CITYFIBRE RESPONSE TO THE TELECOMS ACCESS REVIEW 2026 – 2031

NON-CONFIDENTIAL VERSION

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SECTION 1: EXECUTIVE SUMMARY

1.1 Ofcom's strategy for fixed telecoms is to "*promote investment in gigabit-capable networks through network competition where this is viable*", driving economic growth, supporting higher productivity and innovation across all sectors of the economy.[1] Network competition "*should bring longer term benefits from innovation, choice, and stronger incentives to price keenly to attract customers and to further improve quality of service*".[2]

1.2 Ofcom rightly recognises that to achieve that objective a framework for promoting competition differs from a framework for protecting competition.[3] An *ex ante* framework designed to promote competition must be "*aimed at actively promoting the development of competition through attempting to reduce the level of market power (or dominance) in the identified relevant markets, thereby encouraging the establishment of effective competition.*"[4]

1.3 For there to be sustainable competition, challenger networks need to build customer bases and achieve scale.[5] There is significant potential for competition to continue to emerge over the period of this review. Consumers are already beginning to reap the benefits of that competition in the form of better products, lower prices and higher service levels. However, more needs to be done if competition is to become established for the long term.

1.4 Take-up will be key to achieving that goal. Migrating customers from legacy networks to full fibre will be critical in driving take-up and enabling challengers to become established. Ofcom must, therefore, ensure that Openreach cannot engage in conduct which has the effect of foreclosing demand.[6]

1.5 Ofcom's finding that Openreach continues to hold significant market power in PIA, wholesale local access and leased lines access markets is clearly correct. Ofcom also correctly recognises that, in the absence of regulation, Openreach has the incentive and ability to leverage its incumbency advantages in ways that distort competition and harm consumers. CityFibre has carefully considered whether the proposals in the TAR will be effective in addressing the competition concerns which Ofcom has identified.[7]

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[1] TAR Volume 1, paragraph 1.3.
[2] Ibid.
[3] TAR Annex 5, paragraphs A5.12 to A5.14.
[4] TAR Annex 5, paragraph A5.13.
[5] TAR Volume 1, paragraph 1.7.
[6] TAR Volume 2, paragraph 7.3.
[7] TAR Volume 2, Section 7.

1.6 CityFibre considers that:

a. Ofcom has erred in its definition of the geographic boundaries of WLA Area 3 and LLA Area 3. Ofcom must revisit its approach to ensure that it accurately captures the extent to which CityFibre and others are able to exert a competitive constraint on Openreach;

b. Ofcom is correct to use the fibre cost model as an indicator of *prima facie* concerns with Openreach pricing of FTTP products. However, the model must be updated to properly reflect the costs of a reasonably efficient operator, in particular the cost of capital;

c. The proposed copper retirement process presents serious risks to competition. Ofcom should extend the period before Openreach benefits from pricing freedom for copper products to allow for competition to emerge to the greatest extent;

d. Any exclusions from the copper retirement thresholds should be on a genuinely exceptional basis if consumers and competition are to be protected;

e. The removal of the geographic pricing prohibition in WLA Area 3 is unfounded and presents risks to the emergence of competition. Ofcom should reverse that proposal;

f. Ofcom is correct that conditional pricing by Openreach presents risks to the emergence of competition. Ofcom must conduct a detailed assessment of the competitive impact of any Openreach special offers and should extend the period of assessment to 150 days to provide sufficient time to do so;

g. The requirement on Openreach to provide dark fibre at cost in LLA Area 3 is likely to undermine incentives to invest in LLA Area 3 by competitors to Openreach. Ofcom should not regulate dark fibre at cost but should instead subject dark fibre charges to a “fair and reasonable” requirement; and

h. Ofcom’s changes to the PIA charge controls are welcome, however there are a number of further adjustments which Ofcom should make to ensure that Openreach cannot over recover its costs at the expense of PIA users.

1.7 The next five years will determine whether competition emerges at scale for the long term. If Ofcom gets the regulatory framework right, consumers will reap the benefits of competition through lower pricing, higher speeds, improved quality of service and innovative new products. If Ofcom fails to sufficiently promote competition now, the opportunity to deliver significant benefits for consumers will be lost.

SECTION 2: EXCLUSIONARY BEHAVIOUR BY OPENREACH IN WLA

Introduction

2.1 Ofcom's policy objective is to promote investment in gigabit-capable networks through network competition where this is viable.[8] The TAR rightly identifies that Openreach holds a position of Significant Market Power ("SMP") in the Wholesale Local Access ("WLA") markets and that there are enduring barriers to entry which restrict the ability of new entrants to enter and expand in those markets. Absent regulation, Openreach's SMP gives it the ability and incentive to engage in forms of conduct which could distort competition and/or harm consumers.[9] In particular, Openreach can engage in exclusionary behaviour which has the effect of preventing potential competitors from gaining market share, thereby protecting Openreach's market position.[10]

2.2 During a critical period for the development of competition, it is vital that regulation acts to prevent exclusionary behaviour by Openreach. If competing networks are unable to gain take-up as a result of exclusionary conduct, they will fail to reach scale and to exert competitive pressure on Openreach for the long term over the largest possible footprint.

Openreach's significant market power

2.3 Ofcom's conclusion in the TAR that Openreach has SMP in relevant markets[11] is clearly correct. Openreach is by far the largest network provider in the UK – as of May 2025, it had deployed FTTP to 18.1m premises.[12] Openreach is currently building FTTP at a rate of 1mn premises per quarter, has plans to extend its FTTP footprint to 25m premises by 2026, and has signalled an intention to extend to up to 30m premises by the end of 2030.[13] By contrast,

[8] TAR Volume 1, paragraph 1.3.

[9] TAR Volume 2, paragraph 7.2.

[10] TAR Volume 2, paragraphs 7.3 and 7.5.

[11] See e.g. TAR Volume 2, paragraph 4.156.

[12] BT Group Results for FY25, Presentation Slides, 22 May 2025 ("BT Results Presentation"), slide 4, accessed at https://www.bt.com/bt-plc/assets/documents/investors/financial-reporting-and-news/quarterly-results/fy25/h2/h2-fy25-slides.pdf.

[13] BT Results Presentation, slides 13 and 16; and ISPreview, "BT CEO Talks Shrinking UK Broadband Market Share and Future of Altnets", 29 May 2025, accessed at https://www.ispreview.co.uk/index.php/2025/05/bt-ceo-talks-shrinking-uk-broadband-market-share-and-future-of-altnets.html.

CityFibre's network, the largest of the new entrant networks,[14] currently covers just 4.6mn premises.

2.4 ***[REDACTED]***

2.5 As Ofcom recognises, Openreach has significant incumbency and scale advantages, many of which stem from its position as a former nationalised monopoly:

a. Openreach has the only nationwide network in the UK, which is not easily replicated due to the high sunk costs involved.[15] To offer broadband services nationwide, ISPs must buy wholesale services from Openreach (i.e. in areas where there is no alternative network)[16] and Openreach is therefore an unavoidable trading partner for all major Internet Service Providers ("ISPs");

b. Openreach has a significant head-start in the race to build a FTTP network at scale. It can build further and faster than rivals, unencumbered as it is from the multiple rounds of financing that rivals must undertake to fund further network build;

c. Openreach is vertically integrated and "*benefits from having downstream BT (including Plusnet and EE) as an anchor customer*".[17] BT/EE is the largest ISP, giving Openreach a captive share of over a third of wholesale demand. BT/EE does not take services from any other network, which has the effect of reducing the size of the wholesale market which is contestable for rivals such as CityFibre;

d. Openreach has long-standing relationships with all of the large, independent ISPs and a large installed customer base across those ISPs.[18] As Ofcom's Equinox Statement of 30 September 2021 notes, Openreach "*benefits from economies of scale […]; in relation to FTTP, a key advantage comes from*

[14] At the end of 2024 VMO2 and Nexfibre had a combined FTTP footprint of 6.4 million premises, but these networks are currently available only to VMO2's vertically integrated ISP and do not provide wholesale services to independent ISPs. See TAR Volume 2, paragraphs 2.13 and 2.16-2.17.

[15] TAR Volume 2, paragraphs 3.42 and 5.177: "*Where Openreach has network presence, it has a significant competitive advantage as it will be able to service customers quickly and at a significantly lower cost*".

[16] WFTMR Volume 2, paragraph 8.44: "*BT's coverage gives it an advantage over other operators in the provision of WLA services as in a large part of the UK there are no competing networks. Sky, for example, noted that 'BT will continue to be a key supplier for large parts of the country.*" See also WFTMR Volume 2, paragraph 5.39.

[17] TAR Volume 2, paragraph 4.181.

[18] TAR Volume 2, paragraph 4.181: "*Openreach benefits from having […] a large installed base across other ISPs with which it has established relationships*".

Openreach having high existing customer volumes; and it has established relationships with ISPs […]".[19]

2.6 Altnets such as CityFibre continue to face significant barriers to entry and expansion. As Ofcom acknowledges, "*[t]he economics of building and operating telecoms networks means that altnets' entry may not be viable in all areas, and even in areas where entry is viable, altnets face challenges before they can establish themselves as sustainable competitors to Openreach*".[20] In particular:

a. Building a network at scale takes considerable time and involves significant cost.[21] As Ofcom notes, "*the existence of high sunk costs in establishing coverage across an area creates significant economies of scale, because once the high fixed cost of investment in network build has been sunk, these can be spread across a large number of active customers*";[22]

b. Access to financing to fund further network build remains challenging for altnets yet Openreach is not so capital constrained;

c. The process of securing wholesale agreements with large ISPs is "*lengthy, complex and uncertain*";[23]

d. ***[REDACTED]***

e. Altnets face significant challenges in achieving sufficient levels of take-up on their networks.[24] As Ofcom acknowledges, "*[o]ne of the core challenges for new entrants is the time and cost it takes to achieve customer switching, as perceived or actual switching costs can deter customers from changing supplier. Changing supplier may involve additional financial costs (such as the cost of a new connection), and some disruption to the end-user. In addition, retail customers can be less likely to take-up a service from brands they are not familiar with*".[25]

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[19] Ofcom, "Openreach Proposed FTTP Offer starting 1 October 2021" (Ofcom's Equinox Statement), 30 September 2021, paragraph 3.20, accessed at https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-3-4-weeks/221370-openreach-proposed-fttp-offer/associated-documents/statement-openreach-proposed-fttp-offer.pdf?v=326956.

[20] TAR Volume 2, paragraph 4.169.

[21] TAR Volume 2, paragraph 4.140.

[22] TAR Volume 2, paragraph 4.140. See also paragraphs 4.171-4.172.

[23] TAR Volume 2, paragraph 4.180(b).

[24] See for example TAR Volume 2, paragraph 4.180: *"[…] increasing take-up takes time and has been challenging [for altnets] to date*".

[25] TAR Volume 2, paragraph 4.182.

2.7 Ofcom's conclusion that Openreach has SMP in WLA markets is clearly correct. Indeed, the extent of Openreach's SMP[26] suggests that it has a position more akin to one of 'super-dominance'.[27] As Ofcom rightly notes, that super-dominant position allows it to engage in exclusionary behaviour which can significantly distort the market.[28]

Openreach's ability and incentive to engage in exclusionary conduct

2.8 It is vital that the *ex ante* remedies imposed by Ofcom are both effectively designed and effectively implemented to prevent exclusionary behaviour by Openreach. Otherwise, there is a significant risk of Openreach gaming the system. As a sophisticated operator with long experience of regulation, Openreach can be expected to avoid any obvious restrictions on ISPs' ability to source network inputs from rival networks and Ofcom must be alive to the many ways in which Openreach may deter competition.

2.9 CityFibre is currently Openreach's closest competitor in the provision of wholesale FTTP network access services.[29] Ofcom therefore needs to be particularly careful to ensure that Openreach does not engage in forms of exclusionary conduct which have the object or effect of preventing CityFibre from (i) building its network at scale and (ii) securing take-up on its network.

2.10 CityFibre welcomes Ofcom's recognition that, without effective *ex ante* regulation, Openreach would have the ability and incentive to engage in various forms of behaviour that could distort competition and harm consumers, including both exploitative conduct and exclusionary conduct.[30] Ofcom should be mindful of such behaviour. Whilst Openreach can take steps to defend itself against its competitors, it must do so using means falling within the scope of competition 'on the merits' and which do not act to undermine competition in

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[26] As Ofcom recognises in TAR Volume 2, paragraph 3.60, SMP is equivalent to dominance under Chapter II of the Competition Act. References to "dominance" in this section should therefore be interpreted to cover not just dominance under competition law but also SMP under Ofcom's *ex ante* regulatory regime.

[27] In *Napp Pharmaceutical Holdings v Director General of Fair Trading* , the CAT held that "*the special responsibility of a dominant undertaking is particularly onerous where it is a case of a quasi-monopolist enjoying 'dominance approaching monopoly', 'superdominance' or 'overwhelming dominance verging on monopoly'*" (*Napp Pharmaceutical Holdings v Director General of Fair Trading* [2002] CAT 1, paragraph 219).

[28] TAR Volume 2, paragraphs 7.4 and 7.5.

[29] At the end of 2024 VMO2 and Nexfibre had a combined FTTP footprint of 6.4 million premises, but these networks are currently available only to VMO2's vertically integrated ISP and are not available to independent ISPs.

[30] TAR Volume 2, paragraph 7.2 et seq. See also TAR Volume 2, paragraph 4.148; and TAR Volume 3, paragraphs 9.73 and 10.4.

the market.[31] Competition on the merits is different from the concept of "meeting competition", which does not adequately distinguish between pro-competitive and anti-competitive responses to the competitive threat posed by rival firms.

2.11 Competition on the merits relates to "performance-based" competition which results in consumers benefitting from lower prices, better quality and a wider choice of new or improved goods and services. However, dominant firms may have to refrain from engaging in certain practices that would be unobjectionable if undertaken by non-dominant firms. Conduct which at first sight does not depart from competition on the merits may in fact be found to depart from competition on the merits following closer analysis of all the circumstances, including: (i) market dynamics; (ii) the extent of the dominant position; and (iii) the specific features of the conduct at issue. Ultimately, the focus should be on the (anti)competitive effects of the conduct, not on whether the form of the conduct appears to be consistent with competition on the merits.[32]

2.12 When considering what amounts to competition on the merits,[33] it is appropriate to take account of all the circumstances surrounding that conduct by a super dominant operator. In WLA markets, it is particularly important to consider the following factors:

a. Openreach enjoys significant incumbency and scale advantages;

b. Rival wholesale network providers such as CityFibre face major barriers to entry and expansion, including challenges in achieving sufficient levels of take-up;

c. Network competition is still at an early stage of development[34];

d. Ofcom's principal duty under section 3 of the Communications Act 2003 is to further the interests of citizens in relation to communications matters and to further the interests of consumers in relevant markets, where appropriate by promoting competition. As Ofcom notes, to fulfil this duty regard must be had to the fact that "*ex ante regulation is normally aimed at actively*

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[31] Case C-377/20 *Servizio Elettrico Nazionale SpA v Autorità Garante della Concorrenza e del Mercato*, EU:C:2022:379, paragraphs 74-75.

[32] As Advocate General Rantos put it in his Opinion in *Servizio Elettrico Nazionale*: "*[…] Since the analysis is based on the anticompetitive effects and not the form of the conduct, a competition authority has to conduct careful verification of all the relevant facts, without making the slightest presumption, since whether the conduct is 'typical' or 'atypical' is not decisive*."

[33] In his Opinion in *Unilever*, Advocate General Rantos observed that the concept of competition on the merits "*does not correspond to a specific form of practices, remains abstract and cannot be defined in such a way as to make it possible to determine in advance whether or not particular conduct comes within the scope of such competition. The concept of 'competition on the merits' expresses an economic ideal, the background to which is the current trend in EU competition law to favour an analysis of the anti-competitive effects of the conduct rather than an analysis based on its form […]*". Case C-680/20 *Unilever*, Opinion of Advocate General Rantos dated 14 July 2022, paragraph 78.

[34] This is the case both as regards the build phase and take-up on the rival networks once built.

promoting the development of competition through attempting to reduce the level of market power (or dominance) in the identified relevant markets, thereby encouraging the establishment of effective competition".[35]

e. Consistent with its statutory duties, Ofcom's policy is to encourage altnets such as CityFibre to invest to create network competition.

f. In exercising its regulatory functions, Ofcom must have regard to the desirability of promoting economic growth (the 'growth duty').[36]

2.13 When assessing whether Openreach is competing on the merits or is engaging in exclusionary behaviour, it is particularly important to take account of the dynamic nature of competition in this market, recognising the differences in competitive conditions between (i) those areas where Openreach already faces competition from a rival wholesale network provider and (ii) those areas where it does not currently face such competition but may do so in future. As discussed further below, this is particularly important to consider in the context of Openreach conduct that has the object or effect of accelerating migration of ISP customers from copper to FTTP services before rival wholesale network providers are ready for service in a particular area.

2.14 Given Openreach's SMP and significant advantages in WLA markets, Ofcom must ensure that:

a. Openreach pricing must leave room for reasonably efficient rival operators to compete;[37]

b. Conduct by Openreach which is predatory in nature or involves the anti-competitive leveraging of Openreach's significant incumbency and scale advantages should be prevented. Such conduct is liable to foreclose rival networks to the long-term detriment of consumers;

c. The effect of Openreach's conduct on network competition is fully assessed. As a sophisticated operator with long experience of regulation, Openreach can be expected to avoid any obvious restrictions on ISPs' ability to source network inputs from rival networks and to frame its actions neutrally in terms of accelerating the migration of customers to full fibre even where the effect may be detrimental to the emergence of competition.

2.15 Ofcom's assessment of Openreach conduct is likely to involve a balancing of short-term consumer welfare and the benefits of long-term competition. In balancing those objectives, Ofcom should ensure that it errs on the side of promoting network competition which will also deliver long-term consumer welfare. Competition in WLA markets is already delivering significant benefits

[35] TAR Annex 5, paragraph A5.13.
[36] TAR Annex 5, paragraph A5.57.
[37] This issue is discussed further below.

for consumers in terms of price, choice and innovation. Allowing that competition to expand and become sustainable will drive further benefits for consumer over the long term. Under-regulation (or under-enforcement) at this stage of market development, where competition has yet to become established on a sustainable basis, will cause irreversible damage to the prospects for a competitive market and allow Openreach to entrench its already dominant position. It is therefore important that Ofcom acts now to prevent exclusionary conduct by Openreach, using its *ex ante* powers.

2.16 As Ofcom acknowledges, exclusionary conduct by Openreach "*could take a number of forms*",[38] including:

a. Refusing to supply access to key infrastructure inputs;[39]

b. Providing access to its services to third parties on less favourable terms than to Openreach's own business divisions;[40]

c. Setting wholesale FTTP charges at a level which leaves insufficient margin for a reasonably efficient operator to compete;[41]

d. Using geographically targeted price reductions to undermine altnets' ability to become established competitors to Openreach;[42]

e. Introducing commercial terms that are loyalty-inducing (e.g. volume-based discounts and other loyalty rebates);[43]

f. Encouraging ISPs to significantly accelerate the migration of their existing customer bases on legacy services to Openreach's FTTP network, before ISPs can migrate their customer bases to an altnet.[44]

2.17 The types of exclusionary conduct referred to by Ofcom do not represent an exhaustive list. As Ofcom is aware, there are many variations of practices that can have anticompetitive foreclosure effects.

2.18 CityFibre particularly welcomes the following statements made by Ofcom in Volume 2 of the TAR which recognise the importance of taking action against exclusionary behaviour:

> "*Altnets need to achieve sufficient take-up and revenues, as well as scale, to become an established and sustainable competitor to Openreach. […] [A]bsent regulation, this is likely to be highly challenging.*

[38] TAR Volume 2, paragraph 7.6.
[39] TAR Volume 2, paragraphs 7.6 and 7.11.
[40] TAR Volume 2, paragraph 7.6.
[41] TAR Volume 2, paragraph 7.15.
[42] TAR Volume 2, paragraph 7.15.
[43] TAR Volume 2, paragraph 7.15.
[44] TAR Volume 2, paragraph 7.15.

> *Competition is also likely to be particularly vulnerable to Openreach's strategic behaviour, as Openreach's incentives would be high to deter ISPs from switching and multi-sourcing."*[45]
>
> *"Openreach's incentive to deter ISPs from switching or multi-sourcing to a rival network may be particularly strong during the FTTP migration period" because "rival networks may find it more challenging to gain take-up once consumers have migrated to Openreach's FTTP network."*[46]

2.19 CityFibre has carefully considered the types of conduct which might be undertaken by Openreach and the extent to which the regulation proposed in the TAR is sufficient to address the harm to competition which may result. The following sections address specific forms of anticompetitive conduct by Openreach and whether Ofcom's proposed remedies are fit for purpose.

Openreach's manipulation of copper pricing and copper retirement

Openreach's copper pricing can have both exploitative and exclusionary effects

2.20 Without effective *ex ante* regulation, Openreach's pricing of copper wholesale local access (WLA) services has the potential for both exploitative and exclusionary anticompetitive effects.

2.21 As Ofcom recognises, Openreach will remain a key provider of WLA services while network competition develops and its WLA services will "*continue to be essential to maintain retail competition, by enabling retail providers to offer services to end-users in the downstream markets*".[47] Absent regulation, Openreach therefore has the ability and incentive to set prices for WLA services at excessive levels.[48] Such exploitative behaviour could cause serious harm to consumers and Ofcom rightly identifies the risk of Openreach engaging in such behaviour.

2.22 The copper-based 80/20 product is currently the most widely adopted consumer broadband product and CityFibre welcomes Ofcom's proposal to introduce charge controls on this product.[49] Such charge controls will protect the largest group of broadband customers from excessive pricing by Openreach

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[45] TAR Volume 2, paragraph 4.143.
[46] TAR Volume 2, footnote 284.
[47] TAR Volume 2, paragraph 7.13.
[48] TAR Volume 2, paragraphs 7.7 and 7.14.
[49] TAR Volume 4, paragraph 1.8.

and the anchor-pricing approach should ensure that other consumers of WLA products are also protected. CityFibre agrees with Ofcom that this approach is more likely to protect consumers than a 40/10 anchor during the 2026-31 review period.[50]

2.23 Absent regulation, Openreach could also use the pricing of WLA copper services to exclude competition, i.e. to undermine competition from rival networks in FTTP wholesale access markets by preventing them from gaining market share.[51]

2.24 There are a large number of premises covered by Openreach's FTTP network in areas where the potential for network competition remains in the longer term but where altnets have yet to reach ("Future Competitive Areas"). Openreach's rivals intend to extend their FTTP networks to cover such premises but are unable to match the pace of Openreach's roll-out. If Openreach raises the wholesale price of copper services significantly in Future Competitive Areas, it will incentivise ISPs to migrate their end-users to FTTP and may also prompt end-users to take proactive steps to migrate from copper to FTTP.[52] Forced migration of a large number of customers onto the Openreach network in Future Competitive Areas will undermine rivals' incentives to extend their FTTP networks into those areas. The potential for network competition to develop will be reduced with a consequent loss of long-term benefits for consumers.

2.25 Openreach's use of pricing to drive migration is not without precedent. Since Ofcom removed WLR price controls in 2017, WLR prices have risen by around 40% as Openreach seeks to drive migrations off the PSTN network. CityFibre has no doubt that, were Openreach permitted to raise the price of copper broadband products in a similar way, it would adopt a similar approach in respect of WLA copper pricing.

2.26 It is welcome that Ofcom recognises the risks of exclusionary effects posed by Openreach's pricing of copper services.[53] The proposed price cap for the 80/20 copper product, whilst primarily aimed at preventing exploitative behaviour, will benefit network competition by limiting Openreach's ability to engage in exclusionary conduct. Openreach will be less able to use copper pricing to incentivise ISP customers (and end-users) to migrate onto its FTTP network,

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[50] TAR Annex 8, paragraph A8.39.

[51] TAR Volume 2, paragraph 7.5.

[52] TAR Volume 3, paragraph 2.55.

[53] TAR Volume 3, paragraph 2.55. See in particular paragraph 2.55(a): "*Where customers are not yet able to move to an altnet then providing additional regulatory support for Openreach to drive customers to its FTTP network more quickly risks undermining the development of network competition*." See also TAR Volume 3, paragraph 2.25: "*Providing Openreach with the flexibility to increase the price of copper-based access services […] represents an intermediate means of encouraging migration to other gigabit-capable services that is less drastic than complete withdrawal of copper-based access services*".

thereby preserving the opportunity for entrants such as CityFibre to extend their network footprints and achieve sufficient take-up.

2.27 However, Ofcom's proposed copper retirement rules relax the charge controls on copper products. The risk of exploitative and exclusionary conduct by Openreach once the copper retirement rules are engaged is significant and Ofcom must be alive to those risks. CityFibre is concerned that Ofcom's proposed approach to copper retirement inadequately guards against the risks of anticompetitive conduct by Openreach and therefore considers that amendments should be made to the copper retirement rules to reduce any anticompetitive effects.

Copper retirement

2.28 Copper retirement seeks to support a smooth transition away from Openreach's copper network so that Openreach can avoid the costs of operating copper and fibre networks in parallel.[54] In developing its policy Ofcom has sought to "*support the migration of customers away from Openreach's legacy copper-based network, either to Openreach's FTTP network* ***or to rival networks***" (emphasis added).[55] Ofcom set out a regulatory framework for copper retirement in the Wholesale Fixed Telecoms Market Review ("WFTMR") and the TAR broadly follows the same approach.

2.29 More specifically, Ofcom proposes to maintain the "threshold approach" established in the WFTMR:

- First Threshold ("Stop Sell Threshold"): Openreach can stop selling new copper lines once it has reached 75% FTTP coverage in an exchange area and has provided 12 months' notice of its intention to stop selling copper.
- Second Threshold ("Pricing Freedom Threshold"): Openreach is no longer subject to price controls on copper services once (a) it has reached 100% coverage in an exchange area; (b) 24 months have passed since stop sell was introduced; and (c) Openreach has provided 12 months' notice of its intention to raise prices above the charge controls.

2.30 Ofcom has resisted calls for a third threshold that would allow for the network access obligation for copper WLA products to be removed in its entirety.[56] Ofcom considers that it is too early to define criteria for a third threshold given

[54] TAR Volume 3, paragraph 2.7.
[55] TAR Volume 3, paragraph 2.14.
[56] TAR Volume 3, paragraph 2.108.

the uncertainties over how quickly consumers will migrate from copper products to Openreach's FTTP network or rival FTTP networks.

2.31 CityFibre agrees that it is too early to consider a third threshold. Regardless of the precise threshold used, there will remain a significant number of end-customers who have yet to migrate to FTTP. The removal of copper services places those customers at risk (and particularly more vulnerable consumers who may rely on specialised equipment such as telecare alarms that are dependent on a copper-based service).[57]

2.32 A third threshold would also present significant risks to network competition, given that the removal of copper services will force ISP customers and their end-users to migrate from copper to FTTP. In areas where alternative networks to Openreach are present, competition can take place for ISP customers (and their end-users).[58] However, in Future Competitive Areas, forced migration will leave customers with no choice but to purchase Openreach FTTP. Openreach will therefore be able to foreclose demand and undermine competition.

2.33 As Ofcom recognises "*[o]ne of the core challenges for new entrants is the time and cost it takes to achieve customer switching, as perceived or actual switching costs can deter customers from changing supplier*" and "*rival networks may find it more challenging to gain take-up once consumers have migrated to Openreach's FTTP network*".[59] Foreclosing demand at this stage of the development of competition therefore risks foreclosing competition altogether.

2.34 The Pricing Freedom Threshold has the same exclusionary potential as the third threshold. Once the Pricing Freedom Threshold is triggered, Openreach can raise prices for its copper-based services to levels that will effectively force consumers off its copper network. ISPs (and their downstream customers) will have significant incentives to migrate from Openreach's copper network as quickly as possibly for fear of being caught out by the sudden price increases. In Future Competitive Areas, migration will be captured by Openreach in its entirety. As a consequence, competitors' incentives to invest and compete will be undermined, sustainable wholesale FTTP network competition may not evolve and Openreach will be able to maintain its super-dominant SMP position.

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[57] See e.g. TAR Volume 3, paragraph 2.103.

[58] In this context competition will include rival FTTP providers that are vertically integrated, but only the presence of a rival wholesale network provider such as CityFibre would ensure that end-customers have access to similar ISP options as those available on copper.

[59] TAR Volume 2, paragraph 4.182 and footnote 284.

2.35 Given the potential harm to competition and consumers, it is vital to ensure that the copper retirement rules are designed in a way that minimises the risks of exploitative and exclusionary conduct by Openreach.

Longer timeframe before Pricing Freedom Threshold comes into effect

2.36 For the reasons set out in the TAR, CityFibre considers that the period before the Pricing Freedom Threshold can come into effect should be long enough to allow consumers to migrate to FTTP with a choice of wholesale FTTP networks. As Ofcom recognises, there are uncertainties over how quickly consumers will migrate from copper products to Openreach's FTTP network or to rival networks[60] and the ability to choose wholesale network at the point of migration should be preserved.

2.37 As FTTP build (and critically take-up of FTTP services) progresses over the course of the 2026-31 review period, Ofcom will have clearer evidence on which to base an assessment of the likely impact of the Pricing Freedom Threshold on both competition and consumers. CityFibre therefore considers that there should be a longer timeframe than 24 months before the Pricing Freedom Threshold comes into effect.

2.38 An extension to 48 months would provide a longer period for consumers to migrate to FTTP and so mitigate the risks of exploitative conduct by Openreach. FTTP take-up currently stands at just 35% on average[61] and, whilst growing by around 50% year on year, a significant proportion of consumers will continue to use copper broadband services during much of the TAR period. As Ofcom recognises, many of those consumers are likely to be vulnerable consumers who cannot switch to FTTP services due to their reliance on specialised equipment (such as care alarms) which is dependent upon the copper network.[62] A 24-month period will be insufficient to allow vulnerable consumers to obtain the specialised services they require using equipment that can operate on an FTTP network.[63] A 48-month period is a more realistic timeframe to allow industry to develop solutions for those vulnerable consumers and ensure that they do not face significant price rises.

2.39 A 48-month period would also mitigate the Pricing Freedom Threshold's impact on competition by providing more time for Openreach's rivals to extend their networks and compete for customers as they migrate to FTTP. It is widely

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[60] TAR Volume 3, paragraph 2.108

[61] Ofcom, Connected Nations UK Report 2024, 5 December 2024, page 3, accessed at https://www.ofcom.org.uk/siteassets/resources/documents/research-and-data/multi-sector/infrastructure-research/connected-nations-2024/connected-nations-uk-report-2024.pdf?v=386497.

[62] TAR Volume 3, paragraph 2.103.

[63] CityFibre notes that the switch off process for PSTN services has yet to be completed, some 8 years since it was first announced.

expected that most networks will be largely completed during the 2026-31 review period and a 48-month period before the Pricing Freedom Threshold is triggered will ensure that altnets' incentives to invest are not undermined.

2.40 Whilst an extension to 48 months has many benefits for vulnerable consumers and for the evolution of wholesale FTTP network competition, it would have little impact on Openreach's incentives to invest. Openreach has already signalled its intention to extend its FTTP network to cover up to 30m premises,[64] almost the entirety of the UK. As a result of its incumbency and scale advantages, Openreach enjoys take-up levels that are much higher than those of its rivals.[65] Openreach will continue to have significant advantages in its ability to retain its broadband base and those advantages are unaffected by the copper retirement rules. Openreach therefore already has significant incentives to invest and an extension of the period before the Pricing Freedom Threshold is triggered will not have a material impact on those incentives.

Approach for identifying excluded premises

2.41 Regardless of whether Ofcom chooses to extend the period before the Pricing Freedom Threshold comes into effect, it is important that the 100% threshold for ultrafast coverage is maintained. Lowering that threshold would risk leaving a significant proportion of customers unprotected from exploitative behaviour in circumstances where they would have no alternative option to Openreach copper services.

2.42 CityFibre supports Ofcom's provisional conclusion that the appropriate option is "*an exchange-based approach where premises should only be excluded when assessing whether the second threshold is met if they are unable to receive ultrafast services due to exceptional circumstances beyond Openreach's control. By this, we mean premises where it will be too difficult or costly for Openreach to reasonably make ultrafast services available under its commercial programme*".[66]

2.43 Ofcom's Options 2 and 3,[67] which would result in more premises being excluded through a lowering of the 100% threshold, should be rejected for all the reasons set out above.

2.44 However, Ofcom must ensure that any exclusions from the calculation of the 100% ultrafast threshold are genuinely due to exceptional circumstances beyond Openreach's control. The risks to competition (and ultimately to consumers) of an overly permissive approach are significant and Ofcom must

[64] See e.g. TAR Volume 3, paragraph 2.6.
[65] See paragraph 2.5 above.
[66] TAR Volume 3, paragraph 2.60.
[67] TAR Volume 3, paragraph 2.45.

ensure that Openreach cannot 'game the system' when implementing the copper retirement rules.

2.45 The 'Fixed Percentage Approach' should be rejected since it is completely arbitrary.[68] Under this approach, CityFibre understands that the 100% threshold would be reduced by a fixed percentage regardless of whether there are any impediments to the provision of ultrafast services to premises within an exchange area. A fixed percentage of, say, 2% would leave around 600,000 premises at risk of significant increases in copper prices.

2.46 As Ofcom recognises,[69] conditions between exchange areas may vary significantly, with Openreach able to address 100% of premises in certain exchange areas. There can be no justification for exposing a proportion of those consumers to the risks of higher copper pricing solely on the basis that it is practicable.[70] As explained below, there are other pragmatic, and more effective, ways to identify premises that can be excluded from the 100% ultrafast requirement. Given the arbitrary nature of the Fixed Percentage Approach and the existence of more effective alternatives, it would be unreasonable for Ofcom to adopt the Fixed Percentage Approach.

2.47 A Defined Exclusions Approach is therefore more likely to be consistent with Ofcom's objectives. In implementing that approach, however, Ofcom should assess Openreach's proposed exclusions with scepticism. Only those premises which cannot genuinely be served with ultrafast services for reasons beyond Openreach's control should be excluded.

Extremely high-cost premises where no public funding is available

2.48 CityFibre recognises that there are some premises in very remote locations which are particularly costly to serve and which may be uneconomic for commercial operators to cover. Whilst public subsidy may be available for a subset of these premises, others are too high-cost to serve, even with additional public subsidy. The UK Government estimates that there are likely to be less than 100,000 of these premises across the UK.[71] The Government is considering whether alternative broadband services, such as satellite and FWA, may be more appropriate for such premises. In those circumstances, it

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[68] TAR Volume 3, paragraphs 2.64 and 2.86-2.93.

[69] TAR Volume 3, paragraph 2.93.

[70] TAR Volume 3, paragraph 2.88: *"[t]he main advantage of this approach is that, once the Fixed Percentage is decided, we anticipate that it would be practical to determine whether the second threshold is met*".

[71] Department for Digital, Culture, Media and Sport, "Call for Evidence: Improving broadband for Very Hard to Reach Premises, Government Response", 2022, paragraph 2.4, accessed at https://assets.publishing.service.gov.uk/media/6202929a8fa8f510a66d362d/VHTR_Government_Response__compressed_.pdf.

would appear reasonable to exclude these premises from the 100% ultrafast requirement of the Pricing Freedom Threshold.

2.49 There is currently no defined list of properties which are considered high-cost or uneconomical and for which no public subsidy is available. However, funding available under the Gigabit Broadband Voucher Scheme is capped at £4,500.[72] Ofcom could use that level as the basis for an exclusion since it is reasonable to assume that, above that level, subsidy is not available.

2.50 Should Ofcom follow that approach, it will be important to ensure that Openreach is not in a position to circumvent those rules, for example by assigning costs which could be shared to individual premises. Openreach should in those circumstances be required to obtain third party expert verification that it is not possible to serve premises within the £4,500 limit.[73]

Premises that Openreach is unable to access

2.51 The position which Openreach appears to have put to Ofcom to justify the exclusion of premises in this category[74] does not reflect CityFibre's experience of seeking access from property owners and Ofcom should treat it with caution.

2.52 A number of pieces of legislation have come into force in recent years to facilitate the acquisition of property rights by communications providers. For example:

- The Telecommunications Leasehold Property Act 2021 introduced new measures into the Electronic Communications Code ("the Code"), setting out a clear process for obtaining property rights in cases where a landlord is unresponsive.
- The Product Security and Telecommunications Infrastructure Act 2022 amended the Code to allow courts to impose adverse costs orders against landlords who fail to enter into alternative dispute resolution ("ADR"). Several ADR schemes have been established and such schemes have been effective in encouraging parties to 'come to the table'.

2.53 In CityFibre's experience, such provisions have helped communications providers to obtain property rights in cases where landlords have been reluctant participants. Only in very rare cases has CityFibre needed to consider court action to secure access. In any event, use of the court system by a well-funded party such as Openreach should not be considered an exceptional

[72] BDUK, "Guidance: Gigabit Broadband Voucher Scheme information", accessed at https://www.gov.uk/government/publications/gigabit-broadband-voucher-scheme-information/gigabit-broadband-voucher-scheme-information.

[73] Network operators such as Openreach and CityFibre frequently use expert independent engineers to value the cost of connecting premises, remedying defects, etc.

[74] TAR Volume 3, paragraphs 2.71 to 2.75 and TAR Annex 12, paragraphs 12.7 to 12.11.

circumstance. Measures taken by the Government have made it significantly easier to obtain wayleaves and CityFibre understands that the Government is considering further measures to facilitate wayleaves, particularly for Multi-Dwelling Units.

2.54 If Ofcom is minded to include an exclusion for premises that Openreach is unable to access, it should only allow Openreach to exclude those premises for which all avenues, including court proceedings under the relevant provisions of the Code, have been exhausted. The fact that Openreach has been reluctant to take cases forward to date should have no bearing on whether premises should be excluded.

High-cost premises served by non-Openreach providers using public funding

2.55 The Government's Project Gigabit programme ("BDUK Programme") provides subsidy funding to operators to extend their networks to cover premises which would not be served commercially (with the exception of particularly high-cost premises for which no subsidy is available). Over 30 contracts have been concluded under the BDUK Programme, covering around 1mn premises to date.[75]

2.56 To the extent that these premises have been covered by an operator other than Openreach, it may be uneconomic for Openreach to serve them since the return on investment may not be sufficient. In CityFibre's view, however, there are two major problems with including such premises within an exclusion:

a. First, Openreach has declared that it intends to serve up to 30mn premises by the end of 2030 – almost all of the UK. If it does so, its FTTP build will inevitably cover some of the premises included in the BDUK Programme. It is therefore difficult to see how these premises are incapable of being served by Openreach "*due to exceptional circumstances beyond Openreach's control*".

b. Second, the scope of premises to be covered under BDUK contracts is inherently uncertain as under the BDUK Programme premises are added and removed following receipt of operators' commercial build plans. There are multiple drawdowns under each contract and the final scope is only known once each drawdown is agreed. Defining which premises would fall within the exclusion would therefore be very difficult from a practical perspective with a significant risk of error.

2.57 To address this, CityFibre proposes that such an exclusion should only apply once build to such premises has been completed and premises can access an

[75] BDUK, "Policy Paper: Project Gigabit progress update – November 2024", 27 November 2024, accessed at https://www.gov.uk/government/publications/project-gigabit-progress-update-november-2024/project-gigabit-progress-update-november-2024.

ultrafast connection. BDUK publishes details of completed build at UPRN level and this could be used to determine whether premises should be excluded from the 100% ultrafast threshold. Further or alternatively, use could be made of the indicative list of eligible premises in areas that are open to BDUK voucher projects.[76]

2.58 A restrictive approach to the copper retirement rules is entirely consistent with Ofcom's objectives of promoting competition. Whilst it may be appropriate to provide regulatory support for the retirement of Openreach's copper services over time, Ofcom should err towards the promotion of competition. The copper retirement rules present risks of exclusionary behaviour by Openreach and Ofcom must be alive to those risks.

Below-cost pricing by Openreach

2.59 CityFibre welcomes Ofcom's recognition that Openreach can engage in exclusionary conduct by setting its prices at a level which "*undermines the opportunity for a reasonably efficient competitor to recover its costs*".[77] Openreach could foreclose competition by pricing at a level which, while above its own costs, is below the costs of its rivals. The test for whether Openreach is engaging in below-cost pricing in WLA markets must therefore consider not just whether it is covering its own costs, but also whether it is covering the costs of its reasonably efficient rivals.

Ofcom's fibre cost model

2.60 CityFibre welcomes Ofcom's proposal to use the fibre cost model ("FCM") as a check on Openreach's pricing.[78] However, in order for the FCM to be effective and operate as intended (i.e. by giving alternative network providers sufficient headroom to allow them to recover their costs and make a reasonable return on their investment), it must accurately reflect the costs incurred by a new reasonably efficient operator ("REO"). If those costs are underestimated, pricing by Openreach below that level will not allow new entrants to recover their efficiently incurred costs and further investment will be deterred, to the detriment of network competition and consumers.

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[76] Under the BDUK voucher scheme, eligible homes and businesses can access vouchers worth up to £4,500 to help towards the costs of installing a gigabit-capable broadband connection. See BDUK, "Guidance: Gigabit Broadband Voucher Scheme information", accessed at https://www.gov.uk/government/publications/gigabit-broadband-voucher-scheme-information/gigabit-broadband-voucher-scheme-information.

[77] TAR Volume 4, paragraph 1.91.

[78] TAR Volume 4, paragraphs 1.40-1.41 and 1.91.

2.61 Ofcom has recognised the need to make changes to the FCM.[79] However, CityFibre remains of the view that the FCM set out in the TAR cannot reasonably be relied on to derive REO costs.

2.62 In particular, the FCM fails to recognise the significantly different cost of capital faced by an REO when compared with Openreach. The weighted average cost of capital ("WACC") used in the FCM significantly understates the WACC of a hypothetical new entrant and CityFibre considers that Ofcom should revise its approach to conduct a proper assessment of the WACC of an REO if the FCM is to be used effectively.

2.63 CityFibre has commissioned a report by AlixPartners on the appropriate WACC for an REO (Annex 1) which identifies a number of shortcomings in Ofcom's approach. In particular, Ofcom has:

a. Not appropriately considered why the WACC of an REO would differ from the WACC of Openreach's FTTP business.

b. Understated the appropriate asset beta for a hypothetical new entrant by relying on that of established operators and ignoring the greater risks associated with a new entrant; and

c. Understated the cost of debt which an entrant business with a significantly higher risk profile is likely to face, contrary to the market evidence.

2.64 AlixPartners conclude that the WACC to be used in the FCM should be in the range of 9.2-10.5% and that, to deliver Ofcom's objectives of promoting network competition, Ofcom should "aim up", using the top end of that range.

2.65 CityFibre has asked RBB Economics to assess whether, taking account of AlixPartners assessment of the appropriate WACC for an REO, the FCM could be relied upon as an accurate reflection of an REO's costs. That report is included at Annex 2.

2.66 RBB identify a number of errors in the FCM, in addition to the calculation of the WACC, that result in a significant understatement of an REO's costs:

a. ***[REDACTED]***

b. The FCM underestimates build capex for an REO by omitting relevant cost categories and assuming unrealistically low unit costs.

c. The FCM is based on a simplified network design and fails to capture the additional costs of deploying a future-proofed, resilient network architecture as used by CityFibre.

[79] The changes are summarised in TAR Volume 4, paragraph 1.42. See TAR, Annex 15 for a detailed overview of the changes.

d. The 'low-cost' scenario in the FCM does not reflect realistic deployment conditions for an altnet that can be expected to drive wholesale competition at scale.

2.67 In summary, Ofcom's FCM fails to reflect the significant differences in cost and risk between (i) Openreach with all of its incumbency and scale advantages; and (ii) new entrant operators that have yet to become established. The changes proposed by RBB and AlixPartners are necessary to ensure that the FCM is fit for purpose, accurately reflecting the cost differentials between Openreach and new entrants. A failure by Ofcom to take account of information that is highly relevant to its decisions (the differences in cost and risk borne by REOs and Openreach are an essential input into the FCM) and to ensure that its factual findings are soundly founded in evidence would plainly be unreasonable.

Regulation of geographic discounts

2.68 Discriminatory pricing conduct by a firm with SMP can prevent rival operators from establishing themselves in the market. Openreach could use geographically targeted price reductions or retail inducements – which involves charging different prices or providing different inducements for the same wholesale access – in order to undermine altnets' ability to become established competitors to Openreach.[80] In the WFTMR, Ofcom chose to prohibit geographic discounts in both WLA Area 2 and WLA Area 3 on an *ex ante* basis to ensure that such conduct could not arise.[81]

2.69 Ofcom's approach follows that set out in competition law but applies it on a precautionary *ex ante* basis to ensure that timely action can be taken to protect the potential for sustainable competition to emerge:

a. In *Eurofix-Bauco v Hilti*, the European Commission decided that *"a selectively discriminatory pricing policy by a dominant firm designed purely to damage the business of, or deter market entry by, its competitors, whilst maintaining higher prices for the bulk of its other customers, is both exploitative of these other customers and destructive of competition*".[82]

b. In *Compagnie Maritime Belge*, the Court of Justice held that "*where a liner conference in a dominant position selectively cuts its prices in order deliberately to match those of a competitor, it derives a dual benefit. First, it eliminates the principal, and possibly the only, means of competition open*

[80] TAR Volume 3, paragraph 9.9.

[81] WFTMR Volume 3, paragraph 7.101.

[82] Commission decision 88/138 in *Eurofix-Bauco v Hilti*, OJ L 65 of 11 March 1988, pp. 19-44. In paragraphs 80-81 of the decision, the Commission considered that the practice was "designed to damage the business of, or deter market entry by, its competitors".

to the competing undertaking. Second, it can continue to require its users to pay higher prices for the services which are not threatened by that competition". The Court went on to confirm that the selective price cutting at issue was an abuse of dominance.[83]

c. In *Irish Sugar*, the European Commission decided that a target rebates scheme involving selective price cuts[84] was discriminatory and contrary to Article 102 TFEU.[85] The Commission found that the rebates made it "*difficult for competitors to gain a foothold in the market*" and were "*part of a policy of restricting the growth of competition from domestic sugar packers*".[86] The Commission's decision was upheld on appeal.[87]

2.70 CityFibre welcomes Ofcom's commitment to prohibit geographic price discrimination by Openreach in WLA Area 2, and to ensure that this prohibition extends not just to rental charges, but also to connection charges and other retail inducements that amount to undue discrimination.[88] As Ofcom recognises, Openreach has the incentive to stifle new competition before it emerges and, absent effective *ex ante* regulation, would have the ability to do so through the use of geographic discounts.

2.71 Importantly, however, CityFibre considers that the proposal to remove the prohibition in WLA Area 3 is misguided and irrational. As further explained in Section 3, there is the potential for competition in large parts of WLA Area 3 and Ofcom's proposals will wrongly bake in the boundary between competitive and uncompetitive areas. Compared with the position that it adopted in the WFTMR, Ofcom has not identified any change in circumstances that justifies its change in approach.

2.72 During a period where networks continue to be rolled out, the boundaries between competitive and uncompetitive areas are inherently uncertain. A regulatory approach which sets those boundaries too early risks extinguishing the possibility for competition in WLA Area 3. To guard against the risk inherent in establishing boundaries at this point, Ofcom should ensure that the geographic pricing restriction is maintained in both WLA Area 2 and WLA Area 3 for this market review period.

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[83] Case C-395/96 P *Compagnie Maritime Belge Transports and Others v Commission*, paragraphs 117 and 120.

[84] The size of the target rebate varied depending on the customer in question: it was more favourable to particular customers of competing sugar packers.

[85] Commission decision 97/624 of 14 May 1997, *Irish Sugar plc*., OJ L 258 of 22 September 1997, pp. 1-34.

[86] *Irish Sugar plc* (ibid), paragraphs 152 and 154.

[87] Case T-228/97, *Irish Sugar plc v Commission*, 7 October 1999.

[88] TAR Volume 3, paragraphs 1.75 and 9.7.

Other commercial terms

2.73 CityFibre welcomes the fact that Ofcom has looked carefully at commercial terms that are conditional upon the volume and/or range of services purchased and has confirmed that it will use its direction-making powers to prevent those that would undermine competition.[89] As Ofcom recognises, exclusionary conduct by Openreach can take a number of forms, including commercial terms that are loyalty-inducing (e.g. volume-based discounts and other loyalty rebates).[90]

Arrangements which deter ISPs from switching volumes to rival networks

2.74 CityFibre agrees with Ofcom that that arrangements which deter ISPs from switching volumes to rival networks are likely to undermine the development of network competition. Examples of such types of arrangement that are overtly loyalty-inducing include exclusivity discounts, retroactive rebates, and terms where the price paid in one geographic area where Openreach has SMP depends on whether the ISP buys all or most its requirements from Openreach in another area.[91] CityFibre welcomes Ofcom's indication that it does not view this as an exhaustive list and that there may be other terms which, whilst not overtly loyalty-inducing, may have the same effect.[92]

Openreach terms which accelerate migration to FTTP

2.75 Openreach special offers that have the object or effect of accelerating migration of ISP customers onto Openreach's FTTP network should be monitored particularly carefully by Ofcom. As Ofcom rightly recognises, winning new customers through migration from copper-based broadband to FTTP is a key way for rival fibre network operators to drive the take-up on their networks that is essential to the long-term commercial success of the network:

> "*ISP-led migration of their existing customer bases represents an important opportunity for altnets that wholesale to increase take-up. This, in turn, may strengthen network competition in the future […] While altnets can compete for customers that have already migrated to FTTP, the barriers to migrating customers from legacy broadband services to FTTP are lower.*"[93]

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[89] See e.g. TAR Volume 3, paragraphs 9.76-9.79.
[90] TAR Volume 2, paragraphs 7.6 and 7.15.
[91] TAR Volume 3, paragraphs 9.71 and 9.73.
[92] TAR Volume 3, paragraphs 9.68 to 9.69.
[93] TAR Volume 3, paragraph 9.81.

2.76 Given the importance of the window of opportunity presented by copper-to-fibre migration, it is critical that CityFibre (and other rival network operators) are able to compete for copper customers and secure their migration onto their networks on a level playing field. Otherwise there is a significant risk of Openreach's monopoly in copper being replicated in wholesale FTTP markets.

2.77 Openreach's scale FTTP network and the significant barriers to entry and expansion faced by its rivals make it unsurprising that there are large parts of the country which fall into Future Competitive Areas. CityFibre is intending to cover Future Competitive Areas but faces temporary obstacles to ISPs being in a position to migrate their legacy customers to the CityFibre network:

a. CityFibre has yet to fully build out its network (either organically or through acquisition) and ISPs are therefore not yet able to consume it in areas where build is progressing, is likely, or where acquisitions have yet to be completed;[94]or

b. CityFibre has completed the acquisition of another network but that network has yet to be integrated into the CityFibre network for consumption by ISPs.[95]

2.78 In view of the above, any Openreach offers aimed at accelerating migration to FTTP in Future Competitive Areas will give rise to strong exclusionary effects. The copper retirement process already gives Openreach powerful levers to achieve migration and Openreach should be precluded from introducing additional offers aimed at artificially accelerating migration.

2.79 CityFibre therefore welcomes Ofcom's explicit recognition that actions which "*significantly accelerate*" migrations are likely to be of concern.[96] Given the potentially highly damaging foreclosure effects, Ofcom should carefully examine Openreach offers designed to accelerate migrations and should not adopt an overly narrow approach to what is significant.

The three-question framework and dealing with 'potentially' conditional offers

2.80 CityFibre welcomes Ofcom's confirmation that it will apply the three-question analytical framework to commercial terms notified by Openreach.[97] However, given the importance of ensuring that rival network operators are not foreclosed from the market, it is vital that Ofcom applies the gating question (Question 1) appropriately. CityFibre considers that the Question 1 assessment process should be a relatively short one, screening out only those offers where it is clear

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[REDACTED]

[REDACTED]

[96] TAR Volume 3, paragraph 9.80 et seq.

[97] TAR Volume 3, paragraph 9.75.

on the evidence that there is no possibility of an impact on competition. If that question is answered in the affirmative, CityFibre agrees with Ofcom's analysis in paragraphs 9.77-9.79 of Volume 3 of the TAR and particularly Ofcom's confirmation that Openreach will need to satisfy both Questions 2 and 3 where a plausible concern based on reasonable underlying assumptions has been identified under Question 1.[98]

2.81 Ofcom should also be alive to the fact that conditionality can appear in a wide range of guises and that there may be a difference in opinion as to whether a particular offer is conditional (and hence subject to the notification regime). In the interests of transparency, unless there is clearly no plausible basis for concluding that an offer is conditional, Ofcom should err on the side of caution and consult with interested stakeholders to obtain their views on whether the offer gives rise to competition concerns.

Extension of the notification period

2.82 CityFibre welcomes Ofcom's approach of continuing to subject conditional offers to a notification regime.[99] It also supports the proposal to extend the notification period from the current 90 days.[100] However, as Ofcom's prior reviews of Openreach's Equinox offers have shown, the issues relating to conditional offers are complex and Ofcom needs sufficient time to weigh up the evidence so that it can discharge its duties in a manner that ensures that relevant Openreach offers do not undermine network competition.

2.83 Particularly in view of the time taken to issue the final Statement on Equinox 2 (162 days) and the average taken across the two Equinox Statements (127 days), CityFibre considers that a modest increase from 120 days to 150 days would be reasonable, proportionate and appropriate. This is particularly the case as Ofcom has to date only conducted its analysis of Openreach offers under Question 1 of the three-limb analytical framework. Had Ofcom also assessed the Equinox offers under Questions 2 and 3, it is likely that the process would have taken longer still.

[98] TAR Volume 3, paragraph 9.77.
[99] TAR Volume 3, paragraph 9.62.
[100] TAR Volume 3, paragraph 9.65.

SECTION 3: FORECLOSURE OF COMPETITION: MARKET DEFINITION AND DIFFERENTIATED REMEDIES IN WLA AND LLA

Introduction

3.1 Ofcom defines separate geographic markets in the TAR for both WLA and Leased Lines Access market ("LLA") services. In doing so, Ofcom draws a distinction between those areas where it considers there is the potential for material and sustainable competition and those where it does not. Ofcom is proposing to apply different remedies in areas where it does not consider there is the potential for material and sustainable competition.

3.2 Ofcom recognises that there is inherent uncertainty in defining geographic markets over the forward look, particularly during a dynamic period in which network rollout and competition is still developing.[101]

3.3 However, Ofcom's current proposals for geographic market definition do not work. Large swathes of CityFibre's actual and planned deployment fall within Ofcom's proposed WLA Area 3 and LLA Area 3 where Ofcom has said that it does not expect material and sustainable competition to emerge. This is despite Ofcom's acceptance that CityFibre will provide material and sustainable competition in both WLA and LLA wherever it is present.

3.4 Ofcom should, therefore:

a. Err on the side of caution in defining geographic markets over the 5-year period of the market review, so as to minimise the risk of baking in the boundaries of competition too early, consistent with its objective of promoting competition to the greatest extent where viable;

b. During this period of developing competition, maintain the prohibition on geographic discounts in WLA Area 3, and allow a sufficient margin for entrants in the provision of dark fibre services in LLA Area 3.

WLA

Market Definition

3.5 In the WLA market, Ofcom has defined separate markets for WLA Area 2 and WLA Area 3. WLA Area 2 comprises postcode sectors in which one or more networks with the potential to exert a material and sustainable constraint on Openreach are present. WLA Area 3 comprises postcode sectors in which no

[101] TAR Volume 2, paragraph 4.51.

networks that have the potential to exert a material and sustainable constraint on Openreach are present.

3.6 Networks with a footprint of less than 50,000 premises are considered not to have the potential to exert a material and sustainable constraint on Openreach and are therefore excluded from the analysis. Networks with more than 50,000 premises are considered to be 'present' in a postcode sector if they cover, or plan to cover, 50% or more of the addressable premises within that postcode sector.

3.7 As CityFibre has explained to Ofcom,[102] its proposed WLA Area 3 will include current and prospective CityFibre network. ***[REDACTED]***

3.8 There appear to be two reasons for CityFibre build falling within WLA Area 3:

a. The data used by Ofcom does not reflect CityFibre's full network footprint on a sensible forward look basis over the market review period; and

b. The 50% threshold for "presence" in a postcode sector fails to take any account of the constraint which CityFibre build may impose on Openreach.

Connected Nations data

3.9 Ofcom has used data provided for the purposes of the Connected Nations report as of 1 July 2024[103] as the basis for the definition of geographic boundaries in WLA. This includes actual build and planned deployment for the period to July 2027 only. It also includes information on the level of funding commitment for build and the design stage.

3.10 There are limits to the extent to which that data can be relied upon to provide a true picture of the likely network footprint of altnets. ***[REDACTED]***.

3.11 Additionally, the BDUK Programme is set up in a way that necessarily involves an evolving footprint over time. BDUK provides subsidy for operators to provide services to premises which would otherwise not be served commercially from other operators ("white premises"), in the context of meeting the Government target of 100% gigabit coverage by the end of 2030.[104] BDUK has awarded a range of contracts pursuant to which government subsidy is available to operators to serve white premises in pursuit of that goal.

3.12 As Ofcom is aware, CityFibre has been awarded 10 regional Type B BDUK contracts covering over 500,000 premises eligible for subsidy. ***[REDACTED]***.

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[102] CityFibre and Ofcom Meeting on 10 April 2025.

[103] TAR Annex 7, paragraph A7.6.

[104] Sir Chris Bryant, speech at Connected Futures Festival: "… *our ambition is to have gigabit-capable broadband in every home and in every business, and higher quality 5G to all populated areas by 2030*", delivered on 26 March 2025, accessed at https://www.gov.uk/government/speeches/sir-chris-bryant-speech-at-connected-futures-festival.

3.13 BDUK contracts provide for build in stages with build divided into successive drawdowns. The precise scope of white premises in each drawdown is only decided as each drawdown is reached, with premises added and removed on an ongoing basis. Once the scope of the white premises is agreed, CityFibre will be able to assess the incremental premises that may be served from subsidised spine routes.

Threshold for presence

3.14 Under Ofcom's proposals, a network is considered to be "present" in a postcode sector if its network covers, or proposes to cover, 50% or more of premises in a postcode sector. If a competing network[105] covers over 50% of a postcode, its build will sit in WLA Area 2. If it does not, its build will sit in WLA Area 3.

3.15 The 50% figure is arbitrary. Ofcom adopts this figure on the basis that:

> "*4.121 If a high coverage threshold is used then it is possible that many parts of an operator's network would be excluded, and consequently the operator (and the constraint it provides) would be under-represented. Conversely, if a low coverage threshold is used then it is possible that an operator's network would be over-represented.*
>
> *4.122 In line with our approach in the WFTMR21 statement, we therefore propose using a coverage threshold of 50%, as on average, any under- or over-representation should balance out. This means that an operator will be considered as present in a postcode sector if its existing or planned network covers at least 50% of the premises in that postcode sector.*"[106]

3.16 That assessment fails to take account of the difference in risk associated with over or under representation. Those risks arise as a result of the differentiated approach to remedies, with build in WLA Area 3 less protected from exclusionary conduct by Openreach than build in WLA Area 2. Over representation in WLA Area 2 presents little risk since the regulation applied in WLA Area 2 protects against both exclusionary and exploitative conduct by Openreach. By contrast, under representation in WLA Area 2 exposes more of an altnet's footprint to exclusionary conduct, thereby reducing investment incentives.

3.17 The threshold for "presence" should take account this asymmetric risk and err on the side of caution by allowing for over representation.

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[105] i.e. a network other than Openreach which currently covers at least 50,000 premises.

[106] TAR Volume 2 paragraphs 4.121 and 4.122.

3.18 Annex 3 applies Ofcom's proposed approach to CityFibre's build and planned deployment and sets out some examples illustrating how that approach results in significant amounts of CityFibre build falling within WLA Area 3.

Remedies

3.19 CityFibre has serious concerns that footprint in WLA Area 3 is at risk of exclusionary conduct as a result of the differentiated approach which Ofcom has taken to regulation in each of WLA Area 2 and Area 3.

3.20 In WLA Area 2 Ofcom is proposing to maintain the prohibition on geographically differentiated pricing to prevent Openreach from targeting rival networks through selective discounting which was imposed in the WFTMR.[107] But, in WLA Area 3, Ofcom is proposing to lift the prohibition on geographically differentiated pricing. Network presence from rival networks in WLA Area 3 will therefore be unprotected from strategic pricing by Openreach.

3.21 Ofcom has provided no reasons for removing the geographic pricing prohibition in WLA Area 3. The market dynamics in both WLA Area 2 and WLA Area 3 remain largely unchanged since the WFTMR. It is entirely unclear as to why Ofcom thinks it is now appropriate to remove the geographic pricing prohibition in WLA Area 3.

3.22 As Ofcom set out in the WFTMR:

> "*In Area 3 there is unlikely to be potential for material and sustainable competition to Openreach in the commercial deployment of competing networks, but there is likely to be some rollout. Discounting prices in local areas where alternative networks are starting or planning to deploy could be a very effective way for Openreach to undermine this rollout, particularly given that some VULA services e.g. FTTC are already available at most premises. We believe that Openreach would still have an incentive to do this to deter any alternative network roll out, even if it is not expected to result in material and sustainable competition.*"[108]

3.23 Competition is in the process of emerging and the precise boundaries of the competitive footprint are yet to be established. The conditions of competition which Ofcom identified in the WFTMR therefore remain with rollout in WLA Area 3 still likely.

3.24 ***[REDACTED]***

3.25 Given Ofcom's aim of delivering material and sustainable competition across the broadest area of the UK possible, it is critical that the overall approach in the TAR allows for competition to emerge. The concerns outlined above risk

[107] See paragraphs 2.68 to 2.72 above.

[108] WFTMR Volume 3, paragraph 7.94.

drawing a hard boundary between potentially competitive and uncompetitive markets at a stage where it is simply not possible to know with certainty where that boundary will end up. Ofcom should be wary of an approach which artificially determines where the boundary will lie which may leave consumers that would otherwise benefit from competition in areas where competition can no longer emerge.

3.26 Protecting all altnet build from strategic behaviour by imposing the same regulation in both WLA Area 2 and WLA Area 3 would allow the market to determine where, over time, the boundary between potentially competitive and uncompetitive areas lies. That approach would mean that the prohibition on geographic pricing would be maintained across both markets.

3.27 It is difficult to see any downsides to such an approach which would prevent Openreach from unfairly targeting its rivals in any area of the UK. To the extent that geographic discounting was necessary to serve a purpose other than foreclosing Openreach's competitors, Ofcom's consent process for geographic offers already allows Openreach a means of putting such offers into effect. Both consumers and competitors will therefore be protected, with the conditions for long-term competition in WLA to emerge maintained across the broadest area of the UK.

LLA

3.28 Similar concerns arise in the LLA market where the imposition of a dark fibre remedy in a significant proportion of the country covered by LLA Area 3 risks seriously undermining incentives to invest, not just in LLA but also in WLA.

Market Definition Approach

3.29 In the TAR, Ofcom defines three geographic markets which are susceptible to regulation[109]:

a. High Network Reach – postcode sectors where there are at least two current material and sustainable competitors to Openreach;

b. LLA Area 2 – postcode sectors in which there is at least one current or potential material and sustainable competitor to Openreach; and

c. LLA Area 3 – postcode sectors in which there is no existing or planned presence from any of the current or potential material and sustainable competitors.

3.30 For the purposes of determining LLA market boundaries:

[109] In the WFTMR, Ofcom defined a relevant geographic market for the CLA and found that it was effectively competitive. As a result, Ofcom's analysis in the TAR excludes the CLA from Ofcom's assessment.

- Ofcom has identified the location of an operator's network based on duct maps supplied to Ofcom in response to a formal information request dated 9 May 2024;
- A 50m radius from the duct is drawn in respect of each network's duct maps;
- Ofcom calculates the number of demand sites falling within that radius;
- Where the resulting number of demand sites within a 50m radius exceeds 65% of the total demand sites in a postcode sector, the network is considered to be "present". Where the 65% threshold is not met, the network is not taken into account.

3.31 Ofcom therefore sets the boundaries of each of the geographic markets (HLA, LLA Area 2 and LLA Area 3) according to the number of networks present or potentially present. Notably, this approach has led to an increase in the size of LLA Area 3 from 38% (WFTMR) to 46% (TAR proposed) of postcode sectors. This is despite significant network roll out by CityFibre and others since 2021.

3.32 Ofcom recognises in the TAR that CityFibre has the potential to exert a material and sustainable constraint on Openreach.[110] CityFibre therefore expected that all of its actual and planned the network which can be used to serve leased line customers would have been taken into account in Ofcom's analysis of the geographic boundaries of leased line markets.

Failure to take account of full fibre network

3.33 As CityFibre has explained to Ofcom, CityFibre is now able to offer leased line equivalent services delivered over symmetric PON[111] across the entirety of its full fibre network footprint. This represents a significant change from the position in the WFTMR where dedicated fibre pairs were required to provide Ethernet services.

3.34 CityFibre's analysis suggests that Ofcom has significantly underestimated the footprint over which it is able to exert a constraint on Openreach during the period of the market review by limiting its assessment to the CityFibre Metro Network only.[112] CityFibre now offers Ethernet services across its entire full

[110] TAR Volume 2, paragraph 5.91.

[111] Ofcom has included offer leased line equivalent services delivered over symmetric PON in the product market definition for leased line services (see TAR Volume 2, paragraphs 5.21 to 5.30).

[112] The CityFibre Metro Network is CityFibre's traditional leased line network which provides dedicated fibre pairs to business customers for the provision of Ethernet and dark fibre services.

fibre network[113] and Ofcom should base its geographic analysis on this network as well as the CityFibre Metro Network.

Dig distances

3.35 Under the proposals in the TAR, a competitor will be considered to be capable of serving a demand site where its network is within 50m of that site. Ofcom uses this metric to determine how many demand sites within a postcode sector can be served by that competitor to assess whether or not a competitor meets Ofcom's 65% threshold and is considered "present" in that postcode sector.

3.36 ***[REDACTED]***.

3.37 ***[REDACTED]***.

3.38 ***[REDACTED]***.

3.39 ***[REDACTED]***.

Figure 1: ***[REDACTED]***

3.40 A dig distance of 50m therefore is not correct when considering how far CityFibre is prepared to extend its network to provide premises with leased line services. ***[REDACTED]***.

Failure to consider effect of consolidation

3.41 Ofcom's approach in the TAR also fails to take account of third party altnet footprint which CityFibre acquires over the period of the market review. Ofcom recognises in the TAR[114] that consolidation represents a foreseeable development which is likely to materially affect competition over the course of the review period. Where CityFibre acts as a consolidator, it will offer leased line services across acquired footprint once integrated into its full fibre network.

3.42 Consolidation is taken into account in the WLA market where Ofcom adopts an approach which seeks to include acquired footprint in WLA Area 2 by including altnets with a footprint of over 50,000 as potential material and sustainable competitors. However, for LLA, Ofcom adopts an inconsistent approach whereby altnets other than CityFibre are not considered likely to provide material and sustainable competition to Openreach.

3.43 As a result, altnet footprint is more likely to fall within LLA Area 3 even where it may be the subject of consolidation. Ofcom has provided no explanation for this inconsistency. ***[REDACTED]***.

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[113] CityFibre press release, "CityFibre Triples Business Ethernet Availability for its Partners", 12 June 2025, accessed at https://cityfibre.com/news/cityfibre-triples-business-ethernet-availability-for-its-partners.

[114] TAR Volume 2, paragraph 4.77.

The Dark Fibre Remedy

3.44 As with WLA, the TAR proposes differentiated remedies as between LLA Area 2 and LLA Area 3. Importantly, in LLA Area 3, Ofcom is proposing to impose an obligation on Openreach to provide dark fibre access at cost[115] ("the Dark Fibre Remedy"). That remedy, combined with the way in which Ofcom has defined LLA Area 3, presents serious risks to the emergence of competition not just in leased line services but also in WLA.

3.45 The Dark Fibre Remedy was introduced in the WFTMR[116] to provide users with a more flexible input for leased line services, with the intention of promoting competition in corresponding downstream markets.[117] At the time, Ofcom explicitly ruled out the introduction of a dark fibre remedy in LLA Area 2 since "*the consequence would be to increase incentives for telecoms providers to continue to rely on access to Openreach's network rather than build new networks themselves or enter commercial arrangements with alternative network builders. This in turn removes an important source of demand (and revenue) for telecoms providers looking to deploy competing networks*."[118]

3.46 Ofcom recognised that there may be build by alternative networks in LLA Area 3 but considered that this was likely to be focussed on broadband products for homes and businesses and therefore the risk of undermining investment was small.[119]

3.47 The risk associated with the Dark Fibre Remedy is clearly set out by Ofcom in the WFTMR.[120] An Openreach dark fibre product, priced at cost, will be a more attractive option for access seekers than a dark fibre or active circuit which is higher priced. As a result, there will be little demand for dark fibre or active circuits from alternative network providers who will therefore be limited in their ability to compete in leased line markets where the Dark Fibre Remedy is in place. That lack of demand reduces incentives to invest and grow networks in areas where the Dark Fibre Remedy is in place.

3.48 Such an effect may be limited where entry and expansion are unlikely. As Ofcom identified in the WFTMR, expansion in LLA Area 3 for the provision of leased lines was expected to be limited in that market review period and the risk of undermining investment was small. However, since the publication of the WFTMR, there have been a number of developments which make the risk of undermining investment far more substantial.

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[115] TAR Volume 3, paragraphs 7.42 to 7.62.
[116] WFTMR Volume 3, section 6.
[117] WFTMR Volume 3, paragraphs 6.21 and 6.22.
[118] WFTMR Volume 3, paragraph 6.28.
[119] WFTMR Volume 3, paragraph 6.31.
[120] See footnote 122.

3.49 At the time of the WFTMR, entrant networks were focused on the roll out of networks for the purposes of providing residential broadband services. The higher density of premises which may be served by broadband services meant that the return on investment was likely to be quicker for those products rather than business grade leased line services. As build to residential premises has progressed, attention has turned to business products to generate greater revenues to fund further network expansion.

3.50 The development of Ethernet services over the full fibre network has accelerated this trend, with multi service networks such as CityFibre able to offer services across a much wider footprint. Those services no longer require a dedicated fibre pair and Ofcom recognises in the TAR[121] that they are substitutes for traditional leased line services.

3.51 ***[REDACTED]***

3.52 Further, over the TAR market review period, development of 5G networks is likely to accelerate. Mobile network operators ("MNOs") are some of the largest consumers of dark fibre for the purposes of providing backhaul from mobile sites. All of those MNOs are in the process of rolling out 5G services across the UK. That rollout presents significant opportunities for fixed networks to compete to deliver the additional backhaul bandwidth to service the increased data requirements.

3.53 ***[REDACTED]***.

3.54 In particular, Vodafone/H3G has committed to the Competition and Markets Authority ("CMA"), as a condition of the merger clearance leading to the creating of Vodafone/H3G, that it will upgrade 25,000-30,000 mobile sites to 5G over the next eight years.[122] ***[REDACTED]***.

Figure 2 ***[REDACTED]***

3.55 In CityFibre's view, Ofcom should preserve the opportunity for competitors to Openreach to grow their networks and provide material and sustainable competition across the widest possible footprint by:

- ***[REDACTED]***
- adjusting the approach to pricing of The Dark Fibre Remedy to allow sufficient margin to maintain incentives to invest for entrants by imposing a requirement that charges are "fair and reasonable" rather than

[121] TAR Volume 2, paragraph 5.30.

[122] Final Undertakings given by Vodafone Group Plc, CK Hutchison Group Telecom Holdings Limited and Vodafone UK Trading Holdings Limited to the Competition and Markets Authority pursuant to section 82 of the Enterprise Act 2002, 28 March 2025, paragraph 2.1.

reducing them to cost. That approach would be consistent with the regulatory framework for WLA services where bandwidths above the anchor product are subject to a “fair and reasonable” requirement so as to maintain incentives to invest.

3.56 Purchasers of dark fibre would be protected by the requirement that charges are fair and reasonable. That provision would mean (and Ofcom could explicitly state) that charges for dark fibre could not give rise to excessive pricing or margin squeeze. Whilst such a prohibition already exists under competition law, an *ex ante* remedy would enable Ofcom to take prompt action where the pricing of dark fibre was liable to impact downstream competition.

3.57 Consumers of leased line products will be protected through the charge controls placed on active services from exploitative behaviour by Openreach. As networks are rolled out, they will benefit from long-term sustainable competition which will deliver lower pricing, better products and higher service levels.

SECTION 4: EXCLUSIONARY BEHAVIOUR BY OPENREACH IN THE PROVISION OF PIA

Introduction

4.1 As the incumbent monopolist, Openreach benefits from an irreplicable, ubiquitous network of duct and poles, granting it a huge advantage over its rivals when it comes to the roll out of new fibre infrastructure. In order to level the playing field, access to Openreach's physical infrastructure network is critical. Ofcom has recognised this and regulates access to that network through the PIA Remedy.

4.2 Ofcom considers the PIA Remedy to be its flagship remedy for promoting network competition:

> "*We consider PIA to be our primary remedy for promoting network competition and investment in WLA and LLA networks. Mandating access to Openreach's physical infrastructure has been transformational in enabling investment and deployment of fibre networks across the UK, as it reduces the cost and increases the speed of network rollout by competitors. An effective PIA remedy is critical as it secures the access to Openreach's physical infrastructure for existing altnet deployment, future expansion and connecting customers to networks.*"[123]

4.3 Since the WFTMR 2021, access through the PIA Remedy has enabled competing networks to drive coverage of new fibre networks, in competition with Openreach, to over 16m premises across the UK.[124] PIA usage has increased significantly, allowing for large-scale alternative fibre infrastructure deployment, providing the conditions for long-term, sustainable competition to emerge.

4.4 From a near monopoly position, Openreach faces the prospect of losing market share as challengers enter, offering better pricing, faster speeds and improved customer service. Openreach has the incentive to restrict those competitors in a variety of ways, not least through its control of access to PIA.

4.5 Pricing of PIA products is one way by which this may be achieved. As Ofcom recognises,[125] use of PIA can reduce competitors' deployment costs by as much as 50%, reducing their significant cost disadvantage and allowing them to compete more effectively. That cost reduction only arises if PIA charges are

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[123] TAR Volume 3, paragraph 5.2

[124] INCA, "UK Altnets: Delivering Affordable, High-Speed Connectivity with Unmatched Customer Satisfaction", April 2025, accessed at https://inca.coop/wp-content/uploads/2025/04/INCA-Point-Topic-April-25-2.pdf.

[125] WFTMR Volume 3, paragraph 1.52.

set at a level that does not place PIA users at a disadvantage compared to Openreach and allows Openreach to recover only efficiently incurred costs.

4.6 CityFibre welcomes the changes which Ofcom has made to the charge controls for individual duct and pole products. By reducing the charges for PIA access, Ofcom has ensured that entrants are placed at less of a disadvantage to Openreach.

4.7 CityFibre notes, however, that Ofcom intends to update its cost models to incorporate more recent data in the final figures.[126] Should there be any material changes to that data, Ofcom should treat those changes with scepticism. Openreach continues to state that "*PIA prices are too low*".[127] However, PIA is now a mature product and Openreach's own fibre rollout programme is well established. There should be very little scope for costs or forecasts to change substantially since the 2022/23 Regulatory Financial Statements ("RFS") numbers on which Ofcom has based the indicative charges.

4.8 CityFibre has identified certain areas of Ofcom's approach to the PIA Charge Control where it should go further to secure its overall objectives as set out below.

Aligning the Charge Control methodology with Ofcom's policy objectives

4.9 There are limitations on CityFibre's ability to provide intelligent consideration of the proposed PIA Charge Controls[128] since much of the information and assumptions on which Ofcom relies is not made available in the consultation.

4.10 However, it appears that Ofcom has adopted an approach which is overly concerned with the risk of cost under-recovery by Openreach at the expense of raising costs for PIA users. That approach is not consistent with Ofcom's objectives to create a level playing field in network deployment to facilitate the emergence of sustainable infrastructure competition.

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[126] TAR Volume 4, paragraph 4.9: "*We intend to update our cost models ahead of publishing our Statement to incorporate more recent outturn data from which we can derive updated cost estimates for 2025/26 and 2030/31*".

[127] ISPreview, "Openreach Respond to Altnet Concerns Over Cost of UK Infrastructure Sharing", 16 May 2025, accessed at https://www.ispreview.co.uk/index.php/2025/05/openreach-respond-to-altnet-concerns-over-cost-of-uk-infrastructure-sharing.html.

[128] For example: (i) Base year cost data drawn from the regulatory accounting system/RAB model cannot be fully reconciled to the Regulatory Financial Statements (RFS); (ii) base year volume data varies from the data provided in the RFS yet no information is provided as to why such changes have been made; (iii) no information is given on the capex forecast assumptions and inputs are randomised in the model; (iv) the model provides insufficient transparency over internal and external revenues to allow for a meaningful assessment of fair shares, and; (v) no information is provided on the assumptions of growth in the volume of duct and poles.

"Fair Shares"

4.11 We welcome the important changes that Ofcom has made to "fair shares" based on revised assumptions about asset occupation and eventual accrued revenue streams. Nevertheless, CityFibre considers that there are a number of further changes to fair shares which Ofcom should make to reflect the realities of usage of duct and poles.

4.12 CityFibre notes that Ofcom's approach to fair shares reflects a long run view of the appropriate cost attribution for shared infrastructure once the customer base is fully migrated to fibre services and copper cables have been recovered from infrastructure. That approach assumes that the addressable market at that point will be similar for Openreach and individual PIA based operators, and so the costs of infrastructure should be recovered equally from Openreach and any PIA operator(s) using the infrastructure.

4.13 However, this long run view does not take account of the starting position for PIA users. When PIA users roll out FTTP in an area, 100% of revenues generated from PIA infrastructure result from existing Openreach services. At this point, as PIA users' roll out FTTP networks, those networks are yet to be ready for service and have yet to generate revenues. Openreach, by contrast, will continue to recover the full cost of the infrastructure from existing services but will also receive PIA charges. This means that Openreach will over-recover the costs of the infrastructure. This over-recovery will continue for so long as copper-based services continue to be served from the infrastructure, as copper-based customers make a contribution to the cost of the network even though Ofcom's approach allows the costs of PIA infrastructure to be fully recovered from FTTP networks and their customers.

4.14 In the WFTMR, Ofcom appears to accept that dual occupancy by Openreach of infrastructure with copper and fibre is a temporary phenomenon. Ofcom therefore concluded that basing prices on the then current occupation rate would lead to "price instability" when copper was subsequently removed.[129] The TAR proposals continue this position despite Openreach copper remaining the predominant way in which broadband services are provided in the UK. Ignoring copper services in the assessment of PIA charges has already led to over recovery by Openreach and will continue to do so. Openreach should not be permitted to over recover its costs at the expense of entrant networks that face significant hurdles in rolling out networks.

4.15 PIA users are sophisticated businesses that are capable of reaching decisions on a forward-looking basis, taking into account future price rises which may result from the reduction in contribution of copper services to PIA costs. CityFibre considers that Ofcom should implement an approach whereby PIA

[129] WFTMR Final Statement Volume 4, paragraphs 4.74-4.76.

prices are lower in the short-term to take into account the partial recovery of infrastructure costs from copper services during the migration to fibre. Unlike Openreach, new entrants are capital constrained, and the benefits of savings on PIA costs at this stage of the investment/build cycle comprehensively outweigh the downsides of prices for PIA potentially increasing in subsequent market reviews.

4.16 An approach which recognised that infrastructure costs should be partially recovered from copper-based services during the transition from copper to fibre would better meet Ofcom's overall objectives:

a. It would provide "good pricing signals for network investment", in particular by lowering PIA charges during the period where FTTP uptake was increasing;

b. It would ensure a level playing field between Openreach and PIA users, by recognising that Openreach will partially recover costs from copper services during the migration and so FTTP services will make a smaller contribution to infrastructure costs than assumed under the current fair share assumption; and

c. It will allow Openreach to fully recover its efficiently incurred costs but not to over-recover these costs.

4.17 That approach could be implemented based upon high level assumptions of usage of copper services over the period of the TAR. It would be simple and easy to implement, based on assumptions which can be readily made, taking account of historic data.

4.18 Ofcom should therefore adjust the fair share approach to reflect that Openreach will over recover its costs through PIA assets being occupied by both its copper and fibre during this charge control period.

Asset lives

4.19 The TAR approach maintains the previous 40-year asset life assumption for both ducts and poles used in the WFTMR. That approach should now be revisited. The asset life assumptions used are arbitrary and based upon assessments made a significant number of years ago.

4.20 As regards poles, the 40-year asset life assumption was introduced in the WFTMR[130] but was not consulted upon and Ofcom provided no justification for the approach adopted. Yet the PIA cost model provided along with the consultation strongly indicates only around 1% of poles are forecast to be

[130] WFTMR statement Annex 18, paragraph A18.41.

replaced each year, consistent with an average asset life of the order of 100 years, significantly above the 40 year-asset life which Ofcom assumes.

4.21 Indeed, in industry discussions with Openreach concerning the high number of defective poles encountered by PIA users, Openreach has acknowledged that much of the pole inventory is significantly older than 40 years. Ofcom should therefore reconsider its approach to pole asset lives, based on Openreach's actual replacement rate and the average age of its current pole inventory.

4.22 For duct, the 40-year asset life was determined in 2005[131] but recent precedents by other national regulators suggest longer asset lives. For example, both ARCEP, the French regulator, and Nkom, the Norwegian regulator, have recently adopted 50-year duct lifecycles following detailed reviews based on information obtained from operators.[132] By contrast, no new asset life evaluation has been conducted on Openreach's duct assets since 2005. In light of the more recent reviews by ARCEP and Nkom, CityFibre considers that Ofcom should reconsider its approach to duct asset life in the PIA Charge Control.

Opening RAB valuation for ducts

4.23 In the TAR consultation Ofcom recognises that Openreach has enjoyed high holding gains because of RPI indexation in the existing charge control period. Those holding gains represent a windfall for Openreach in the charge control since they have the effect of increasing the costs which Openreach can recover through the charge control despite Openreach not having directly incurred any additional cost.

4.24 Ofcom proposes to address this problem on a forward-looking basis by adopting a 2% indexation figure.[133] CityFibre supports this approach on a forward-looking basis, which should mitigate the accrual of further unearned holding gains in the 2026-31 period.

4.25 However, Ofcom should go further and consider starting cost adjustments to PIA prices to offset the effects of the significant holding gains from which Openreach has benefitted since 2021. Ofcom proposes not to do so on the basis of downsides to Openreach's investment incentives which it considers will

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[131] Ofcom, "Valuing copper access: Final statement", 18 August 2005, accessed at https://www.ofcom.org.uk/siteassets/resources/documents/consultations/uncategorised/8778-copper/associated-documents/valuing-copper-access-statement.pdf?v=323123.

[132] WIK, "Best practice for passive infrastructure access", 19 April 2017, Table 2-1, p.25, and Nkom, "Modelling the costs of copper networks in the Norwegian context", 15 December 2017, p.17, accessed at https://nkom.no/ekom-markedet/kostnadsmodeller-og-wacc/_/attachment/download/409bbdd4-5e8e-4927-b58b-fa6fd19b3c52:545a4850b1bc56c77247c76c75077a310e209a34/Rapport%20om%20modellering%20av%20kostnader%20for%20kobbernettet%20(Vedlegg%205%20til%20vedtak%20i%20Marked%203a).pdf.

[133] TAR Volume 4, paragraph 4.18.

result from taking steps to address the holding gains enjoyed during the WFTMR:

> "*Adjusting the cost recovery of PIA assets to account for any over recovery in downstream services could undermine Openreach's incentives to invest in its physical infrastructure. We also do not consider it appropriate to adjust future charge controls based on historical over recovery.*"[134]

4.26 Ofcom's reasoning is misguided. Holding gains are not the result of historical over-recovery but instead, as the regulatory asset value affects the net present value of future allowable revenues, will result in BT shareholders being able to over-recover the value of past investments in infrastructure from future PIA charges.[135]

4.27 CityFibre recognises that Ofcom may be reluctant to address over-recovery after the event if a regulated entity out-performs against, for instance, the efficiency assumption that underpinned the setting of a charge control. In this case however, the high holding gains are entirely a function of exogenous and exceptional circumstances, notably the unprecedented spike in RPI triggered by shocks in the wider economy: they are a classic "windfall gain". Adjusting the charge control to remove the effects of that windfall gain cannot therefore be said to have any negative effects on Openreach's incentives to operate efficiently, or to continue to invest in its network assets, which it is in any event incentivised to do through its own use of the assets.

4.28 An approach which allows for PIA users to face artificially inflated starting charges is inconsistent with Ofcom's overarching objective to secure sustainable infrastructure competition through a level playing field for PIA access. Ofcom should adjust the opening RAB to remove these effects through a downward starting cost adjustment to the PIA Charge Control.

Efficiency Challenge

4.29 An ongoing efficiency challenge is a useful regulatory tool in monopoly regulation. In areas, such as PIA, where competition is lacking, an efficiency challenge can help protect against inefficiency by mimicking competitive

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[134] TAR Volume 4, paragraph 4.19.

[135] There also appears to be an error in the RPI input in the PIA charge control model which overstates the increase in asset values. Under the current RAV approach, the value of duct assets is indexed in each year reflecting the annual change in RPI to March each year, i.e. the gross value of assets is assumed to increase by the increase in RPI in the year. This is a key input to the forecast of costs. However, the inputs in the forecast model appear to be average of the annual RPI change in each of the 12 months of the year, i.e. an average of the annual changes calculated for each month April to March rather than for the single month of March. This has the effect of shifting the measure of inflation by 6 months as it will include the effect of inflation in the previous year. As inflation fell rapidly between 2022/23 and 2023/24 this leads to the input for 2023/24 being biased upwards leading to the value of duct assets being over-stated.

pressures. A stretching, but achievable, ongoing efficiency target helps to protect consumers of monopoly products by ensuring that inefficiencies cannot simply be incurred and the costs passed on.

> "*Given our finding that BT has SMP in the Physical Infrastructure market (see Volume 2 Section 3), we consider that BT has the incentive and ability to set PIA prices at an excessively high level and/or impose a price squeeze, as to have adverse consequences for end-users.*"[136]

4.30 In the WLA market review[137] in 2018, Ofcom set an efficiency target of 3% per annum for Openreach. This represented the mid-point of its range of possible efficiency targets. In the PIA Charge Control, Ofcom has retained the 3% efficiency challenge but does not set out its reasoning.

4.31 A 3% target fails to recognise the efficiencies which Openreach is already making. BT's recently published results show that the number of Openreach employees fell by 15% last year (FY25) and 10% the year before[138]. Guidance for overall BT headcount[139] shows that Openreach is expecting to continue to cut employees across the group by around 10% a year.

4.32 A 3% efficiency challenge is one which is particularly favourable to Openreach. CityFibre considers that, to ensure that the PIA Charge Control is consistent with Ofcom's objectives and does not favour Openreach, an efficiency challenge at the upper end of Ofcom's original assessment of 5% should be adopted.

Regulatory approach

4.33 In addition to the points made above, where Ofcom has exercised its regulatory judgment, it has tended in almost all cases to favour the interests of Openreach. For example, Ofcom's approach to the WACC and to glide paths favour Openreach and fail to take sufficient account of Ofcom's duties and objectives in promoting network level competition.

4.34 The WACC used in the assessment of the PIA charge control is calculated as an all Openreach WACC. However, the WACC for duct and poles is likely to be significantly lower due to the inherently low risk associated with such infrastructure. The fact that many telecoms companies have chosen to separate infrastructure assets when seeking new sources of capital demonstrates this

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[136] TAR Volume 4, paragraph 4.11.

[137] Ofcom, "Wholesale Local Access Market Review: Statement – Volume 2 Charge control design and implementation", paragraph 4.35, accessed at https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-1-10-weeks/97923-wholesale-local-access-market-review/associated-documents-/wla-statement-vol-2.pdf?v=323102.

[138] BT Group, Key Performance Indicators (KPIs), p.4, accessed at https://www.bt.com/bt-plc/assets/documents/investors/financial-reporting-and-news/quarterly-results/fy25/h2/h2-fy25-kpis.pdf.

[139] Ibid.

inherently lower risk, with investors valuing the predictable cash flows generated by infrastructure assets. Yet Ofcom makes no allowance for the lower risk associated with infrastructure assets in its assessment of the WACC in the PIA Charge Control.

4.35 Ofcom's choice to use glide paths rather than starting cost adjustments to reflect its updated view of Openreach costs benefits Openreach in allowing it to continue to over recover in the short term. Ofcom provides no reasoning for adopting a glidepath other than to indicate that this is the approach it has followed previously. Ofcom makes no assessment of the impact of using glidepaths on PIA users' ability to compete in doing so, thereby favouring Openreach's incentives over those of its rivals.

4.36 CityFibre considers that Ofcom should revisit its approach. In favouring Openreach's interests on the principal elements of the PIA Charge Control, Ofcom risks allowing Openreach to profit at the expense of its weaker, less established rivals.

NON-CONFIDENTIAL VERSION

ANNEX 1
ALIXPARTNERS REPORT

AlixPartners

Assessing the WACC of an entrant FTTP network - Response to Ofcom's TAR26 Consultation

Report prepared for CityFibre

Redacted: For publication

12 June 2025

About this Report

This report ("**Report**") was prepared by AlixPartners UK LLP ("**AlixPartners**") exclusively on instructions from and for the sole benefit and use of CityFibre in respect of its reply to Ofcom's Telecom Access Review 2026-2031 Consultation called *Promoting competition and investment in fibre networks,* dated 20 March 2025.

This Report has been prepared by AlixPartners for CityFibre and may be also submitted by CityFibre to Ofcom in the context of the Telecoms Access Review 2026–2031 consultation. It is intended for Ofcom's consideration in that context only. AlixPartners does not accept or assume responsibility to any other party in respect of this Report. While reasonable efforts have been made to ensure the accuracy of the information and analysis contained in the Report, Ofcom is expected to conduct its own investigation, analysis, and evaluation of the issues addressed herein and should not rely solely on the contents of this Report in forming any regulatory or policy decisions.

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Contents

Glossary

Term	Definition
AlixPartners 2024 WACC Report	AlixPartners Report named "*Assessing the WACC of an entrant FTTP network*", dated 21 September 2024
altnets	"Alternative networks", infrastructure-owning rivals to Openreach
BT, BT Group	British Telecom plc
CAPM	Capital Asset Pricing Model
CMA	Competition and Markets Authority
CPI	Consumer Price Index
CPIH	Consumer Prices Index including Owner Occupiers' Housing Costs
ERP	Equity Risk Premium
Fibre Cost Model	A bottom-up model developed by Ofcom to estimate the costs of deploying and operating fibre networks in the UK by a reasonably efficient operator
FTTP	Fibre to the premise connection
ICT	Information and communication technologies
Openreach	A legally separate but wholly owned subsidiary of BT Group, responsible for building and maintaining the UK's access network infrastructure, including fibre network
OUKT	"Other UK Telecom": a segment of BT used by Ofcom when considering differences in risk associated with different business activities of BT Group
Ppt	Percentage point
RoBT	"Rest of BT": a segment of BT used by Ofcom when considering differences in risk associated with different business activities of BT Group
RPI	Retail Price Index
TAR26	Telecoms Access Review 2026-2031
TAR26 Consultation	Consultation: Promoting competition and investment in fibre networks: Telecoms Access Review 2026-31
TMR	Total Market Return
WACC	Weighted Average Cost of Capital
WFTMR 2021	Wholesale Fixed Telecoms Market Review 2021

1 Introduction and executive summary

1 Ofcom recently published its consultation for the upcoming Telecoms Access Review ("**TAR26 Consultation**")[1], outlining its proposals to regulate UK fixed telecoms for the years 2026 until 2031. Ofcom proposals are designed to encourage competition and investment in high-quality gigabit-capable networks across the UK[2] and to ensure that network competition continues to develop where it is sustainable.[3]

2 Ofcom states that it is important for its regulation to maintain an opportunity for "*reasonably efficient altnets*" to compete[4] and it implements this by making changes to its bottom-up fibre cost model ("**Fibre Cost Model**") to ensure that its *"proposed charge control allows a reasonably efficient operator the opportunity to profitably offer a range of full-fibre services in the market".*[5]

3 An important input into the Fibre Cost Model is BT's Weighted Average Cost of Capital ("**WACC**"). Ofcom recognises that to reflect the different competitive challenges and risks faced by a reasonably efficient entrant, it needs to modify BT's WACC and Ofcom proposes some limited adjustments to achieve that.[6]

4 AlixPartners has been asked by CityFibre to consider and comment on Ofcom's approach to estimating the WACC of a reasonably efficient entrant in the UK fibre sector in the TAR26 Consultation.[7] This report sets out our views and builds on a previous AlixPartners report (the "**AlixPartners 2024 WACC Report**")[8] that was submitted to Ofcom in September 2024 as part of CityFibre's response to Ofcom's scoping document "Telecoms Access Review 2026 – Starting work on the 2026-2031 review" published in March 2024.

5 In this report, we do not seek to replicate the details set out in the AlixPartners 2024 WACC Report. Instead, we reference specific problems that we have identified with Ofcom's approach to estimating the WACC of a reasonably efficient entrant in the TAR26 Consultation. This report should be read in conjunction with AlixPartners 2024 WACC Report and assumes broad familiarity with WACC.

Ofcom's assessment of a reasonably efficient entrant's WACC

6 Ofcom calculates the WACC of a reasonably efficient entrant as follows:

(a) First, Ofcom derives a WACC for BT Group plc ("**BT**", or "**BT Group**") by considering BT's cost of equity, its cost of debt and its gearing. The resulting WACC of BT Group estimated by Ofcom in the TAR26 Consultation is 7.6%.[9]

(b) Second, recognising that BT Group engages in different business activities which have different risk profiles, Ofcom disaggregates the BT Group WACC into the WACC that

1 Ofcom Consultation: Promoting competition and investment in fibre networks: Telecoms Access Review 2026-31.
2 Ibid., paragraph 1.1.
3 Ibid., paragraphs 1.8 and 2.11.
4 Ibid., paragraphs 1.8.
5 Ibid., Annex 15, paragraph A15.70.
6 Ibid., Annex 15, paragraphs A15.80 and A15.81.
7 We use the term "reasonably efficient entrant" since all altnets will have entered the UK in the relatively recent past.
8 AlixPartners Report "Assessing the WACC of an entrant FTTP network" dated 21 September 2024.
9 TAR26 Consultation, paragraph A19.77.

should be associated with different segments of BT's business. Although Ofcom goes into some effort in Annex 20 of the TAR26 Consultation to disaggregate BT's Group's cost of capital and to estimate the cost of capital of relevant services, it ultimately finds that the WACC for BT's fibre to the premises ("**FTTP**") business is the same as the WACC for BT Group, i.e. 7.6%.[10]

(c) Third, Ofcom recognises that WACC of new entrant FTTP network could differ from the WACC of BT's FTTP business and makes adjustments to reflect this.

(i) Ofcom proposes uplifts of 0 percentage points ("**ppt**"), 0.5ppt, 1.0ppt to BT's FTTP WACC of 7.6% in its low, medium and high-cost scenarios respectively. This results in an estimate of WACC for a reasonably efficient entrant to be between 7.6% and 8.6%.[11]

(ii) Ofcom make specific adjustments to shorten asset lives for electronic and passive equipment, because it states that "*an entrant operator may be required to pay its investment back sooner than an incumbent operator would"*. [12] Ofcom states that this is equivalent to increasing the reasonably efficient entrant WACC by a further 0.5 ppt, and that the effective WACC it assumes from 2026 is 8.1%/8.6%/9.1% in the low-cost/base/high-cost scenarios.

Overarching concern with Ofcom's approach

7 Operating a FTTP network is an asset-intensive business, and the cost of capital is, consequently, an important element of the cost base. We explained in the AlixPartners 2024 WACC Report that the cost of capital for a new FTTP entrant network is materially higher than the cost of capital for an incumbent FTTP network because of the greater volatility of return that a new entrant will face compared to an incumbent.[13]

8 We set out rigorously in the AlixPartners 2024 WACC Report how the WACC of a reasonably efficient entrant should be estimated considering each of the elements of the WACC calculation and, importantly, taking into account the risks (for consumers) of over- or under-estimating the cost of capital.

9 In the TAR26 Consultation, Ofcom bases its calculation of WACC for a reasonably efficient entrant on its estimate of the WACC of BT's FTTP business along with a couple of adjustments.

10 We have an overarching concern that Ofcom has not appropriately considered why the WACC of a reasonably efficient entrant would differ from the WACC of BT's FTTP business. Ofcom has limited itself to making what appear to be a relatively ad hoc adjustments to BT's FTTP WACC, without providing justification for the size of the uplifts it has applied or how they relate to the specific reasons why the WACC for a reasonably efficient entrant should differ from BT's WACC.

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10 TAR26 Consultation, paragraph A16.12. Ofcom states that for the WACC of FTTP services it uses the pre-tax nominal OUKT WACC – OUKT is the segment of BT Group that has other UK telecoms and which includes BT's FTTP network.
Ibid., Table A20.7 shows that Ofcom considers the WACC for OUKT to be the same as BT Group's WACC.

11 Ibid., paragraph A15.80. Ofcom specifically notes new entrant may face higher cost of debt (in comparison to BT) and lower effective tax rate. Ofcom considers, incorrectly in our view, an entrant is unlikely to face a different systematic risk profile to Openreach.

12 Ibid., paragraph A15.81.

13 AlixPartners 2024 WACC Report, paragraphs 3-6.

11 In our view, this is inappropriate: Ofcom's approach lacks rigour and is not grounded in empirical evidence. Ofcom should have provided an analysis of why the WACC of a reasonably efficient entrant would differ from that of BT's FTTP business. In doing that, we consider that Ofcom should recognise that there are good reasons to believe that the systematic risk profile for a reasonably efficient entrant differs from BT's FTTP business, contrary to what Ofcom has stated.

12 In addition, Ofcom bases its assessment of WACC for a reasonably efficient entrant on BT's WACC. During this transformation, Ofcom adopts adjustments we do not consider correct and we set out how Ofcom's approach should be changed.

13 We are concerned that Ofcom's ad-hoc approach materially underestimates the WACC of a reasonably efficient entrant in UK fibre and therefore risks disincentivising investment in UK fibre networks, leading to less competition and worse outcomes for consumers.

14 In the remainder of this report, we set out how Ofcom should more comprehensively have considered the differences between the WACC for a reasonably efficient operator and that of BT, and how it should have made additional adjustments to BT's FTTP WACC.

Specific changes that we consider are required to Ofcom's approach and the structure of this report

15 There are several specific areas where we consider Ofcom's approach to determining WACC for a reasonably efficient entrant is either insufficiently robust or ignores critical facts relevant to the WACC analysis.

(a) **Assessing the higher cost of debt of a reasonably efficient entrant (Section 2):** Ofcom accepts that a reasonably efficient entrant may face a higher cost of debt, but it does not provide any empirical evidence showing how large the difference in debt costs for new entrants and BT could be. We estimate this difference by considering the likely credit rating of a reasonably efficient entrant and the cost of debt associated with this rating.

(b) **Better identifying the WACC of BT's fibre business (Section 3):** when disaggregating WACC of BT Group to identify WACC associated only with BT's fibre business, Ofcom does not properly separate BT's mobile business from BT's fibre business. Mobile businesses normally have lower WACC relative to fibre businesses and by considering both jointly, Ofcom underestimates the WACC specific to BT's fibre business. This also creates a bias when Ofcom infers WACC for new fibre entrants from BT's fibre business as its WACC contains mobile services not usually provided by new entrants. We show how such disaggregation could be done and its impact on the estimate of WACC of a reasonably efficient entrant.

(c) **Recognising the impact of higher operational gearing for reasonably efficient entrants (Section 4):** Ofcom acknowledges that operational gearing is a driver of systematic risk, but it does not make any adjustments reflecting the fact that new entrants will have higher operational gearing relative to BT.[14] Higher operational gearing of new entrants results in higher systematic risk for which investors will require

[14] TAR26 Consultation, paragraph 20.19.

compensation, and which therefore needs to be reflected in the WACC of a reasonably efficient entrant.

(d) **Ofcom's approach to estimating WACC is influenced by its methodology choices (Section 5)**: We examine the choices made by Ofcom in its WACC analysis, and where relevant, propose alternative estimates that we consider more accurately reflect the cost of capital of a reasonably efficient entrant and should be used by Ofcom.

(e) **Summarising our view on the WACC of reasonably efficient entrant (Section 6):** We summarise our suggested values for key WACC components from Section 5 and present the updated WACC value for reasonably efficient entrants.

(f) **Recognising the uncertainty in Ofcom's calculations and the need to "Aim Up" (Section 7):** Lastly, we explain why Ofcom should aim up to mitigate the risk of underestimating WACC of new FTTP entrant networks. This issue is amplified by the fact that Ofcom does not derive the range of possible values within which the relevant WACC may lie. Without establishing the plausible range of WACC outcomes and considering where in that range a suitable estimate should lie, Ofcom is unable to consider the magnitude of appropriate aiming up.

16 Section 8 contains our conclusion and summary of key points raised in this report.

17 Based on our analysis, we find that the WACC for reasonably efficient entrants most likely lies within the interval of 9.2%-10.5%. We believe that there are strong reasons why Ofcom should aim up and use the upper end of range, i.e. 10.5%, for the WACC of a reasonably efficient entrant.

2 Estimating cost of debt for reasonably efficient entrant

18 Accurately estimating cost of debt is fundamental to determining an appropriate WACC benchmark. An erroneously low cost of debt allowance risks undercompensating efficient investment, thereby potentially stifling the development of competitive fibre infrastructure.

19 In this chapter, we review Ofcom's approach to determining cost of debt for a reasonably efficient entrant in its TAR26 Consultation. We subsequently propose an alternative, evidence-based framework grounded in the observable financial characteristics and creditworthiness of such market participants.

Ofcom's suggested approach in the TAR26 Consultation

20 Ofcom's approach to establishing the cost of debt involves a multi-stage process, primarily anchored to the credit rating of the incumbent, BT Group:

(a) **Cost of new debt**: Ofcom firstly considers the BBB credit rating obtained by BT Group. It then derives an estimated cost of new debt by averaging recent market yields on BBB-rated corporate bonds with 10- and 20-year maturities. Employing a 6-month averaging period to mitigate spot rate volatility, Ofcom arrives at a range of 4.9% to 5.3%.[15]

(b) **Cost of existing debt:** Ofcom considers historical yields on BBB-rated corporate bonds over 10- and 20-year maturities and concludes by choosing a 4% allowance for existing cost of debt, which is larger than 10-year average yield but below 15-year average yield.[16]

(c) **Weighing:** Ofcom suggests weighing the new and existing debt costs by 15%-60%, which corresponds to the share of BT's debt due for repayment at the start and end of the regulatory period.[17] Ofcom includes 0.1ppt uplift for the cost of issuance.

21 Taken together, Ofcom estimates the cost of debt for BT Group to be 4.6%.

22 Ofcom acknowledges that new fibre entrants could face a higher cost of debt compared to BT Group.[18] As a result, Ofcom incorporates a WACC uplift for new entrants over BT's WACC, applying a 0.5ppt increase in the base case and a 1.0ppt increase in the high-cost scenario. Given the gearing of 55% used by Ofcom, the uplift corresponds to an uplift of 0.9ppt-1.8ppt on the cost of debt (i.e. cost of debt between 5.5% and 6.4%).

23 While acknowledging entrants might face higher debt costs, Ofcom does not explain nor provide any evidence for how it arrived at the value of these uplifts. We do not consider such approach appropriate as it does not provide a clear link between the financial realities and risk profile of reasonably efficient entrants and the magnitude of Ofcom's uplift. In the rest of this chapter, we summarise a facts-based analysis considering the likely credit rating a reasonably efficient entrant

15 TAR26 Consultation, paragraphs A19.43-A19.47.
16 TAR26 Consultation, paragraphs A19.48-A19.52.
17 TAR26 Consultation, paragraph A19.53.
18 TAR26 Consultation, paragraph A15.80.

would obtain and the resulting cost of debt. The full details of this analysis can be found in a separate AlixPartners report authored by AlixPartners capital advisory experts.[19]

BT's cost of debt is not an appropriate benchmark for reasonably efficient entrants

24 We start our analysis by identifying a relevant benchmark for cost of debt faced by a reasonably efficient entrant. We consider Ofcom's approach of using BT Group as a benchmark to be incorrect. BT Group is a mature and diversified business, with a strong track record and multiple stable revenue streams – it is fundamentally different in nature from reasonably efficient entrants, which are inherently start-ups without a material track record, and which must incur large capital outlays before developing material revenue streams. The risks for investors in BT Group are different in nature from the risks for investors in new entrants. Specifically, there are several important factors influencing BT's business which are not applicable to new entrants.

(a) **Product Diversification & Scale:** An entrant is a more narrowly-focused business entity (normally a pure-play fibre infrastructure provider), lacking the scale and diversification of BT. In comparison, BT Group is one of the largest telecom companies in Europe with £21bn of consolidated revenue in 2024, providing a wide range of services (including TV and mobile services) to wholesale and retail customers.

(b) **Asset Base:** An entrant's asset base primarily consists of new, undepreciated infrastructure, requiring full cost recovery from future revenues in a competitive market. On the other hand, BT benefits from a diversified asset base, including legacy mobile towers and fixed line infrastructure, much of which will be largely paid off.

(c) **Financial Track Record:** An entrant has a limited (or non-existent) operational and financial track record, making it a higher-risk proposition for lenders. Conversely, BT is a well-known operator with a long track record of market performance.

(d) **Market Entry Risks:** An entrant faces considerable uncertainties related to customer acquisition, take-up rates, competitive responses from incumbents, and achieving positive cash flow in its initial years. BT on the other hand has a well-established business operation which also benefits from higher take-up for reasons not applicable to new entrants (see paragraph 66 below).

25 These fundamental differences mean that the cost of debt for a reasonably efficient entrant cannot be credibly inferred by applying marginal adjustments to BT's cost of debt. We therefore carry out a dedicated, bottom-up assessment of entrants' likely credit rating.

Determining an appropriate credit rating for a reasonably efficient entrant

26 Most existing fibre networks in the UK are unrated. This is because new entrants have only limited financial history, and their operations are associated with high initial risk and uncertainty. As a result, entrants are normally funded by private debt or equity investors.

27 Each of the three major credit rating agencies (Standard & Poor, Moody's and Fitch) have developed their own credit rating criteria for telecommunication services providers. We apply the

[19] See AlixPartners report "Estimating cost of debt of a reasonably efficient operator in the UK fibre networks market", 12 June 2025

credit rating criteria of each agency to estimate the credit rating ***[REDACTED]***. As part of this analysis, we consider factors such as the competitive position and market penetration of each company, size and scale, operating efficiency, country and industry risk, leverage, cash flow, capital structure and diversification of product portfolio. Once these factors have been considered, we derive the credit rating that each selected fibre provider would obtain.

28 The results indicate a credit rating of B to B- (according to Fitch and S&P methodologies) and between B3 and Caa1 (according to Moody's methodology). We also consider the ratings obtained by VMO2, which is the only fibre network operator in the UK with credit ratings besides BT Group. We note that credit rating of VMO2 is likely to overestimate the credit rating which a reasonably efficient entrant can achieve for the same reasons we set out above in paragraph 24 when considering credit rating of BT Group. Table 1 below summarises the estimated credit ratings and the resulting midpoint for major rivals to BT Group.

Table 1: Actual and estimated credit ratings for largest fibre networks in the UK

Company	Fitch	Moody's	S&P
BT Group	BBB	Baa2	BBB
VMO2	B+	Ba3	B+
[REDACTED]			
Midpoint	**B**	**B2**	**B**

Source: AlixPartners analysis

29 By considering the major factors determining risk for lenders (see paragraph 27 above), we estimate that a rating of B/B2 represents a realistic and evidence-based assessment of the credit rating achievable by a reasonably efficient entrant in the UK fibre market during the TAR26 period.

Estimating cost of debt for a reasonably efficient entrant

30 Based on the proposed credit rating, we estimate the cost of debt for a reasonably efficient entrant.

31 In line with Ofcom methodology, we have considered the spot and 6-month average yield for an index of B-rated bonds with 10- and 20-year maturities. The indicates cost of debt between 6.81% and 7.59% (depending on whether 10- or 20-year maturity is considered). We note that this is significantly above the 4.6% cost of debt estimated by Ofcom for BT Group in its TAR26 Consultation.

32 The analysis robustly demonstrates that a reasonably efficient operator will incur a materially higher cost of debt than an established incumbent like BT. Ofcom's reliance on BT's credit rating as a primary benchmark, and the application of non-specific WACC uplifts for entrants, fails to adequately quantify this issue. To ensure the TAR26 framework genuinely supports investment and fosters a competitive market, Ofcom should adopt a more facts-based approach to determining cost of debt for new entrants, explicitly recognising their distinct financial and risk profile relative to BT Group.

3 Recognising BT's mobile business when disaggregating WACC of BT Group

Ofcom's suggested approach in the TAR26 Consultation

33 When determining the WACC for a reasonably efficient entrant, Ofcom calculates an asset beta for BT Group, which reflects the consolidated risk profile of all its diverse activities.[20] In the second step, Ofcom disaggregates the group-level asset beta into asset betas associated with different segments of BT's business which each have different level of risk associated with them.[21]

34 The segments of BT's business considered by Ofcom are:

(a) **Openreach**: includes lower-risk regulated fixed access network services (e.g. copper access, FTTC, PIA, DFA, and DFX);

(b) **Rest of BT** ("**RoBT**"): captures higher-risk activities primarily associated with BT's global and ICT operations; and

(c) **Other UK Telecoms** ("**OUKT**"): a residual category containing BT's remaining UK operations, notably its FTTP business, active leased lines, as well as BT's mobile business.

35 Using these segments of BT's business, Ofcom determines specific asset betas for each segment, ensuring that these weighted components reconcile back to the overall WACC of BT Group.

36 Ofcom proposes an asset beta of 0.40 for the lower-risk Openreach business and asset beta of 0.65 for the higher-risk RoBT segment. Importantly, Ofcom assumes that the OUKT business has the same asset beta as BT at the group-level (i.e. 0.46).[22] Ofcom justifies this by noting that "*given the quantum of the investment and future importance of FTTP returns on BT, investors will likely place significant weight on expected FTTP returns when deciding to invest in BT. As such BT Group's asset beta will likely be heavily influenced by these expected future returns. Therefore, it seems reasonable to assume that the BT Group asset beta provides a reasonable starting point when considering the systematic risk associated with BT's FTTP services.*"[23]

37 Consequently, the WACC Ofcom calculates for the OUKT segment (7.6%) is adopted by Ofcom as the representative cost of capital for BT's FTTP business activities.[24]

AlixPartners views on the Ofcom's suggested TAR26 approach

38 In our view, Ofcom's approach underestimates the WACC associated with BT's fibre business. This is because the OUKT segment is not homogeneous in terms of risk: it combines mobile services with fibre services like FTTP and leased lines. This is problematic because mobile businesses exhibit a lower asset beta relative to a fibre-based business.

39 Mobile markets are subject to distinct competitive pressures, cycles of investment (e.g., 5G deployment), and consumer behaviour patterns. The evidence clearly indicates that mobile

20 TAR26 Consultation, Annex 19.
21 Ibid., Annex 20.
22 Ibid., paragraph A20.68.
23 Ibid., paragraph A20.36.
24 Ibid., paragraph A16.12.

businesses generally offer a more stable revenue stream and less exposure to demand-side volatility, which results in returns that are less risky than those related to capital-intensive fibre deployments.

- In the AlixPartners 2024 WACC Report, we showed that the asset beta for BT Group was between 0.49 and 0.54, while the asset beta for Vodafone Group was lower - between 0.41 and 0.44.[25]

- The CEPA Report commissioned by Ofcom estimates the asset beta of Vodafone UK to be 0.30-0.50 (midpoint 0.40), while BT's asset beta is estimated to be 0.42-0.50 (midpoint 0.46).[26]

40 This shows that the asset beta for a mobile business is generally lower relative to the asset beta for a fibre-based business.

41 The inclusion of BT's mobile business within OUKT distorts the segment's suitability as a risk benchmark for new fibre entrants (and BT's fibre business). By averaging mobile-specific risks with those of FTTP and leased lines, the resulting OUKT asset beta cannot accurately isolate the risk profile relevant to fibre investment. Given the lower systematic risk profile of mobile business relative to fibre-based business, Ofcom's aggregation leads to an understatement of the asset beta appropriate for a fibre business.

42 To establish a credible and robust WACC for a reasonably efficient entrant, it is important that Ofcom undertakes a further disaggregation step when estimating the WACC for BT's FTTP business. The systematic risk attributable to BT's mobile division should be explicitly separated from the rest of the OUKT segment before determining the residual asset beta applicable to BT's FTTP network activities. This will result in a WACC which can provide a more accurate signal for investment and competition in the UK fibre market.

AlixPartners estimate of the asset beta of BT's FTTP network

43 Ofcom should explicitly account for the distinct risk profile of BT's mobile operations in its asset beta disaggregation.

44 Vodafone represents a good benchmark for mobile-centric operations within Europe. Although Vodafone has other sources of revenue, its core business remains predominantly mobile, making its risk profile a suitable proxy for the systematic risk of BT's mobile business.

45 Vodafone does not provide separate financial reporting for its mobile services. However, it provided revenue for mobile services for its largest geographic markets (Germany, UK, Italy) in its Annual Reports from 2022 and 2023. This data shows that mobile services represented 48% of Vodafone's total revenue in Germany, UK and Italy during this period. The remaining revenue came from fixed services (37%) and other services (15%).[27] In comparison, BT Group Annual Report indicates that mobile subscriptions were responsible for 22% of total revenues in 2022 and 2023.[28]

46 By comparing BT and Vodafone, we can see that asset beta decreases as the share of mobile revenue increases. Given that Vodafone generates a material portion of its revenue from fixed

25 AlixPartners 2024 WACC Report, Table 5.
26 CEPA, Cost of Capital: Beta and Gearing for TAR 2026, dated 6 February 2025, Table 6.1.
27 Vodafone Annual Report 2022, Vodafone Annual Report 2023.
28 BT Group Annual Report 2022, BT Group Annual Report 2023.

services, the asset beta associated with BT's mobile services might be even lower than the asset beta reported for Vodafone Group (although we consider that it is appropriate to conservatively assume that it is the same).

47 Table 1 below also shows that between years 2022 and 2024, Vodafone Group generated 69%-76% of its revenue and 72%-74% of its profit from European markets.[29] The asset beta associated with its business will therefore reflect systematic risks in these markets, which are comparable to systematic risks in the UK market given the synchronization of business cycles between European countries.

Table 2: Vodafone Group revenue and EBITDA (2022-2024)

	2022	2023	2024
Revenue – Total	45,580	45,706	36,717
Revenue – Europe	34,572	34,397	25,298
EBITBA – Total	15,208	14,665	11,019
EBITDA – Europe	11,326	10,705	7,941
Revenue - Europe, share	76%	75%	69%
EBITDA – Europe, share	74%	73%	72%

Source: Vodafone Group Annual Reports 2022-2024

48 By incorporating a separate mobile segment into Ofcom's disaggregation analysis, we derived a more accurate asset beta for the remaining fibre business included within BT's OUKT segment (which we refer to as OUTK-FTTP).

49 Our methodology for disaggregating systematic risk from BT's asset beta is the following:

(a) We adopt Ofcom's proposed asset betas for BT Group (0.46), Openreach (0.40), and RoBT (0.65), along with their respective weights (25% for Openreach and 8% for RoBT).[30]

(b) We introduce a distinct "Mobile" segment, assigning it the midpoint of estimates for Vodafone's asset beta provided by CEPA (i.e. 0.40). As explained above, this is a conservative approach and likely overestimates asset beta associated with BT's mobile business (see paragraph 46).

(c) We estimate the weight of BT's mobile business to be 20%. This is based on the fact that in its 2024 Annual Report, BT Group reported it generated £3,554m from mobile

[29] European markets refer to Germany, UK, Italy, Spain, as well as smaller countries labelled in Vodafone's annual reports as "Other Europe", which comprise of Albania, Czech Republic, Greece, Hungary, Ireland, Portugal and Romania. Note that Vodafone sold its Spanish and Italian operations in 2023.

[30] TAR26 Consultation, Annex 20, Table A20.1 and A20.5.

subscriptions and £20,835m overall.[31] The share of mobile business within BT Group was therefore approximately 22%.[32]

(d) We remain conservative in our analysis and assign BT's mobile business weight of 20% when disaggregating asset beta of BT Group. As a result, the weight of the OUKT becomes 47% (instead of 67%).

50 The asset beta associated with BT's mobile business can be calculated by disaggregating the Openreach, RoBT and Mobile asset betas from the BT Group-level asset beta. This results in an asset beta value for the remaining fibre business included within BT's OUKT segment (which we refer to OUKT-FTTP) of 0.49[33], which is higher than the 0.46 figure Ofcom proposes based on mixing fibre and mobile business within the OUKT segment. This adjusted beta value better reflects the specific systematic risks associated with FTTP deployment.

Table 3: Summary of asset beta and weighting proposed by Ofcom

Segment	Asset beta	Weight in disaggregation
BT Group	0.46	
Openreach	0.40	25%
RoBT	0.65	8%
OUKT-Mobile	0.39	20%
OUKT-FTTP	**0.49**	47%

Source: TAR26 Consultation, AlixPartners Analysis

51 To determine a plausible asset beta range for BT's OUKT-FTTP segment, we use the asset beta ranges proposed by Ofcom for each of BT's segments. Our approach to derive this range is as follows:

(a) We use Ofcom's proposed asset beta range of 0.42-0.50 for both BT Group and OUKT, consistently with Ofcom's view that OUKT captures most of BT Group's activities.

(b) We determine the Openreach range by taking the midpoint between the lower bound of BT Group (0.42) and UK Utilities (0.30), and the midpoint between the upper bound of BT Group (0.50) and UK Utilities (0.35). This methodology is consistent with Ofcom's decision to use the midpoint between UK Utilities and BT Group to set the Openreach beta.[34] This results in an asset beta range of 0.36-0.43.

31 BT 2024 Annual Report available here: https://www.bt.com/bt-plc/assets/documents/investors/financial-reporting-and-news/annual-reports/2024/2024-bt-group-plc-annual-report.pdf

32 BT reported only revenue generated by mobile subscriptions, not by mobile pre-paid customers. If they were to be considered, the share of BT's mobile business may be a bit higher. Our approach of assuming 20% share of BT's mobile business is therefore conservative.

33 This is done using the following calculation: (0.46 – 0.40x25% - 0.65x8% - 0.39x20%) / 47% = 0.489.

34 TAR26 Consultation, paragraph A20.65.

(c) For RoBT, we use a single value 0.65. This is in line with Ofcom's view that using a value at the bottom-end of CEPA's asset beta range for ICT companies is reasonable, as it prevents an implausibly high notional equity beta value for RoBT activities.[35]

(a) We then use the lower and upper bounds for the asset beta of Vodafone (0.30-0.50) to determine the asset beta range for the "Mobile" segment within OUKT.

52 Based on the approach delineated above, the asset beta range is 0.46-0.55, as set out in the Table 4 below.

Table 4: Range of possible asset beta values for BT OUKT-FTTP

Segment	Lower bound	Upper bound	Weight in disaggregation
BT Group	0.42	0.50	
Openreach	0.36	0.43	25%
RoBT	0.65	0.65	8%
OUKT-Mobile	0.30	0.40	20%
OUKT-FTTP	**0.46**	**0.55**	47%

Source: TAR26 Consultation, AlixPartners analysis

53 The range of 0.46-0.55 indicates that Ofcom's proposed asset beta value for BT's FTTP business of 0.46 is at the bottom of the range we identified once BT's mobile business has been properly disaggregated from the BT Group asset beta.

35 TAR26 Consultation, Annex 20, A20.69. The logic behind this reasoning is that, because the assumed notional gearing for BT is significantly higher than the actual market gearing values of ICT companies, a higher asset beta value for RoBT would result in an excessively high notional equity beta value.

4 New FTTP entrants are associated with higher operational gearing

Ofcom's suggested approach in the TAR26 Consultation

54 Ofcom's approach to estimating the cost of capital follows the Capital Asset Pricing Model ("**CAPM**"), where systematic risk (asset beta) determines the required return on equity and influences the value of the WACC.

55 In the TAR26 Consultation, Ofcom acknowledges that operational gearing is a key driver of systematic risk. It states that

> *"[…] services that have greater operational leverage (i.e. require significant upfront investments or have a higher proportion of fixed costs) are more exposed to systematic risk and this would have higher asset betas."*[36]

56 When considering systematic risk associated with an entrant FTTP network, Ofcom states that "*[…] an entrant is unlikely to face a different systematic risk profile to Openreach […]*".[37] In practice, Ofcom assumes that the systematic risk of new entrant FTTP networks is comparable to the systematic risk of BT's OUKT segment (which Ofcom sets to be the same as asset beta of BT Group as a whole).[38] Ofcom does not make any adjustments in its WACC calculation which would reflect the higher systematic risk of new entrant FTTP networks.

57 As explained above (see paragraph 6(c)), Ofcom evaluates three scenarios in its Fibre Cost Model. These scenarios differ (among other things) in the assumed take-up rate, which is an important driver of operational gearing.[39] Ofcom explains that the uplifts it implements to a WACC of a reasonably efficient entrant represent higher cost of debt or lower effective tax rate of these firms.[40] Ofcom does not indicate that any portion of these uplifts is related to the increased systematic risk of reasonably efficient entrants considered in the modelling. Ofcom therefore does not account for differences in systematic risk associated with the different take-up rates it uses in its cost modelling.

58 We do not consider that Ofcom's approach to determining the asset beta of a reasonably efficient entrant correctly reflects the higher systematic risk that these firms face. On one hand, Ofcom accepts that operational gearing is a driver of systematic risk. On the other hand, Ofcom assumes that the systematic risk profile of entrants is unlikely to be different from that of Openreach and it makes no adjustments when calculating the WACC of a reasonably efficient entrant for these reasons. We find these positions contradictory and unsustainable, especially given that Openreach will face smaller systematic risk relative to new entrants (see paragraph 66 below).

59 Ofcom also does not recognise the risk of potentially underestimating the WACC of reasonably efficient entrants (an issue we consider in Section 7).

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36 Ibid., paragraph A20.19.

37 Ibid., paragraph A15.80.

38 Ibid., paragraph A15.80 and A20.68.

39 Lower take-up rate means that a larger network coverage is required to acquire the same number of customers, resulting in a higher share of fixed costs to achieve the same revenue. Higher share of fixed costs results in higher operational gearing.

40 TAR26 Consultation, paragraph A15.80.

60 As a result, Ofcom's WACC calculation underestimates the WACC for a reasonably efficient entrant. Such an approach risks deterring investment into and expansion of UK's fibre network by efficient fibre entrants.

AlixPartners views on the Ofcom's suggested TAR26 approach

61 Deploying fibre networks is an inherently capital-intensive undertaking, characterized by substantial upfront fixed costs such as civil works, network infrastructure deployment, and installation of core equipment. These expenses are predominantly fixed and incurred irrespective of the immediate number of customers connected. Both new entrant FTTP networks and incumbent operators face these fixed costs. However, new entrants typically experience a significantly higher share of fixed costs across their customer base relative to incumbents for a few reasons:

(a) **Lower asset depreciation**: Incumbents like BT often benefit from legacy network assets whose costs have been substantially depreciated over time. By contrast, new entrant FTTP networks incur full, new-build network costs upfront, with no legacy depreciation advantage, resulting in higher initial fixed cost burdens.

(b) **Lower take-up rates**: Entrants typically experience lower initial take-up rates (see paragraph 66). As such, achieving economies of scale is more challenging for these firms, increasing their relative fixed-cost burden per connected customer and resulting in higher operational leverage.

(c) **Less established market position**: Entrants face riskier demand because of their less known brand and reputation, they therefore need to build relationships with ISPs and potentially with retail customers as well.

62 As a result of these factors, new entrant FTTP networks will have higher share of fixed costs, resulting in higher operational gearing.

63 In the AlixPartners 2024 WACC Report, we showed how higher operational gearing leads to higher fluctuations in profitability as a result of change in demand.[41] If two companies with different operational gearing face the same percentage change in demand, the profitability of the company with higher operational gearing will show larger fluctuations.[42] We have updated this analysis to reflect Ofcom's latest version of its Fibre Cost Model used in the TAR26 Consultation.

64 We followed the same methodology described in the AlixPartners 2024 WACC Report (paragraphs 109-121). First, we use different levels of take-up rates to estimate the fixed costs associated with building out the fibre network used in Ofcom's base case scenario. In line with our previous report, we use take-up rates of 10%, 20%, 33% and 40% for this fixed-cost estimation.

65 Second, we make assumptions about the take-up rates Openreach and a reasonably efficient entrant might be expected to achieve in the medium-term.

41 AlixPartners 2024 WACC Report, Table 7 and 8.

42 This is because higher operational gearing means higher share of fixed costs on the overall cost base. When demand drops, smaller share of total costs drops as well, and larger share of overall cost base remains, leading to larger drop in profitability. On the other hand, a company with smaller operational gearing (i.e. incumbent operators) experience higher share of their cost base changing with changes in demand as their share of fixed costs is smaller. This acts as a "shock-absorber" tempering profit swings.

66 In the medium-term, we would expect the take-up rate of BT's FTTP network to be materially higher than both its currently take-up rate of 35% and the take-up rate that a reasonably efficient entrant can be expected to achieve.[43] This is for several reasons:

(a) BT's FTTP network has the largest fibre footprint of all networks in the UK. This means that its national take-up rate will be a weighted average of take-up across areas including those where it faces little to no competition from other fibre networks;[44]

(b) BT's FTTP network has the benefit of a mature retail base (Openreach provides fibre services to retail operations including the retail part of BT Group) which is not the case for new entrant FTTP networks;

(c) Openreach is currently migrating its large customer base using its copper network onto its FTTP network, which will increase its take-up over time;

(d) Openreach and BT retail can rely on established market positions and high levels of brand recognition.

67 Based on the factors set out above, it is reasonable to expect Openreach to achieve take-up rate of its FTTP network of 50%-60% in the medium term. We remain conservative and apply a take-up rate of 50% in our calculations. Regarding the take-up rate of reasonably efficient entrants, we use the value from Ofcom's base-case scenario used in its Fibre Cost Model, i.e. 33%. Evidently, Ofcom will be in a better position to make assumptions about the take up of BT's FTTP network relative to that of a reasonably efficient entrant.

68 The remaining inputs (premises coverage and monthly rental costs) we took directly from Ofcom's Fibre Cost Model, particularly the base case scenario.

69 Using this information, we show in Table 5 below how differences in take-up rates lead to differences in profitability fluctuations when demand is reduced or increased by the same percentage share.

[43] BT, Trading update for the quarter and nine months to 31 December 2024, available at https://newsroom.bt.com/trading-update-for-the-quarter-and-nine-months-to-31-december-2024/

[44] AlixPartners 2024 WACC Report, paragraph 117(b).

Table 5: Illustrative example of operational gearing using Ofcom's base case scenario from its Fibre Cost Model

	Take-up 30%	Take-up 50%	
Base scenario			
Fixed costs annuitised per month	3,261,380	3,261,380	A
Variable costs per subscriber	£5.60	£5.60	B
Premises coverage	5,000,000	5,000,000	X
Take-up	33%	50%	Y
Subscribers	1,650,000	2,500,000	C=XxY
Monthly rental	£14.49	14.49	D
Total revenue	23,908,500	36,225,000	E=CxD
Total costs	12,506,492	17,269,126	F =A+BxC
Profit	11,402,008	18,955,874	G=E-F
Operational Gearing	26%	19%	*H=A/(A+BxC)*
Demand reduced by 10%			
Fixed costs annuitised per month	3,261,380	3,261,380	A
Variable costs per subscriber	£5.60	£5.60	B
Premises coverage	5,000,000	5,000,000	X
Take-up	29.7%	45%	Y
Subscribers	1,485,000	2,250,000	C=XxY
Monthly rental	£14.49	£14.49	D
Total revenue	21,517,650	32,602,500	E=CxD
Total costs	11,581,981	15,868,351	F =A+BxC
Profit	9,935,669	16,734,149	G=E-F
Change in profit	**-12.86%**	**-11.72%**	
Operational Gearing	28%	21%	*H=A/(A+BxC)*
Demand increased by 10%			
Fixed costs annuitised per month	3,261,380	3,261,380	A
Variable costs per subscriber	£5.60	£5.60	B
Premises coverage	5,000,000	5,000,000	X
Take-up	36%	55%	Y
Subscribers	1,815,000	2,750,000	C=XxY
Monthly rental	£14.49	£14.49	D
Total revenue	26,299,350	39,847,500	E=CxD
Total costs	13,431,003	18,669,900	F =A+BxC
Profit	12,868,347	21,177,600	G=E-F
Change in profit	**12.86%**	**11.72%**	
Operational Gearing	24%	17%	*H=A/(A+BxC)*

Source: Ofcom's Fibre Cost Model (TAR26 Consultation), AlixPartners analysis

70 The results show that reasonably efficient entrant with take-up rates of 33% will have much larger operational gearing and face larger fluctuations in profitability (relative to Openreach with expected take-up rate of 50%). This increased sensitivity of entrants' profitability to fluctuations in customer demand represents heightened systematic risk - the exact type of risk captured by the asset beta within the CAPM framework. Higher operational gearing thus justifies a higher asset beta and, consequently, a higher WACC for reasonably efficient entrant compared to incumbent operator.

71 Based on the differences in operational gearing illustrated in Table 5, we would expect the asset beta of the 33% take-up network to be 1.1 times higher relative to the beta of the 50% take-up network. In Table 4 above, we showed that once BT's mobile business is correctly disaggregated, BT's asset beta associated with its fibre business is between 0.46 and 0.55. Given that a

reasonably efficient entrant will face higher level of operational gearing, its asset beta should then be uplifted by 10% and take a value between 0.51 and 0.61.

72 In summary, the increased operational gearing of new entrant FTTP networks directly translates into greater exposure to systematic market-wide risks. Ofcom should therefore acknowledge this within its regulatory framework by appropriately adjusting the asset beta and WACC of a reasonably efficient entrant. This will ensure efficient market entry, investment incentives, and sustainable competition in fibre network provision.

5 WACC estimation methodology

73 In the AlixPartners 2024 WACC Report, we outlined our preferred methodology for estimating each of the WACC parameters.[45] Certain aspects of the estimation methodology Ofcom has proposed in the TAR26 Consultation deviate from what we consider to be the appropriate approach. In this section we provide a critical assessment of these differences and, draw conclusions on the specific parameters' ranges that we consider appropriate for the purpose of determining the WACC of a reasonably efficient new entrant FTTP network.

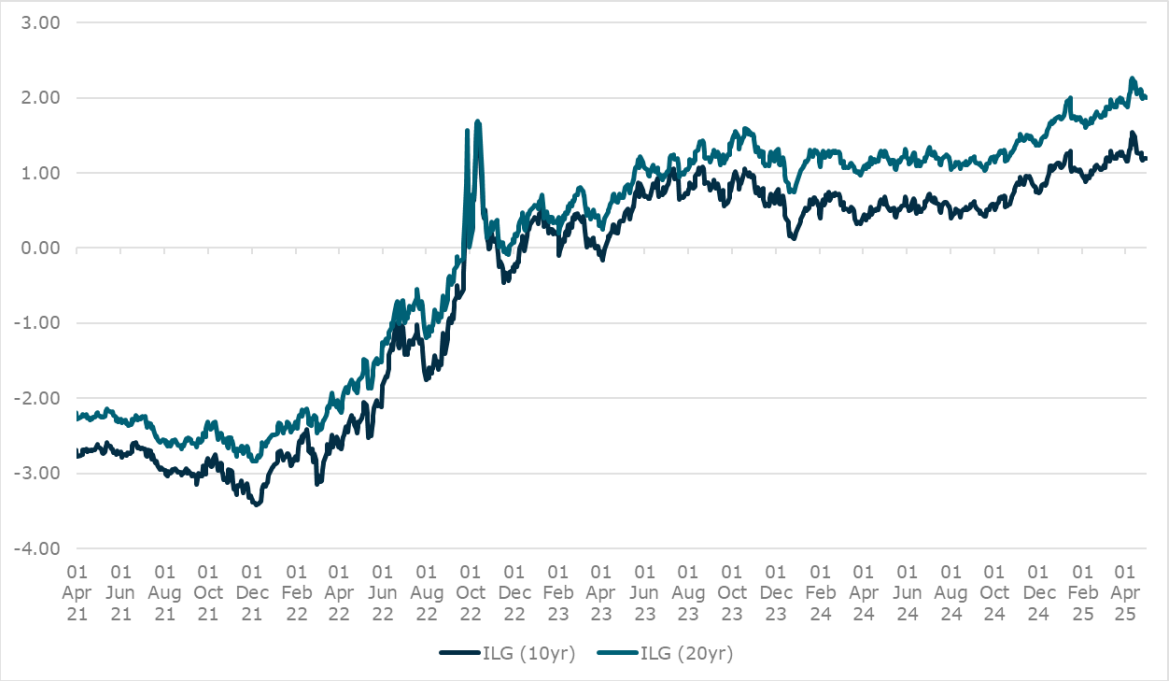
The risk-free rate

74 In the TAR26 Consultation, Ofcom determines the risk-free rate by reference to the yields on Index-Linked Gilts ("**ILG**") with maturities of 10 and 20 years. This approach is in line with established UK regulatory practice.[46] In the 2021 Wholesale Fixed Telecoms Market Review Statement ("**WFTMR 2021**"), Ofcom relied on ILGs with maturities of 10 and 15 years.[47] Ofcom justifies this departure by noting that these maturity profiles match the notional investment horizon for the sector given the long asset lives of fibre and duct, and the fact that the maturity at issuance on BT's debt has increased from the WFTMR 2021.[48] To obtain a risk-free rate estimate, Ofcom uses a measurement period of 6 months and does not apply any forward-looking adjustment.[49]

75 We consider that Ofcom's methodology is appropriate and in line with the approach adopted in the AlixPartners 2024 WACC Report. However, we note that the cut-off date used by Ofcom in the TAR26 Consultation is October 2024. The geopolitical situation has changed materially since then as reflected by the marked increase in gilt market rates. The chart below (see Figure 1) shows that yields have steadily risen since November 2024 (i.e. since the US presidential elections and various UK specific issues, such as UK budget concerns and questions as regards gilts funding). Thus, the evidence which Ofcom relies on does not reflect current market conditions.

45 AlixPartners 2024 WACC Report, Section 4.
46 UKRN guidance for regulators on the methodology for setting the cost of capital, 22 March 2023, page 15, Recommendation 3.
47 WFTMR 2021, paragraph A20.34
48 TAR26 Consultation, paragraph A19.25.
49 TAR26 Consultation, paragraph A19.26.

Figure 1: Recent evolution of (RPI) index-linked gilts yields



Source: Banck of England, AlixPartners analysis

76 As of April 2025, the 6-month average of 10-year and 20-year ILGs were respectively 1.1% and 1.7%, compare to values of 0.6% and 1.2% used by Ofcom (see Table 6 below). Therefore, recent market conditions would support a risk-free rate value which is approximately 0.5ppt higher than the one used by Ofcom.

Table 6: RPI index-linked gilts yields

	ILG (10 years)		ILG (20 years)	
	31-Oct-2024	**30-April-2025**	**31-Oct-2024**	**30-April-2025**
Spot rate	0.8%	1.2%	1.4%	2.0%
6-month average	0.6%	1.1%	1.2%	1.7%

Source: Bank of England, AlixPartners analysis

77 Based on the evidence above, we consider the appropriate risk-free rate range to be 1.2%-1.7%.

The Total Market Return and Equity Risk Premium

78 The approach Ofcom adopts for estimating the Total Market Return ("**TMR**") and the Equity Risk Premium ("**ERP**") is broadly in line with the approach we advocated in the AlixPartners 2024 WACC Report, in particular:

(a) The TMR is calculated directly from equity returns sourced from the "UBS Global Investment Yearbook" authored by Professor Elroy Dimson of Cambridge University and Professor Paul

Marsh and Dr Mike Staunton of the London Business School. The implied ERP is then calculated by subtracting the assumed risk-free rate from the TMR.[50]

(b) The arithmetic mean - as opposed to a geometric mean - is used to calculated expected returns.[51]

(c) Ofcom considers both historical ex-post and historical ex-ante evidence and finds that both approaches yield the same results.[52] This is in in line with our previous report's conclusion that in the case of the UK there is little difference between ex-post and ex-ante estimates of expected investor returns based on long run historic average data.[53]

79 The difference between Ofcom's TMR value of 6.7% (in CPI-terms) and the 7.1% value used in the AlixPartners 2024 Report is attributable to the use of different inflation measures to deflate historical nominal equity returns[54], and Ofcom's estimation of returns based on different holding periods[55].

80 The appropriate historical inflation measure and holding horizons to be used for the purpose of estimating the TMR have been extensively debated in recent regulatory precedents and the UKRN.[56] Different choices regarding these factors can have a material impact on TMR estimates, and this is a reflection of the inherent uncertainty related to TMR estimation. Such uncertainty has been explicitly recognised by the CMA, which for example in its PR19 redetermination states that:

> *"Some measures, such as risk-free rate and TMR, are subject to more uncertainty about the right theoretical approach, and in practice different investors may have different required returns that reflect this uncertainty".*[57]

81 Ofcom's TAR26 Consultation cites recent TMR estimates from UK regulators, showing a range as wide as 6.15%-7.46%, and narrower ranges of 6.5%-7.0% and 6.68%-6.98% based on the most recent precedents by Ofgem and Ofwat respectively.[58] Ofcom itself suggests its TMR estimate may be slightly lower than those of other UK regulators.[59]

82 In recognition of the inherent uncertainty associated with TMR estimation, we propose to use the range of 6.5%-7.0%. This is in line with the recent Ofgem decision presented in the TAR26 Consultation.[60] We note that Ofcom's point estimate lies towards the lower end of this plausible

50 TAR26 Consultation, paragraph A19.34, and AlixPartners 2024 WACC Report paragraph 49.
51 Ibid., paragraph A19.36, and AlixPartners 2024 WACC Report, paragraphs 50-53.
52 Ofcom concludes that both ex-posy and ex-ante approaches suggest a CPI-real TMR of 6.7%
53 AlixPartners 2024 WACC Report, paragraph 57.
54 While our real TMR figure is sourced directly from Dr. Mike Staunton (and it is therefore based on Dr Staunton's own inflation measure), Ofcom deflates historical nominal equity returns using three different CPI-inflation measures (see TAR26 Consultation, paragraph A19.35).
55 Ofcom takes an arithmetic average of over 10 and 20 years overlapping holding periods (see TAR26 Consultation, paragraph A19.36).
56 UKRN guidance for regulators on the methodology for setting the cost of capital, 22 March 2023, pages 16-21.
57 CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Final report, dated 17 March 2021, paragraph 9.1301.
58 TAR26 Consultation, Table A19.5.
59 TAR26 Consultation, paragraph A19.39. Ofcom suggests that this is due to its TMR estimate being based on CPI as opposed to CPIH, and the fact that historically, CPI has on average been slightly higher than CPIH.
60 TAR26 Consultation, Table A19.5.

range and we consider that it would be appropriate to explicitly acknowledge the uncertainty surrounding TMR estimation through "aiming up" (we cover this in more detail in Section 0).

Treatment of inflation

83 Ofcom's long-run inflation rates are 2.0% for CPI and 2.5% for RPI, based on OBR forecasts from October 2024.[61] The latest March 2025 forecasts by OBR show minimal changes relative to the October 2024[62].

84 While we followed a similar approach to inflation in our previous report (i.e. we also relied on OBR official forecasts), we also noted that market evidence indicated that official forecasts may not be representative of inflationary expectations at that time.[63] This appears to be the case also now since UK gilts markets indicate a RPI inflation expectations of around 3.3% (i.e. well above the 2.5% OBR forecast) over the 10-20 years' time horizon.

85 Therefore, whilst we use CPI and RPI assumptions of 2.0% and 2.5% respectively, in line with the OBR forecasts, we stress that these assumptions are on the side of being conservative, reinforcing the need for ultimately aiming up on the final WACC as we discuss in Section 0.

Asset beta

86 In the BCMR 2019 and WFTMR 2021, Ofcom relied on 5-year asset betas.[64] However, in the TAR26 Consultation, Ofcom has chosen to use 2-year asset betas based on CEPA's view that BT Group's 5-year asset beta was likely elevated due to the inclusion of the Brexit referendum date in the estimation sample.[65]

87 In the AlixPartners 2024 WACC Report, we explained why we considered that using longer estimation windows of 5 years and 10 years is preferable as it reduces the risk of asset beta estimates being unduly influenced by specific events. We also noted the benefits using longer time horizons for asset beta estimation have been explicitly acknowledged by both the CMA and the UKRN.[66]

88 We remain of the view that estimating asset betas based on longer time horizons is the most appropriate approach. We also note the following:

(a) In BCMR 2019, Ofcom noted that the Brexit referendum had a significant impact on BT's 2-year asset beta and decided to adopt a longer estimation window of 5 years because of the perceived uncertainty associated with 2-year asset betas around the Brexit period.[67]

(b) As we explained above, Ofcom has justified reverting to use of 2-year beta in TAR26 Consultation on the basis that 5-year beta might have been elevated due to the inclusion of the Brexit referendum in the sample.

61 TAR26 Consultation, paragraph A19.20.
62 OBR Economic and fiscal outlook – March 2025.
63 AlixPartners 2024 WACC Report, paragraphs 64-66.
64 TAR26 Consultation, paragraph A19.63.
65 TAR26 Consultation, paragraph A20.63.
66 AlixPartners 2024 WACC Report, paragraphs 73-75.
67 BCMR 2019 Statement, paragraphs A21.141-A21.144.

89 While we recognise Ofcom's approach aimed to balance the need to form a forward-looking perspective by relying on recent market data and ensuring regulatory stability through longer estimation horizons to mitigate volatile betas, we consider it fell short in achieving this balance. More specifically, the fact that Ofcom has adjusted its beta estimation method and treatment of Brexit twice within the last six years has the potential of introducing undue regulatory risk in the process.

90 Following the methodology outlined in the AlixPartners 2024 WACC Report, we have estimated betas over 2-year, 5-year, and 10-year time horizons using daily, weekly, and monthly frequency data.[68] Our beta estimates employ the same disaggregation approach described in Section 3 and are summarized in the table below.

Table 7: Asset betas

	OUKT (BT Group)	OUKT-Mobile (Vodafone Group)	OUKT-FFTP
5-year data period			
Daily	0.44	0.38	0.46
Weekly	0.53	0.44	0.57
Monthly	0.49	0.47	0.50
10-year data period			
Daily	0.56	0.52	0.58
Weekly	0.54	0.54	0.54
Monthly	0.56	0.57	0.56

Source: Bloomberg data, AlixPartners analysis. The cut-off date is end of April 2025.

91 The asset beta for OUKT-FTTP varies within a relatively wide range of 0.46 to 0.58. To narrow this range, we use the interquartile range of 0.49 to 0.55. Based on the analysis set out in Table 5, we then apply a 10% uplift to account for the fact that a reasonably efficient entrant is likely to face a higher operational gearing relative to an incumbent FTTP network. Therefore, our proposed asset beta range for a reasonably efficient entrant is 0.54-0.61.

Debt beta

92 Ofcom has opted for a debt beta value of 0.075, which is slightly lower than the previous value of 0.1 assumed in the WFTMR 2021[69]. In the AlixPartners 2024 WACC Report, we noted that recent precedents have established the plausible debt beta range to be 0.05-0.10.[70] Therefore, the debt value assumed by Ofcom represents the midpoint of this range and may be appropriate for an incumbent FTTP network. However, since the debt beta of a reasonably efficient entrant is likely to be higher for the same reasons as its equity beta, we apply the same 10% uplift which results in a debt beta value for a reasonably efficient new entrant FTTP network of 0.0825.

68 Estimating betas with data of different frequencies is in line with the approach adopted by the CMA. See e.g. CMA, "Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Final report", dated 17 March 2021, paragraph 9.479.

69 WFTMR 2021 Statement, paragraph A21.33.

70 AlixPartners 2024 WACC Report, paragraph 79.

Cost of debt

93 We provided updated values for cost of debt in Section 2 above. In summary, market evidence suggests that reasonably efficient entrants will have cost of debt between 6.8% and 7.6%. Adding 10 basis points (in line with Ofcom's approach) to reflect additional issuance costs, leads to a cost of debt range between 6.9% and 7.7%.

Debt gearing

94 Ofcom assumes a notional (forward-looking) gearing assumption of 55% for BT Group and notes that this figure sits slightly above the midpoint of the 45%-60% range proposed by CEPA to reflect the fact that BT's actual gearing has been higher than UK utilities in recent years.[71] ***[REDACTED].*** We concluded that a new entrant with higher risk is likely to have more equity financing and, therefore, BT's gearing value would be the upper limit for a reasonably efficient entrant.[72] We maintain this view and assume gearing value of 55%.

Corporate tax rate

95 Consistently with AlixPartners 2024 WACC report, Ofcom proposes using the prevailing statutory corporate tax rate of 25% in its calculations. We agree with this proposal and maintain an effective average rate corporate tax rate of 25% over the forward-looking period also in this report.

71 TAR26 Consultation, paragraph A19.72.

72 AlixPartners 2024 WACC Report, paragraph 143.

6 Summary of WACC for a reasonably efficient entrant

96 We bring together all the components of the CAPM presented in Section 5 to calculate a range for the pre-tax nominal WACC of a reasonably efficient entrant. This shows a range of 9.2%-10.5%.

97 We note that the overall, the WACC figures are slightly lower than those we recommended in the AlixPartners 2024 WACC Report. This is in partly due to the fact that:

(a) the risk-free rate values are currently higher than in 2024, and this leads to lower ERP;[73]

(b) the current RPI-inflation forecast is 2.5% as opposed to 3.0%;

(c) asset betas have decreased since last year (this can be seen by noting that the OUKT-FTTP asset beta values of Table 7 are lower than those reported in the last column of Table 6 of the 2024 AlixPartners WACC Report); and

(d) cost of debt is below our previous estimates. This is because we estimate cost of debt for a reasonably efficient entrant using a bottom-up approach rather than referencing cost of debt faced by specific market players (such as CityFibre).

[73] Since the notional equity beta for an reasonably efficient entrant is larger than one, an increase in the risk-free rate leads to an overall decrease in the cost of equity. To see why this is the case note that: $K_e = r_f + \beta_E\left(TMR - r_f\right) = r_f(1 - \beta_E) + TMR$.

Table 8: Estimated WACC range for a reasonably efficient entrant

	TAR26 Consultation	Reasonably efficient entrant		
WACC component		**Lower bound**	**Upper bound**	
Real (RPI-based) RFR	1.0%	1.7%	1.2%[74]	
RPI inflation forecast	2.5%	2.5%	2.5%	
Nominal RFR	3.5%	4.2%	3.7%	= (1+real$_{RPI}$ RFR)*(1+RPI inflation) - 1
Real (CPI-based) TMR	6.7%	6.50%	7.00%	
CPI inflation forecast	2.0%	2.0%	2.0%	
Nominal TMR	8.8%	8.6%	9.1%	= (1+real$_{CPI}$ TMR)*(1+CPI inflation) - 1
Nominal ERP	5.3%	4.4%	5.4%	= Nominal TMR – Nominal RFR
Debt beta (βd)	0.075	0.0825	0.0825	
Asset beta (βa)	0.46	0.54	0.61	
Gearing (forward-looking) (g)	55.0%	55.0%	55.0%	
Implied equity beta (βe)	0.93	1.10	1.25	= (βa - βd*g)/(1-g)
Cost of equity (post-tax) (Ke)	8.5%	9.1%	10.5%	= Nominal RFR + ERP *βe
Cost of equity (pre-tax)	11.3%	12.1%	14.0%	= Ke / (1-t)
Corporate tax rate (t)	25.0%	25.0%	25.0%	
Cost of debt (pre-tax) (Kd)	4.6%	6.9%	7.7%	
WACC (pre-tax nominal)	**7.6%**	**9.2%**	**10.5%**	**= (Ke*(1-g))/(1-t)+(Kd*g)**

Source: AlixPartners calculations based on assumptions in this report.

98 The uncertainty reflected in WACC ranges provided in Table 8 is primarily driven by the risk-free rate, the TMR, and the asset beta. We note that this is consistent with the CMA's acknowledgment that parameters related to the cost of equity — particularly the risk-free rate and the TMR relating to the cost — are inherently uncertain. According to the CMA:

> *"The aim of any cost of capital determination is to set a point estimate for the cost of capital, which is then translated directly into returns for investors. We consider that the best approach to doing so is to use the CAPM in order to estimate the appropriate returns to equity. However, we note that use of this model comes with parameter uncertainty. The CAPM cost of equity is not directly measurable and the **parameters are subject to both theoretical debate and statistical uncertainty**."[75] (Our emphasis added.)*

> *"Some measures, **such as risk-free rate and TMR, are subject to more uncertainty about the right theoretical approach**, and in practice different investors may have different required returns that reflect this uncertainty."[76] (Our emphasis added.)*

[74] Note that the upper bound is higher with a lower real RFR given the way the ERP is calculated and because the equity beta is greater than 1.

[75] CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Final report, dated 17 March 2021, paragraph 9.1238.

[76] Ibid., paragraph 9.1301.

99 Two further areas of material uncertainty are related to:

(a) The potential for estimation error in the beta for a reasonably efficient new entrant FTTP network. Such uncertainty is reflected by the asset beta range we propose.

(b) The possibility that the inflation assumptions we rely upon underestimate actual market expectations. We think that that such uncertainty should be explicitly recognised and addressed through aiming-up.

7 Recognising uncertainty and "aiming up"

Inherent challenges to precise WACC estimation

100 In the TAR26 Consultation, Ofcom seeks to identify the value of WACC for a reasonably efficient entrant which would be sufficient to incentivise investments into UK fibre networks in the period 2026-2031. This analysis involves a degree of uncertainty for the following reasons:

(a) First, Ofcom's WACC analysis starts by estimating key components of BT's WACC. Many of these components are not observable or directly measurable and must be estimated based on imperfect market data and expert judgement.

(b) Second, Ofcom seeks to adjust the values of BT's WACC (and its components) to identify WACC for a reasonably efficient entrant. BT enjoys various incumbency advantages (see paragraph 66 above) which are not available to reasonably efficient entrants. Ofcom therefore should acknowledge these comparative advantages and provide sufficient allowances when setting returns for a new entrant.

(c) Third, when setting the cost of capital, Ofcom aims to establish a forward-looking value that reflects the expected rate of return for investors in fibre network providers. However, in practice, the estimation of WACC parameters relies on historical market data. This reliance on past information means that there is an unavoidable uncertainty about whether these historical values will accurately represent future market conditions. This is also pointed out in the CEPA Report commissioned by Ofcom, which states that:

"*The findings enclosed in this document may contain predictions based on current data and historical trends. Any such predictions are subject to inherent risks and uncertainties.*"[77]

(d) Lastly, Ofcom's approach to the WACC analysis includes methodological choices which create uncertainty around the true value of WACC – for example choice of data cut-off dates, holding periods for return estimates, and beta estimation windows. These choices introduce a degree of uncertainty as they influence the final WACC value.

101 In recognition of this inherent uncertainty, we believe that the correct approach is to estimate a plausible WACC range, recognising that there are a range of plausible values for key components informing the WACC analysis, not a single "correct" value. One should then use informed judgment to determine the appropriate point estimate that will be used for regulatory purposes from within that range based on a careful consideration of the pros and cons of taking higher or lower figures. We believe that this is the appropriate approach rather than setting a single WACC value as Ofcom has done. (For the reasons we discuss further below, in our view setting the point estimate at the higher end of the range (i.e. aiming up) is appropriate in this case due to the risk asymmetry.)

102 Further, Ofcom does not capture specific factors in its WACC analysis, which directly consider certain factors affecting systematic risk (i.e. asset beta) of new entrants:

(a) Ofcom includes BT's mobile business it its benchmark for BT's FTTP business's asset beta, i.e. OUKT (see Section 3 above),

[77] CEPA, Cost of Capital: Beta and Gearing for TAR 2026, dated 6 February 2025, page 2.

(b) Ofcom also does not consider that higher operational gearing of new entrants leads to higher systematic risk (see Section 4 above).

103 Given that Ofcom does not consider these factors directly in its WACC analysis, it needs to consider them when evaluating the accuracy of its WACC estimates.

104 In circumstances where there exists uncertainty about the precision of WACC estimates and when some relevant factors affecting WACC have not been directly accounted for, Ofcom should adopt a policy of "aiming up" — that is, setting the WACC at or close to the upper bound of a plausible range.

Asymmetric risks of incorrectly estimating WACC of reasonably efficient entrants in the UK fibre markets

105 Given Ofcom's objective to incentive investment in UK fibre networks, which needs to be considered in light of the UK Government's growth agenda[78], the economic and societal welfare costs of setting the WACC too low are more severe, less easily reversible, and more detrimental to Ofcom's long-term policy objectives than the costs associated with setting it modestly too high.

(a) Underestimating the WACC: If Ofcom errs on the low side, the consequence will be significant. Companies will be unwilling to commit capital to projects that do not promise a risk-adjusted return sufficient to satisfy investors. This will negatively impact network rollout, coverage, and quality. A tangible reduction in investment into full fibre deployment in the UK will lead to reduced competition in the market and consumer welfare loss.

(b) Overestimating the WACC: Setting WACC above the value of a reasonably efficient entrant creates a risk of higher prices for regulated services and potentially excess returns for the regulated firm. These effects can be relatively easily mitigated given that WACC is reassessed periodically during regulatory review cycles. Further, in markets where network competition is developing or anticipated (as is Ofcom's policy goal), the ability of any single operator to translate a slightly elevated WACC into persistently higher end-user prices is constrained by competitive pressures from other network providers.

106 As a result, selecting a point estimate toward the upper end of the plausible range provides a conservative, but pragmatic, safeguard against the asymmetric downside of under-estimating the WACC when faced with several sources of uncertainty around its true value (see paragraph 100).

107 The impact of risk asymmetry is particularly pronounced for entrants to the UK fibre market characterised by high upfront sunk costs. Fibre deployment involves significant, irreversible capital expenditure which firms will undergo only if they are confident that they will have the opportunity to recover these costs over the long term.

Aiming-up: a prudent regulatory response to risk asymmetry

108 It is common for UK regulators to recognise uncertainties associated with WACC determinations and to aim up. This is not an arbitrary inflation of allowed return, nor is it intended to guarantee excess profits. Instead, it is a considered risk management strategy. It explicitly acknowledges the greater potential harm from under-remuneration and underinvestment compared to the

[78] See https://www.gov.uk/missions/economic-growth

potential costs of a modestly more generous WACC, especially in the context of promoting new, long-term infrastructure deployment.

109 This approach was expressed by Dame Melanie Dawes, then Chief Executive of Ofcom, in her 2020 speech to the FTTH Council Europe, where she stated that Ofcom would "*aim to allow all companies to achieve a fair return over their whole investment period, allowing for a margin above their cost of capital to reflect the risks*".[79]

110 In our AlixPartners 2024 WACC Report, we referenced a UKRN research paper that argued that aiming up is an appropriate risk mitigation strategy preventing underinvestment. The paper also argued that aiming up is particularly important for new investment (as opposed to setting WACC for sunk investment).[80]

111 The principle of aiming up has been applied by several UK regulators in significant determinations in recent years.

(a) For example, in its March 2021 final report on the price determinations for Anglian Water, Bristol Water, Northumbrian Water, and Yorkshire Water, the Competition and Markets Authority ("**CMA**") explicitly chose a point estimate for the cost of equity that was above the midpoint of its derived range. CMA firstly explained that "*regulation should create a supportive long-term investment environment*" and that "*there are risks that there will be underinvestment in new assets, if the expected return on capital on new investment in AMP8 and beyond does not provide incentives to reinvest capital and maintain or grow the asset base over time*".[81]

(b) In its conclusion, the CMA justified its approach by saying "*Our view is that this will result in an appropriate balance of risk in the round across the determination, including addressing the level of risk to investment in the sector associated with setting the cost of equity too low, particularly in the context of a sharp reduction since AMP6, and also addressing asymmetry in the broader financial settlement."*[82]

(c) Similarly, Ofwat aimed up in its PR24 determinations, specifically with respect to allowed return on equity. This was adopted to "*retain a cost of equity point estimate towards the top of our CAPM-derived range, together with the positive benchmark adjustment to the cost of new debt, is appropriate to ensure finance is attracted, at a reasonable cost, to support increased investment over 2025-30."*[83]

112 The case for aiming up is even stronger for a reasonably efficient new entrant FTTP network than for established water companies. The UK telecoms market is more dynamic, and the societal benefits of rapid, widespread fibre deployment are significant. This is also recognised by CMA, which noted that in telecoms markets there are *"costs to consumers of delays in new products when prices are slightly too low (because the WACC has been under-estimated) are greater than*

79 Ofcom, Fibre must be a fair bet, Dame Melanie Dawes gives a speech to FTTH Council Europe, dated 3 December 2020.

80 AlixPartners 2024 WACC Report, paragraphs 165-168.

81 CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Final Report, dated 17 March 2021, paragraph 9.1388 and paragraph 9.1394.

82 Ibid., paragraph 9.1402

83 Ofwat, PR24 final determinations, Aligning risk and return – allowed return appendix, dated March 2025, page 6.

the costs to consumers of prices being slightly too high (because the WACC has been over-estimated)."[84]

113 In summary, the principle of aiming up in the estimation of WACC is a prudent regulatory approach that acknowledges the asymmetric risks associated with underestimating the cost of capital for new fibre entrants. By setting the WACC closer to or at the upper bound of the plausible range, Ofcom can mitigate the potential negative impacts of underinvestment and ensure a supportive investment environment. This approach has been endorsed by several UK regulators in recent determinations and is particularly relevant for the dynamic telecoms market (such as the fibre market) where the societal benefits of rapid fibre deployment are significant.

84 CMA, Anglian Water Services Limited, Bristol Water plc, Northumbrian Water Limited and Yorkshire Water Services Limited price determinations, Final Report, dated 17 March 2021, paragraph 9.1246.

8 Conclusion

114 In this report, we showed how Ofcom's proposed approach to determining the WACC for reasonably efficient entrant in TAR26 was not sufficiently rigorous and robust and misses several key elements. In particular, Ofcom does not appropriately reflect the distinct financial and operational realities faced by reasonably efficient new entrants, compared to BT. As Ofcom has not made adjustments to reflect these realities, it does not correctly estimate the WACC for a reasonably efficient entrant, instead materially and inappropriately underestimating it. Setting the WACC of a reasonably efficient entrant too low creates a risk of inadvertently reducing the pace and extent of competitive fibre investment in the UK.

115 Our analysis suggests a plausible WACC range for new entrants of 9.2% to 10.5%. Given the asymmetric consequences of underinvestment in long-lived infrastructure, established regulatory best practice suggest that a cautious approach is appropriate, and that Ofcom should aim up to the higher end of the plausible range, i.e. 10.5%, to safeguard against deterring essential capital deployment.

116 Ofcom should consider these elements in its final WACC determination. Ensuring that the cost of capital adequately reflects the specific risk profile and financing conditions of new entrants is more than a technical calibration; it is fundamental to maintaining the pro-investment environment necessary for the UK to realise its digital ambitions. A carefully calibrated WACC will better support the continued development of competitive fibre networks, ultimately benefiting consumers and businesses through enhanced choice, innovation, and the widespread availability of next-generation broadband services.

AlixPartners

Estimating cost of debt of a reasonably efficient entrant in the UK fibre networks market

Telecommunications Access Review 2026-2031

12 June 2025

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Background

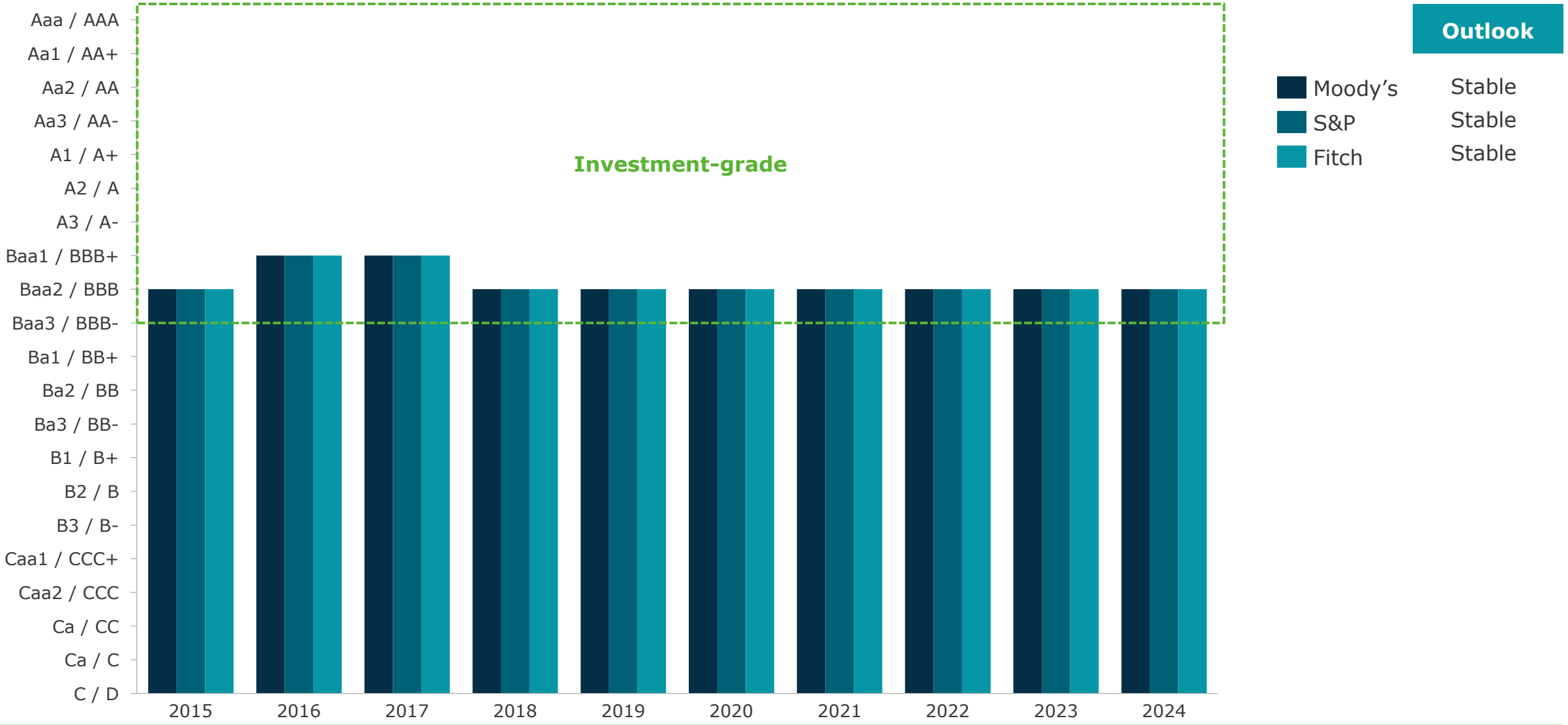
- Ofcom is consulting on its approach to the Telecoms Access Review 2026-2031, which will shape the regulatory and commercial landscape for full-fibre operators in the UK. A key focus is the weighted average cost of capital ("**WACC**") for a reasonably efficient entrant, which underpins Ofcom's price controls applied to BT Group plc ("**BT**", "**BT Group**") and investment incentives of new fibre entrants.
- Under the base case, Ofcom estimates BT Group's nominal cost of debt relevant for setting regulatory WACC for new fibre network ("**BT Group's cost of debt**") to be 4.60% based on BT Group's credit rating of BBB/ Baa2 (Fitch/ S&P and Moody's) and S&P Global bond index data dated 31 October 2024.
- Ofcom proposes to adjust its estimate of WACC for BT by 0.5% in the base case and by 1.0% in the high-cost scenario. This adjustment is done to account for the higher costs of debt faced by reasonably efficient entrants. Ofcom does not provide justification for the magnitude of these uplifts and makes no assessment of the cost of debt quantum for reasonably efficient entrants.
- This Report reviews Ofcom's use of BT Group and its BBB credit rating as the basis for, and the adequacy of this approach in, determining the nominal cost of debt for reasonably efficient entrants ("**entrants' cost of debt**").

Summary of conclusions

- BT Group's BBB credit rating is driven by a number of credit enhancing factors outside of its fibre network which cannot be replicated by a reasonably efficient entrant, so BT Group's cost of debt is not an adequate proxy for a reasonably efficient entrant.
- We adopted a criteria-focused approach in determining a reasonably efficient entrant's credit rating, by applying the Telecommunications Services Provider credit rating criteria of the three major credit rating agencies (Fitch, Moody's and S&P) against a cohort of fibre network operators.
- Our analysis indicates a reasonably efficient entrant is highly unlikely to achieve a BBB credit rating.
- Our estimate of a reasonably efficient entrant's credit rating is a B/B2/B (Fitch/ Moody's/ S&P, thereafter "B").
- We estimate the entrants' cost of debt (B credit rating) is 6.81% - 7.59%, based on S&P Global bond index data dated 20 May 2025. Comparing against the actual cost of debt of current UK broadband providers and fibre network operators, the entrants' cost of debt should sit at the higher end of this range.
- Ofcom assessed BT Group's cost of debt as 4.60% based on S&P Global bond index data dated 31 October 2024. Based on S&P Global bond index data dated 20 May 2025, we assess BT Group's nominal cost of debt as 4.70% and have used this as the basis for comparing the differential with entrants' cost of debt.
- Therefore, we estimate the differential in nominal cost of debt between a current assessment of BBB-rated BT Group (4.70%) and a reasonably efficient entrant is 2.11% - 2.89%.

BT Group credit profile

BT Group has historically maintained a stable investment-grade credit rating across the three main credit rating agencies: (1) Moody's (2) S&P and (3) Fitch



Each agency applies its own criteria to determine BT Group investment-grade rating; BT Group benefits from higher scores on most factors compared to peers

Below is a summary of the credit rating factors and scorecards under each agency's criteria (Fitch, Moody's and S&P). We have reviewed key risk factors to assess whether BT Group's BBB/ Baa2 investment-grade credit rating is an adequate proxy for assessing a reasonably efficient entrant.

		Fitch		Moody's		S&P	
Current credit rating		**BBB**		**Baa2** [1]		**BBB**	
	Outlook	**Stable**		**Stable**		**Stable**	
	Industry-specific criteria	**Telecommunications**		**Telecommunications Service Provider**		**Telecommunications**	
Risk	**Factor**	**Weighting**	**Score**	**Weighting**	**Score**	**Score**	
Business	Overall					Satisfactory	Slides 8-9
	Operating Environment/ Country risk	Lower	AA			Low	
	Sector risk profile/ Industry risk	Moderate	A			Intermediate	
	Competitive Position	Higher	BBB+	15%	Baa	Satisfactory	
	Market Position/ Share	Higher	A	10%	Baa		
	Competition	Higher	BB				
	Scale	Higher	A	10%	A		
	Diversification/ portfolio effect	Moderate	BBB			Neutral (no impact)	
	Technology and infrastructure	Lower	A				
	Regulatory environment	Lower	BBB				
Financial	Overall					Significant	Slides 10-11
	Profitability and efficiency	Moderate	BBB	10%	Baa		
	Leverage	Higher	BBB	15%	Ba	Intermediate	
	Cash flow-to-debt			15%	Ba	Highly leveraged	
	Interest coverage	Moderate	A	10%	B	Intermediate	
	Financial discipline/ financial policy	Lower	A	15%	Baa	Neutral (no impact)	
	Liquidity	Lower	A			Adequate (no impact)	
	FX Exposure	Lower	A				
Other	Management and Corporate Governance	Lower	A-			Neutral (no impact)	
	Group/ Capital structure	Lower	A			Neutral (no impact)	
	Comparable rating analysis					Positive (+1 notch)	

Fitch rates each factor on an AAA to CCC scale

Moody's rates each factor on an AAA to Ca scale

S&P uses multiple scales & matrices to rate each factor
Please refer to slides 24-27

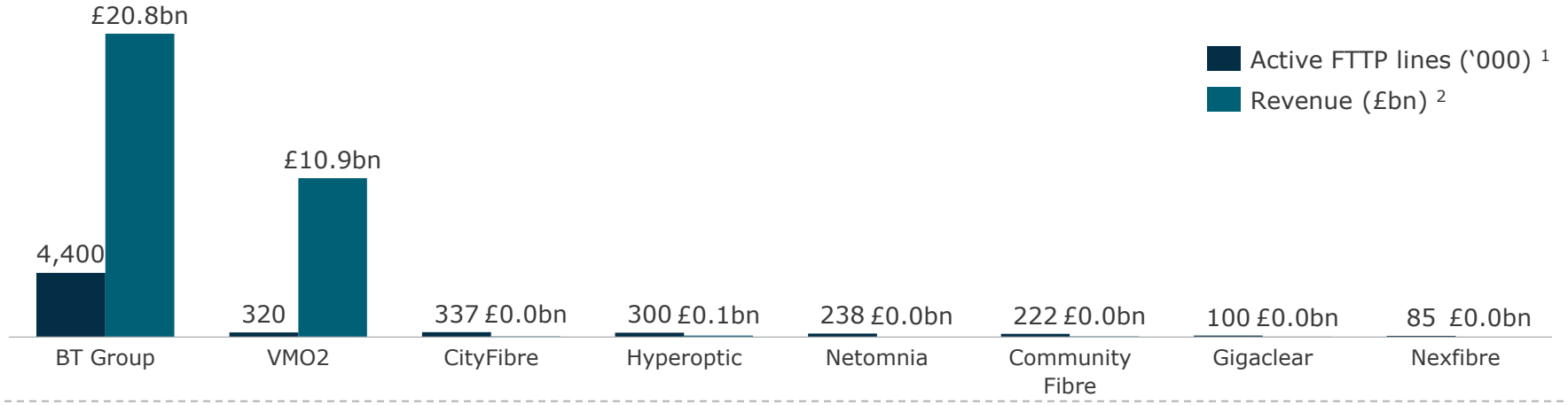
[1] The Moody's scorecard rating for BT Group is Baa3, but credit rating has been assessed as Baa2

Source: BT Group Plc rating reports – Fitch (Aug-24); Moody's (Jul-24); S&P (Aug-24)

Business factors: BT Group investment grade credit rating benefits from its large scale and solid market share as the incumbent UK Telecom provider

Moody's weightings & scores have been included to illustrate the comparative weight applied to each of the specified factors. As part of our analysis, we have reviewed and applied each of Fitch, Moody's and S&P credit rating criteria to determine the credit profile of a reasonably efficient entrant.

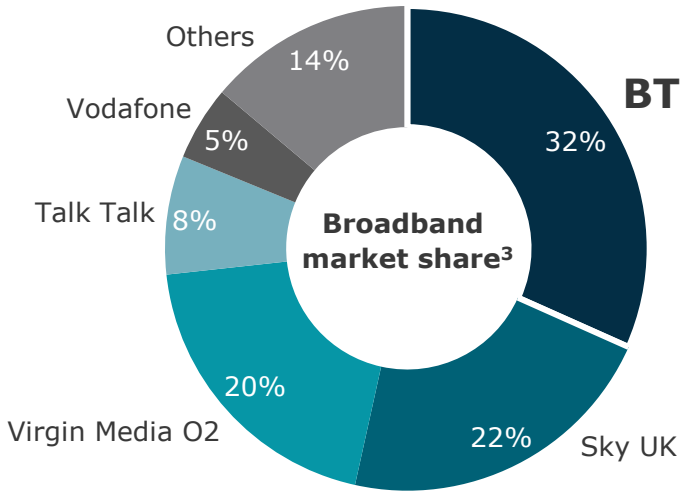
Large scale, especially compared to other fibre network operators

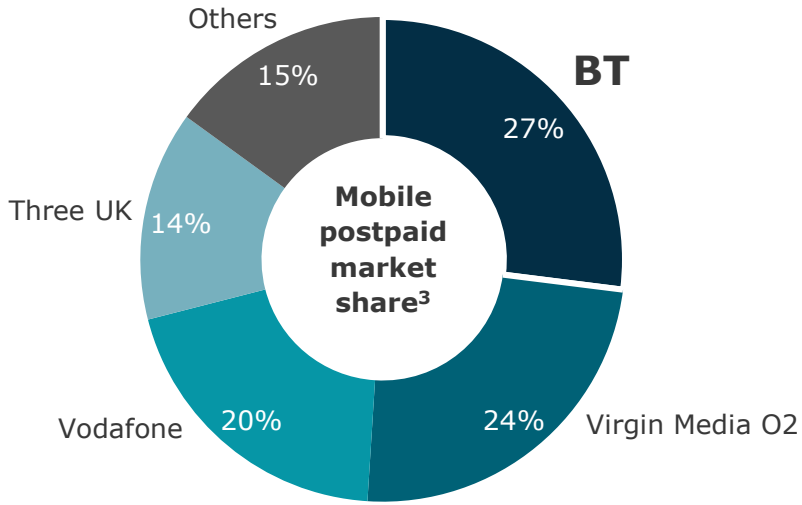


Moody's weighting: **10%**

Moody's score: **A**

Solid leading market share across broadband and mobile prepaid





Moody's weighting: **10%**

Moody's score: **Baa**

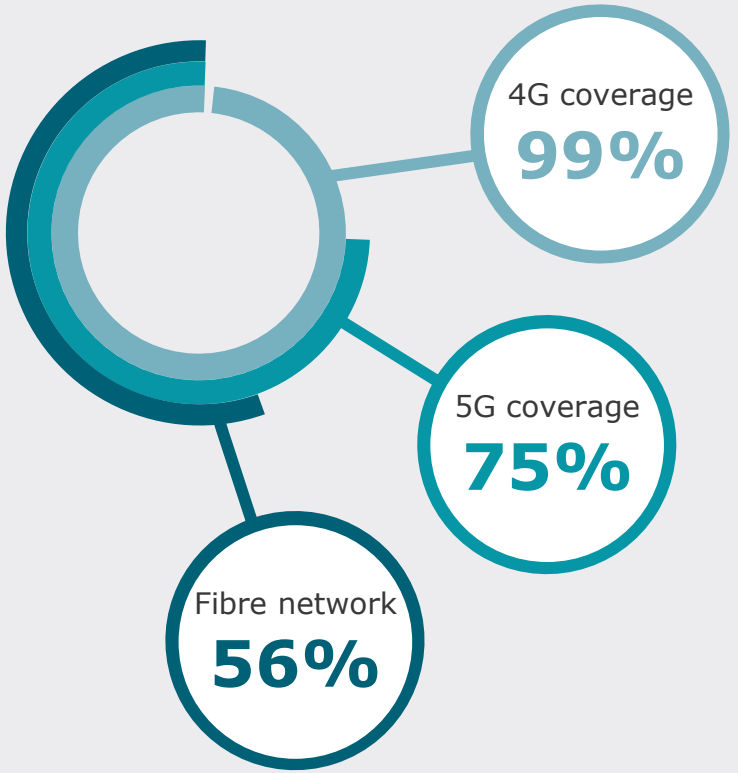
[1] 2023 data, per company announcements & AlixPartners estimates.
[2] Per latest audited accounts: BT Group (Mar-24); VMO2 (Dec-24); Others (Dec-23).
[3] Ofcom, BT Group and Moody's Ratings data presented in Moody's BT Group Plc credit opinion, 25-Jul-24

Business factors: BT Group investment grade credit rating benefits from its diversified integrated operations and ownership of network infrastructure through Openreach

Full diversified, integrated operator that owns infrastructure

Brand	Division	Scale
EE / plusnet	**Consumer** Mobile, voice lines, broadband, TV, TNT Sport	**30m** customers
BT	**Business** Broadband, networking, voice, mobile, IT services, ethernet, security and vertical solutions	**1m+** organisations
openreach	**Openreach** **Broadband infrastructure**, networking, voice, mobile, IT services, ethernet, security and vertical solutions	**700+** providers

Extensive coverage across the UK



Moody's weighting: **15%**

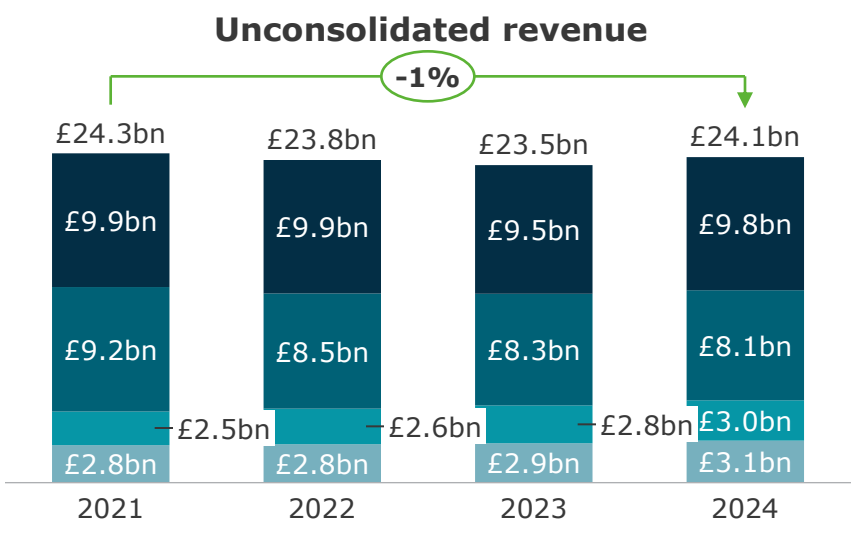
Moody's score: **Baa**

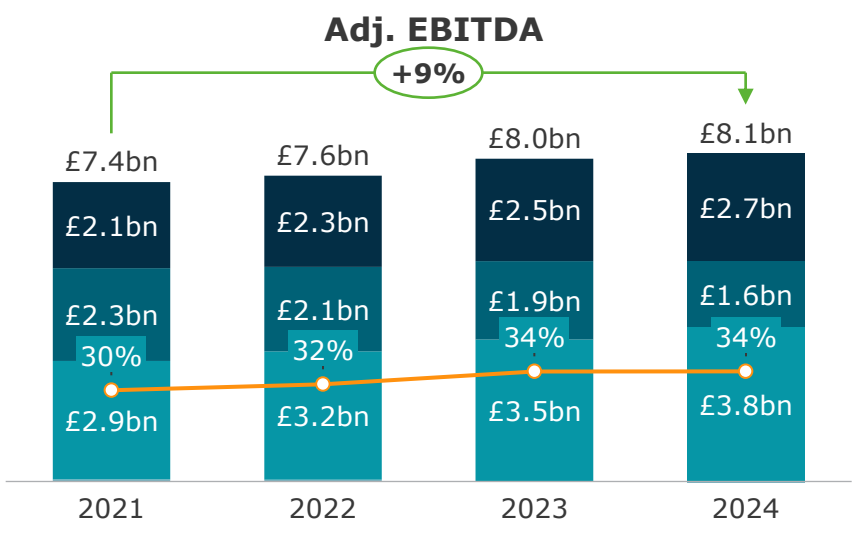
- The key drivers (Moody's weighting: 35%) of BT Group's investment-grade credit rating are its large scale, product diversification and market share.
- These characteristics are a function of BT Group's heritage as the incumbent UK telecommunications operator and not reflective of the characteristics of a reasonably efficient entrant.
- As such, we expect that a reasonably efficient entrant is unlikely to be assessed at an investment-grade credit rating.

Source: BT Group FY24 annual report

Financial factors: BT Group investment grade credit rating benefits from its stable performance track record and clear governance practices as a public company

Stable revenue and EBITDA margin

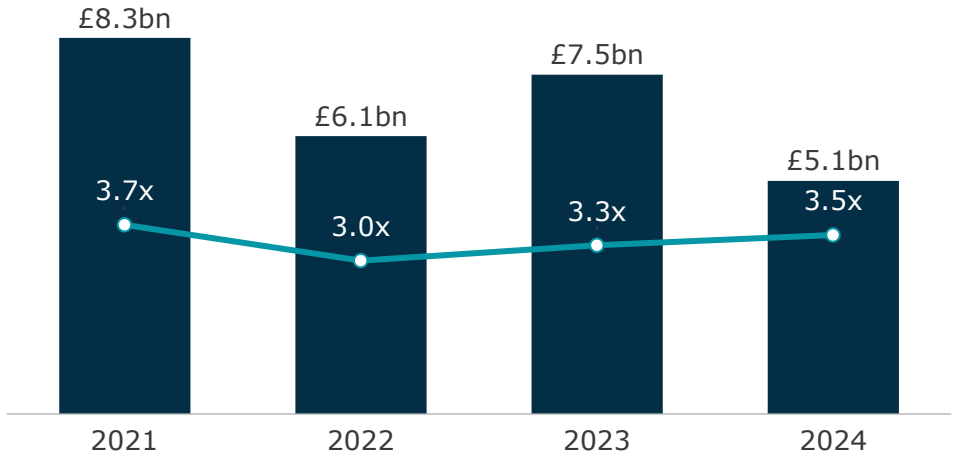




Moody's weighting: 10%

Moody's score: Baa

Conservative financial policies & solid liquidity



- BT Group management continue to target a BBB+/Baa1 credit rating over the cycle, with a BBB/Baa2 floor. Management regularly review the liquidity of the group and funding strategy takes account of medium-term requirements. These include the pension deficit and shareholder distributions.
- Leverage maintained historically in line with policy

Debt/ EBITDA

Cash and current investments

Moody's weighting: 15%

Moody's score: Baa

Source: BT Group Plc rating reports – Fitch (Aug-24); Moody's (Jul-24); S&P (Aug-24)

Consumer | Business | Openreach - external | Openreach - internal | EBITDA margin

Financial factors: BT Group key financial metrics are non-investment grade based on the Moody's and S&P criteria

BT Group maintains lower/ non-investment grade credit rating based on its financial metrics alone. Therefore, a reasonably efficient entrant, who does not benefit from BT Group's investment grade scores on other factors, should not be assessed at an investment-grade credit rating

	Fitch			Moody's			S&P		
Factor	**Ratio[1]**	**Measure**	**Score**	**Ratio[1]**	**Measure**	**Score**	**Ratio[1]**	**Measure**	**Score**
Leverage	Debt/ EBITDA	2.8x	BBB	Debt/ EBITDA	3.5x	**Ba**	Debt/ EBITDA (core)	3.0x	**Significant**
	Net Debt/ EBITDA	2.6x	BBB						
Cash flow-to-debt	(Cash flow from operations - Capex)/Debt	1.5%	**CCC**	Retained Cash Flow/Net Debt	24.9%	**Ba**	Funds from operations/debt (Core)	28.8%	**Significant**
							Cash flow from operations/debt	22.1%	**Significant**
							Free operating cash flow/debt	1.2%	**Highly leveraged**
							DCF/debt	-2.7%	**Highly leveraged**
Interest coverage	EBITDA/ Interest Expense	10.5x	A	(EBITDA - Capex)/ Interest Expense	1.6x	**B**	EBITDA/Interest expense	6.7x	Intermediate
							Funds from operations/ cash interest	8.7x	Significant

- Based on the Fitch criteria, a higher weighting is applied to leverage metrics (refer slides 17-19 for detail), which contributes to BT Group's investment-grade credit rating under this methodology. However, despite the scale, diversification and maturity of the business, BT Group does not maintain an investment-grade score across every financial metric.
- Based on the Moody's criteria, BT Group scores non-investment grade (Ba or B scores) across all its financial metrics (refer slides 20-23 for detail).
- Based on the S&P criteria, BT Group scores significant or higher risk for 5 of 7 ratios, which negatively impacts BT Group's credit rating. Without the benefit of its "satisfactory" business risk profile, BT Group scores non-investment grade based on its financial metrics (refer slides 24-27 for detail).

[1] Each agency applies its own adjustments to key items such as debt & EBITDA, so ratios may not be fully aligned across methodologies
Source: BT Group Plc rating reports – Fitch (Aug-24); Moody's (Jul-24); S&P (Aug-24)

Credit profile of a reasonably efficient entrant

BT Group is not an adequate proxy for a reasonably efficient entrant as its fibre network is only one of its many product lines and cannot be assessed standalone

Openreach generates only 25% of BT Group revenue and 47% of BT Group earnings.[1]

1 Only 13% of Openreach revenue is generated from its full-fibre network.

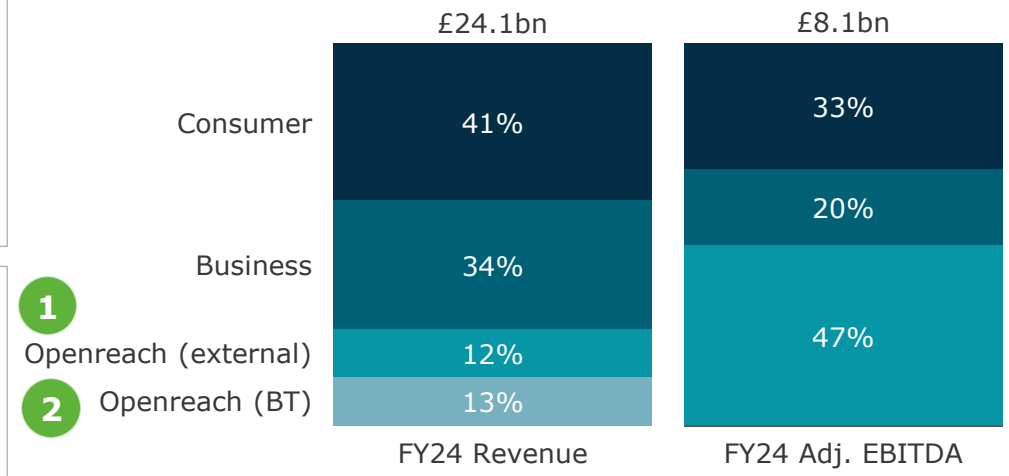
Overall, Openreach revenue from FTTP network represents 3.25% of BT Group revenue.

2 Openreach also benefits from the cross-sell to BT Group's retail divisions (Consumer & Business), with only 12% of BT Group revenue being generated from third-party Internet Service Providers ("**ISP**").

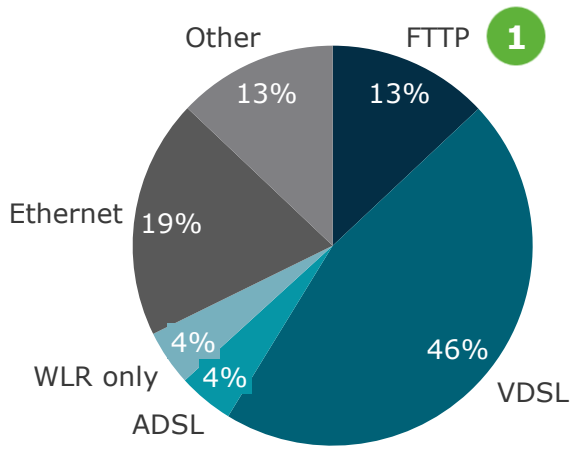
3 Openreach holds only 56% of BT Group property, plant & equipment ("**PP&E**") in its network infrastructure (£36.1 bn), which includes its full-fibre and other fixed line networks, and mobile phone towers.

4 BT Group does not separate out the performance of the fibre network assets, so a credit rating analysis of BT Group's fibre network is challenging.

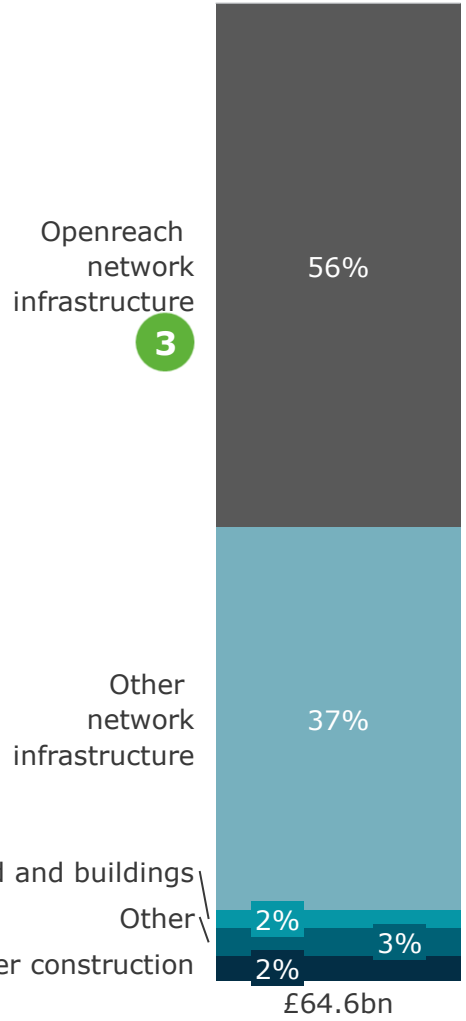
BT Group unconsolidated revenue & Adj. EBITDA (FY24)



Openreach revenue (FY24)



BT Group PP&E (FY24)



[1] FY24 annual report. Revenue is on an unconsolidated-basis
[2] FY24 annual report, PP&E at cost

BT Group BBB credit rating is not representative of the market; Global and UK Telecoms maintain a wide spread of credit ratings, with the majority being non-investment grade

Ratings Trends: Telecoms

Chart 1

Ratings distribution by subsector

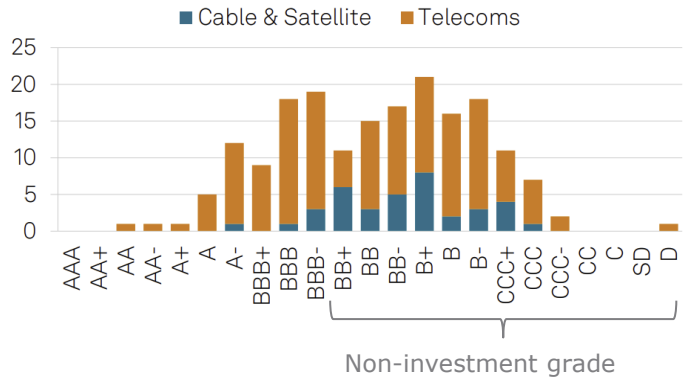
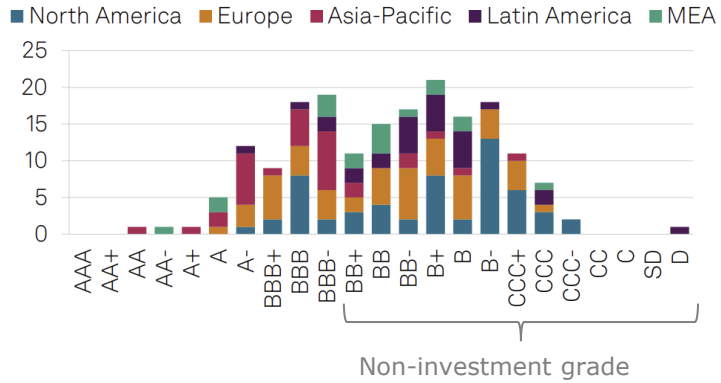
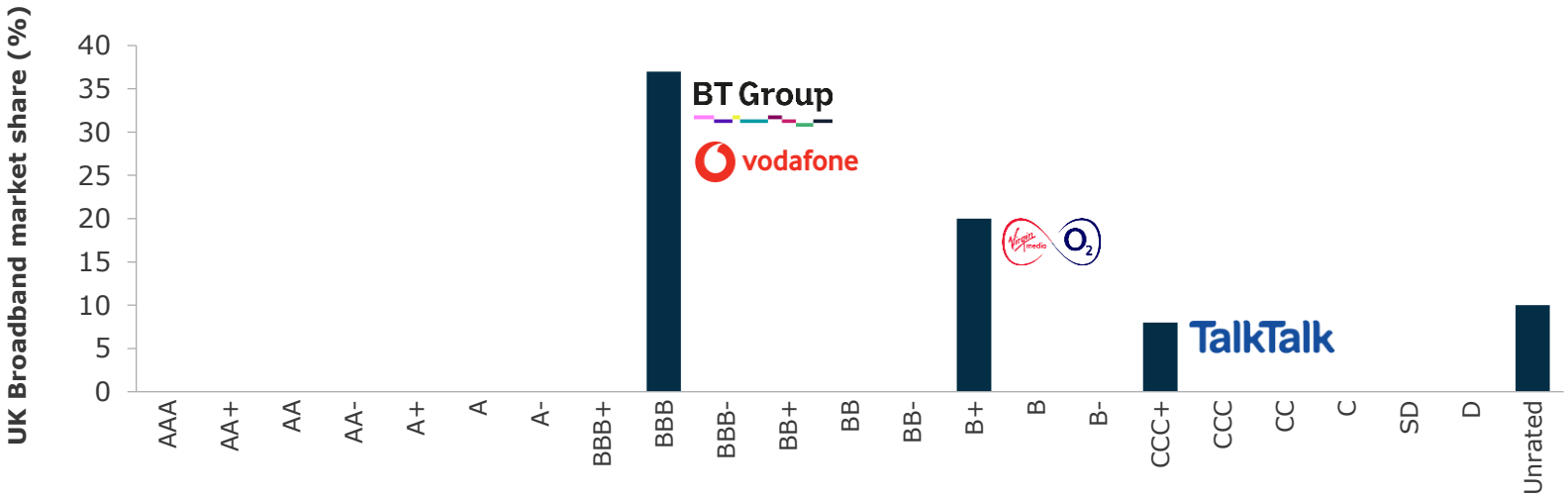


Chart 2

Ratings distribution by region





Note: Sky UK (25% market share) has been excluded as issuer credit rating is assigned at the US parent (Comcast corporation).

Comments

Both Global (Chart 1) and European (Chart 2) telecoms rating distribution data indicate that the majority of operators are rated non-investment grade. BT Group's BBB rating is considered superior to the market.

Comments

This spread is also mirrored amongst UK Telecoms, where BBB (BT Group & Vodafone) rating represents the upper end of the credit range, with a wide spread of credit ratings from BBB to CCC+.

c. 10% of the market is unrated.

Source: Chart 1 & Chart 2 - S&P Global, Industry Credit Outlook 2025: Telecoms (Jan-25); Chart 3 - U.K Telecom Outlook: Consolidation in Mobile, Fragmented Fixed, and Broadly Stable Ratings (Apr-25) & Ofcom, BT Group and Moody's Ratings data presented in Moody's BT Group Plc credit opinion, 25-Jul-24

No other operators in the UK fibre network market can achieve a "BBB" credit rating due to lack of scale, market share and product diversification

BBB/Baa key business rating factors [1]	BT Group	VMO2	Others
Credit rating	**BBB/ Ba2**	**BB-/ Ba3**	**Unrated**
Scale: £10-20bn revenue/ >£1bn EBITDA	✓	✓	✗
Market position: holds competitive positions in many regions where it operates, >20% market share	✓	✓	✗
Competitive advantage: broad suite of telecommunication services, significant customer base and good geographic diversification	✓	✓	✗

- Amongst the 8 largest UK fibre network operators, most operators (except BT Group & VMO2) are pure full-fibre operators (narrow suite of telecommunication services) with modest market share (<10%). This prevents them from achieving an investment-grade credit rating like BT Group.
- Given the comparatively weaker financial factor scores of telecoms, business factor scores need to be rated better than BBB/ Baa to achieve an investment-grade credit rating. For comparison, VMO2 meets the BBB/ Baa business factor criteria; however, it does not hold an investment-grade credit rating (refer slides 14-27 for detailed breakdown).
- Firms which do not own their fibre network infrastructure (e.g. Vodafone, TalkTalk & Sky) have been excluded from this analysis given they do not incur the substantial capital cost of establishing infrastructure.

Estimating the credit profile of a reasonably efficient entrant

Applying the Fitch Telecommunications criteria, BT Group scores at the upper end on all risk factors compared to other UK fibre network operators

- The Fitch criteria weighs the following key factors in determining the credit rating for a Telecommunications operator:
  - **General factors –** Sector risk profile, operating environment and management and corporate governance;
  - **Sector-specific factors** –market position, diversification, technology and infrastructure and regulatory environment; and
  - **Financial profile factors** – Profitability, financial structure and financial flexibility
- We have applied the scores for BT Group & VMO2 per the latest rating report.
- We have then estimated the credit rating scores of the 4 largest UK full-fibre network operators with national scale per current audited accounts and publicly available data.

[IMAGE REDACTED]

1 General factors assessment

- We have assumed the same sector risk profile & operating environment scores for all operators, consistent with the latest credit reports for BT Group and VMO2, as they share the same macroeconomic risks by operating in the same market.

Per latest rating report	BT Group	VMO2
Sector Risk Profile	A	A
Operating Environment	AA	AA
- Economic Environment	AA	AA
- Financial Access	AA	AA
- Systemic Governance	AA	AA

[SLIDE REDACTED]

Applying the Fitch Telecommunications service providers criteria, BT Group scores at the upper end on all risk factors compared to other UK fibre network operators

4

Issuer credit rating

Relative Importance of Factor: Higher | Moderate | Lower

		General factors						Business profile								Financial profile					
		Sector risk profile		Operating Environment		Management and Corporate Governance		Market Position		Diversification		Technology and Infrastructure		Regulatory Environment		Profitability		Financial Structure		Financial Flexibility	
Issuer	Rating	Score	Weighting	Score	Weighting	Score	Weighting	Score	Weighting	Score	Weighting	Score	Weighting	Score	Weighting	Score	Weighting	Score	Weighting	Score	Weighting
BT Group	BBB	A		AA		A-		BBB+		BBB		A		BBB		BBB		BBB		A	
VMO2	BB-	A		AA		A-		BBB+		BBB		A-		BBB+		BBB+		B		BB	

[ROWS REDACTED]

- The Fitch criteria applies a relative weighting to each factor rather than any explicit factor weighting, as credit risk is asymmetric and therefore positive outliers tend to attract lower importance than negative outliers. Credit risk is often affected by the weakest link in a chain rather than a neatly blended average, so high risk factors often attract significantly higher importance than moderate and lower risk factors.
- [REDACTED]

[SLIDE REDACTED]

[SLIDE REDACTED]

[SLIDE REDACTED]

Applying the Moody's Telecommunications service providers criteria, BT Group scores at the upper end on all risk factors compared to other UK fibre network operators

Scorecard Credit Rating & Issuer Credit Rating

- Under the Moody's criteria, a numerical value is assigned to each rating factor score and a weighted average score determined based on the assigned weighting of each factor. The numerical score aligns to a Scorecard Credit Rating.
- In most cases, the Scorecard Credit Rating and the Issuer Credit Rating aligns. However, we note that Moody's applied a one-notch upgrade to BT Group's Issuer Credit Rating. As no specific reasoning was provided, we have not applied the same notching to other operators (in line with VMO2 credit rating).
- We have presented our estimated and indicative Scorecard Credit Ratings under the Moody's criteria below:

Factor	Weighting	BT Group	VMO2
Scale	10%	A	Baa
Competitive position	15%	Baa	Baa
Market share	10%	Baa	Baa
Revenue and margin sustainability	10%	Baa	Ba
Debt/ EBITDA	15%	Ba	B
Retained Cash Flow/ Net Debt	15%	Ba	B
(EBITDA-Capex)/ Interest expense	10%	B	B
Financial policy	15%	Baa	Ba
Scorecard Credit Rating		**Baa3**	**Ba3**
Issuer Credit Rating		**Baa2**	**Ba3**

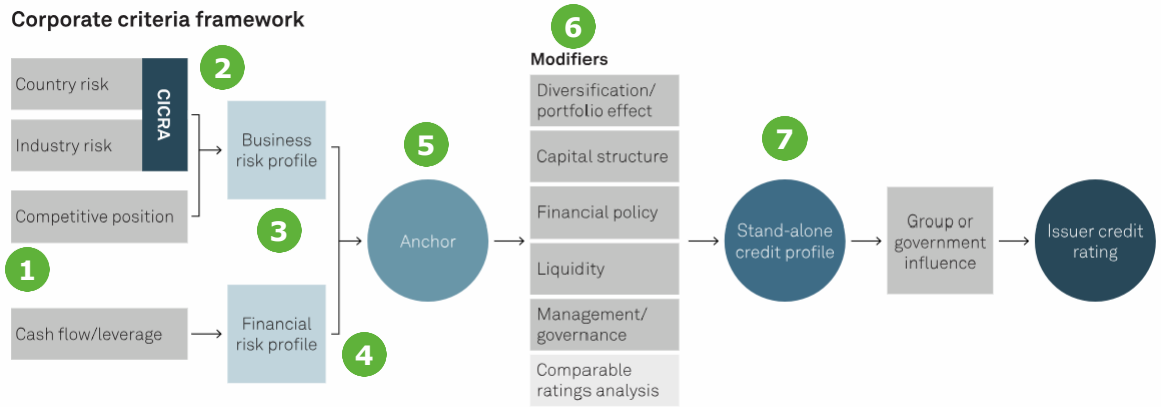
[COLUMNS REDACTED]

Applying the S&P Telecommunications sector criteria, BT Group scores at the upper end on all risk factors compared to other UK fibre network operators

The S&P criteria considers the following key factors in assessing a Telecommunications operator credit rating:

- **Business risk profile:** country risk, industry risk and competitive position;
- **Financial risk profile:** cash flow/ leverage; and
- **Modifiers:** Diversification/ portfolio effect, capital structure, financial policy, liquidity, management/ governance and comparable ratings analysis.

- Unlike Fitch & Moody's methodologies, these factors are not assessed by weighting but applied in a matrix, with steps outlined in the diagram below.
- We have applied the credit rating scores for BT Group & VMO2 per the latest rating report.
- We have then estimated the credit rating scores of the 4 largest UK full-fibre network operators with national scale per current audited accounts and publicly available data.



CICRA--Corporate industry and country risk assessment. Source: S&P Global Ratings.

1 Competitive Position Assessment

	Weighting (Utilities)	BT Group	VMO2
Competitive advantage	60%	3	3
Scale, scope and diversity	20%	2	2
Operating efficiency	20%	2	3
Weighted average		**2.6**	**2.8**
Profitability			
Competitive Position Assessment		**3**	**3**

[COLUMNS REDACTED]

- Each factor is rated on a 5-point scale: 1 – strong; 2 – strong/ adequate; 3 – adequate; 4 – adequate/ weak; 5 – weak
- Then, a weighted average score is calculated which aligns with a preliminary competitive position assessment score (refer table right).
- We have applied no adjustment for profitability factor to ensure.
- Guidance on scoring for each factor can be found in the appendices.

Weighted average assessment range	Preliminary competitive position assessment
1.00 – 1.50	1
>1.50 – 2.25	2
>2.25 – 3.00	3
>3.00 – 3.75	4
>3.75 – 4.50	5
>4.50 – 5.00	6

Applying the S&P Telecommunications sector criteria, BT Group scores at the upper end on all risk factors compared to other UK fibre network operators

2 & 3 CICRA & Business Risk Profile Assessment

- We have applied the same scores for country risk (low) & industry risk (intermediate) across all operators, consistent with the latest credit reports for BT Group and VMO2, as they share the same macroeconomic risks by operating in the same market. Corporate Industry and Country Risk Assessment ("**CICRA**") of 3 applied.
- Business risk profile score is a matrix of the CICRA and competitive position assessment. Based on a CICRA rating of 3, no adjustment to the competitive position assessment score has been made.

4 Financial Risk Assessment

Cash Flow/Leverage Analysis Ratios--Standard Volatility

	--Core ratios--		--Supplementary coverage ratios--		--Supplementary payback ratios--		
	FFO/debt (%)	Debt/EBITDA (x)	FFO/cash interest(x)	EBITDA/interest (x)	CFO/debt (%)	FOCF/debt (%)	DCF/debt (%)
Minimal	60+	Less than 1.5	More than 13	More than 15	More than 50	40+	25+
Modest	45-60	1.5-2	9-13	10-15	35-50	25-40	15-25
Intermediate	30-45	2-3	6-9	6-10	25-35	15-25	10-15
Significant	20-30	3-4	4-6	3-6	15-25	10-15	5-10
Aggressive	12-20	4-5	2-4	2-3	10-15	5-10	2-5
Highly leveraged	Less than 12	Greater than 5	Less than 2	Less than 2	Less than 10	Less than 5	Less than 2

- Financial Risk Profile is determined by a scorecard of 2 core ratios & 5 supplementary ratios. The most applicable supplementary ratios for Telecoms are Free Operating Cash Flow (FOCF) / debt and Discretionary Cash Flow (DCF)/ Debt.
- Based on current financial statements, most other operators are not yet profitable and maintain material debt levels. [REDACTED].

5 Anchor Credit Rating

[IMAGE REDACTED]

Legend: BT Group VMO2

[SLIDE REDACTED]

Applying the S&P Telecommunications sector criteria, BT Group scores at the upper end on all risk factors compared to other UK fibre network operators

7 Standalone Credit Profile & Issuer Credit Rating

- The standalone credit profile can sometimes be adjusted if there is material government or group influence impacting the credit profile of the operator. However, we consider that no notching is required for UK fibre network operators.
- We have presented our estimated and indicative Issuer Credit Ratings under the S&P criteria below:

	BT Group	VMO2
Anchor credit rating	BBB-	B+
Modifier notching	+1 notching	No notching
Standalone credit profile	**BBB**	**B+**
Government or group influence	No notching	No notching
Issuer credit rating	**BBB**	**B+**

[COLUMNS REDACTED]

We estimate the credit profile of a reasonably efficient entrant to be a B/ B2 credit rating

Based on peer benchmarking of the 6 largest national network operators in the UK fibre network market, the credit rating of a reasonably efficient entrant is indicated to sit between BBB to B- (Fitch and S&P) and Baa2 to Caa1 (Moody's)

We estimate that the average rating of UK fibre network operators is a B/ B2 credit rating and indicative of a reasonably efficient entrant credit rating

Company	Latest rating action	Fitch	Latest rating action	Moody's	Latest rating action	S&P
BT Group	Aug-24	BBB	Jul-24	Baa2	Aug-24	BBB
VMO2	Feb-25	B+	Mar-24	Ba3	Apr-25	B+
[ROWS REDACTED]						
Range		**BBB to B-**		**Baa2 to Caa1**		**BBB to B-**
Average		**B**		**B2**		**B**

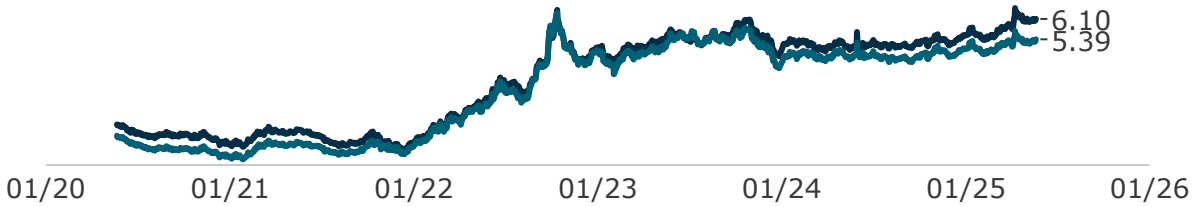
Cost of debt for a reasonably efficient entrant

Cost of debt comparison: investment-grade vs non-investment grade bonds index

Per Ofcom's methodology, we have considered the spot & 6-month avg. all-yield for an index of B, BB, BBB and A-rated GBP bonds (10 yr & 20 yr maturities) in estimating the nominal cost of debt

A-rated bonds index

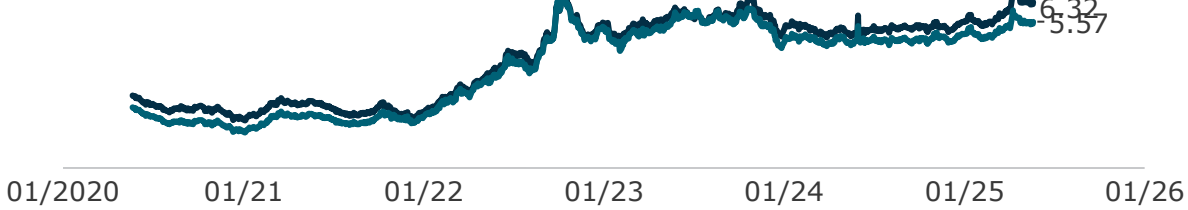
All-in yield %	10Y	20Y
Spot	5.39	6.10
6-month	5.12	5.68



BBB-rated bonds index

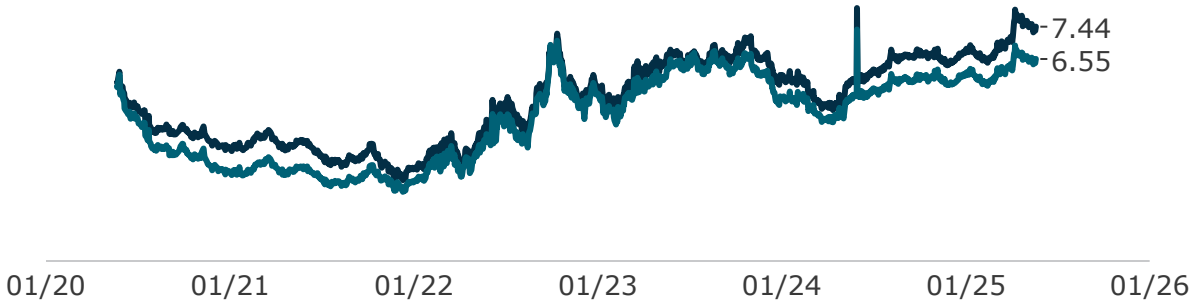
20y 10y

All-in yield %	10Y	20Y
Spot	5.57	6.32
6-month	5.22	5.79



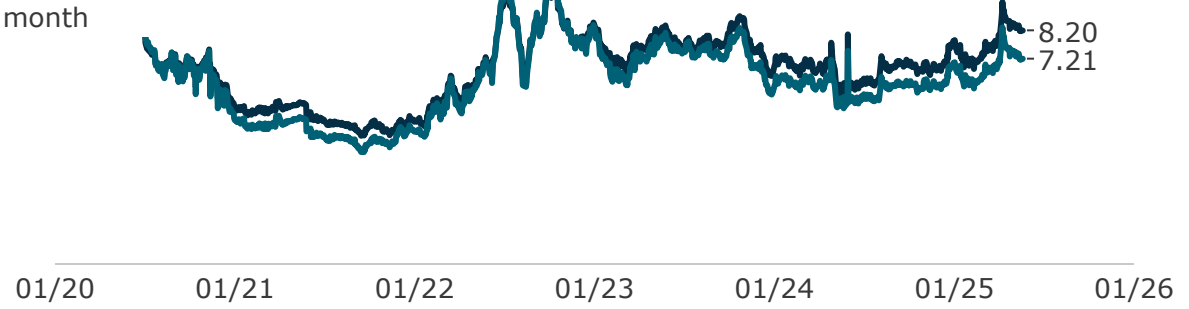
BB-rated bonds index

All-in yield %	10Y	20Y
Spot	6.55	7.44
6-month	6.19	6.91



B-rated bonds index

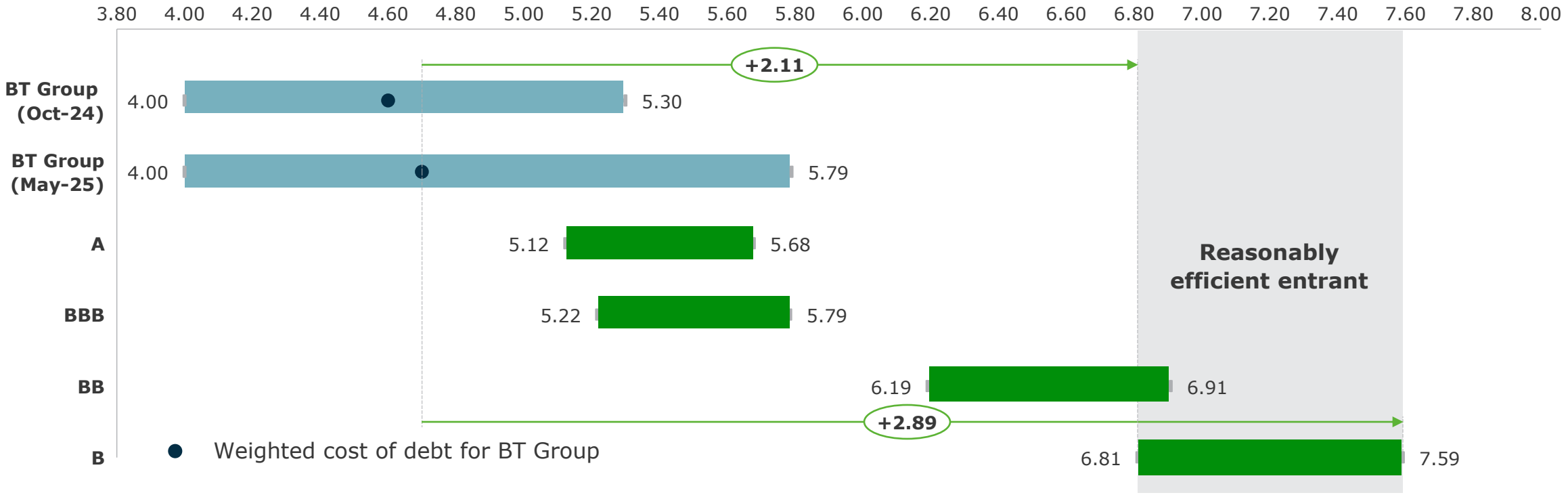
All-in yield %	10Y	20Y
Spot	7.21	8.20
6-month	6.81	7.59



Source: GBP – All Corporates – A/ BBB/ BB/ B – S&P Capital IQ Pro. Data to 20 May 2025

We assess that the cost of debt differential between Ofcom's assessment of BT Group and a reasonably efficient entrant (B rating) is 2.11% - 2.89%

In line with Ofcom's methodology, we have adopted a cost of debt range between 10-year B bond index & 20-year B bond index (6-month avg. all-in yield). We compare this against Ofcom's weighted cost of debt, which was assessed at 4.60% in October 2024.



The cost of new debt for BBB-rated bonds has increased since Oct-24 from 4.9%–5.3% to 5.2-5.8%.

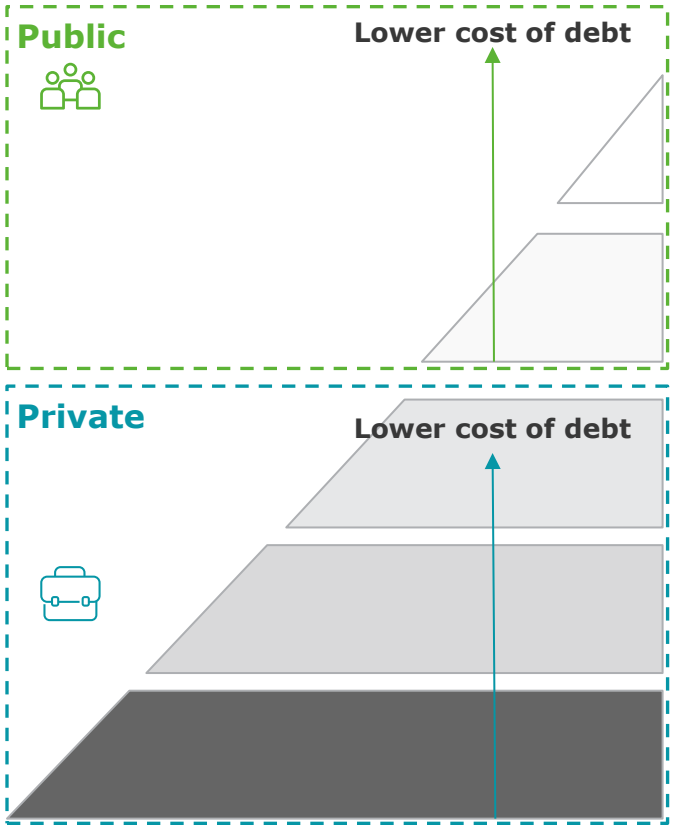
Applying Ofcom's allowance for cost of debt (4.0%) & weighting on new debt (15% - 60%) for BT Group, we assess that the updated weighted cost of debt for BT Group is 4.7% (+0.1% since Oct-24).[1]

We have compared the cost of debt differential for a reasonably efficient operator against this 4.7%.

[1] Refer Appendix for detailed calculation
Source: GBP – All Corporates – A/ BBB/ BB/ B – S&P Capital IQ Pro. Data to 20 May 2025
Source: Ofcom Telecoms Access Review, published 20 March 2025

BT Group can access lower cost of debt through public debt markets which non-investment grade ('non-IG') operators cannot access due to scale and perceived risk

Consideration should also be given to the private debt markets cost of debt. The prevalent debt instruments in the UK Telecom sector are secured loans and loan notes. UK Regulators Network cost of debt guidance notes *"Regulated companies use other forms of financing, not just bonds, depending on their financing strategy and risk appetite. Depending on their materiality within their sector, some weight has been given to these instruments in previous regulatory determinations."*



Medium & long-term debt instruments	IG	Non-IG	BT Group	Others
Corporate Bonds Publicly-traded, unsecured debt securities issued by a corporation offering lower risk and stable returns	✓	✗	✓	✗
High-Yield Bonds Publicly-traded, unsecured debt securities issued by lower-rated corporations, carrying higher yields due to increased risk	✗	✓	✗	✗
Secured loans Loans provided by banks or private lenders, backed by collateral	✓	✓	✗	✓
Loan Notes Secured or unsecured loans, often used in private placements	✓	✓	✗	✓
Unsecured loans or subordinated loans Loans from lenders not backed by any collateral or subordinated to other debt instruments	✓	✓	✗	✓

Actual cost of debt for rated UK broadband providers is significantly wider than the spread in cost of debt calculated from bond market data

	Broadband Market share [1]	Credit Rating/ Outlook (S&P)	Revenue (£m) [2]	EBITDA (£m) [2]	Primary debt Instruments	Base Rate (%)	Margin/ Coupon (%)	Cost of debt (%)
BT Group [5]	**32%**	**BBB Stable**	**20,835**	**8,100**	**Bonds Hybrid bonds**	**Nil (fixed coupon)**	**0.50%-9.63% 1.87%-8.38%**	**4.60% [3]**
Virgin Media O2 ("VMO2) [5]	20%	B+ Stable	10,913	387	Credit facilities Senior-secured notes Senior notes Vendor financing Related party loan	Not disclosed	6.98% 3.25% – 7.75% 3.75% – 5.00% 6.50% 7.10%	5.85% [4]
TalkTalk	8%	CCC+ Stable	1,472	226	Senior-secured loan notes	Nil (fixed coupon)	8.25% – 11.75%	8.25% – 11.75%
Vodafone	5%	BBB Stable	31,363	12,560	Bonds Hybrid bonds	Nil (fixed coupon)	0.00% – 7.88% 2.63% – 8.00%	0.00% – 7.88% 2.63% – 8.00%

- For comparison, we have reviewed the actual cost of debt for UK Telecom peers, which indicates a wide spread in cost of debt depending on the credit rating and debt instrument.
- Investment-grade operators (BT Group and Vodafone) can access public market corporate bonds. Actual cost of debt ranges from 0.00%-9.63% depending on the bond issuance date and currency.
- Non-investment grade operators (VMO2 and TalkTalk) only hold private market debt instruments (e.g. bank loans and loan notes). Actual cost of debt ranges from 5.85% (B+) to 11.75% (CCC), with our estimate of the entrants' cost of debt sitting towards the lower end of this range at 6.81%-7.59%.

[1] Premises passed, compared to 30.2m UK homes reported by OfCom in Connected Nations update: Spring 2025, published 8 May 2025.
Connected Nations update: Spring 2025 – Ofcom
[2] BT Group & Vodafone reported at Mar-24; VMO2 reported at Dec-24; TalkTallk reported at Feb-24
[3] Weighted average effective fixed interest rate, per BT Group Plc FY24 annual report
[4] Weighted average effective fixed interest rate, per VMO2 FY24 annual report
[5] Only BT Group & VMO2 own some or all of their UK fibre network infrastructure

Actual cost of debt for UK fibre network operators lent through the private debt markets indicates a potential premium to the entrants' cost of debt

	Fibre Market share [1]	Revenue (£m) [2]	EBITDA (£m) [2]	Debt Instruments	Base Rate (%)	Margin/ Coupon (%)	Cost of debt (%)	Premium to entrants' cost of debt (%)
BT Group/ Openreach	**56.3%**	**20,835**	**8,100**	**Bonds Hybrid bonds**	**Nil (fixed coupon)**	**0.50%-9.63% 1.87%-8.38%**	**4.60% [3]**	
Reasonably efficient entrant							**6.81%-7.59%**	**7.59%**
CityFibre	14.2%	134	5	Senior-secured bank loan	SONIA [4]	2.95% – 3.85%	7.16% – 8.06%	0.46%
Nexfibre	7.3%	2	(39)	Senior-secured bank loan	SONIA [4]	2.50%	6.71%	Nil
Netomnia	6.9%	9	(27)	Senior-secured bank loan Senior-secured loan notes	SONIA [4] Nil (fixed rate)	3.75% 5.00%	7.96% 5.00%	0.37% Nil
Hyperoptic	5.7%	93	(5)	Senior-secured bank loan	SONIA [4]	3.50% – 4.00%	7.71% – 8.21%	0.62%

- For comparison, we have reviewed the actual cost of debt for several unrated UK fibre network operators, which indicates that the majority of peers can only access the private debt markets (senior-secured bank loans and loan notes).
- The cost of debt sourced through the private debt markets is at the upper end or at a premium to our estimate of an entrants' cost of debt (which is calculated based on public market bond data).

[1] Premises passed, compared to 30.2m UK homes reported by OfCom in Connected Nations update: Spring 2025, published 8 May 2025.
Connected Nations update: Spring 2025 – Ofcom
[2] BT Group & Vodafone reported at Mar-24; VMO2 reported at Dec-24; TalkTallk reported at Feb-24
[3] Per BT Group Plc FY24 annual report
[4] SONIA: 4.21% (16/05/2025)
[5] Excludes Netomnia fixed rate loan notes, interest accruing

Our conclusions

- BT Group's BBB credit rating is driven by a variety of factors arising from its diversity of business divisions, scale and historical dominance as the country's sole telecoms provider / legacy benefits.
- Using BT Group's cost of debt and WACC as a basis then applying a 0.5%-1.0% increase in WACC does not reflect the entrants' cost of debt on fundamental credit risk / sector views or other benchmarking available.
- We adopted a criteria-focused approach in determining a reasonably efficient entrant's credit rating, by applying the Telecommunications Services Provider credit rating criteria of the three major credit rating agencies (Fitch, Moody's and S&P) against a cohort of fibre network operators.
- Our analysis indicates a reasonably efficient entrant is highly unlikely to achieve a BBB credit rating. Our estimate of a reasonably efficient entrant's credit rating is a B/B2/B (Fitch/ Moody's/ S&P, thereafter "B") credit rating.
- We estimate the entrants' cost of debt (B credit rating) is 6.81% - 7.59%. Comparing against the actual cost of debt of current UK broadband providers and fibre network operators, the entrants' cost of debt should sit at the higher end of this range.
- Ofcom assessed BT Group's cost of debt as 4.60% based on S&P Global bond index data dated 31 October 2024. Based on S&P Global bond index data dated 20 May 2025, we assess BT Group's nominal cost of debt as 4.70% and have used this as the basis for comparing the differential with entrants' cost of debt.
- Therefore, we estimate the differential in nominal cost of debt between a current assessment of BBB-rated BT Group (4.70%) and a reasonably efficient entrant is 2.11% - 2.89%.

Appendices

Long-term instruments credit rating scale by agency

Moody's	S&P	Fitch	
Aaa	AAA	AAA	Prime
Aa1	AA+	AA+	High grade
Aa2	AA	AA	
Aa3	AA-	AA-	
A1	A+	A+	Upper medium grade
A2	A	A	
A3	A-	A-	
Baa1	BBB+	BBB+	Lower medium grade
Baa2	BBB	BBB	
Baa3	BBB-	BBB-	
Ba1	BB+	BB+	Non-investment grade speculative
Ba2	BB	BB	
Ba3	BB-	BB-	
B1	B+	B+	Highly speculative
B2	B+	B+	
B3	B-	B-	
Caa1	CCC+	CCC+	Substantial risk
Caa2	CCC		Extremely speculative
Caa3	CCC-		Default Imminent with little prospect for recovery
Ca	CC	CC	
	C	C	
C	D	D	In default
/			
/			

INVESTMENT GRADE

NON-INVESTMENT GRADE/ JUNK

S&P Business Risk Assessment Credit Rating Criteria - Guidance

Competitive advantage: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Limited competition within a supportive, predictable regulatory framework that provides meaningful barriers to entry.	High level of competition within a regulatory regime that lacks stability and establishes few barriers to entry.
Successful market position, demonstrated by a leading or substantial (more than one-third) market share.	Lagging market penetration, or competition with far larger and better-capitalized operators, including global companies.
Favorable brand recognition and reputation; factors that support premium pricing; superior customer growth or retention; and lower marketing costs.	Unfavorable reputation that results in below-market pricing and inferior customer retention, leading to elevated marketing costs.
Participation in industry segments that have favorable longer-term growth prospects; or delivering services with demand characteristics more like those of utilities.	Reliance on commoditized or mature product offerings in structural decline.
Government policies that stimulate demand, such as durable subsidies for certain residential telecommunication services.	Government policies mandate the inclusion of influential domestic investors, which impairs operational flexibility and efficiency.
State of the art technology and, for wireless carriers, adequate spectrum for the predicted demand.	Limited ability to maintain adequate customer service levels and meet future demand due to lagging technology or lack of operational resources (for example, wireless spectrum or satellite orbital slots).
For digital infrastructure providers such as data centers, sites near to enterprise customers and carrier interconnection points; for tower companies, sites in capacity-constrained urban areas that have low overbuild risk.	Unfavorable site locations.
Predictable revenue and factors that reduce customer churn, such as contractual relationships or material switching costs for customers.	Revenue visibility is hampered by limited contractual relationships with customers.

S&P Business Risk Assessment Credit Rating Criteria - Guidance

Scale, scope, and diversity: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
Sufficient scale to optimize operating leverage or achieve economies of scale, given the significant fixed-cost component of network-intensive segments such as wireless and wireline, cable, long-haul transport, towers, and satellite-based services.	A small customer base across which to spread fixed costs, or an inability to achieve economies of scale in procurement negotiations.
A service area sufficiently large to enable most traffic (terrestrial or wireless) to be originated, transported, and terminated on-network, with minimal need to pay for third-party carriage.	Limited service area or network coverage, forcing the provider to pay third parties to originate, transport, and terminate a material proportion of traffic.
Operations in several attractive and geographically and economically diverse markets.	Market concentration, particularly in a less-attractive market or jurisdiction where regulation and public policy are unstable, leaves an operator exposed to volatility.
Diversification across wired and wireless broadband product lines, which enables telecommunications providers to offer the attractive, integrated service bundles that improve customer satisfaction and retention and minimize the risk of product substitution.	Limited product diversification exposes the company to changing customer preferences. Customer churn is likely to increase where a provider cannot offer a service package that bundles and integrates wireline and wireless services, especially in converged commercial markets.

S&P Business Risk Assessment Credit Rating Criteria - Guidance

Operating efficiency: typical characteristics

Strong or strong/adequate	Adequate/weak or weak
All	
High revenue per customer or asset unit that results in an EBITDA margin consistently above peers.	Low per unit revenue that results in an EBITDA margin consistently lower than peers.
Capex as a percentage of revenue is lower than peers and ROC is higher than peers.	Capex as a percentage of revenue is higher than peers and ROC is low.
Superior customer satisfaction metrics that result in low customer churn	High customer churn that increases marketing costs.
Management actively works to anticipate which business segments show declining potential and mitigate this by expanding into areas with higher potential growth.	Management has a record of failing to anticipate and effectively mitigate the impact of declining business segments.
Residential wireline voice providers	
A record of reducing operating expenses to reflect weak secular trends.	A record of failing to actively lower operating costs.
Wireless and fixed broadband providers	
Superior marketing performance leading to high ARPU and low SAC.	Subpar marketing or operational performance, resulting in inferior customer satisfaction, elevated churn with a low ARPU and high SAC.
Wireless operators	
Large service areas that can carry most traffic on-network and minimize payments to other carriers for off-network customer roaming.	Significant payments to other carriers to provide service when customers roam (particularly for regional operators that have a limited service area).
Fixed-satellite service	
High utilization of satellite transponder capacity.	Low utilization of satellite transponder capacity.
Wireless and broadcast tower operators	
Above-average number of tenants or customers per tower and high lease renewal rates.	Lower-than-average tenancy rates, which weakens margins. This risk is magnified for towers that are built on spec.
Data center operators	
A high level of interconnection within its customer base; above-average utilization of total space or total power output; above-average yield per square foot; a high lease renewal rate; and a power usage efficiency (PUE) ratio, indicating strong energy efficiency;	Low interconnectivity and a reliance on managed service; low utilization of total space or power output, which depresses the yield per square foot; shorter-than-average lease terms; subpar lease renewal rates; and a weak PUE ratio.

ARPU--Average revenue per user. SAC--Subscriber acquisition costs.

Ofcom methodology: Weighted cost of debt for BT Group per Oct-24 & May-25 data

Component	Ofcom (Oct-24)		BBB (May-25)	
	Low	High	Low	High
Cost of new debt	4.9%	5.3%	5.1%	5.8%
Cost of existing debt	4.0%	4.0%	4.0%	4.0%
Weighting on new debt	15.0%	60.0%	15.0%	60.0%
Weighted cost of debt	**4.1%**	**4.8%**	**4.2%**	**5.1%**
Midpoint	4.5%		4.6%	
Issuance costs	0.1%		0.1%	
COST OF DEBT	**4.6%**		**4.7%**	

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ANNEX 2
RBB REPORT

Telecoms Access Review consultation response

Adjusting the 2026 FCM to reflect altnet costs

RBB Economics, 12 June 2025

Contents

1 Introduction and executive summary

We have been instructed by CityFibre to assess the extent to which Ofcom's 2026 Fibre Cost Model (FCM) can be relied upon to determine the appropriate cost level for a reasonably efficient operator (REO), in the context of the 2026 Telecoms Access Review (TAR) consultation.[1,2] To support this assessment, we have also been provided with an expert report from AlixPartners, which provides updated analysis on the Weighted Average Cost of Capital (WACC).[3]

In the 2021 WFTMR statement, Ofcom introduced the 2021 FCM, a model designed to estimate the cost of fibre deployment under different scenarios, including different geographies, scales and network configurations.[4] In the 2026 TAR consultation, Ofcom has updated this model with the goal of estimating the costs that an REO would incur when building and operating a full-fibre network from scratch. Ofcom has said that it will use this estimate when considering whether the level of Openreach's prices raise *prima facie* concerns that they may undermine the opportunity for an REO to recover its costs.[5] It is therefore important that this model delivers a reliable estimate of an REO's costs of building and operating a fibre network.

The following section of this report identifies five important shortcomings in the 2026 FCM that result in a systematic understatement of altnet costs:

- Section 2.1 (*build capex*) shows that the 2026 FCM underestimates build capex for an REO by omitting relevant cost categories and assuming unrealistically low unit costs.
- Section 2.2 (*WACC*) explains that the 2026 FCM fails to incorporate the higher risk profile faced by altnets. While the 2026 FCM model applies a WACC of 8.6%, a current estimate from AlixPartners suggests a more appropriate WACC for altnets is in the range 9.2% to 10.5%, given the investment and scale risks altnets must bear.
- ***[REDACTED]***
- Section 2.4 (*network architecture cost*) discusses that the 2026 FCM is based on a simplified network design and fails to capture the additional costs of deploying a future-proofed, resilient architecture as used by CityFibre.
- Section 2.5 (*use of altnet scenarios*) explains that Ofcom should place no weight on the low-cost scenario of the FCM, because this scenario is unlikely to reflect realistic deployment conditions for any altnet that can be expected to drive wholesale competition at scale.

1 See Promoting competition and investment in fibre networks: Telecoms Access Review 2026-31 Consultation, available at https://www.ofcom.org.uk/phones-and-broadband/telecoms-infrastructure/consultation-promoting-competition-and-investment-in-fibre-networks-telecoms-access-review-2026-31 (accessed on 11 June 2025).
2 This paper builds on parts of our report to CityFibre entitled "*Telecoms Access Review 2026 – Adjusting the fibre cost model to reflect altnet costs*" dated 11 October 2024, but has been updated to reflect the 2026 TAR consultation, and adds some new arguments.
3 See AlixPartners report "*Assessing the WACC of an entrant FTTP network - Response to Ofcom's TAR26 Consultation - Report prepared for CityFibre*", dated 12 June 2025.
4 See paragraph A15.1 in Annex 15 of the 2026 TAR consultation.
5 See paragraph 1.91 in Vol. 4 of the 2026 TAR consultation.

2 Five reasons why the 2026 FCM does not properly reflect altnet costs

This section sets out five key reasons why the 2026 FCM needs further updating to properly reflect the costs an REO, such as CityFibre, would face in serving broadband customers. Specifically, based on information available to us, the 2026 FCM fails to include or underestimates several important cost drivers for altnets, including:

- build capex (section 2.1);
- WACC (section 2.2);
- ***[REDACTED]***
- network architecture cost (section 2.44).

Further, the low-cost scenario in the FCM is not relevant to a forward-looking assessment of competition (section 2.55).

Consideration of these factors suggests that the 2026 FCM significantly underestimates the costs that an REO would need to recover to compete effectively with Openreach. In both the 2021 WFTMR statement and the 2026 TAR consultation, Ofcom has primarily relied on Openreach's data for the FCMs, despite receiving relevant data from (at least) CityFibre.[6] Relevant cost and take-up data from major altnets is available and should be factored into the 2026 FCM to ensure a more accurate and representative benchmark.

2.1 The 2026 FCM underestimates CityFibre's build capex

This section shows that the build capex implied by the 2026 FCM for a large-scale entrant is significantly below CityFibre's reported build capex. While we recognise that different altnets can have different business models (for example, in terms of the types or locations of properties they seek to serve), given CityFibre's scale and relevance as outlined in section 2.5 below, it would be inappropriate for Ofcom to rely on a model that predicts costs materially below those actually incurred by the UK's largest altnet.

Build capex is a critical cost metric for altnets, used, for instance, by CityFibre's board to approve build plans. It is, therefore, a natural benchmark for cost modelling. Ofcom recognised this in the 2021 WFTMR statement, where it compared the build capex implied by the 2021 FCM with altnet estimates, including CityFibre and Hyperoptic.[7] However, no such comparison is presented in the 2026 TAR consultation.[8]

The 2026 FCM underestimates key build capex categories

We present below a like-for-like comparison of the build capex for 2024/25 implied by the 2026 FCM vs. CityFibre's estimated build capex for the same year.

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6 We understand that the base case fibre cost model relied entirely on data from Openreach, but that Ofcom conducted some *ad hoc* adjustments to test scenarios that could be more representative of market conditions faced by altnets, although no evidence is cited for the magnitude of these adjustments. Further details on these adjustments can be found in paragraphs A15.69 – A15.82 of Annex 15 in the 2026 TAR consultation.

7 For further details, see paragraphs A15.69 – A15.75 of Annex 15 to the 2021 WFTMR statement. Moreover, we explain that the altnet build capex estimate used in the 2021 WFTMR (comparator range £250 - £350 in Table A15.3) did not correspond with CityFibre's view of its build capex in section 3.4 of our previous report to CityFibre entitled "*Telecoms Access Review 2026 – Adjusting the fibre cost model to reflect altnet costs*" (11 October 2024).

8 The 2026 TAR consultation states in paragraph A15.58 that: "*Where we were able to obtain comparable information on Openreach's 2023/24 network element costs under formal information gathering powers, we updated on this basis*". CityFibre has confirmed to us that the information sought by Ofcom related only to capex costs that directly align with Openreach's cost categories, and hence is not a true picture of new entrant costs, for the reasons set out in this report.

- Ofcom sets out a build capex range of £392.58 to £442.10 for the base case and high-cost scenarios, respectively.[9]
- ***[REDACTED]***

The 2026 FCM omits relevant build capex categories

Beyond underestimating existing cost categories, the 2026 FCM also excludes several key cost categories. For example, it omits the cost of initial network design and the IT systems needed to support and operate a full fibre network.

Ofcom states in the 2026 TAR consultation that it has developed the New Entrant module on a "*scorched earth*" basis.[10] In other words, the model assumes that the hypothetical entrant starts from scratch with little or no reuse of existing infrastructure (e.g. aggregation points, exchanges, or cabinets). On that basis, it is inconsistent to omit core upfront costs such as design work, planning, and systems required for ongoing operations. Excluding these elements risks underestimating the true cost of deploying a competitive full fibre network, potentially leading to flawed regulatory conclusions about the cost-efficiency or viability of new entrants.

- These are essential elements of any large-scale network deployment and should be accounted for when estimating the build capex. ***[REDACTED]***

One reason for this disparity may be that Openreach benefits from significant purchasing advantages that are unavailable to altnets, regardless of their efficiency. Openreach's national scale, extensive build activity, and long-standing supplier relationships allow it to negotiate more favourable terms for labour, materials, and equipment. These advantages translate into lower per-unit costs and more secure access to resources. This asymmetric buyer power creates a structural cost disadvantage for altnets.[11]

2.2 The 2026 FCM does not accurately reflect risks borne by entrants

This section explains why the WACC used in the 2026 FCM underestimates the risks faced by new entrants and therefore underestimates their cost of capital. It highlights how the risk profile of new entrant altnets, particularly wholesale-only providers like CityFibre, differs materially from that of Openreach. We also present an updated WACC estimate from AlixPartners that better reflects the commercial realities for such firms.

In previous reviews, Ofcom has taken the view that:

> *"[T]he entrant's cost of capital for FTTP will be similar to Openreach. This is because we consider that an entrant is unlikely to face a different systematic risk profile to Openreach."*[12]

While Ofcom's position has evolved in the 2026 TAR consultation, its core view remains that new entrants are unlikely to face a different *systematic* risk profile to Openreach. However, Ofcom now acknowledges that entrants *may* face different risks from what it describes as the Other UK Telecoms ("OUKT") group (whose WACC is assumed to be equal to that of BT Group).[13] To account for the possibility of a higher cost of capital for entrants, Ofcom has applied a 1 percentage point uplift to the 2026/2027 OUKT WACC

9 See Table A15.4 of the 2026 TAR consultation. As discussed in section 2.5 below, we excluded the low-cost case from our analysis.
10 See paragraphs A15.12–A15.13 in Annex 15 of the 2026 TAR consultation.
11 Further detail on asymmetric buyer power is set out in section 3.4 in our previous report to CityFibre entitled "*Telecoms Access Review 2026 – Adjusting the fibre cost model to reflect altnet costs*" dated 11 October 2024.
12 2021 WFTMR, paragraph A15.83.
13 2026 TAR consultation, paragraph A15.80 and A20.8.

of 7.6%, resulting in a new entrant WACC of 8.6% from 2026 onwards for a high-cost entrant (and a smaller uplift to 8.1% in the base case).

As an initial point, it seems unlikely that an altnet such as CityFibre would have the same WACC (or risk profile) as Openreach for its FTTP services.[14] Openreach is part of a large, blue-chip group with a strong market position in various markets, diversification between wholesale and retail products, dependable income streams, and incumbency advantages.[15] It has a large installed base of wholesale and retail customers that it can migrate onto its FTTP network (for example, by increasing prices on legacy products relative to FTTP).[16]

In contrast, REOs entering or expanding in the FTTP wholesale access market must make capital-intensive investments largely in support of products with limited take-up to date, and with uncertain future demand. Wholesale-only altnets, in particular, have higher demand risk, as they do not have direct levers to apply in the retail market.[17] Investors will therefore require higher returns to compensate for this risk.[18]

It is therefore appropriate that Ofcom has, to some extent, acknowledged relevant differences when setting the WACC in the 2026 FCM. However, Ofcom's uplift of only 1 percentage point is not explained or linked to evidence. To investigate this, CityFibre commissioned AlixPartners in 2025 to estimate an appropriate WACC for a new entrant. According to AlixPartners, a conservative WACC level for an altnet calibrated for the TAR period 2026-2031 would be 9.2%,[19, 20] compared to Ofcom's proposed new entrant WACC of 8.6%. This 0.6 percentage point difference is material and reflects the real risks investors perceive when assessing altnet business models.

This higher WACC has a significant impact on the fibre cost estimates in the 2026 FCM. As an illustration, even on the most conservative view, using the bottom end of the range produced by AlixPartners, increasing the WACC from 8.6% to 9.2% raises the cost for a large-scale altnet covering eight million premises to £18.60 (in 2026/27 prices),[21] which is slightly above the proposed FTTP 80/20 charge control at £17.94 (in 2026/27). This illustrates the importance of using a realistic cost of capital when assessing altnet viability and setting price benchmarks.

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14 See paragraph 11 of "*Assessing the WACC of an entrant FTTP network – Response to Ofcom's TAR26 Consultation*", report prepared for CityFibre by AlixPartners (12 June 2025).

15 The cost of debt for Openreach is likely to be materially lower than for an altnet, which will be reflected in the WACC differential between Openreach and altnets.

16 For example, the rentals for FTTP 80/20, FTTC 80/20 and MPF increased all by 11% from 1/4/2022 to 1/4/2023. However, Equinox 2 offered from 1/4/2023 a 23% discount for FTTP 80/20 compared to the standard price list. See Openreach's price list at https://www.openreach.co.uk/cpportal/products/pricing and Table A6.1 in the Equinox 2 consultation. On Openreach's ability to benefit from BT Retail, while Openreach is functionally separate from BT Retail, it nonetheless has the benefits of an established anchor tenant which has the largest retail market share of any ISP – BT Retail is part of BT Group (as is Openreach) and in practice BT Retail sources only from Openreach.

17 This is not easily solved by entering the retail market. A new FTTP network might well find it difficult to enter the retail market as it would not have an established customer base or a strong brand.

18 CityFibre has previously raised this issue, in the course of the WFTMR: "*The WACC is critical to investment incentives. The cost of capital changes over time for market entrants, reducing as they gain a track record in delivering networks and a reasonable return on the investments made. Ofcom needs to recognize that the WACC for BT is unlikely to be appropriate for a REO*". See p. 35 of CityFibre response to Ofcom's consultation at https://www.ofcom.org.uk/siteassets/resources/documents/consultations/category-2-6-weeks/152543-fttp-modelling/responses/cityfibre/?v=197691 (accessed on 11 June 2025).

19 AlixPartners estimates a nominal pre-tax WACC range for a new entrant FTTP network of 9.2%-10.5%. To arrive at a point estimate, the AlixPartners' report 'aims up' to the top of the estimated range (i.e., 10.5%) rather than relying on the midpoint of the range. AlixPartners explains that aiming up is important in the case of incentivising new investment in FTTP networks which is risky because of, for example, uncertainty faced by new entrants in take-up and market share relative to an established incumbent. For further details, see paragraphs 15(f) and 17 in "*Assessing the WACC of an entrant FTTP network – Response to Ofcom's TAR26 Consultation*", report prepared for CityFibre by AlixPartners, 12 June 2025.

20 We understand that this WACC estimate is conservative. As explained in AlixPartners' "*Assessing the WACC of an entrant FTTP network – Response to Ofcom's TAR26 Consultation*" report dated 12 June 2025, the 9.2% WACC estimate for an entrant FTTP network relies on various conservative assumptions.

21 With a WACC of 8.6%, Ofcom's fibre cost estimate for a scale competitor with 8 million premises is £17.03 (in 2024/25 prices) (2026 TAR consultation, Table A15.4). However, for confidentiality purposes, the version of the 2026 FCM published by Ofcom uses randomised data, and as such, we cannot replicate the £17.03 estimate exactly. Rather, when using Ofcom's high-cost assumptions, we calculate a fibre cost estimate of £16.75. Adopting a WACC of 9.2% (instead of 8.6%) in Ofcom's published 2026 FCM increases the estimate from £16.75 to £17.44 (in 2024/25 prices). This is a 4.1% increase. Applying a 4.1% increase to Ofcom's £17.03 figure results in an updated fibre cost estimate of £17.73 (a £0.7 increase in 2024/25 prices), which is equivalent to £18.60 in 2026/27 prices. In the 2026 FCM, Ofcom assumed for the medium scenario a CPI of 2.6% for 2025/26 and 2.2% for 2026/27. See "*NON CONFIDENTIAL control module.xlsm*", tab "*Parameters*" (annual CPI levels).

2.3 *[REDACTED]*

[REDACTED]

2.4 The 2026 FCM underestimates network architecture cost for altnets

This section explains why the 2026 FCM should be revised to reflect the higher network architecture costs incurred by altnets that invest in modern, resilient, and future-proofed networks. Unlike Openreach's traditional "tree and branch" design,[22] altnets such as CityFibre often deploy more advanced network architectures that entail higher upfront costs but deliver greater performance and reliability. In particular, ring-based architectures are commonly used in the backhaul and core layers to enhance resilience and reduce downtime in the event of faults.[23] CityFibre, for example, has adopted this design as part of its core network to ensure robustness and scalability.

> *A ring architecture is often used in backhaul and core networks to provide additional resilience. This is the preferred design for the core network for operators such as CityFibre.*[24]

However, the cost assumptions embedded in the 2026 FCM appear to reflect a more basic network architecture, such as a less extensive fibre ring design and a reduced number of cabinets or FExs, than that deployed by CityFibre. These differences should not be misinterpreted as inefficiencies. Instead, they reflect deliberate strategic choices to deliver a superior network product capable of meeting the demands of retail ISPs and end users, both now and in the future.

CityFibre's decision to invest in a denser network and more extensive FEx and FAC infrastructure enables:

- lower latency and greater capacity;
- improved resilience and uptime; and
- enhanced scalability to accommodate future demand growth.

These are important attributes for attracting ISPs,[25] especially in a market where Openreach has a dominant position. A more capable wholesale network strengthens the retail proposition, provides a better quality for consumers, and sharpens competition, partly by pushing competitors to compete on quality and innovation. However, it comes at a cost. These additional costs, particularly for FEx/FAC deployment, are not adequately captured in the 2026 FCM. As a result, the model risks underestimating the true cost base for a large-scale altnet.

[REDACTED]. A more resilient and scalable architecture can drive higher adoption by ISPs and consumers, but only if its costs are appropriately reflected in the model. If these costs are excluded, it may also be appropriate to reassess the take-up assumptions applied to altnets in the model.

Ultimately, continuing to anchor the 2026 FCM in assumptions based on Openreach's network architecture and market position will understate the cost base of new entrants and harm incentives to invest in innovation and more resilient technology. This could have damaging implications for the sustainability of infrastructure-based competition in the long run.

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22 See paragraph A6.62 in Annex 6 of the 2026 TAR consultation.
23 See, for example, https://synchronet.net/ring-topology/#Enhanced_Fault_Tolerance (accessed on 11 June 2025).
24 See paragraph A6.62 in Annex 6 of the 2026 TAR consultation. See https://cityfibre.com/news/modern-full-fibre-exchanges-offer-service-providers-the-edge (accessed on 11 June 2025).
25 [REDACTED]

2.5 Ofcom should place no weight on the low-cost scenario of the 2026 FCM

This section explains that the 2026 FCM should focus on scenarios that are relevant to its goals for an REO. While we recognise that altnets can operate at different scales and different models and therefore there is no one size fits all model, the costs of an altnet at the scale of the low-cost scenario are not informative for making decisions that will affect wholesale competition.

The 2026 FCM produces a range of results based on outputs for three scenarios for altnets: low-, medium- and high-cost based on networks covering two, five and eight million premises, respectively. Given Ofcom's goal to promote infrastructure-based competition between Openreach and altnets, Ofcom should focus on the medium- and high-cost scenarios. This is because major altnets who can be expected to drive competition have already exceeded the two million premises coverage threshold assumed in the low-cost case and have a business plan that relies on significant further expansion. For example:

- CityFibre currently passes 4.3 million premises and is targeting coverage of 8 million;[26]
- Netomnia has expanded to cover 2.4 million premises, with a target to reach 5 million by 2027;[27] and
- Nexfibre is a more recent entrant currently passing 2.2 million premises, with a mission to create a national-scale challenger to Openreach, in collaboration with its partner Virgin Media O2.[28]

In this report, we focus primarily on the high-cost scenario, which assumes coverage of eight million premises and therefore most closely reflects CityFibre's target network. We use CityFibre as a reference point both because relevant data is available to us and because its scale and market experience make it a reasonable proxy for an REO deploying a nationwide fibre network in competition with Openreach. In particular:

- CityFibre is the largest altnet in the UK, aiming to reach eight million premises with full fibre. This positions it as the most credible large-scale challenger to Openreach at the national level,[29] and a key driver of wholesale competition in fibre networks.
- CityFibre was founded in 2011, around the same time Openreach began providing FTTP wholesale access (July 2010), giving it substantial accumulated experience in this market, which enhances the reliability of its cost and performance data.[30]

More fundamentally, the low-cost scenario is unlikely to reflect realistic deployment conditions for any altnet that can be expected to drive wholesale competition. It is based on cost structures and network characteristics that may only be achievable under unusually favourable circumstances, such as ultra-dense urban areas with minimal civil engineering challenges. As such, it does not offer a credible benchmark for assessing the economic viability of large-scale fibre rollout by altnets under typical commercial and geographic conditions.

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26 See https://cityfibre.com/news/cityfibre-delivers-first-full-year-of-profitability-with-sky-to-launch-in-2025 (accessed on 11 June 2025).
27 See https://www.netomnia.com/news/netomnia-raise-160m-in-junior-debt/ (accessed on 11 June 2025).
28 See https://www.nexfibre.co.uk/nexfibre-network-passes-2-million-premises/https://www.nexfibre.co.uk/wp-content/uploads/2025/05/nexfibre-Q125-coverageupdate-web.pdf (accessed on 11 June 2025).
29 See "*Full speed ahead: CityFibre's build now underway in all Project Gigabit areas*" (20 January 2025), available at https://cityfibre.com/news/full-speed-ahead-cityfibres-build-now-underway-in-all-project-gigabit-areas (accessed on 11 June 2025).
30 Sources: https://cityfibre.com/about-us for CityFibre's foundation date; and Openreach's pricing list history for the 40/10 FTTP product available on Openreach's web-site (direct link here). Both links were accessed on 11 June 2025.

3 Conclusion

This report has assessed whether the 2026 FCM offers a reliable benchmark for estimating the costs of an REO in the context of Ofcom's objectives for promoting long-term, infrastructure-based competition in the wholesale local access market. Our analysis shows that the 2026 FCM, particularly its "low-cost" scenario, significantly understates the actual costs faced by altnets such as CityFibre. We identify five key reasons why the current version of the model is *not* a sound basis for policy or pricing.

Each of these issues, on its own, results in a material upward revision to the fibre cost estimate. Taken together, they show that the 2026 FCM significantly understates the true costs of competitive full fibre rollout. The WACC adjustment alone would increase the modelled fibre cost by nearly £4 per fibre line per month, sufficient to suggest that altnets would be unable to recover their costs at any price below the proposed cap on the FTTP 80/20 rental. Therefore, Ofcom should seek to revise the model to better capture these factors before finalising its view on the appropriate range for REO costs, in order to promote wholesale competition.

NON-CONFIDENTIAL VERSION

ANNEX 3
EXAMPLES OF CITYFIBRE BUILD IN WLA AREA 3

NON-CONFIDENTIAL VERSION

Introduction

1. CityFibre has mapped the postcode sectors proposed for WLA geographic markets onto its current and planned network. ***[REDACTED]***. In CityFibre's view, Ofcom has therefore significantly underestimated the potential for competition in WLA Area 3.

2. CityFibre raised these concerns in a meeting with Ofcom on 10 April 2025. This Annex sets out the assessment of the impact of Ofcom's proposed WLA geographic markets which was presented to Ofcom at that meeting.

3. Whilst it is not possible to determine accurately the precise reasons for why CityFibre build is included in WLA Area 3, CityFibre considers that this is likely to be the result of (i) the use of Connected Nations data to determine planned build deployment and (ii) the threshold for presence in a postcode sector.

Planned build deployment

4. In the TAR Ofcom uses data supplied by CityFibre in response to a section 135 request for the purposes of Ofcom's Connected Nations report ("the CN s135"). That data was requested information on CityFibre build as at 1 July 2024.

5. CityFibre is concerned that the way in which CN s135 has been used in the TAR has materially understated the extent of CityFibre's likely footprint.

6. CityFibre sets out below a few examples of the issues with how Ofcom has defined the boundary between WLA Area 2 and WLA Area 3:

   - ***[REDACTED]***
   - ***[REDACTED]***

[REDACTED]

7. ***[REDACTED]***

Figure 1: ***[REDACTED]***

8. ***[REDACTED]***:

   - ***[REDACTED]***
   - ***[REDACTED]***.

[REDACTED]

9. ***[REDACTED]***.

Figure 2: ***[REDACTED]***

10. ***[REDACTED]***.

[REDACTED]

11. ***[REDACTED]***

12. ***[REDACTED]***:

- ***[REDACTED]***;
- ***[REDACTED]***.

Figure 3: ***[REDACTED]***

Figure 4: ***[REDACTED]***

NON-CONFIDENTIAL VERSION

ANNEX 4
EXAMPLES OF CITYFIBRE BUILD IN LLA AREA 3

Introduction

1. CityFibre has mapped the postcode sectors proposed for LLA geographic markets onto its current and planned network. [REDACTED]. In CityFibre's view, Ofcom has therefore significantly underestimated the potential for competition in LLA Area 3.

2. CityFibre raised these concerns in a meeting with Ofcom on 1 May 2025. This Annex sets out the assessment of the impact of Ofcom's proposed LLA geographic markets which was presented to Ofcom at that meeting.

3. Whilst it is not possible to determine accurately the precise reasons for why CityFibre build is included in LLA Area 3, CityFibre considers that this is likely to be the result of the fact that:

   - Ofcom has included leased line equivalent services delivered over symmetric PON within its product market definition yet has not taken into account the actual and planned deployment of CityFibre's XGS-PON network in its geographic market definition;
   - In defining "presence", Ofcom assumes a dig distance of 50m from the CityFibre network. ***[REDACTED]***;
   - The extension of 5G networks provides a significant opportunity for CityFibre and others to extend their footprint for both LLA and WLA services. ***[REDACTED]***.
   - The failure to include altnets other than CityFibre will result in an underestimation of the CityFibre network in 2031. ***[REDACTED]***.

Failure to take account of equivalent services

4. In the WFTMR, Ofcom defined leased line services as "dedicated circuits between end-user sites and the first point of aggregation, or in some cases, a dedicated connection between end-user sites."[140] At the time, leased lines were provided over dedicated fibre pairs which enabled users of leased line services to obtain uncontended capacity on a dedicated network.

5. With the advent of full fibre networks, network operators have innovated to be able to deliver uncontended capacity over a shared network, without the need for a dedicated fibre pair, enabling leased line services to be offered across a broader footprint, at lower cost. The TAR recognises this development by including leased line equivalent services within the relevant product market:

[140] WFTMR Volume 2, paragraph 6.73

> *"providers are able to offer uncontended capacity services on symmetric PON (such as XGS-PON) by 'ringfencing' part of the shared capacity for a particular end-user, to whom the capacity appears uncontended."*[141]

6. CityFibre's ability to exert a material and sustainable constraint on Openreach, both through traditional "leased lines" and through leased line equivalent services is similarly recognised in the TAR.[142] When determining the boundaries of the geographic area in which CityFibre can exert such a constraint, the relevant network footprint must include the full footprint over which CityFibre can provide leased line services.

7. However, we understand that the analysis in TAR is based only on the network reach of the CityFibre Metro network, its traditional leased line access network. CityFibre understands that this results from the use of data supplied under the formal information request dated 9 May 2024 ("the Leased Lines s135"). That document requested a range of information relating to "leased lines" which were defined in the Leased Lines s135 as "*a symmetric service of dedicated (i.e. uncontended) capacity between two fixed locations*."

8. CityFibre provided a map of the duct network used to provide "leased lines" in accordance with the definition in the Leased Lines s135. However, CityFibre explained at the time that in future it planned to use the shared full fibre network to deliver business connectivity products.[143] Those products did not meet the definition of "leased lines" in the Leased Lines s135 and the network map provided covered only the CityFibre Metro Network map.

9. The TAR uses the CityFibre Metro Network map to determine CityFibre presence. However, in light of the provision of Ethernet products over the full fibre network, the network map of the CityFibre full fibre network will provide a more accurate picture of the network over which CityFibre provides leased line services.

10. ***[REDACTED]***.

Figure 1 ***[REDACTED]***

11. ***[REDACTED]***.

[REDACTED]

12. ***[REDACTED]***.

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[141] TAR Volume 2, paragraph 5.21.
[142] TAR Volume 2, paragraphs 5.89-5.91.
[143] See Section C response to Leased Lines s135.

Figure 2: ***[REDACTED]***

13. ***[REDACTED]***.

Figure 3: ***[REDACTED]***

14. ***[REDACTED]***.

Figure 4: ***[REDACTED]***

15. ***[REDACTED]***.

Figure 5: ***[REDACTED]***

[REDACTED]

16. ***[REDACTED]***:

- ***[REDACTED]***.
- ***[REDACTED]***.
- ***[REDACTED]***.

Figure 6: ***[REDACTED]***

Figure 7: ***[REDACTED]***

Figure 8: ***[REDACTED]***

17. ***[REDACTED]***.

Figure 9: ***[REDACTED]***

Footprint uncertainties

18. Even if Ofcom were to use the CityFibre full fibre network and increase the dig distance, there will continue to be uncertainties over the extent of the footprint over which CityFibre will compete in leased lines. As highlighted in paragraph 3.10, there remains a degree of uncertainty over likely expansion of the network since further network expansion is dependent upon the availability of financing.

19. As set out in paragraphs 2.56(b)-2.58 and 3.11-3.13, a particular issue also arises in relation to BDUK areas due to the uncertainty surrounding the precise

scope of the white premises to be built and the incidental premises which may be served. This uncertainty is more pronounced when considering the approach to geographic market definition set out in the TAR for LLA since, even where premises are more certain, detailed network design may not have been undertaken.

20. ***[REDACTED]***.

Figure 10: ***[REDACTED]***

21. ***[REDACTED]***.

Figure 11: ***[REDACTED]***

22. ***[REDACTED]***. If the current approach is maintained, there is a significant risk that those demand sites will miss out on the benefits of competition which might otherwise have been served by CityFibre infrastructure.

NON-CONFIDENTIAL VERSION

ANNEX 5
CITYFIBRE RESPONSE TO CONSULTATION QUESTIONS

NON-CONFIDENTIAL VERSION

CITYFIBRE RESPONSE TO CONSULTATION QUESTIONS

VOLUME 2: MARKET DEFINITION AND SMP ASSESSMENT

Question 2.1: Do you agree with our provisional conclusion on physical infrastructure product market definition? Please set out your reasons and supporting evidence for your response.

CityFibre agrees with Ofcom's provisional conclusions in paragraphs 3.30 and 3.31 of Volume 2 of the TAR.

CityFibre does not regard either non-telecoms physical infrastructure (such as energy pylons, gas pipes, water pipes etc.) or other telecoms infrastructure such as wireless as suitable substitutes to physical infrastructure which is deployed for the purpose of supporting a telecoms network or hosting fixed elements of telecoms networks. There are significant practical difficulties (technical complexities and high costs) in making use of non-telecoms or wireless infrastructure to support or host fixed elements of a telecoms network and use of such infrastructure is therefore avoided.

Question 2.2: Do you agree with our provisional conclusion on physical infrastructure geographic market definition? Please set out your reasons and supporting evidence for your response.

CityFibre agrees with Ofcom's provisional conclusions in paragraph 3.52 of Volume 2 of the TAR.

Ofcom rightly identifies the importance of ubiquity in seeking access to duct and pole infrastructure. A ubiquitous physical access network offers flexibility and allows for lower cost deployment of fibre networks. The use of multiple providers of physical access creates significant additional cost and complexity and the ubiquitous network is always to be preferred.

No network can currently come close to matching the ubiquity offered by access to Openreach's ducts and poles. Ofcom rightly identifies that VMO2's network would be difficult to access, even if VMO2 were prepared to grant access. The limited network build in the period by other operators since the WFTMR has not resulted in any significant scale competitor to Openreach's physical infrastructure, with significant portions of alternative network build relying primarily upon access to Openreach's physical infrastructure. CityFibre therefore agrees with Ofcom's proposal to define a single national market.

Question 2.3: Do you agree with our provisional conclusion on the application of the three criteria test to the physical infrastructure market? Please set out your reasons and supporting evidence for your response.

CityFibre agrees with Ofcom's provisional conclusion at paragraph 3.64 of Volume 2 of the TAR.

There are significant barriers to entry and Ofcom rightly recognises the high levels of investment and the considerable time which is required to install new and ubiquitous physical infrastructure. Any network deployments during the period of the review will be of only limited scale such that they will not impose a constraint on BT. *Ex ante* regulation is therefore appropriate since competition law remedies alone would not be sufficient to promote downstream competition.

Question 2.4: Do you agree with our provisional finding on SMP in the physical infrastructure market? Please set out your reasons and supporting evidence for your response.

CityFibre agrees with Ofcom's provisional conclusion at paragraph 3.68 of Volume 2 of the TAR that BT has SMP in the proposed national market for the supply of wholesale access to telecoms physical infrastructure for deploying a telecoms network.

There is currently no alternative infrastructure which can come close to matching the ubiquity offered by the BT network and therefore no infrastructure which has the potential to exert a material constraint on BT. Given the very high barriers to entry associated with rolling out physical infrastructure, it is improbable that this position would change over the period of this review.

Question 2.5: Do you agree with our provisional conclusions on product market definition for WLA? Please set out your reasons and supporting evidence for your response.

CityFibre agrees with Ofcom's provisional conclusion at paragraph 4.3 of Volume 2 of the TAR.

The product market encompasses broadband products at all speeds, including those targeted at business customers. All suppliers of broadband products can offer a range of bandwidths to both residential and business customers and there is therefore a high degree of supply side substitutability.

Wireless technologies including Fixed Wireless Access ("FWA") used to provide broadband services are not currently a substitute for broadband services delivered over copper or fibre. Take-up of FWA services is low and is not expected to grow significantly during the period of the market review. FWA technologies are typically used only by a small number of customers, primarily where they only have access to very low speed fixed products. Take-up of fixed broadband products remains high and this is unlikely to change during the period 2026-2031.

Mobile broadband, being optimised for mobile usage, is also not currently, and is unlikely to become, a sufficiently close substitute for fixed broadband

services. Satellite broadband is only likely to be an attractive product in areas where other forms of broadband provision is unfeasible and should be excluded from the WLA product market definition.

CityFibre also considers it appropriate to exclude services in the LLA market. On the demand side, residential and consumers and smaller businesses are unlikely to see leased lines as a substitute for WLA-based services given the significant price differences between the products and the features offered by LLA products which are not generally relevant to them. On the supply side, whilst multi service networks are increasingly able to supply LLA products over the same networks as broadband products, the same is not true for access networks which only supply leased lines and continue to form an important part of the market.

Given the limited substitutability between broadband products and LLA products, both from a demand side and supply side perspective, CityFibre agrees that it is not appropriate to include LLA products in the product market for WLA.

Question 2.6: Do you agree with our provisional conclusions on geographic market definition for the wholesale local access market? Please set out your reasons and supporting evidence for your response.

As set out in Section 3, CityFibre has serious concerns that Ofcom has drawn the boundary between WLA Area 2 and WLA Area 3 in a way that presents serious risks to the emergence of competition in WLA Area 3.

CityFibre considers that Ofcom should revisit its approach to the definition of WLA Area 3 to more accurately reflect the potential for competition in those postcode sectors.

Question 2.7: Do you agree with our provisional conclusion on the application of the three criteria test to the wholesale local access market? Please set out your reasons and supporting evidence for your response.

CityFibre agrees with Ofcom's provisional conclusions at paragraph 4.153 and 4.154 of Volume 2 of the TAR.

Even where new networks have been deployed, barriers to entry remain high given the challenges for rival networks in achieving take-up in the face of Openreach's significant advantages and incentives to engage in strategic behaviour. Further investment will be required for CityFibre and others to become material and sustainable competitors to Openreach and it is unlikely that WLA markets will become effectively competitive during the period of the review.

Ofcom's assessment of the insufficiency of competition law in WLA markets in paragraphs 4.148 to 4.152 and Section 7 of Volume 2 of the TAR accurately

reflects the competition challenges. In the absence of regulation, Openreach has the incentive to engage in both exploitative and exclusionary behaviour. *Ex ante* regulation is therefore necessary to prevent Openreach from engaging in such behaviour and to ensure that the conditions for the emergence of material and sustainable competition are maintained.

Question 2.8: Do you agree with our provisional findings on SMP in the wholesale local access market? Please set out your reasons and supporting evidence for your response.

CityFibre agrees with Ofcom's provisional conclusions at paragraphs 4.223 and 4.242 of Volume 2 of the TAR that BT has SMP in both Area 2 and Area 3.

Barriers to entry in both markets remain high and BT continues to enjoy very high market shares in both Area 2 (61-80%) and Area 3 (91-100%). Whilst there has been some entry in Area 2, competition is yet to become established and sustainable. Entrants (and VMO2) will aspire to grow their shares in the coming years, but it is unlikely that there will be any change to BT's dominant position during the period of this review. Ofcom is therefore correct to conclude that BT has SMP in each of the WLA markets.

Question 2.9: Do you agree with our provisional conclusions on product market definition for leased lines? Please set out your reasons and supporting evidence.

CityFibre agrees with Ofcom's provisional conclusions at paragraphs 5.46 and 5.47 of Volume 2 of the TAR.

CityFibre welcomes the inclusion of leased line services delivered over symmetric PON in Ofcom's product market definition. The services offered by CityFibre over its XGS PON network provide dedicated capacity and, from a demand side perspective, are largely indistinguishable from services delivered over a traditional dedicated leased lines infrastructure.

CityFibre also agrees that Dark Fibre forms part of the LLA product market. CityFibre supplies both dark fibre and Ethernet products and regards these as close supply side substitutes.

Further, all leased line bandwidths should be included in the relevant product market due to both demand side and supply side substitutability. Traditional suppliers of leased line services can supply all bandwidths for limited additional cost. Whilst providers delivering Ethernet services over symmetric PON may currently be unable to provide Ethernet services at higher bandwidths, higher bandwidth dark fibre is likely to be available. Further innovation in the delivery of Ethernet services is likely, increasing the speeds which may be offered over symmetric PON in the future.

CityFibre therefore agrees with the definition of the relevant product market for leased line services.

Question 2.10: Do you agree with our provisional conclusions on geographic market definition for the leased line access market? Please set out your reasons and supporting evidence for your response.

As set out in Section 3, CityFibre has serious concerns that Ofcom has drawn the boundary between LLA Area 2 and LLA Area 3 in a way that risks preventing competition from emerging in LLA Area 3.

Question 2.11: Do you agree with our provisional conclusion on the application of the three criteria test to the leased line access market? Please set out your reasons and supporting evidence for your response.

CityFibre agrees with Ofcom's provisional conclusion at paragraph 5.164 of Volume 2 of the TAR.

Barriers to entry in the provision of leased line services remain significant and will take time and substantial investment to overcome. BT continues to hold a position of SMP across all leased line markets (HNR, LLA Area 2 and LLA Area 3) reviewed by Ofcom in the TAR. Constraints on BT are limited and CityFibre agrees with Ofcom that entry and expansion is unlikely to occur in the absence of regulation. For the same reasons as set out in response to Question 2.7 above, competition is unlikely to prove sufficient to counter BT's SMP.

Question 2.12: Do you agree with our provisional findings on SMP in the leased line access market? Please set out your reasons and supporting evidence for your response.

CityFibre agrees with Ofcom's provisional conclusions that BT has SMP in all LLA markets reviewed by Ofcom in the TAR.

Barriers to entry in all LLA markets remain high and BT continues to enjoy very high market shares in all markets (at least 61-70%). Entry has yet to deliver long-term, sustainable competition and it is unlikely that there will be any change to BT's dominant position during the period of this review. Ofcom is therefore correct to conclude that BT has SMP in each of the LLA markets.

Question 2.13: Do you agree with our provisional conclusions on product market definition for the inter-exchange connectivity market? Please set out your reasons and supporting evidence.

Question 2.14: Do you agree with our provisional conclusions on geographic market definition for the inter-exchange connectivity market? Please set out your reasons and supporting evidence.

Question 2.15: Do you agree with our provisional conclusion on the application of the three criteria test to the wholesale inter-exchange connectivity market? Please set out your reasons and supporting evidence for your response.

Question 2.16: Do you agree with our provisional conclusions that BT has SMP at BT Only exchanges and BT+1 exchanges, but not at BT+2 exchanges for the wholesale IEC market? Please set out your reasons and supporting evidence.

CityFibre supports Ofcom's overall approach to market definition, identification of SMP and application of the three criteria test in the IEC market. CityFibre specifically supports Ofcom's conclusion that BT has SMP at BT Only and BT+1 exchanges for the wholesale IEC market.

VOLUME 3: NON-PRICING REMEDIES

Question 3.1: Do you agree with our proposed approach to supporting copper retirement? Please set out your reasons and supporting evidence for your response.

CityFibre has serious concerns with the approach to copper retirement, as set out in paragraphs 2.20 to 2.58 above.

Question 3.2: What are your views in relation to our initial thinking on how we might identify excluded premises? Please set out your reasons and supporting evidence for your response.

See paragraphs 2.41 to 2.58 above.

Question 3.3: Do you agree with our proposed approach to exchange exit? Please set out your reasons and supporting evidence for your response.

CityFibre recognises that, over time, the transition by BT from copper technology to FTTx will allow it to consolidate its assets and reduce costs and that this may be desirable if managed correctly. However, as rightly recognised by Ofcom, exchange exit also presents risks to competition and consumers according to its implementation.

CityFibre's particular concern with exchange exit relates to its impact on alternative network operators that have built their own fixed access network in a BT exchange area and use space and/or power in the exchange building for their access aggregation node, and/or also use connectivity from BT exchanges to backhaul access traffic to their own core and/or backhaul network.[144] ***[REDACTED]***.

CityFibre supports Ofcom's proposals to maintain the obligation to provide DFX and active IEC products (and their associated regulatory protections) at an exchange until all telecoms providers have exited under commercial terms

144 TAR Volume 3, paragraph 3.18

agreed with Openreach. This approach will guard against the risk of exclusionary conduct by Openreach through the removal of the provision of DFX and IEC products to its downstream competitors.

Question 3.4: Do you agree with our proposed general remedies? Please set out your reasons and supporting evidence for your response.

CityFibre supports the proposed general remedies for WLA, LLA and IEC markets. Those remedies are necessary to ensure that both competition and consumers are protected.

CityFibre considers, however, that the period for notification for a change relating to any new or existing product where the price or other contractual conditions are conditional on the volume and/or range of services purchased should be extended to 150 days for the reasons set out in Section 2.

Question 3.5: Do you agree with our proposed specific remedies in the PIA market? Please set out your reasons and supporting evidence for your response.

Towerhouse LLP has put in a submission on behalf of the group of PIA CPs (which includes CityFibre) in response to the consultation.

CityFibre intends to put in a further note in respect of PIA implementation shortly. This will include CityFibre's concerns with Ofcom's approach to Quality of Service and transparency requirements in PIA.

Question 3.6: Do you agree with our proposed specific remedies in the WLA markets? Please set out your reasons and supporting evidence for your response.

See Sections 2 and 3.

Question 3.7: Do you agree with our proposed specific remedies in the LLA markets? Please set out your reasons and supporting evidence for your response.

See Section 3.

Question 3.8: Do you agree with our proposed specific remedies in the IEC markets? Please set out your reasons and supporting evidence for your response.

CityFibre supports Ofcom's proposed remedies for the IEC markets.

Ofcom rightly notes that, absent regulation, "*Openreach would have the ability and incentive to refuse to provide access to its IEC network or not provide access on terms that would enable efficient investment and innovation, both in the relevant wholesale markets (WLA and LLA) and the related downstream*

retail markets."[145] That risk is particularly important where alternative network operators are reliant on connectivity between BT exchanges where they have built their own fixed access network in a BT exchange area and need to backhaul this access traffic to their own core and/or backhaul network.

Regulation is therefore necessary to prevent Openreach from engaging in exclusionary behaviour, to the detriment of consumers and competition. CityFibre's principal concern in this respect is for the provision of DFX at regulated exchanges but also with ancillary products, such as Cablelink. Given the importance of those products to allow altnets to compete against Openreach, CityFibre considers that it is vital that Ofcom maintain regulation which provides network access on terms that allow for competition to emerge in downstream markets. CityFibre therefore supports the proposal to extend the scope of the DFX remedy by requiring Openreach to provide DFX at all regulated exchanges (all BT Only and BT+1 exchanges).[146]

That obligation, coupled with the additional remedies proposed in relation to DFX and ancillary services, should ensure that competition can thrive in downstream markets.

Question 3.9: Do you agree with our proposed approach to geographic discounts and other commercial terms? Please set out your reasons and supporting evidence for your response

See Section 2.

VOLUME 4: PRICING REMEDIES

Question 4.1: Do you agree with our proposed approach in WLA Area 2? Please set out your reasons and supporting evidence for your response.

See Section 2.

Question 4.2: Do you agree with our proposed approach in WLA Area 3? Please set out your reasons and supporting evidence for your response.

See Section 2.

Question 4.3: Do you agree with our proposals for charge controlling LLA services in LLA Area 2 and LLA Area 3 and not introducing a charge control on LLA services in the HNR Area? Please set out your reasons and supporting evidence for your response.

See Section 3 in relation to charge controls for dark fibre access in LLA Area 3.

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145 TAR Volume 3 paragraph 8.13

146 TAR Volume 3 paragraph 8.26

Question 4.4: Do you agree with our proposals for charge controlling in the IEC markets? Please set out your reasons and supporting evidence for your response.

CityFibre supports Ofcom's proposals for charge controlling IEC products, particularly DFX. As set out in response to Question 3.8 above, DFX is a critical product for altnets to deliver competition in downstream markets. Pricing of IEC services must therefore be set at a level which allows for them to generate returns and maintain incentives to invest. In the absence of price regulation, Openreach has the ability and incentive to raise the price of IEC products to a level at which downstream competition is distorted. The proposed charge controls for IEC services will act to prevent such exclusionary behaviour by Openreach and CityFibre supports Ofcom's approach.

Question 4.5: Do you agree with our proposals for charge controlling in the PIA market? Please set out your reasons and supporting evidence for your response.

See Section 4.

Question 4.6: Do you agree with our proposed approach for ancillaries? Please set out your reasons and supporting evidence for your response.

CityFibre supports Ofcom's proposals for capping ancillary charges in the physical infrastructure market in accordance with the controls listed in Table 5.1 of Volume 4 of the TAR. CityFibre considers it appropriate to maintain the financial limit of £4,750 per kilometre of spine duct when approaching the recovery of network adjustment costs. It also supports, in particular, Ofcom's proposal to set the ancillary charge for hosting services at £0. These caps are appropriate for ensuring that Openreach does not engage in exclusionary or exploitative behaviour through setting excessively high levels of ancillary charges. Given the increasing importance of PIA in the period of the review, Ofcom should resist any calls by Openreach to increase the levels of ancillary charges.

Question 4.7: Do you agree with our proposals on charge control design? Please set out your reasons and supporting evidence for your response.

CityFibre supports Ofcom's approach, subject to its comments on the charge controls for dark fibre access in LLA Area 3 (Section 3) and for PIA access (Section 4).

Question 4.8 Do you have any comments on the drafting (non substantive) amendments to the charge control conditions described above and set out in Volume 7?

VOLUME 5: QUALITY OF SERVICE

Question 5.1: Do you agree with our proposal to retain a QoS SMP condition in all wholesale fixed telecoms markets in which we provisionally determine that BT has SMP and where we propose to apply transitional arrangements? Please set out your reasons and supporting evidence for your response.

No comment.

Question 5.2: Do you agree with our proposals for QoS regulation in WLA markets for this review period? Please set out your reasons and supporting evidence for your response.

To the extent that QoS regulation is necessary to protect consumers from exploitative behaviour by Openreach, that regulation should be limited only to those areas where Openreach does not, and will not, face any competitive pressure. In areas where the potential for competition exists, differentiation on Quality of Service will be a key parameter of competition.

Question 5.3: Do you agree with our proposal to keep the same QoS regulations in place for LLA and IEC markets for this review period? Please set out your reasons and supporting evidence for your response.

CityFibre considers that Ofcom's Quality of Service proposals may be susceptible to manipulation by Openreach since they are based on aggregated service level monitoring.[147] The aggregation of such reporting gives rise to the potential that Openreach provides certain services at lower or higher levels so as to disadvantage access seekers. For example, Quality of Service standards across "Relevant Ethernet Services" includes ethernet access direct (EAD), Ethernet Backhaul Direct and Cablelink.[148] ***[REDACTED]***. CityFibre considers that a Quality of Service obligation placed on individual services would better safeguard against Openreach engaging in such exclusionary behaviour.

Question 5.4: Do you agree with our proposal not to impose specific QoS standards or transparency requirements in the physical infrastructure market? Please set out your reasons and supporting evidence for your response.

See response to Question 3.5 above.

VOLUME 6: REGULATORY FINANCIAL REPORTING

Question 6.1: Do you agree with our proposal to retain the accounting separation and cost accounting remedies on each of the proposed SMP markets? Please set your reasons and supporting evidence for your response.

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[147] TAR Volume 5, paragraph 4.41.

[148] TAR Volume 5, paragraph 1.4, footnote 8.

Accounting separation and cost accounting remedies are vital to ensure that Ofcom and other stakeholders can properly monitor BT's activities and make an informed judgement of the impact and effectiveness of pricing remedies. This will ensure that efficiently incurred costs have been distributed fairly across BT services in such a way as to ensure a level playfield where those costs are passed on to other users.

Question 6.2: Do you agree with our proposals in relation to the published performance schedules set out in Section 4? Please set out your reasons and supporting evidence for your response.

Consistent reporting formats are important to ensure Ofcom and stakeholders can assess Openreach performance on an ongoing basis and monitor compliance with SMP conditions. CityFibre and others make significant payments based on those figures and it is vital that they are accurately reported and attributed.

Question 6.3: Do you agree with our proposals in relation to the preparation and assurance of the RFS set out in Section 5? Please set out your reasons and supporting evidence for your response.

CityFibre agrees with Ofcom's proposals in relation to the preparation and assurance of the RFS. BT's RFS represent a significant input into how Ofcom sets charge controls and it is vital that the RFS numbers represent an accurate view of Openreach's efficiently incurred costs. Those numbers allow stakeholders to carefully consider the extent to which Ofcom's charge control proposals are consistent with Openreach costs and make informed comment.

CityFibre notes in this respect that, in the PIA Charge Control, Ofcom has adjusted the RFS numbers but has not explained how it has done so. CityFibre would therefore expect that where Ofcom is proposing to make adjustments to data contained in the RFS, it clearly sets out the basis for those adjustments.

Question 6.4: To what extent do you think it is necessary to require BT to publish in the reconciliation report the impact on current year figures of each methodology change reported in the CCN (which includes the impact of each change on prior year figures)?

CityFibre agrees that it is necessary to require BT to publish in the reconciliation report the impact on current year figures of each methodology change reported in the CCN. Given the weight placed on these numbers in many of Ofcom's regulatory decisions, and prices set for other operators, Ofcom should require audits as necessary to achieve this.

Question 6.5: Do you agree with our proposals in relation to information provided to Ofcom set out in Section 6? Please set out your reasons and supporting evidence for your response.

CityFibre supports the proposals set out in Section 6.