange areas as they would have faster access to fibre than under the current rules.

166. In addition, as outlined above, incentives to migrate from BT copper to BT fibre which have an exclusionary effect should be prohibited.

7 Conclusion

167. We have demonstrated in this paper that the ultra-fast broadband market has grown steadily since the 2021 WFTMR and much of that is due to the PIA product introduced by Ofcom in the review. The step-change improvement in the regulation of PIA, which makes building a fibre network faster, cheaper and more efficient, was the most important action taken by Ofcom in 2021 and they deserve congratulations for doing so.

168. However, the future is not an extrapolation of the past and nexfibre's market experience suggests we are at a fork in the road. One path leads to BT continuing to dominate the market and competition being severely restricted, the other to a vibrant, competitive market. The decisions Ofcom makes in the 2026 TAR will determine which path the industry takes.

169. Regulatory stability should be the first priority for Ofcom. Specifically, Ofcom needs to keep the definition of Areas 1, 2 and 3 the same, even if the boundary changes. However, we expect that the evidence will still support finding that there are no areas of the UK in Area 1 and that there are therefore no areas where there is effective competition to BT. Thus, it will still be necessary to impose regulation to support investment by competitive networks.

170. In our view there are three regulatory developments that should be taken to prevent the effect of BT's actions being to exclude rivals from the market.

171. First, as PIA has become a much more popular product that was expected in 2021, it should be made available by Openreach on a more transparent basis and, if necessary, under EOI rather than no undue discrimination. This will resolve the current problems with PIA terms and ensure a competitive level playing field between Openreach's WLA products and those of independent fibre networks.

172. Second, Ofcom should require BT to ensure there is economic headroom between the anchor product and PIA for a reasonably efficient rival to replicate BT's anchor product. Ofcom should prevent BT reducing the price of any variant of WLA below the anchor product price.

173. Third, BT should not be allowed to use copper switch-off to leverage its market power from the copper network to fibre and steps should be taken to prevent patterns of behaviour with exclusionary effects.

Annex A: Geographic Market Definitions

Country	Review Year	Status	Comments	Source
BU	2019	Full	The CRC undertook a review of the WLA market in 2019, that included copper and fibre access but excluded cable due to lack of substitutability. It found that there is a national market as competitive conditions do not vary significantly. It found that BTC's copper network covers 79% of the population and its fibre network around 50%. A1 and Busatcom have networks with coverage of around 50%. Based on these market shares, the CRC found no operator has SMP in the national market.	European Commission
DK	2017	Partial	The NRA (DBA) determined that there was insufficient competition in local areas to define geographic markets, but did impose differential remedies to reflect higher levels of competition in 50 of the 592 local areas defined by post codes. More lightly regulated areas had to fulfil three criteria: (1) TDC's (the incumbent) market share to be less than 40% in 2016 and predicted to be below 40% in 2018; (2) deployment of at least two NGNs owned by TDC's competitors; and (3) area to include more than 25,000 households. Although 50 areas met this condition, they were all rural and in DBA's opinion access to TDC's copper network with national coverage was still key to competition.	ECOI
FI	2017	Partial	In 2017 the NRA, FICORA, identified 115 geographic markets by municipality. This was because, unlike other countries, there is no national incumbent with SMP but many small geographically based and vertically integrated operators, together with a few smaller community networks that are not vertically integrated. The European Commission objected to FICORA's SMP findings and obligations but did not object to market definitions. In 2018 FICORA issued a new analysis of 150 local markets that did not change the market definitions (based on the local operator's network reach) but did find that the smaller community operators did not have SMP, due to restrictions placed on them for receiving State Aid.	ECOI

Country	Review Year	Status	Comments	Source
HU	2017	Partial	The 2011 market review found three geographic markets based on location of the three regional operators: Magyar Telecom, Invitel and UPC. In the 2017 review the NRA found that each of these three areas had some competitive presence and so found six geographical markets in total: a competitive and non-competitive geographical market within each operator's territory. Competitive areas were based on presence of at least two other operators with their own infrastructure, with each operator having at least 15% market share and at least 50% between the two other operators. Competitive areas cover 20% of the Hungarian population.	ECOI
IT	2019	Partial	In 2019 AGCOM concluded that Milan was a separate geographic market based on three operators being present: TIM (formerly Telecom Italia), Open Fibre and Fastweb and TIM having a lower market share than Open Fibre. AGCOM also found 26 municipalities where there was not sufficient competition to find a separate geographic market but where different regulations could be imposed on TIM, in particular more pricing freedom in the WLA market and lighter access obligations.	ECOI
IE	2023		Comreg uses the following criteria to assess whether or not there are differences in competitive conditions between geographic areas. The criteria are: **Criterion 1**: At least three Network Operators capable of delivering Virtual Unbundled Access (VUA) must be present, or reasonably forecast to be present within the lifetime of the market review period, at the Modified Exchange Area (EA); **Criterion 2**: Individual Network Operator coverage at a Modified EA must be (or be reasonably forecast to be) at least 60%; and **Criterion 3:** At least 50% of premises in a Modified EA must be passed by at least three Network Operators. On this basis it found two next generation access markets: The **Commercial NG WLA Market** The **Intervention Area NG WLA Market.** Eir was found to have SMP in the Commercial NG WLA Market and no company had SMP in the Intervention Area WLA Market due to the agreement between the National Broadband Initiative and the government.	Comeg *Review of WLA Provided at a fixed location: Decision D05/24, January 2024*

Country	Review Year	Status	Comments	Source
NL	2018	Full	The Netherlands is a unique case. In 2018 the ACM found KPN and Vodafone Ziggo to have joint dominance in the single national market, despite Vodafone Ziggo not being in the WLA but in the WCA market. This finding was on the basis, derived from game theory, that without regulation neither firm would have an incentive to offer wholesale access to access seekers. The finding was supported by the European Commission. KPN and Vodafone Ziggo successfully appealed the decision to the Dutch Trade and Industry Appeals Tribunal (CBp) and so the ACM's decision was annulled leaving the whole market deemed effectively competitive and so not subject to regulation. The annulment was based on, *inter alia,* a market definition that included both wholesale local and wholesale central access and objections to the game theory model adopted by the ACM. The appellants showed that, contrary to the game theory model used by ACM, KPN would still have a commercial incentive to provide wholesale access even without regulation.	Author's knowledge. European Commission Oxera.
PL	2019	Partial	In 2019 Poland's NRA, UKE, found geographic markets in both WLA and WCA. In WLA 51 municipalities, covering 13% of the population, were declared competitive based on: (i) At least three providers present in the area; (ii) Orange Poland having less than 40% market share by number of connections; and (iii) at least 65% of households have access to at least three separate infrastructures.	ECOI
RO	2020	Full	The Romanian market is characterised by a large number of operators with their own independent infrastructure resulting in significant and sustainable infrastructure competition. This is based on a product market definition that excludes CATV, since wholesale offers are "not possible on this infrastructure". The degree of competition between these operators meant that ANCOM found that no operator had SMP in any geographic area of the country. The former incumbent operator's market share has declined to 21.5% and has been overtaken by RCS & RDS which has a market share of 52%. Although the commission upheld the finding of no SMP, it has called upon ANCOM to monitor market developments in case RCS & RDS acquires SMP.	European Commission
ES	2021	Partial	Conditions to declare an area as competitive: three competing networks with at least 20% individual coverage in the area and less than 50% of retail market share for the SMP operator. This covers 696 municipalities and 70% of the population.	CNMC