

# AXIONE'S RESPONSE TO OFCOM CONSULTATION

## Wholesale Fixed Telecommunications Market Review 2020



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# Table of Content

<b>1. Introduction and executive summary .....</b>	<b>5</b>
1.1. Introduction .....	5
1.1.1. Introducing Axione .....	5
1.2. Executive summary .....	6
1.2.1. Geographic market definitions .....	7
1.2.2. Ofcom's proposed remedies .....	7
1.2.2.1. Price remedies.....	7
1.2.2.2. Non-price remedies .....	9
<b>2. Ofcom's policy objectives .....</b>	<b>10</b>
<b>3. Axione's deployment plans in the UK .....</b>	<b>11</b>
<b>4. Geographic market segmentation.....</b>	<b>12</b>
4.1. Ofcom's purpose for defining sub-national geographic markets .....	13
4.2. Criteria for defining geographic markets .....	14
4.3. Defining stable geographic markets .....	14
4.3.1. Fibre deployment plans are not stable over time .....	15
4.3.2. Locations in deployment plans are not significantly different from many other locations .....	15
4.3.3. Investment criteria differ between altnets .....	15
4.4. Ofcom's implementation of its Area 2 market definition .....	17
4.5. Consequences of Ofcom's geographic market definitions .....	17
4.5.1. Ofcom's Area 2 remedies .....	17
4.5.2. Ofcom's Area 3 remedies .....	18
4.5.2.1. Impact assessment for CPI-X+K .....	19
4.5.2.2. Impact assessment for forecast scenario.....	20
4.5.2.3. Assessment of Area 3 price remedies.....	20
4.6. A single geographic market maximises economic benefits and reduces risk of regulatory failure .....	20
4.7. Ofcom's concerns about altnets in single-network areas .....	21
4.7.1. Coverage risk .....	22
4.7.2. Retail competition choice .....	22
4.7.3. Provider of last resort risk .....	23
4.7.4. Provision of broadband USO services .....	24

<b>5. Assessing the proposed price remedies .....</b>	<b>25</b>
5.1. WLA Area 2 .....	25
5.1.1. Roll-out sequence and scope of roll-out .....	25
5.1.2. PIA usage assumptions .....	27
5.1.3. Connection costs and duct and fibre lengths .....	27
5.1.4. WACC assumptions .....	28
5.1.5. Impact analysis .....	29
5.2. WLA Area 3 .....	29
5.2.1. RAB approach .....	29
5.2.2. Forecast approach .....	30
5.3. BC Area 2 .....	31
5.4. BC Area 3 .....	31
5.5. Competition-related remedies .....	32
5.5.1. Geographic and volume discount restrictions .....	32
5.5.1.1. Geographic discounts .....	32
5.5.1.2. Loyalty and other volume-related discount schemes .....	34
5.6. Price-floors .....	35
<b>6. Assessing the proposals for non-price remedies .....</b>	<b>37</b>
6.1. PI remedies .....	37
6.1.1. Strengthening of non-discrimination provisions .....	37
6.1.1.1. The need for EoI .....	37
6.1.1.2. Ofcom's implementation of no undue discrimination .....	38
6.1.1.3. The scope of the no undue discrimination remedy .....	39
6.1.1.4. Accounting separation .....	39
6.1.2. Strengthening of service level agreements, service level guarantees and key performance indicators .....	40
6.1.2.1. SLAs and SLGs .....	40
6.1.2.2. KPIs .....	40
6.1.3. The PIA product, systems and processes .....	41
<b>7. Assessing copper retirement proposals .....</b>	<b>42</b>
7.1. Stop-sell provisions .....	43
7.2. Removal of copper charge control .....	43
<b>8. Annexes .....</b>	<b>44</b>
Annex 1 – [X] .....	44
Annex 2 – Fibre costs modelling .....	45

8.1. Introduction .....	45
8.2. Model scope.....	45
8.3. Rollout sequence .....	45
8.4. DPA usage and UG/OH ratio.....	48
8.5. WACC .....	49
8.6. Impact analysis .....	50
8.7. Duct and cable lengths.....	50
8.8. Connection costs.....	51

# 1. Introduction and executive summary

- 1.1 Axione is pleased to submit this response to Ofcom's consultation Promoting competition and investment in fibre networks: "Wholesale Fixed Telecoms Market Review 2021-26" (the WFTMR) and hopes that the response will prove helpful to Ofcom in its deliberations over the next 12 months before the commencement of the new review period on April 1 2021.
- 1.2 Axione understands that Ofcom plans to issue additional consultations over the coming months, some on matters of detail and some as a result of the responses received to this consultation. Axione welcomes this transparent approach.

## 1.1. Introduction

- 1.3 The WFTMR combines the review of a number of related fixed telecoms markets, with the explicit objective of ensuring consistency in regulation between these markets to enable competitive providers to access the economies of scale and scope across markets that BT and Openreach have always been able to access.
- 1.4 Axione welcomes this attempt to create consistency and, to an extent, level the playing field on network economics between Openreach and its competitors. This response sets out Axione's responses to selected proposals that are of highest significance to Axione, if we do not comment on any specific proposals, this should not be interpreted as our support for such proposals.

### 1.1.1. Introducing Axione

- 1.5 Axione, a joint venture between the Bouygues group (Bouygues Energies & Services) and Vauban Infrastructure Partners, is a key digital infrastructure player in France. Along with Vauban Infrastructure Partners and other equity partners such as Caisse des Dépôts, Axione has been investing in, building and operating FTTP networks for over 10 years in France and is on course to be operating a footprint of over 6 Million premises by 2025.
- 1.6 As a purely wholesale provider covering the whole value chain, Axione has developed a unique model perfectly fitted to address the challenges in less-densely populated areas to roll-out and operate FTTP networks. Through in-house design and build capabilities, Axione has implemented processes, methods and tools enabling the roll-out of FTTP networks in rural areas at scale and cost-effectively. In its historical core market, French rural areas, Axione has secured a share of 25% of the French Public Initiative Networks (PIN) market working in partnership with local authorities to deploy FTTP to cover 2.8 Million premises. Over the years, through its strong in-house design and build capabilities, Axione has consistently increased its monthly build outputs reaching a peak of 60,000 at the end of 2019. As of March 2020, Axione has built and is operating FTTP networks covering more than one Million premises in rural areas.
- 1.7 Since 2018, Axione is also present in dense urban areas through its joint venture CityFast with Bouygues Telecom. Once this build is complete, Axione will be operating an FTTP infrastructure covering 3.4 Million premises across 20 dense cities.

- 1.8 As a purely wholesale provider and often acting as a single-network operator, Axione relies on maximising the use of its infrastructure by all retail communication and internet service providers. The introduction of a large range of FTTP services, from passive to access products, and the availability of rental and co-financing scheme, has allowed Axione to be the first alternative operator to have all four (4) main national ISPs active on its wholesale platform (Orange, SFR, Free and Bouygues Telecom) in France. In addition to these players, Axione offers access to a large ecosystem of over 150 smaller ISPs serving all types of end-users: residential, businesses, public sector, mobile operators. Underpinning these wholesale operations is Axione's fully automated OSS/BSS platform allowing the processing of large volumes of orders and incidents through web interfaces as well as Machine-to-Machine Application Programming Interfaces (APIs).
- 1.9 Axione sees the UK market as a key strategic market to expand into. Our ambition is to build a footprint [X] to be offered on a purely wholesale basis to all communication and internet service providers by leveraging our experience and capabilities to design, build and operate wholesale FTTP infrastructure at scale.
- 1.10 [X]

## 1.2. Executive summary

- 1.11 Axione welcomes the opportunity to respond to Ofcom's WFTMR consultation and hopes that the comments and analyses set out in this document will assist Ofcom in making its final decisions.
- 1.12 Ofcom's final WFTMR Statement will be critical to the level and nature of investment in, and deployment of, full-fibre networks in the UK. Axione welcomes Ofcom's overall pro-investment strategy, which is particularly reflected in Ofcom's proposals for regulation of what Ofcom defines as Area 2.
- 1.13 Axione has strong concerns, however, with regards to:
- How Ofcom has defined the different geographic markets, particularly Area 2 and Area 3, and
  - The proposed price remedies for Area 3. Axione considers that Ofcom's proposed remedies constitute preferential treatment of Openreach and will result in market distortion.
  - Ofcom's proposals for the duct and pole access (DPA) remedy do not prevent continued discrimination by BT, between how BT's itself uses its ducts and poles and the PIA product.
- 1.14 Overall, Axione has deep concerns about Ofcom's proposed approach and believes that, if implemented, it would result in a reduction in both deployment of full-fibre networks and in competition at all levels.
- 1.15 Axione considers that Ofcom unduly favours BT and investment by BT over that of rival providers including Axione. **Ofcom appears to believe that, where only a single network can be commercially viable, that network should be built and operated by BT. Ofcom does not explain or justify that position and Axione considers it to be wrong, discriminatory and not in compliance with Ofcom's duties.**
- 1.16 It would seem that Ofcom values altnet investment primarily as a means of incentivising Openreach to invest, not for the value altnet networks deliver to consumers and the UK economy.

### 1.2.1. Geographic market definitions

- 1.17 Ofcom's definition of Area 2 is "*where there is already some material commercial deployment by rival MSNs to BT or where this could be economic*" and the definition for Area 3 is "*where there is unlikely to be material commercial deployment by rival MSNs to BT*".
- 1.18 Ofcom defines Areas 2 and 3 with reference to where commercial deployment may be economically viable, but offers no criteria for determining where this is the case. Instead Ofcom uses altnet 5-year deployment plans as the single determinator of Area 2 and 3.
- 1.19 Deployment plans include locations that satisfy the provider's investment criteria, but they are a subset of such locations, not an exhaustive list. They therefore cannot be considered an acceptable proxy for identifying where rival commercial deployment is or may be economic.
- 1.20 Axione presents in this response that such plans are not static but, in reality, may change by as much as 25%, due to a number of factors including where other providers already deploy, costs of deployment, planning permission issues and the availability of PIA. Axione strongly objects to Ofcom's use of deployment plans as the means of defining Areas 2 and 3.

### 1.2.2. Ofcom's proposed remedies

Ofcom's remedies fall into two categories:

- Price remedies, and
- Non-price remedies

#### 1.2.2.1. Price remedies

- 1.21 Overall, Ofcom states that its price remedies are intended to maximise investment in commercial full-fibre deployment throughout the country. Axione agrees with this objective, but has strong concerns in relation to Ofcom's specific proposals.

##### Area 2

- 1.22 Ofcom's proposed price remedies for Area 2, i.e. to keep regulated wholesale prices stable using a CPI-0% charge control, are a welcome change to Ofcom's traditional aim of forcing prices down to BT's efficiently incurred costs. Axione agrees with Ofcom that price regulation has a material impact on investment incentives.
- 1.23 It is not clear, however, that the CPI-0% charge control will maximise investment incentives. This is because the resulting prices are likely to either be below or at the bottom limit of the costs of a Reasonably Efficient Operator (REO). Axione presents detailed analysis of Ofcom's fibre costing model.

##### Area 3

- 1.24 For Area 3, however, Ofcom proposes a fundamentally different approach to price remedies. Here, Ofcom's investment incentives are solely targeted at BT, resulting in strong deterrents for rival investment and deployment.
- 1.25 Axione demonstrates clearly that the RAB approach will not give BT strong incentives to invest in Area 3. Axione believes that the RAB approach will deter competitive deployment by pushing regulated wholesale prices down, whilst not providing the incentives to BT that Ofcom assumes. This will leave area 3 with neither BT nor altnet deployment. Further the increased margins for retail ISPs associated with the RAB approach will lock ISPs to Openreach causing significant harm to altnets seeking to attract ISPs to their networks.

- 1.26 The forecast approach will require BT to make commitments which will concentrate naturally on the most profitable locations of area 3. These are single network areas currently targeted by altnets. The consequence of this will be a replacement of altnet investment and infrastructure and not a complementary increase in fibre coverage and investment.
- 1.27 Axione considers that Ofcom's proposed price remedies in Area 3 constitute clear preferential treatment of Openreach and discrimination against investment and deployment by altnets. Axione considers this to be in direct conflict with Ofcom's duties to not pick winners and losers and to regulate in the interests of consumers, not individual market participants.

Altnet deployment in single-network areas

- 1.28 The forecast approach clearly favours BT investment over altnet investment. The WFTMR offers no reasoning for that although in meetings Ofcom has shared some of its potential issues with Altnet deployment in single network areas – namely:
- Risk of partial coverage;
  - Risk of reduced consumer choice; and
  - Risk of supplier of last resort.
- 1.29 Axione does not accept that altnets are more likely than BT not to provide ubiquitous coverage. Axione has deployed full-fibre networks in many rural areas in France, where it is the only fibre network provider. Ubiquity has never been a problem. In the UK, where deployment to some premises is not commercially viable, BT and altnets alike will all depend on Government subsidy to connect such premises.
- 1.30 Axione is a wholesale-only provider, so will offer the same level of downstream competition as would BT. In fact, we believe we may well enable more choice than BT as we are not wedded to a service portfolio dictated by our downstream businesses. Axione is in discussion with large retail ISPs in the UK and will be defining its services to ensure their needs are met. We can also ensure that providers wishing to offer the basic universal service can do so on our network.
- 1.31 As for supplier of last resort, Axione does not agree that this should be a significant concern. If an altnet operating the only network in an area was in financial difficulty it would be able to find a buyer for the network without difficulty and arrangements for continuity of service could be made without difficulty. If Ofcom considers that this is a real concern, it should introduce a provision ensuring that any provider makes arrangements to ensure that its network can be operated during a period of change of ownership.

Measures to prevent anticompetitive pricing

- 1.32 Axione welcomes Ofcom's recognition that BT has both the means and the incentive to deter altnet investment and deployment through anticompetitive pricing structures. Proposals to limit BT's ability to introduce geographical discounts are welcome, but are too limited. The scope of this measure should include both FTTP and leased line pricing across Areas 2 and 3.
- 1.33 Further, restrictions on other potentially anticompetitive pricing activities, including loyalty schemes and tying/bundling of services across competitive and non-competitive areas should be made more specific than proposed by Ofcom.
- 1.34 This is a critical time for UK fibre investment; the balance of risks and benefits in respect of remedies to prevent anticompetitive pricing needs to be in favour of securing investor confidence that BT cannot spoil the market and significantly increase the investment risks for altnets. Taking the opposite point of view, the potential benefits of allowing BT to engage in potentially anticompetitive pricing are likely to be marginal and should be seen in the context of the substantial benefits to the economy and customers from altnet investment.
- 1.35 A reduction in altnet investment would not only reduce overall investment in the UK, it would very likely also result in reduced investment by BT as the competitive threat lessens.



### 1.2.2.2. Non-price remedies

#### Ofcom's DPA proposals

- 1.36 **Axione is concerned that Ofcom is continuing to propose that the DPA remedy be subject to a no undue discrimination (NUD) rule, rather than Equivalence of Inputs (Eol) or functionally/legally/structurally separating the duct and pole business from the remainder of Openreach.**
- 1.37 At present the version of NUD that is applied to the DPA product is too weak and incentivises Openreach to develop separate processes and systems for its PIA product with no effort to move towards Eol.
- 1.38 Implementing Eol for DPA would be a significant undertaking and improvements to the product should not be slowed down due to efforts being focused on the Eol implementation. We propose a number of options for how Ofcom could change its approach, including the creation of an escalation process where the Office of Telecommunications Adjudication (OTA) can escalate unresolved issues to Ofcom for resolution within specified timeframes.

#### Copper retirement

- 1.39 Axione agrees that BT could use the copper retirement process to harm and deter competitive fibre investment and deployment. Axione has already seen evidence of tactical deployment by BT in rural pockets to spoil the altnet investment case. Axione is, however, disappointed that Ofcom proposes no measures to attempt to counteract this risk.
- 1.40 Axione lists a number of potential interventions that Ofcom could explore and urges Ofcom to engage in a separate follow-up consultation on this topic in which options for intervention can be identified, and critiques analysed resulting in the introduction of the most robust and proportionate interventions to guard against this considerable risk.
- 1.41 Additionally, 'Stop Sell' provisions should include safeguards against how the Stop Sell can be communicated to consumers (such communications could have severe anticompetitive effects), and BT should be allowed to invoke Stop Sell when an altnet network has reached the relevant coverage threshold.
- 1.42 **It is critical that Ofcom's framework actively accommodates and encourages the outcome that BT may not deploy fibre everywhere and that altnet fibre networks may be the only fibre networks in some locations.**

## 2. Ofcom's policy objectives

- 2.1 Ofcom states that it "is creating the conditions to transform the business case for investment in full-fibre broadband through how we regulate BT." Thus, the objective of the proposals developed by Ofcom is to incentivise investment in fibre networks across the UK, whilst protecting consumer interests.
- 2.2 Ofcom further states: "Future broadband networks should provide choice, value and quality. Ofcom's approach to achieving that has been through encouraging competition between different networks". Thus, Ofcom seeks to incentivise investment by BT and by other investors in competitive fibre networks.
- 2.3 Axione agrees with Ofcom's overall objectives and welcomes the strengthened focus on removing barriers to investment.
- 2.4 Market regulation is essential to ensure a competitive, efficient and fair investment in full fibre broadband. The scale of the investment required is substantial and to be concentrated over a defined period of a few years in order to meet, or at least get close to, the government's target. There is appetite for investment in full-fibre network from equity partners and lenders to the level required to achieve a large part of the government's ambitions. As such investment is long term with business cases built over at least 20 years, measures should be taken to provide a stable regulatory framework. Regulatory uncertainty increases investment risk and endangers FTTP deployments. Of all measures that are required to strengthen full-fibre business cases, the most important measures relate to price regulation, at least during the period of construction and of initial uptake of services that will see the establishment of commercial relationships between wholesalers and retailers.
- 2.5 While we understand that a key concern for Ofcom is the protection of end users which translates into ensuring wholesale prices are capped to avoid increases in retail prices, for investors, the key concern is to ensure a stable and fair wholesale price over the regulated period to prevent anti-competitive behaviour and hence preserve competition in the long term. We believe a balance can be struck that meets both objectives. This is essential to allow suppliers like ourselves to draw down the investment required and which, we are keen to stress, is available on the markets. Without such measures, investment will not materialise which will translate into lower FTTP coverage across the UK, unbalanced service availability for end-users, lack of choice and competition for communication and internet service providers, and ultimately, higher public sector investment to fund the areas not covered by the market.

### 3. Axione's deployment plans in the UK

- 3.1 Investment in full-fibre in the UK is picking up momentum with a substantial amount of investment pledged over the next 5 years from large and small players. However, this investment is not yet sufficient to reach full coverage.
- 3.2 Moreover, while current investment will focus mainly on urban and dense areas, where the cost to deploy is lower and where infrastructure competition is viable, we believe that there are commercially viable rural areas that will not be covered over the review period through this investment.
- 3.3 Based on our rural and remote rural deployment experience in France and our talks with the key ISPs in the UK, we strongly believe we can make a viable business case for a commercial investment in small towns and villages, excluding the most isolated and difficult to reach premises. [REDACTED]
- 3.4 Our equity partners and investors are keen to support Axione in this next stage of our deployment provided the business case can be secured. This means that we need to entice retail partners of national scale and reach in addition to smaller local players, in order to secure such investment. To secure use of our network by ISPs such as Sky, TalkTalk, Vodafone and even BT retail, Plusnet and EE in the future, a key requirement will therefore be for our wholesale price to be comparable to other national infrastructure players for equivalent geographies. To date, in our negotiations, ISPs have recognised that there should be a slight premium on a wholesale price for deployments in towns and villages compared to the wholesale prices offered in cities to reflect the higher cost of deployment. However, in such geographies, the business case can only stack up if the take up reaches a high level, typically > 70%. Our base case scenario assumes that neither Openreach, nor other Altnets, will decide to invest in the areas we have already covered due to the higher cost per premise which makes it unlikely that two networks can be viably operated in such areas. There may be limited overlap in places from Openreach or other altnets targeting specific geographic areas, but we assume that there will not be overbuild of our footprint at scale from national providers. In discussions with ISPs these have also requested that any commitment to use our network would be associated with a benchmarking clause to ensure the wholesale price was aligned to the market.
- 3.5 Axione has started building its network in central Scotland and the first premises will be available commercially by the Q3 2020.

## 4. Geographic market segmentation

- 4.1 Ofcom's proposed approach varies in different parts of the UK, with the country being divided into three areas with:
- Area 1: where there is already material commercial deployment by two rival MSNs to BT each with established market positions;
  - Area 2: where there is already some material commercial deployment by rival MSNs to BT or where this could be economic; and
  - Area 3: where there is unlikely to be material commercial deployment by rival MSNs to BT.
- 4.2 In summary, Ofcom proposes to:
- not intervene in Area 1 (as competition should be effective),
  - impose a remedy package in Area 2 that actively encourages competitive investment, as well as investment by Openreach, and
  - impose a remedies package in Area 3 that creates incentives on Openreach only to invest.
- 4.3 It is instructive that Ofcom does not seem to be considering simply whether there is likely to be altnet investment, but whether there is likely to be 'material' investment by 'rival MSNs to BT' which seems to assume that BT/Openreach will have network everywhere and the only variable is the level of presence of competitive MSNs.
- 4.4 Instead, Axione believes it would be more appropriate if Ofcom was to simply define the country into three geographic markets as follows:
- Area 1 – Where it is likely to be viable to deploy and operate three or more full-fibre networks, regardless of who the network operators are;
  - Area 2 – Where it is likely to be viable to deploy and operate two or more full-fibre networks, regardless of who the network operators are;
  - Area 3 – Where it is likely to be viable to deploy and operate only one full-fibre network, regardless of who the network operator is.
- 4.5 The boundary between the three areas should be set using transparent parameters reflecting the variation of cost per premises passed and connected (e.g. premise density and other relevant parameters) and other relevant parameters. We understand that several altnets (and no doubt also Openreach) have submitted criteria to Ofcom for how they decide where to deploy, but it may be necessary to re-consult on that as the proposed market definitions set out above differ from those proposed by Ofcom.
- 4.6 Ofcom has, however, chosen to define the boundary between Areas 2 and 3 using altnet deployment plans. Axione disagrees with that approach. FTTP deployment is still at the early stages in the UK, with Openreach as well as altnets only starting to deploy FTTP at scale. Some larger altnets and Openreach have published locations where they intend to deploy, and Ofcom has chosen to define geographic areas based on where Openreach and/or some specific other suppliers plan to deploy.
- 4.7 For the remainder of the country, Ofcom assumes that (i) there will be no material commercial FTTP deployment and (ii) Openreach can deliver connectivity to the whole Country. **This is contrary to evidence that shows altnets, including Axione, are planning significant deployments in the remaining parts of the country.**

- 4.8 BT has admitted that it would not have the capability to deliver FTTP to the whole country<sup>1</sup> and wants other operators to build in some areas where only one network is likely to be viable. This suggests that BT is willing to consume wholesale access to altnet networks in order to deliver services to its retail customers. Axione welcomes that development which seems consistent with what is happening in other comparable countries.
- 4.9 Ofcom ignoring this likely situation (i.e. having a single-network provider other than Openreach in an area) creates uncertainty deterring investment for the five years to come, as no framework will be set up to regulate altnets.

#### 4.1. Ofcom's purpose for defining sub-national geographic markets

- 4.10 It is the explicit objective of the WFTMR to “transform the business case for investment in full-fibre broadband through how we regulate BT”. In addition, the Government is actively supporting the deployment of fibre to the whole of the UK and has designed its ‘outside-in’ programme to provide financial support for this to happen in areas that cannot attract commercial deployment<sup>2</sup>.
- 4.11 Ofcom does not state anywhere in the consultation documents that it wants to incentivise fibre investment only in certain parts of the country, but it appears from the proposed remedies in the different geographic markets, that Ofcom considers that different types of investment, from different types of investors and network operators, should be encouraged in the different geographic markets. Most specifically that only Openreach investment is to be encouraged in what Ofcom defines as Area 3.
- 4.12 **Axione believes that Ofcom makes the incorrect assumption that Openreach should be the default provider of full-fibre networks in areas that can only support a single network (single network areas).** Axione does not believe that such an assumption is compatible with Ofcom's duties and powers under the Communications Act of 2003 (the Act), to protect consumer interests and encourage efficient investment. Axione urges Ofcom to ensure that any investment incentives in Area 3 are supplier agnostic, rather than clearly favouring one supplier over all others.
- 4.13 Axione considers that Ofcom's proposed price remedies for Area 3 are discriminatory against altnets and will result in market distortion to the detriment of consumers and to the overall UK economy.
- 4.14 Further, we consider that Ofcom's Area 3 price remedies are in direct conflict with Ofcom duties to not favour or discriminate different providers of electronic communications networks and services. In particular, we believe the Area 3 price remedies to conflict with the following provisions:
- Communications Act 3002 4. (6)
 

The fourth Community requirement is a requirement to take account of the desirability of OFCOM's carrying out their functions in a manner which, so far as practicable, does not favour—

(a); one form of electronic communications network, electronic communications service or associated facility or

<sup>1</sup> <https://www.ispreview.co.uk/index.php/2020/01/examining-bt-groups-uk-single-rural-full-fibre-network-idea.html>

<sup>2</sup> The outside-in programme takes root in the Government's Future telecoms Infrastructure Review, published in June 2018. At present the Government has pledged £5b to support ultrafast network deployment in hard to reach or commercially uneconomic areas.

*(b) one means of providing or making available such a network, service or facility, over another. [emphasis added]; and*

- The European Electronic Communications Code 3. 4. (b)  
*ensure that, in similar circumstances, there is no discrimination in the treatment of providers of electronic communications networks and services;*

- 4.15 Axione does not see anywhere in the WFTMR documents that Ofcom explains its motivation, analysis and rationale for why only Openreach investment should be incentivised in Area 3.
- 4.16 In meetings during the consultation period, Ofcom has explained that it has certain concerns relating to replying to altnet investments in Area 3 (assuming that Area 3 is defined to reflect where only one fibre network is commercially viable or where public subsidies are required), we address those concerns separately in section 4.7.

## 4.2. Criteria for defining geographic markets

- 4.17 The European Commission (the EC) recommendation for market and SMP analysis defines separate relevant geographic markets as:
- “Relevant geographic market comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products or services, in which the conditions of competition are sufficiently homogeneous, and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are significantly different.”*
- 4.18 To constitute separate geographic markets, the competitive conditions in one group of locations (geographic market) needs to differ sufficiently from another group of locations to be distinctly separate whilst homogenous within each geographic market.
- 4.19 Competitive conditions are characterised by demand and supply characteristics. For geographic market definition, it is typically the supply characteristic's that are considered – that is, the number and nature of supply of the product in question.

## 4.3. Defining stable geographic markets

- 4.20 Axione does not believe that the early build plans for FTTP deployment over a 5-year period constitute the basis for defining separate geographic markets in which the competitive conditions are distinctly different. As set out below, such plans are likely to change substantially over the 5-year deployment time.
- 4.21 Axione does not believe that the existence of deployment plans for a 5-year period would satisfy the requirements to qualify as determinants of geographic market boundaries. We set out below a number of reasons for why this is the case. Instead clear and transparent criteria should be used and the deployment plans submitted by altnets can be used to validate the results of that analysis

### 4.3.1. Fibre deployment plans are not stable over time

- 4.22 The EC geographic market definition guideline requires that geographic markets have clear and stable boundaries over time.
- 4.23 Although Axione and other operators develop plans with target locations where they will invest in new fibre networks, the reality is that the details of these plans change significantly over time as first plans are based on high-level criteria. Reasons for plans to change include:
- Other providers may start deploying in some of our target locations before we do. This would typically cause us to look for different similar locations where ours would be the first fibre network.
  - We may find out that the existing Openreach infrastructure in some of our target locations is particularly poor, reducing the likely PIA usage and increasing capex requirements for the build. Again, this would cause us to look for other similar locations.
  - There may be planning restrictions that make deployment difficult, more expensive or impossible. Some local authorities issue moratoria on digging to reduce disruption. If that were the case in any of our target locations, we would look for other similar locations as replacements
- 4.24 These are some of the most obvious reasons for why the initial target deployment list is always in a state of flux and therefore cannot be used to identify the only locations that are uniquely suitable for fibre deployment. The exclusion from deployment lists certainly does not mean that a location is not suitable for commercial full-fibre deployment.
- 4.25 [REDACTED].

### 4.3.2. Locations in deployment plans are not significantly different from many other locations

- 4.26 Axione plans to deploy new fibre networks in the UK [REDACTED] and has created its initial target deployment list. That list was created by the application of a number of criteria which ensures that the size of the market and the level of investment fit our business model.
- 4.27 In the process of doing so, we identified more potential target locations than are included on our target list, and it is likely that we will use some of the other locations as substitutes in the situations outlined above. This means that the locations on our list are in no way unique in meeting our investment criteria.
- 4.28 Other altnets will apply different criteria to identify their target locations and will typically also have more potential target locations than those included on their initial target deployment lists.
- 4.29 What this shows is that it would be wrong to assume that the locations on the various target deployment lists are uniquely investable, and that other locations are not. That is simply not the case. On the contrary, they are a subset of locations that meet a variety of investment criteria by different altnets.
- 4.30 It would therefore be entirely wrong to use the initial target deployment lists to define locations that meet investment criteria, as opposed to many other locations that happen to not be on the initial lists but which also meet the investment criteria of at least one altnet.

### 4.3.3. Investment criteria differ between altnets

- 4.31 Ofcom defines Area 2 as “where there is already some material commercial deployment by rival networks to Openreach or where this could be economic”.

- 4.32 If Ofcom is trying to define a geographic market that covers locations where altnets would invest in new fibre infrastructure, then it is important to acknowledge that different altnets have different business models and target different markets.
- 4.33 Some altnets focus on MDUs only, whereas others develop MSNs in large cities and yet others specialise in building network in rural areas and small towns and villages. These are all commercial deployments and separate commercially viable business models.
- 4.34 Ofcom's definition of Area 2 refers to "material" commercial deployment, but offers no indication as to what would constitute a material deployment. It is also not clear whether an individual deployment needs to be material as a stand-alone deployment or whether it collectively, with other small deployments, can be considered material.
- 4.35 If materiality is, as has been suggested by Ofcom in meetings during the consultation period, measured as the extent to which the deployment is likely to cause Openreach to want to also invest in order to avoid losing market share, then the cumulative deployment by altnets within a given geographic area would seem to be a reasonable measure. Axione does not agree with Ofcom that material deployment by a collection of smaller providers should be disregarded as it is the cumulative impact of those deployments that will impact the Openreach investment decisions.
- 4.36 Altnet investment in single-network areas incentivises Openreach to invest as much as it does in multi-network areas. Arguably, the consequences to Openreach of altnet deployment in single-network areas are more severe than in multi-network areas, simply because Openreach by definition loses 100% market share in single-network areas where an altnet deploys before Openreach. In multi-network areas Openreach can expect to retain a significant market share due to its downstream retail arm acting as anchor tenant and also to its existing relationships with large national retail ISPs.
- 4.37 Some locations cannot support more than a single network, many of which are currently underserved. A number of altnets are specifically targeting such areas. Some of those altnets are local initiatives resulting from the very poor connectivity services offered by Openreach today, it would seem strange and counter-intuitive if Ofcom's actions were to stop such communities from benefiting from services that they have themselves invested in, and set them back to a situation of full dependence on Openreach.
- 4.38 Attracting investment to areas that offer lower commercial returns is important to the UK's economy, this is evidenced by the Government outside-in programme<sup>3</sup>, and there is commercial investment willing to deploy in substantial (and material) parts of Ofcom's Area 3 locations.
- 4.39 The different investment criteria for different types of investors with different business models means that some altnet deployment plans will almost certainly include single-network areas, as that is compatible with their business plans and investment.
- 4.40 We are not aware that Ofcom has asked altnets to only provide deployment plans for locations that will support more than one network, therefore it seems inappropriate to use the deployment plans to determine which locations should be in Area 2 as currently defined by Ofcom.
- 4.41 Axione itself plans to deploy FTTP to reach approximately [x] in what is currently classified as Area 3, and considers this to be material by any standard. Axione considers it highly unusual that Ofcom would wish to actively discourage that level of investment, which would speed up deployment of FTTP across areas in the UK where other large altnets and Openreach are currently not focusing their initial deployment efforts.

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<sup>3</sup> The outside-in programme is designed to enable investment and deployment by many small providers, whilst it appears that Ofcom considers that the most appropriate means of achieving that is to incentivise Openreach to do so



## 4.4. Ofcom's implementation of its Area 2 market definition

- 4.42 As set out above, Ofcom defines Area 2 as “where there is already some material commercial deployment by rival networks to Openreach or where this could be economic”.
- 4.43 Ofcom relies entirely on deployment plans from altnets to identify areas that should be included in Area 2. As explained above, initial deployment plans are likely to be subject to a substantial level of change, and the specific locations in initial deployment plans are indicative of the types of locations in which each altnet is willing to invest – not a list of locations outside of which the altnets are not willing to invest. It is also not a list of locations outside which the altnets will not actually invest in the 5-year period.
- 4.44 Ofcom's current definition for market 2 includes existing deployments and “where this could be economic”, but Ofcom has decided to not attempt to define any criteria to establish where altnet investment could be economic. It is clear from the analysis presented above in this response, that existing deployment plans are entirely inappropriate as indicators of where deployment could be economic. The lists include only areas where altnets have already decided to deploy, and the lists are not exhaustive in representing where deployment is economic, never mind where it could be economic.
- 4.45 Axione does not consider that Ofcom's proposed implementation of its Area 2 definition actually delivers a set of locations that meet Ofcom's Area 2 description.
- 4.46 If Ofcom intends Area 2 to be locations where two full-fibre networks are economically viable, then Ofcom should define the criteria it believes can reasonably be used to determine which areas should be included.
- 4.47 It should be noted, however, that Ofcom's proposed remedies for Areas 2 and 3 should be more aligned, given that investment is sought for both areas. It may be necessary to impose additional remedies in Area 3 to protect consumer interests (such as mandated wholesale access), but investment incentives should essentially be the same.

## 4.5. Consequences of Ofcom's geographic market definitions

- 4.48 Above we have discussed the process, mechanics and rationale for Ofcom's geographic market definitions. In this section we present our impact analysis of the remedies proposed by Ofcom in Areas 2 and 3, with a particular focus on Area 3.
- 4.49 Ofcom's overall objective with the remedies proposed is to incentivise investment in FTTP networks. Ofcom has decided that different remedies are appropriate in Areas 2 and 3, due to its conclusion that Openreach needs to be specifically incentivised to invest in Area 3.

### 4.5.1. Ofcom's Area 2 remedies

- 4.50 We set out our full comments on Ofcom's proposed set of remedies later in this response in this section we are particularly concerned with the impact of remedies on investment incentives in Areas 2 and 3 and are therefore focusing on pricing remedies.

- 4.51 As explained in section 5.1, the proposed CPI-0 charge control in both the WLA and BC markets for Area 2 will send a significant pro-investment signal to providers and the investment community. Although the current price levels in the BCM are below BT's fully allocated costs (FAC) as per the last published regulatory financial report (RFS), the act to not reduce prices further is significant both for the actual investment assessments and as an overall and general pro-investment signal.
- 4.52 However, Axione believes that the REO cost range calculated by Ofcom in its fibre costing model significantly underestimates the costs of efficient operator in FTTP deployment and operation. We set out the detailed reasoning for this in section 5.1. Should Ofcom change its charge control proposals to in any way reduce the regulated maximum prices that Openreach can charge, then this will without doubt have a negative effect on actual investments and on the willingness from the investment community to participate in the UK FTTP sector.
- 4.53 Axione believes that the Area 2 charge control approach sends positive investment incentives to all potential investors, including Openreach.
- 4.54 It could be argued that increasing copper pricing would increase Openreach's incentives to prolong the life of the copper infrastructure in order to maximise returns. That, however, ignores the strong imperative on Openreach to deploy FTTP or face having its copper network overbuilt by altnet FTTPs and gradually lose market share at the infrastructure level.
- 4.55 Axione has no doubt that Ofcom's policy of designing investment incentives into the charge control design for Area 2 is the right approach. It provides a more level playing field for altnets and Openreach to compete to deploy full-fibre networks either by overbuilding each other in very densely populated locations or by building the single full-fibre network to serve less densely populated areas.
- 4.56 The single strongest incentive for Openreach to invest in full-fibre is the threat of losing market share. Ofcom's Area 2 charge control approach will generate altnet investment (although we believe that Ofcom is underestimating REO costs as explained above), and will result in fast deployment of full-fibre in these areas.
- 4.57 We understand that there is concern amongst retail ISPs that Openreach/BT group could chose to deploy any excess profits from copper services to subsidise retail services such as TV rights. We do not underestimate the concerns by those retail ISPs and would be willing to work with them and Ofcom to assess options to reduce this potential unintended consequence.
- 4.58 We do, however, believe that Openreach is likely to channel all available funds into full-fibre deployment. The competitive threat from altnets is real and in the present. Openreach's business is to build and operate networks, not to provide retail entertainment services.
- 4.59 Axione further believes strongly that the same set of investment incentives would optimise investment in Area 3, where only a single full-fibre network is likely to be commercially viable. The CPI-0 charge control in Area 3 would make it viable for altnets to deploy in Area 3 (higher unit costs would be outweighed by a higher penetration rate) and that would in turn result in strong incentives on Openreach to deploy in other Area 3 locations in order to avoid losing too much market share. If Openreach misses out on deployment in a location in area 3, it will lose all its customers in that location, so Openreach's incentive to be the first to deploy in Area 3 will be increased if altnets can viably invest in Area 3.

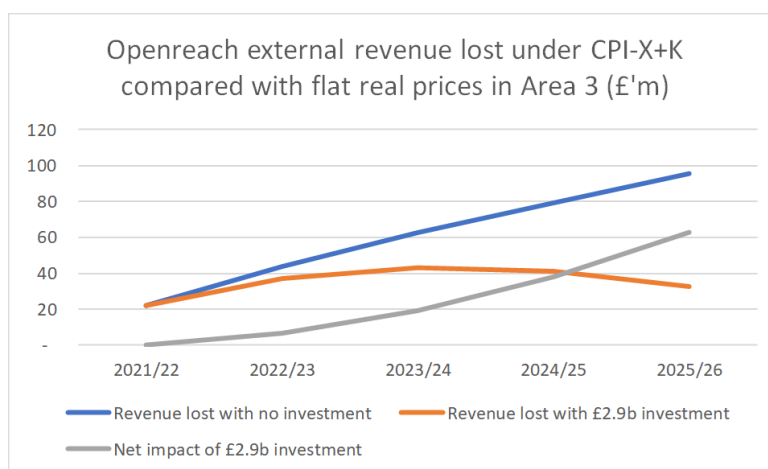
#### 4.5.2. Ofcom's Area 3 remedies

- 4.60 As for Area 2 above, these comments are limited to a general assessment of the impact on investment incentives of Openreach and altnets of Ofcom's proposed price regulations for Area 3.
- 4.61 Ofcom has two separate proposals for price regulation in Area 3:
- A CPI-X+K approach, and a

- Forecast approach which would result in price regulation similar to that applied in Area 2.

#### 4.5.2.1. Impact assessment for CPI-X+K

- 4.62 Axione has assessed the likely incentives for Openreach to invest in Area 3, under the proposed CPI-X+K charge control scenario.
- 4.63 The first step in that assessment is to ascertain the revenue loss Openreach would suffer if it did not make any FTTP investment in Area 3 at all - that is, the value of K would be zero throughout the 5-year charge control period, so the 40/10 pricing would decrease annually by CPI-X.
- 4.64 Using the midrange of Ofcom's proposed X-values, our assessment of that revenue loss is that Openreach would forego around £300m of external revenues, compared with a 'best case' scenario for Openreach with flat real prices at current levels (CPI-0%) as implemented in Area 2.
- 4.65 Using Ofcom's fibre costing model, we estimate that the investment for Openreach to reach 4m premises passed in Area 3 at 90% penetration would be around £2.9b.
- 4.66 Deploying FTTP to 4m premises in Area 3 (evenly across the 5-year period) would result in a positive and increasing k-factor; however, there would remain a revenue loss of £176m to Openreach over the 5 years compared to a CPI-0% charge control.
- 4.67 So Openreach would need to invest £2.9b in Area 3 in order to avoid a revenue loss of £124m.
- 4.68 The chart below shows the impact.



- 4.69 If, on the other hand, taking into account that Openreach doesn't have unlimited technical and financial capabilities and has to make investment decisions, Openreach were to invest that £2.9b in Area 2, then it could prevent the loss of significant future revenues.
- Openreach would expect that future price regulation would allow it to recover its costs plus an appropriate return over the 20-year modelling period, and as a result it could expect revenues of at least the £2.9b capex plus ongoing operating costs.
  - If Openreach did not invest in a part of Area 2, then it would face losing its entire customer base in that area to competition.
  - The Area 2 revenues protected by this investment would be expected to endure for a much longer time than the 5 years of the charge control.
- 4.70 The revenues saved in Area 3 would be much lower than the corresponding revenues saved in Area 2 for the same investment.

- In Area 3, Openreach would only lose part of the revenues, whereas in Area 2 in areas it did not invest, it would lose all revenues from the customers who would connect to altnet networks, and
- The price decline from the RAB-X+K charge control will deter altnet investment in Area 3, so the risk of losing market share there will be much lower and Openreach is likely to retain its entire customer base. Altnet investment will be deterred as they would have to compete with the lower regulated Openreach 40/10 price and also because retail ISPs would be incentivised to remain with Openreach due to increased margins during the RAB-pricing period.
- Further, once altnets have been deterred from investing in Area 3, Openreach will have a strong argument for needing additional Government subsidies to connect premises there. There will be no competitors proposing to do so and it will be imperative for the Government that the whole nation is connected.

#### 4.5.2.2. Impact assessment for forecast scenario

- 4.71 This scenario assumes that Openreach will make enforceable commitments to investment in Area 3 that will allow Ofcom to include an assumed K factor into the charge control from day one and throughout the charge control period.
- 4.72 We understand that Ofcom expects that this scenario would result in the charge controls in Areas 2 and 3 being similar if not identical.
- 4.73 In principle, this would therefore provide investment incentives for both Openreach (who would be forced to invest) and altnets.
- 4.74 However, as Openreach will be forced to make substantial investment in Area 3 in the 5-year period, it will naturally adopt a cherry-picking strategy by targeting the most commercially attractive areas. This means that it is more likely that altnets will therefore be forced into less commercially attractive locations, making the investment case harder and increasing the dependency on Government aid. Alternatively, if an altnet deploys in some Area 3 locations that are commercially attractive, there would be an increased probability that Openreach would simply overbuild.
- 4.75 It is Axione's view that the forecast approach may prove to be at least as big a deterrent to altnet investment as the RAB approach.

#### 4.5.2.3. Assessment of Area 3 price remedies

- 4.76 It is clear from the above analysis that the two proposed price remedies for Area 3 both favour Openreach over altnet investment and thus discriminate against altnet investment and deployment.
- 4.77 It is Axione's strong belief that both of these approaches will result in consumer harm and that neither should be implemented.

## 4.6. A single geographic market maximises economic benefits and reduces risk of regulatory failure

- 4.78 Axione believes that it is premature and not in the interests of the UK and consumers to second-guess where commercial investment will be made. As described in section 3, Axione is planning to deploy substantial amounts of new fibre infrastructure, much of which in what is currently classified at Area 3.
- 4.79 Ofcom's approach risks deterring substantial investment by competitive providers and is, in our view, unlikely to result in Openreach diverting deployment activities from Area 2 locations to Area 3 locations.

- 4.80 The economic benefits of Ofcom's approach seem to be unlikely to materialise, whereas the risks associated with the approach are substantial, including:
- Delay in fibre deployment in Ofcom's Area 3 locations,
  - Reduced overall commercial fibre investment in the UK, and
  - An increase in public subsidies needed to cover Area 3 locations later, when only Openreach is left to deliver those networks.
- 4.81 Axione challenges Ofcom's assumption that the single-network must be operated by Openreach. There is evidence from other countries, including France where alternative providers operate extensive wholesale fibre networks in rural areas, small and medium size towns, and villages, that deployment by alternative providers in such areas delivers faster overall national coverage with significant associated economic benefits. Axione also outlines that, to date, there is stronger competition on the retail market where a single FTTP network is operated by a wholesale-only altnet as all ISPs offer retail services over the network, whereas in areas where the single FTTP network is operated by a vertically integrated operator, the latter tends to enjoy higher market share at the retail level through lower competition.
- 4.82 Axione's business case is based for the most part on deployment in areas where the economics can only sustain a single infrastructure. It would be more reasonable for Ofcom to consider these areas to be served by Openreach or by another operator such as Axione, with some wholesale access obligations.
- 4.83 Axione urges Ofcom to reconsider its geographic segmentation approach by redefining Areas 2 and 3 as multi- and single-network areas respectively and adjusting the remedies proposed for Area 3 to include investment incentives for others in addition to Openreach. Applying the same charge control to Areas 2 and 3 would ensure consistent investment incentives to Openreach and altnets throughout the UK and result in maximum commercial deployment.
- 4.84 This approach would also ensure that Government aid was targeted where there genuinely is not commercial investment case and we are confident that it would deliver full-fibre to many parts of the UK which would not otherwise see deployment for considerable time, should Ofcom's current proposal be implemented.
- 4.85 The risks of regulatory failure – significant reduction in investment by altnets and gaming of the situation by Openreach - far outweigh any incremental benefits resulting from Ofcom's proposed geographic market definitions and associated remedies.
- 4.86 Many communities have come together to create their own local broadband providers because Openreach did not consider it worthwhile to invest in infrastructure to serve consumers and business in those areas. The majority of high-speed broadband services available in villages and rural locations today are there in spite of Openreach, not because of it. Government recognises this and this is why the outside-in initiative is being designed to encourage a plurality of providers that are passionate about serving those communities, rather than to simply subsidise Openreach to build where it does not want to.
- 4.87 It is, in our view, likely that Ofcom's approach will lead to more state aid being required to serve the less commercially attractive locations in the UK if only Openreach is left to serve them, than if Ofcom, like the Government, worked with altnets to ensure equal opportunity to invest regardless of the demographics of population density of a specific area.

## 4.7. Ofcom's concerns about altnets in single-network areas

- 4.88 Ofcom has explained to altnets that it has a number of specific concerns with regards to safeguarding consumer interests in areas where an altnet operates the only full-fibre network.
- 4.89 We understand those concerns to be:
- The risk that the altnet will not deliver ubiquitous coverage

- The risk that consumers will not have retail choice, and
- The risk of the altnet ceasing trading and customers not having service.

### 4.7.1. Coverage risk

- 4.90 Ofcom has expressed concerns that altnets may 'cherry-pick' premises to cover, leaving gaps where consumers (private and businesses) would not benefit from full-fibre services. Ofcom considers this to be a particular problem in locations that can only support a single network as, when Openreach retires its copper network, those customers could be left without service.
- 4.91 While Axione deliberately ensures that whole clusters of premises in communities are served, it acknowledges that there are likely to be premises for which commercial deployment will not be commercially viable, but that will equally be the case for Openreach as for altnets and that is the case in Area 2 as well as in Area 3. The Government's outside-in initiative is designed to assist in achieving complete coverage and Axione does not agree that altnets are less likely than Openreach to achieve full coverage.
- 4.92 Axione has extensive experience in France of deploying full-fibre networks in locations that can only support a single network and understands the responsibilities that are associated with that. It should also be noted that the vast majority of high-speed broadband coverage in hard to reach locations in the UK today is provided by altnets, simply because Openreach finds such deployment commercially unattractive and will not prioritise deployment in that kind of location. Altnets, with the sole focus of deployment in less densely populated areas, will find such deployment attractive.

### 4.7.2. Retail competition choice

- 4.93 Ofcom has also expressed concern that altnets in single network locations could result in a lack of consumer choice. This concern is based on Ofcom's understanding that some altnets do not wish to offer wholesale access to their networks and that the large retail ISPs are not interested in working with a large number of smaller network providers to get wholesale access.
- 4.94 Axione is a wholesale-only provider. In France its networks provide wholesale access to all four (4) major retail ISPs (Orange, SFR, Free and Bouygues Telecom) as well as to over 150 other small and/or local and/or specialised ISPs. We have experience in wholesale access product and platform development, we have an existing, tried and tested wholesale platform and we are already in negotiations with major retail ISPs in the UK for access to our networks.
- 4.95 Axione's full-fibre deployments in the UK are contingent on setting up wholesale agreements with retail ISPs. Our discussions with retail ISPs are influencing the products we will offer as well as the pricing structures and levels. We understand that it is critical that altnets offer products that meet the needs of the retail ISPs and that price levels enable national pricing for the retail ISPs.
- 4.96 Our negotiations to date suggest that pricing needs to enable competition with the most popular current FTTC products, but that some variation between dense urban and more rural and less dense locations would be acceptable. To achieve pricing at those levels in the less dense urban and rural locations, we require high penetration rates. This is consistent with Ofcom's assumptions for Area 3, the only difference being that Ofcom assumes that the only provider in single-network locations should be Openreach, not an altnet.
- 4.97 We are also aware that other altnets understand the responsibility they have when operating in single-network locations, understand the obligations they would have were they receive state aid for hard to reach areas, and understand that the only way they can credibly avoid being overbuilt by Openreach is to offer an attractive wholesale access package.

- 4.98 Given how critical this is to fast fibre deployment in the UK, Axione believes that Ofcom has a role to play in facilitating this. For example, facilitation of the development of standardised OSS/BSS interfaces for wholesale access would be a significant help, rather than forcing individual altnets to enter into negotiations with individual ISPs who have no wish to enter into a plethora of wholesale agreements. Our experience in France is that intervention by the regulator to coordinate that process was extremely helpful.
- 4.99 Axione is also aware of, and supportive of, the development of an altnet wholesale aggregation platform in the UK. INCA is providing the focal point for that initiative and it is expected that concrete proposals will emerge within a relatively short period, perhaps before summer (although it is necessary to allow for any delays caused by Covid19). Axione will contribute to such negotiations.
- 4.100 Axione would also be willing to consider allowing other smaller altnets to access its wholesale platform.
- 4.101 Ofcom should impose an open access obligation remedy on areas where there could presumably be only one network commercially viable. This remedy should rely on fair and non-discriminatory prices.
- 4.102 Axione also considers that the range of services offered can help meet this concern. Axione is keen on offering passive or active services and under rental or co-investment scheme. Such a range of products can match the strategies and requirements of any ISPs.
- 4.103 Axione believes that Ofcom's concern relating to retail competition in altnet-only network areas are misplaced and that Ofcom should instead spearhead initiatives to assist in the standardisation of wholesale interfaces to remove barriers for altnets to be able to engage productively with the large retail ISPs.

### 4.7.3. Provider of last resort risk

- 4.104 Finally, Ofcom is concerned that consumers in areas with only an altnet network, would be vulnerable should that altnet cease trading. Ofcom considers that risk to be substantially lower if Openreach is the only provider, presumably due to Openreach's size, being 'too large to fail'.
- 4.105 As explained throughout this response, Axione operates the only network in many locations in France and the risk of failure is mitigated by the fact that we have a solid business of providing the single fibre infrastructure over which a number of competing retail ISPs compete for customer connections. The business model is effectively that of a utility.
- 4.106 Should we, or another altnet, fail in a specific location then that network would be a valuable asset which other providers would compete to acquire. It is expected that there will be some level of consolidation over time, but that should not put at risk the connectivity for consumers.
- 4.107 In single-network areas, it would be exceptional if a provider were to fail. The high penetration levels create a stable business. It is more likely that a provider wants to exit the market and therefore seeks a buyer for the network, in a managed process that does not put at risk the connectivity of end users connected to the network.
- 4.108 Axione considers that this concern could easily be overestimated. The utility-nature of the business model for fibre deployment in single-network areas makes such businesses extremely resilient. It is possible that the retail arm of altnets that chose to offer both retail and wholesale services may suffer in competition with the large retail ISPs, but the high-penetration wholesale business would be more resilient and, in any case, an attractive acquisition target for larger operators should a smaller altnet cease trading.

#### 4.7.4. Provision of broadband USO services

4.109 Axione wishes to also point out to Ofcom, in case it has concerns of whether broadband USO services can be supplied in single network areas served by altnets, that all services planned by Axione, are able to deliver the broadband USO service. Likewise, we do not consider that it would be a problem to deliver that service within the stipulated price limits.



## 5. Assessing the proposed price remedies

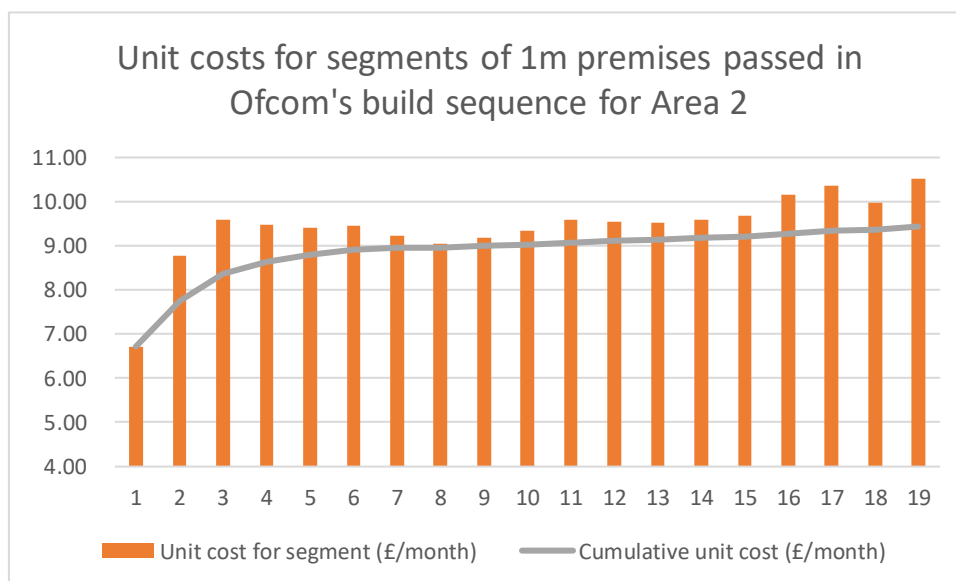
- 5.1 Axione completely agrees with Ofcom's overall objective to use price remedies to support and create investment incentives for BT and altnets. We further believe that price remedies should support such incentives in all areas of the country where investment in fibre is commercially viable, including areas which may ultimately only support one fibre network.

### 5.1. WLA Area 2

- 5.2 Axione wholeheartedly supports Ofcom's stated aim to implement price regulation which supports investment in fibre networks through promoting network competition, and Ofcom's approach of price continuity on the existing 40/10 anchor product to ensure sufficient headroom for investment by altnets as well as BT. This sends an important positive message to investors generally, and also encourages sign-off for individual investment projects as it provides a degree of certainty on price levels in the early years of deployment.
- 5.3 We also agree with the proposal for pricing flexibility on higher speed services; this will increase incentives for competitive network deployment in the longer term, as the consumer benefits and hence value of higher speed services are increasingly realised.
- 5.4 Axione does not believe that the range of costs produced by Ofcom's fibre model (£8.50 - £12.75 per month) reflects the costs that an REO would incur to build a new fibre network, and we believe that Ofcom should reconsider many of the assumptions used in this model. Below we briefly outline some of our main concerns. [×].
- 5.5 The scope of the model is limited to the access network, and it therefore ignores many of the non-access costs of serving a town or settlement which would generate significant economies of scale. It may exclude costs necessarily incurred by altnets in producing the equivalent to BT's wholesale products.

#### 5.1.1. Roll-out sequence and scope of roll-out

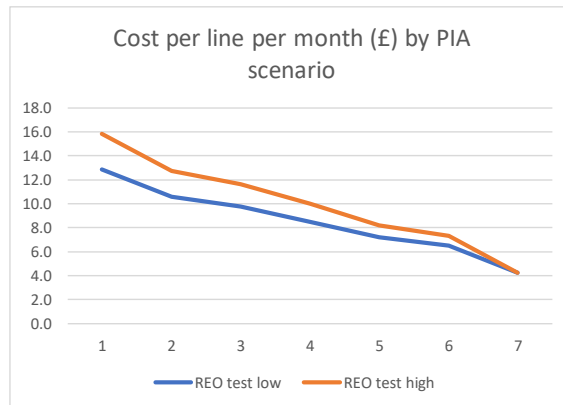
- 5.6 The rollout sequence assumed by the model uses the underground infrastructure length in BT exchange areas as a proxy for cost, deploying in the order of increasing cost. This results in a fragmented build, whereby exchange areas spread across several towns would be built, in preference to exchange areas comprising complete towns. We recognise that the move to using exchange areas rather than just postcode sectors is an improvement in the modelling in this respect, but we believe the rollout sequence remains significantly different from what would be implemented in the real world.
- 5.7 The chart below shows the variation in cost per line for different segments of 1 million premises passed in Ofcom's build sequence, along with the cumulative average cost. This uses Ofcom's REO Low scenario, which Ofcom uses to generate the low end of the cost range.



- 5.8 In its Area 2 scenarios (REO Low and REO High), Ofcom assumes a coverage of 3.5m premises in order to calculate its price range. The chart above shows that this includes a majority of postcode sectors with much lower than average unit costs. Competitive build in Area 2 is likely to cover significantly more premises than 3.5m, and Openreach is also likely to cover many of the premises included in this lowest-cost build of 3.5m.
- 5.9 Ofcom's build sequencing is based on underground distance, but it is clear from the graph above that such distance is not a good indicator of actual costs of deployment. Axione considers it would be appropriate for Ofcom to use the cumulative unit costs for complete coverage in Area 2 to set the REO Low and High values.
- 5.10 Not allowing for the cumulative unit costs of all of Area 2, would suggest that Ofcom does not think that competitive all-fibre deployment is viable throughout Area 2.
- 5.11 Annex 2 contains an analysis of the towns and cities covered by Ofcom's rollout assumptions for 3.5m and 8m lines coverage. This illustrates clearly the problem that Ofcom's assumed build of 3.5m premises results in partial build of many towns, and extending the coverage to 8m premises primarily results in further build in the same towns rather than extension to new areas. Axione therefore believes that the costs calculated in Ofcom's REO scenarios seriously understate the average costs for two reasons: firstly it is expected that CPs will deploy to far more than 3.5m premises (likely to be more than 8m, and far more when Openreach deployment is included), and secondly, CPs will tend to build complete towns in preference to the more fragmented build assumed in the model.

### 5.1.2. PIA usage assumptions

5.12 Axione notes that the usage assumptions for PIA are rather speculative, and that these assumptions have a very high impact on the results; we have analysed the impact on unit costs by considering a range of scenarios using Ofcom's control panel, with the following results.



Scen #	Scenario			REO test	REO test
	Segment 1	Segment 2	Segment 3	low	high
1	Self	Self	Low	12.9	15.9
2	LowLow	LowLow	Low	10.6	<b>12.8</b>
3	LowLow	LowLow	Low	9.8	11.6
4	MedLow	MedLow	Medium	<b>8.5</b>	10.0
5	Medium	Medium	Medium	7.2	8.2
6	High	High	High	6.5	7.3
7	NoSelf	NoSelf	High	4.2	4.2

red bold = Ofcom case

5.13 We therefore believe that these assumptions must be further considered and refined before the decision is finalised. There is a growing body of evidence of PIA usage across the country, which Ofcom should use to inform its final decision, further (as it is unpredictable what the level of PIA availability will be in any one area) it is important that Ofcom errs on the side of caution when making PIA usage assumptions.

### 5.1.3. Connection costs and duct and fibre lengths

5.14 We note that the costs to connect customers to the FTTP network assumed by Ofcom are largely based on information provided by Openreach, Ofcom has verified its final drop costs against a figure of £195 per connection (national deployment) or £190 (sub-national deployment), but it is not clear exactly what cost elements are allowed for in these amounts. Axione believes that, while these amounts may be appropriate to dense areas, they do not fully reflect the costs of connecting customers in general.

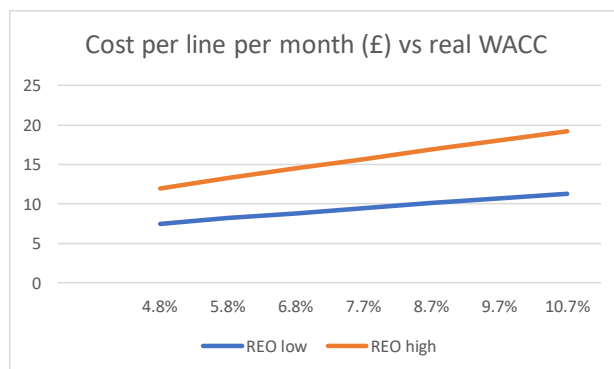
5.15 For example, Axione would expect these costs to include allowances for project management, missed appointments and share of infrastructure work on private land, but there is not sufficient detail provided to confirm whether such costs are included. We suggest that the connection costs are reviewed in detail, with input from altnets as well as Openreach, to ensure that they reflect the real-world costs of deployment. [§<].

5.16 Axione has reviewed in some detail the metrics coming from the fibre model [§<]. We are concerned to note that for segment 2, the duct length is greater than the cable length, implying that at least 30% of duct length is empty of cables. This undermines our confidence in the integrity of the geographic modelling, and we strongly believe that Ofcom must conduct rigorous checks and analytical review before using the fibre model to inform its decisions.

5.17 Moreover, the lack of detailed bottom-up analysis of the recurring opex undermines the credibility of the figures stated. The cost recovery profile for opex is unrealistic, and there is a real risk, in our view, that elements of cost are excluded and opex is underestimated. The scale of such differences may account for an underestimation of the ARPU of up to £1 per line and per month.

### 5.1.4. WACC assumptions

- 5.18 The WACC used for all scenarios in the fibre model is the “Other UK Telecoms” WACC used for FTTP and G.Fast provided by Openreach. This does reflect a premium of 80 basis points (nominal) over the standard Openreach WACC used for copper and FTTC charge controls, however it does not reflect the profile of a new entrant.
- 5.19 We note from discussions with Ofcom that the use of reduced asset lives is intended to compensate for not using an REO WACC in some way, but our analysis suggests that the asset life reduction would be equivalent to only an increase of 0.18%-0.26% in the WACC, which we consider insufficient to reflect the difference in WACC between Openreach (with existing anchor tenants) and a market entrant.
- 5.20 Given that Openreach is likely to face significantly increased infrastructure competition in Area 2, and also increased ramp-up risk in the move from copper-based services to FTTP, Axione believes there are strong arguments for an increased risk premium to be applied to Openreach for FTTP services, and we do not believe that the 80 basis point premium adequately reflects this.
- 5.21 So Axione strongly believes that a higher WACC would be appropriate to reflect the evolution of the WLA market with higher competition and increased risks, and we also disagree with Ofcom that the systematic risk is the same for altnets as it is for Openreach. Openreach has a dominant position in the broadband market, with a large existing customer base and substantial revenues. New entrants such as Axione will be starting with zero customers, and will face the risks and uncertainties of building market share. In the early stages of rollout especially, it seems clear that the risk profile is higher for altnet investment than for Openreach.
- 5.22 Ofcom should therefore apply a higher WACC to the REO costing scenario than it does for Openreach.
- 5.23 We note that the unit prices from the fibre model are strongly sensitive to the WACC used, as illustrated below:



- 5.24 At a more general level, Axione is concerned that Ofcom has made no explicit consideration of investor returns in its modelling, which ignores the fact the funding for rollout will be highly dependent on the IRRs and cash recovery profile that can be achieved.

### 5.1.5. Impact analysis

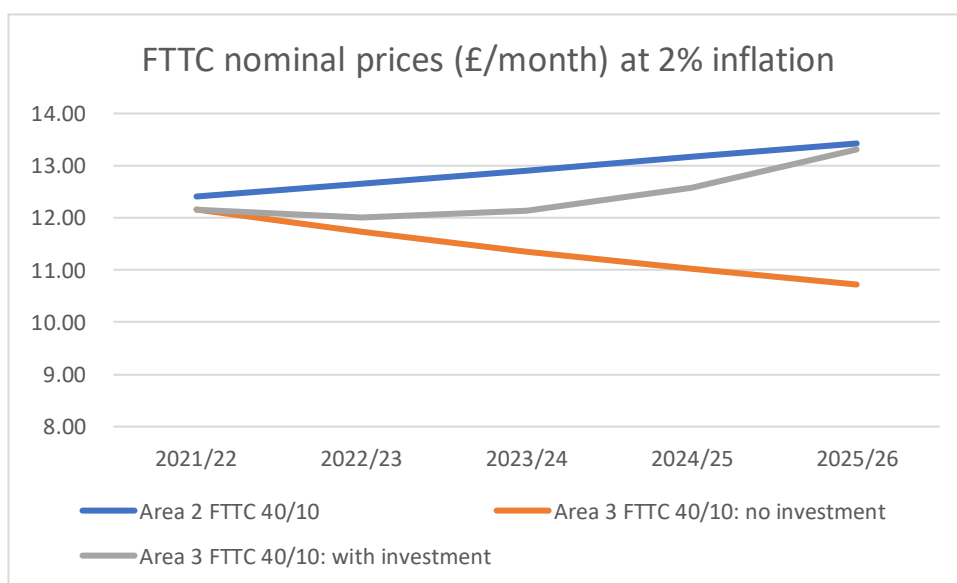
- 5.25 Considering the high sensitivity of the model outputs to the assumptions we have discussed above, Axione believes that there is a significant risk that the £8.50 - £12.75 unit cost range identified by Ofcom understates the costs of efficient deployment by altnets.
- 5.26 Annex 2 includes an impact analysis where four input assumptions are adjusted, giving a revised unit cost range of £12.20 - £19.25 per month. Axione therefore believes that there is a considerable risk that the CPI-0% charge control will not provide sufficient headroom for altnet deployments, and we suggest that the parameters used in Ofcom's REO scenario should be carefully reconsidered before Ofcom finalises its decision on the charge control.

## 5.2. WLA Area 3

- 5.27 Axione notes that the type of price regulation to be applied in Area 3 is not yet clear, as there are two options: the RAB approach if Openreach do not give robust investment commitments and the forecast approach if they do.
- 5.28 In either case, Ofcom assumes that there will be no material investment by altnets in Area 3. Axione disagrees with this assumption; as noted in Section 3, Axione has plans for significant investment in areas currently defined as Area 3, and therefore believes that any price control should not deter altnet investment, whether this is in competition with Openreach, or as an alternative to Openreach investment.
- 5.29 Axione believes that the optimal approach to price regulation in Area 3 for this review period (once it has been redefined as including locations that only support a single full-fibre network (without public subsidy) would be as follows:
- Set charge control at same level as in Area 2, as the overriding objective of incentivising investment is equally applicable here as in Area 2;
  - Price floor, as in Area 2 (proposed by Axione), and
  - Mandatory wholesale access for all operators in single-network locations, with priced benchmarked against Openreach charge control.

### 5.2.1. RAB approach

- 5.30 Our analysis in sections 4.5.2.1 and 4.5.2.2 demonstrates clearly that when faced with the choice of investing in Area 3 or Area 2, Openreach has very strong incentives to address Area 2 first. Whilst Openreach is less resource constrained than altnets, it will still have to choose where to deploy over time and our analysis demonstrates the clear value of focusing its early investment in locations where it is more likely to lose market share.
- 5.31 Axione analysis shows that the CPI-X+K approach would provide only a weak incentive for Openreach to invest in fibre in Area 3 compared to a "do-nothing" approach where they would be able to continue to fully recover the costs of their existing legacy network and continue to make a return on the existing capital employed. The chart below shows the expected cost recovery for a 4m premises FTTP investment compared with the Area 2 charge control and the Area 3 no-investment case.



- 5.32 The CPI-X+K approach will also act as a strong deterrent to altnet investment, which will further strengthen Openreach's incentives to focus initial investment in Area 2 where it is more likely to face competition and lose market share.
- 5.33 Although Ofcom proposes that Openreach cannot claim K-factor uplift for where it overbuilds existing full-fibre networks, we do not consider that this will in reality make any significant difference. This is because it is very unlikely that altnets can build a business case for deployment in Area 3 under the CPI-X+K scenario in the first place.
- 5.34 A further concern about the CPI-X+K approach relates to the fact that, whilst Openreach's wholesale FTTC pricing will be reduced until such time that Openreach has invested enough for the prices to go back up, those price reductions are, by Ofcom's direct admission in meetings during the consultation period, not likely to be passed on to end users but rather retained as increased margin for the retail ISPs.
- 5.35 This in itself creates a barrier for altnets like Axione, wishing to attract those ISPs onto their full-fibre networks. By not offering their customers the choice of full-fibre services using the altnet network, the retail ISPs would retain the higher margins and that effectively ties them to the Openreach platform for the period that those increased margins exist.
- 5.36 It is our view that, in creating the CPI-X+K approach, Ofcom would inadvertently create a win-win situation for Openreach and a strong altnet investment deterrent. We do not believe that this is Ofcom's intention and we urge Ofcom to reconsider.

### 5.2.2. Forecast approach

- 5.37 Although, at first glance, the forecast approach may appear more likely to support altnet investment in Area 3, this is in fact not the case. We explain below why that is so.
- 5.38 In order for Openreach to achieve a price level in Area 3 that is equal to the pricing in Area 2 at the end of the charge control period, our analysis suggests that Openreach would need to commit to deploying full-fibre to approximately 4m premises in Area 3.
- 5.39 It would be natural for Openreach to select the most commercially attractive locations for that deployment, and that will therefore overlap significantly with the locations included in the deployment plans for Axione and other altnets planning to deploy in Area 3.
- 5.40 The forecast approach does not include any deterrent to Openreach from overbuilding altnets (in the CPI-X+K approach Openreach could not claim K-factor where it overbuilds altnets), and Openreach could publish a list of locations where it intends to deploy in Area 3 at an early stage, effectively making those destination no-go zones for altnets.

- 5.41 This would result in altnets being forced into the less commercially attractive parts of Area 3, significantly reducing the likelihood of any substantial altnet deployment at all. Axione will deploy to a mixture of commercially viable and non-viable locations (with Government assistance), but cannot contemplate investing in non-viable areas only. Such deployments would then be left to small community-funded initiative that exist for the single reason that Openreach will not serve them.
- 5.42 As outlined above, the forecast approach would likely constitute a significant deterrent to altnet investment in Area 3. It is possible that it may result in less altnet deployment than the CPI-X+K approach, certainly we doubt that it would result in much more.
- 5.43 Axione understands Ofcom's motivation behind designing specific investment incentives for locations that are less commercially attractive and which may only be able to support a single network, but it is our strong belief that the way of achieving maximum commercial investment in Area 3 during this period, is to provide the same investment incentives in Area 3 as in area 2. Ofcom should provide investment incentives for Openreach AND altnets in Area 3 without discrimination or preference.

### 5.3. BC Area 2

- 5.44 BT's 2018-19 RFS showed that regulated Ethernet prices were below cost, and as a result Axione believes that this market is not attractive for altnet investment. To incentivise investment for MSNs, Ofcom should look to impose a charge control that allows Openreach to recover its costs as an absolute minimum. Altnet investment is best incentivised by the use of REO-level pricing; while we recognise that there are substantial economies of scope between the WLA and BC markets, we believe that Ofcom should ensure that the charge control allows sufficient economic space for a new entrant to make a reasonable return on leased line services, including recovery of common costs.
- 5.45 Whilst Axione agrees with Ofcom that the CPI-0 charge control is a positive pro-investment statement in its own right, it is unlikely to result in Openreach begin able to fully recover its costs of providing the relevant services, as those prices are already below cost. It therefore seems likely that these services would have to be cross-subsidised by WLA services. Axione does not understand why Ofcom would intentionally design a charge control with explicit cross-subsidies whereby WLA consumers would subsidise business services.
- 5.46 Axione notes that Ofcom has decided to apply the charge control to a wide basket of Ethernet and optical services; this may provide substantial opportunities for Openreach to game the control. We believe that Ofcom should analyse this carefully before finalising its decision.

### 5.4. BC Area 3

- 5.47 Our comments regarding the active leased line charge control in Area 2 are also relevant to Area 3.
- 5.48 Ofcom's proposed pricing for DFA in Area 3, with price declines to BT's costs, will effectively foreclose altnet investment in leased lines in Area 3, and is likely to cannibalise the active leased line market. Axione believes that that DFA should not be mandated in Area 3 in this review period; but if Ofcom decides to mandate it, then Axione believes that the price control should be set at a much higher level which would allow altnets to compete with Openreach.

## 5.5. Competition-related remedies

- 5.49 Axione welcomes Ofcom's recognition that Openreach has strong incentives to deter investment by altnets and as such it is important that the package of remedies for this period of intense FTTP deployment includes measures to prevent Openreach from engaging in such behaviour.
- 5.50 Axione believes that Ofcom needs to recognise that altnet investment is a binary issue. If it is deterred once, it is extremely unlikely that there will be a second opportunity to attract commercial altnet investment. It is therefore important that Ofcom imposes remedies that err on the side of preventing as much anticompetitive behaviour as possible, as opposed to erring on imposing the minimum level of interventions possible.
- 5.51 Axione considers that Ofcom's approach to competition related remedies is generally too cautious.
- 5.52 Axione agrees that the proposed restrictions on geographic discounts are important and that other forms of pricing that could have anti-competitive behaviour should also be deterred or even prohibited.
- 5.53 In addition to this, Axione also believes that the imposition of a price floor is a powerful pro-competitive measure which would significantly reduce risk to altnet investors.
- 5.54 We set out our comments on the proposed measures below.

### 5.5.1. Geographic and volume discount restrictions

- 5.55 Axione welcomes Ofcom's proposal to continue the limitations on Openreach's abilities to offer geographic discounts and to extend the scope of that provision to cover FTTP services as well as FTTC services.
- 5.56 Axione agrees that a general prohibition, with only consent-based exceptions is both proportionate and appropriate for the 5-year period covered by this review. The clarity and certainty offered by such a remedy is important for altnets and investors. We do, however believe that the proposed remedy should be strengthened.

#### 5.5.1.1. Geographic discounts

- 5.57 Ofcom limits the scope of the remedy to rental charges. Whilst Axione agrees that this is the charge through which providers recover the majority of their costs, connection and installation charges are also extremely important for providers for the following reasons:
- Installation and connection charges are levied up-front, so they are important to the overall cashflow of the provider
  - Installation and connection charges can be considered a barrier to switching by consumers, so the removal or reduction of such charges means that customers are much more likely to switch.
- 5.58 In Area 2, where Ofcom expects at least one full-fibre network in addition to Openreach, the introduction of low or zero FTTP installation and connection charges by Openreach could deter customers/retail ISPs from migrating to the altnet network. Ofcom recognises that Openreach enjoys benefits of incumbency, including its own downstream retail business as an anchor tenant and existing relationships with other large retail ISPs, so initiatives such as this could lead to mass migration of Openreach's existing FTTC customer base across to its new FTTP network.
- 5.59 It is unlikely that altnets would be able to waive installation and connection fees as these revenues are important to their overall business case.



- 5.60 Axione understands that Openreach favours connection and other one-off charges when offering discounts. It would seem that Openreach considers these charges to be an effective means of attracting and keeping customers. Openreach would not be offering that type of discounts if its retail ISP customers did not consider it to be of significant commercial value.
- 5.61 In the 2018 BCMR, Ofcom showed in table 5.2 that Openreach had offered significant discounts on connection charges over several years, despite these not counting towards compliance with the relevant charge controls imposed by Ofcom. Again, Openreach would not be offering such discounts unless it considered it worthwhile.
- 5.62 The potential scale of the costs of extending the geographic discount restrictions to installation, connection and other one-off costs, given that Openreach would remain free to offer such discounts on a national basis, is likely to be limited. The benefits, however could be significant. Ofcom acknowledged the possibility that Openreach can offer such discounts undermines investment cases and deters potential investors.
- 5.63 Ofcom acknowledges that it has only “*a relatively small window of opportunity to encourage alternative network investment*”, it is our view that there is a real risk that Openreach’s ability to offer unrestricted geographic discounts in installation, connection and other one-off charges will result in reduced investment over the relevant 5-year period.
- 5.64 Ofcom does not propose an outright prohibition of geographic discounts, but offers Openreach the opportunity to request individual approval of geographic discount schemes which Openreach considers satisfies the following two criteria:
- Whether Openreach had provided objective justification for the differential pricing; and
  - Whether it is consistent with our overarching policy objectives (including our strategy to promote network competition).
- 5.65 Although we understand Ofcom’s reluctance to impose a rigid all-out prohibition, we consider the two criteria above to be too wide and vague. We would like to see Ofcom provide further indication of the kind of justification Ofcom would find acceptable for differential pricing. This need not be exhaustive and we understand the need for some flexibility, but if a lower unit cost compared to surrounding areas is sufficient as a justification, then many urban areas could qualify.
- 5.66 We would like to see Ofcom making it clear that the justification needs to prove not only why there are lower costs in a specific area compared to neighbouring areas, but also that the area in question is different from other locations nationally where no geographic discount is proposed. The cost of geographic discounts to Openreach increase as the area covered by the discounts get bigger, so making it necessary to cover all other locations nationally with similar justification, could act as a deterrent to Openreach.
- 5.67 We note that Ofcom proposes to not apply the volume discount remedies to FTTP services in Area 3. Ofcom has explained to us that it considers it most likely that Openreach would use the pricing of FTTC services to deter competitive entry in Area 3. This is because Area 3 is unlikely to support more than a single network and FTTP price discounting could only be used after the FTTP network is deployed. Ofcom considers that once the single full-fibre network is deployed any geographic discounting of FTTP prices are unlikely to have an anticompetitive effect as no 2<sup>nd</sup> network deployment is likely.
- 5.68 Whilst Axione understands Ofcom’s argument, we still believe that there is scope of announcing regional FTTP pricing/discounts in advance of deployment that could deter altnet deployment. Additionally, if Ofcom’s assumption is right then one of the following scenarios should be true:
- Openreach would have no incentives to offer geographic discounts for FTTP prices as it faces no competition once it has deployed, or
  - If Openreach does propose to introduce geographic discounts for FTTP services, then it should be a simple process for Ofcom to approve any such proposals if they were in the interest of consumers and would not have any anticompetitive effects.

- 5.69 Axione therefore urges Ofcom to extend the geographic discounting restrictions to cover FTTP pricing in Area 3.
- 5.70 We further note that Ofcom proposes that there should be no restrictions on geographic discounting in the BCM for Area 3. Axione believes that can cause direct damage to altnet investments, we explain this below.
- 5.71 As explained above, Openreach's Ethernet prices are already below costs, which means that leased lines are effectively cross-subsidised by broadband services.
- 5.72 Ofcom removed the restrictions on PIA usage to enable altnets to benefit from the same economies of scope as Openreach, serving both the leased liens market and the broadband market from the same fixed infrastructure. Ofcom therefore acknowledged the importance to altnets of surviving both those markets.
- 5.73 It now seems that Ofcom considers this to be an issue in Area 2 only, not in Area 3. This may be linked to Ofcom's misperception that only Openreach should be incentivised to invest in Area 3, but it is important that Ofcom understands the strong investment cases for altnets to become the single network provider in Area 3 locations and that it is important that altnets can access both the broadband and leased lines markets in Area 3.
- 5.74 The prohibition on geographic discounts for leased lines in Area 3 is particularly important as Openreach could introduce such discounts in locations where it has no intention of deploying FTTP for some considerable time. It would therefore be a very low cost means of Openreach to damage the investment prospects for altnets.
- 5.75 Given the very limited direct leased lines competition Openreach currently faces in Area 3, it is difficult to imagine legitimate reasons for wanting to initiate geographic price discounts in those areas. The potential costs of imposing the remedy in Area 3 are therefore likely to be low, whereas the benefits could be very large.

### 5.5.1.2. Loyalty and other volume-related discount schemes

- 5.76 Ofcom also recognises that Openreach has the incentive to devise pricing schemes that incentivises major retail ISPs to stay with Openreach and not use competitive altnet networks. Axione agrees with this and again welcomes Ofcom's discussion of this.
- 5.77 We are, however, disappointed that Ofcom has not been able to propose a more specific and transparent framework to signal to Openreach what type of arrangements will not be acceptable to Ofcom. Ofcom proposes the following points are demonstrated by Openreach:
- the impact on nascent network competitors is unlikely to be material; and
  - the arrangements will generate clear and demonstrable benefits, such as:
    - *the arrangements are essential to Openreach's business case for fibre roll-out. In considering what is essential, we would need to see evidence that the restrictive elements were necessary over and above the fact that to date BT Consumer has not sought wholesale services from other infrastructure providers, relying instead on Openreach as a sole supplier and thus should be reliable as an anchor customer, plus our proposed copper switchover arrangements already give BT very powerful levers to achieve migration quickly; or*
    - *the arrangements are necessary to offer more efficient prices that would deliver benefits for consumers. For example, setting low incremental wholesale charges to customers for higher quality products. We would evaluate these benefits recognising that more efficient pricing structures of this type often can be achieved in a variety of ways that need not require large volume commitments on the part of wholesale customers.*

- 5.78 We understand that any test should be sufficiently flexible to ensure that it cannot be easily gamed, but once again, we would welcome more explicit examples of what would not be acceptable to Ofcom.
- 5.79 We are also concerned that Ofcom considers it to be beneficial overall to consumers if Openreach were to offer low incremental wholesale charges to assist in upgrading customers to higher quality products. Whilst there may be short-term benefits from accessing higher quality products at a lower price, the result of that kind of pricing would likely have two effects that are directly in conflict with Ofcom's objectives of encouraging competitive fibre investment:
- The price of the higher quality product (likely moving from FTTC to FTTP or from FTTP low speed to a higher speed) would be reduced and thus remove/reduce investment headroom for altnet investors. As such offers would be temporary, Openreach would be able to increase prices later without difficulty, once the desired effect on competition had been achieved.
  - Customers migrated onto the higher quality product will become more 'sticky', this making them less likely to want to use a new altnet fibre network in the foreseeable future. As the discounts would be offered at the wholesale level, the retail ISPs would be incentivised to stay on the Openreach platform, this could therefore partially foreclose the market to an altnet operator.
- 5.80 Even without significant volume commitments, this type of pricing could undermine altnet investments.

## 5.6. Price-floors

- 5.81 Ofcom acknowledges that a number of stakeholders have presented arguments that a price floor is necessary, but concludes that its geographic and volume/loyalty discount restrictions are sufficient to prevent Openreach from engaging in pricing behaviour that undermines competitive full-fibre investments.
- 5.82 In V4 paragraph 1.47 onwards Ofcom describes an approach referred to as 'adaptive regulation'<sup>4</sup> in which Openreach's prices are initially regulated using a standard CPI-X charge control, based on Openreach costs, and when an altnet has deployed in a given area Openreach's prices would be increased to sit above a price floor based on the costs of a reasonably efficient operator (REO). Ofcom finds that the initial CPI-X is likely to deter investment at the outset, Axione agrees with that assessment.
- 5.83 Ofcom also finds that the prospect of increasing prices once altnet deployment has taken place could discourage FTTP take-up.
- 5.84 The adaptive regulation approach is, however, not how price-floors are typically used. Rather the price floor is introduced up-front in order to prevent further reductions from undermining altnet investment incentives. Axione has experience of working in France where Arcep has used a REO-costing approach for setting active leased lines pricing. This with the explicit objective of incentivising investment at the upstream passive level. This approach has resulted in a commercial market for dark fibre and active leased lines, based on access to regulated ducts and poles. The REO costing is calculated taking account of duct and pole access.

<sup>4</sup> Which we understand was proposed by TalkTalk

- 5.85 Axione is concerned that Openreach's incentives to undermine altnet investment are sufficiently strong that it might cause Openreach to price below the maximum charges as per the proposed CPI-0 charge controls in the BC and WLA markets. The long term returns to Openreach if it successfully deters a substantial part of altnet investment would be very large indeed.
- 5.86 We note that Ofcom's powers are specifically linked to the imposition of remedies prevent BT from pricing excessively or engaging in margin squeeze activity<sup>5</sup>. Ofcom has no specific powers to address predation or behaviour that will result in market foreclosure.

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<sup>5</sup> Communications Act 88 (3) "For the purposes of this section there is a relevant risk of adverse effects arising from price distortion if the dominant provider might—

(a)so fix and maintain some or all of his prices at an excessively high level, or

(b)so impose a price squeeze"

## 6. Assessing the proposals for non-price remedies

6.1 Axione does not plan to consume active Openreach wholesale BC and WLA products, and therefore does not offer comments on Ofcom's proposed access remedies. As a wholesale-only provider, Axione does however wish to remind Ofcom that altnet wholesalers need to replicate, and often better, the Openreach access products and as such it is important that they are clear, transparent and proportionate.

### 6.1. PI remedies

6.2 Ofcom relies on the use of PIA to reduce fibre deployment costs, but proposes to largely leave existing PI remedies unchanged. Axione currently uses PIA in Scotland and intends to use PIA when building its fibre networks across the UK, but believes that the service needs significant improvements before it can really be relied upon to play the role Ofcom relies on it to play.

6.3 Axione participates actively in the PIA industry working group (IWG), chaired by the OTA2. This is a very useful body and progress is being made to improve the product and make it fit for use at scale. It is clear, however, that the assessment of issues brought to the IWG and the negotiation of solutions is one between keen users of a product and a reluctant supplier of that product.

6.4 Our concerns fall into 3 categories:

- The strengthening of non-discrimination provisions
- Strengthening of service level agreements and service level guarantees
- Improvements to the PIA product, systems and processes

#### 6.1.1. Strengthening of non-discrimination provisions

6.5 This is by far Axione's largest concern in relation to the PIA product.

6.6 The most fundamental and underlying problem is that Openreach is vertically integrated and it has no interest in making access to its furthest upstream infrastructure easy to consume by operators that would otherwise be customers for downstream Openreach products or that become competitors to Openreach for the supply of downstream products.

##### 6.1.1.1. The need for EoI

6.7 Axione firmly believes that the only way to ensure that the PIA product becomes fit for purpose and preventing Openreach from accessing its physical infrastructure in ways not available to altnets is to introduce full equivalence of inputs (EoI) for the product.

6.8 Axione has extensive experience of using the Orange duct and pole access product and that product is subject to full EoI ("Equivalence des Intrants"). In its decision N° 2008-0835 from 2008, Arcep already concluded that "In terms of non-discrimination, all operators, including France Telecom and Numéricâble, should be able to access France Telecom's civil engineering infrastructure under equivalent conditions: It is therefore necessary to ensure that the operational processes set up in terms of the wholesale offer of access to civil engineering infrastructures place alternative operators on an equal footing, and do not place undue burdens or constraints on them which would penalise them compared to other wholesale or retail offers from France Telecom."

- 6.9 Although the design and implementation of an Eol platform for the PIA product is complex, expensive and will take time, it is a process that needs to be commenced as soon as possible. If it is not implemented within the next 2-3 years the benefits of Eol will be delivered after the majority of altnet deployment has been completed.
- 6.10 Axione is aware that Ofcom has in the past stated that it would review the need to impose Eol at a later stage, we now urge Ofcom to initiate the Eol process as soon as possible in order that the efforts of implementing Eol will be delivered in time to support the majority of full-fibre deployment across the country.
- 6.11 We note that Ofcom does not discuss Eol in relation to PIA in the WFTMR, other than to say that Ofcom considers Eol to be "*inappropriate or disproportionate*"<sup>6</sup>. This is disappointing as it has become clear though the last 24 months since the work on the new PIA reference offer started, that altnets are identifying areas where BT/Openreach itself has what constitutes preferential access to the Openreach infrastructure.
- 6.12 On numerous occasions during the PIA reference offer negotiations, altnets have asked whether the same restrictions apply to Openreach itself and the answer is always that Openreach does not use PIA, so that is not relevant.
- 6.13 In retrospect, not mandating Eol from the outset could prove a mistake. There is now a full set of processes and systems designed by Openreach to service altnets, but which are almost certainly unsuitable to meet Openreach's needs. It would be in Openreach's interests to ensure that a transition to Eol would be a difficult, expensive and time-consuming as possible.
- 6.14 In Annex 12, Ofcom states: "Without access to BT's physical infrastructure network, large-scale network deployment in significant parts of the country is likely to be unviable."<sup>7</sup> But yet Ofcom seems reluctant to ensure that the PIA product is fit for purpose and that no discrimination is possible in the provision of access to the Openreach infrastructure, regardless of who uses that access. Axione urges Ofcom to reconsider its position on Eol for PIA. PIA is the cornerstone for Ofcom's infrastructure competition strategy and equally critical for the Government to meet its objectives for the sector.

#### **6.1.1.2. Ofcom's implementation of no undue discrimination**

- 6.15 Ofcom's proposed implementation of the no undue discrimination (NUD) remedy should, in principle, be a good compromise, given Ofcom's concerns that Eol may be inappropriate or disproportionate. The description of the NUD remedy includes statements like: "*we would interpret that obligation as requiring strict equivalence in respect of all processes and sub-products that contribute to the supply and consumption of network access, with discrimination permitted only in cases where Openreach demonstrates that a difference in respect of a specific process step or sub-product is justified.*"<sup>8</sup>
- 6.16 However, Ofcom then proceeds to state that: "we do not consider it necessary for Openreach to set out the entire end-to-end process on how passive infrastructure is used (with differences being individually identified and justified)" and "We are not proposing an upfront obligation on Openreach to justify all instances of non-equivalence"<sup>9</sup>.

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<sup>6</sup> V2 paragraph 3.71.

<sup>7</sup> Annex 12. Paragraph A12.5.

<sup>8</sup> Annex 12. Paragraph A12.27

<sup>9</sup> Annex A. Paragraph A12.28.

- 6.17 These statements effectively result in the onus being on altnets to make strong cases for why Openreach is favouring itself. That is extremely hard to prove, as altnets do not have access to Openreach's internal processes or performance data. This has been clearly demonstrated through the difficulty experienced in finding KPIs where comparable data is available between the Openreach access terms and the access terms offered to altnets via PIA.
- 6.18 Openreach has implemented new processes and systems to support the PIA product, but there has been no effort, to the best of our knowledge, to ensure that those processes and systems reflect the way Openreach uses its own infrastructure as much as possible. Axione considers that this is not in compliance with Ofcom's NUD remedy, even without the need to prove compliance with existing processes and systems.
- 6.19 Ultimately, the only way of securing that Openreach is incentivised to make the PIA systems and processes as functional as possible, is by making Openreach itself to use those same systems and processes.
- 6.20 Ofcom's statement that "*We are not proposing an upfront obligation on Openreach to justify all instances of non-equivalence, however, we are provisionally retaining the requirement on Openreach to produce an Internal Reference Offer that requires it to set out its internal processes to some degree. This will allow Ofcom and telecoms providers to identify any differences in process.*" Suggests that the Openreach Internal Reference Offer (IRO) should be a means of understanding where discrimination occurs and what impact this might have.
- 6.21 Instead, the IRO reads like a marketing document for Openreach's approach and presents the separate PIA processes and systems as almost means of offering better functionality than that which is afforded to Openreach itself using its internal processes and systems. Whilst Axione appreciates the intention behind the IRO, we consider the actual document of very limited use.
- 6.22 While working on the Eol implementation for PIA, and as an input to that process, we believe Ofcom should amend the NUD provisions to include that Openreach, over the next 12 months, has an obligation to justify any current non-compliance with Eol. We further propose that Ofcom amend the NUD remedy to state that any new systems developed by Openreach to support the PIA product must be developed in such a way that they can support the needs of Openreach once Eol is implemented.

#### 6.1.1.3. The scope of the no undue discrimination remedy

- 6.23 As mentioned above, the most common response from Openreach when an altnet queries whether a feature of the PIA product is aligned with how Openreach itself uses its infrastructure, is that Openreach does not use PIA, so it is not possible to compare. Axione believes that Ofcom should expand the scope of the NUD remedy such that more general comparisons can be made. Axione would welcome the opportunity to work with Ofcom the OTA and other stakeholders to define specific parameters for such comparisons.

#### 6.1.1.4. Accounting separation

- 6.24 Axione further notes that Ofcom is not proposing to implement meaningful accounting separation for the PI market.
- 6.25 The PI market has been defined as a relevant market in which a provider has been identified as having SMP, and an accounting separation remedy has been applied by Ofcom to that market.
- 6.26 Therefore, the separated accounts need to comply with the EC accounting separation rules and show in a transparent manner the cost and revenues incurred and generated for that market. However, we understand that Ofcom's proposal is to simply have BT report on the external revenues and assume that internal revenues make up the balance in order to match the costs including the WACC.

6.27 This does not provide transparency and does not provide any insight into how BT itself uses its duct and pole infrastructure. Axione urges Ofcom to reconsider this approach.

### 6.1.2. Strengthening of service level agreements, service level guarantees and key performance indicators

#### 6.1.2.1. SLAs and SLGs

6.28 At present only very few service level agreements (SLAs) are in place for the PIA product, relating to the provision of network adjustments only. A systems SLA is being considered, but it will, as we understand it, only apply to when there is a complete systems breakdown – not to the performance of the various systems that support the PIA product.

6.29 Although only lease of space (duct and pole) and performance of network adjustments are chargeable PIA products, the consumption of the product relies on a large number of interfaces between Openreach and altnets. These include the provision of keys for locked lids and a number of other operational interfaces where the altnet is entirely dependent on Openreach to be able to conduct its business. Axione proposes that Ofcom conduct a separate short consultation asking altnets to submit areas for which SKLAs would be appropriate. It can then, with the help of the OTA, impose specific SLA obligations on Openreach.

6.30 With regards to service level guarantees (SLGs), Ofcom will be aware of a lengthy process over the past 8-10 months, during which Openreach has presented a structure for calculation of SLGs. The resulting SLGs do not reflect the costs incurred by altnets when Openreach does not meet its SLAs, this is rooted in a number of disagreements between Openreach and altnets including, but not limited to:

- The structure of the SLGs does not reflect how costs are incurred by altnets. For example, significant costs are incurred at the time the delay is communicated, but Openreach calculates an average daily cost. This means that altnets that suffer short delays are undercompensated and vice versa for those that suffer long delays. We encourage Ofcom to make it clear to Openreach that the SLGs must reflect how costs are incurred.
- Openreach has excluded all losses to altnets as a consequence of delays/cancellations. Openreach states that such losses are 'remote' from the SLA failure, but that is evidently not the case. It seems that this is simply a case of prolonging the SLG negotiation process for as long as possible and thus reducing any liabilities to Openreach for compliance with the, very limited, SLAs. Axione requests that Ofcom makes it clear that Openreach's SLG liability must cover all relevant costs incurred by altnets as a consequence of Openreach not meeting its SLAs.

6.31 It cannot be acceptable that an almost ritual protracted dance, during which Openreach 'walks slowly backwards' can cause delays of more than 2 years to the fair and reasonable implementation of the duct and pole access remedy Ofcom imposed in March 2018. Whilst more specificity can cause future problems in lack of flexibility, that can be overcome by drafting and should not be used as a justification for allowing Openreach to abuse the flexibility in the remedies to the detriment of the UK delivering full-fibre networks across the country as quickly as possible.

#### 6.1.2.2. KPIs

6.32 Ofcom has not prescribed any specific key performance indicators (KPIs), but refers to the process to Openreach and Ofcom agree relevant KPIs and publish KPI data on a quarterly basis.

6.33 Openreach is proposing KPIs that compare PIA processes with processes for other Openreach products, such as Ethernet, justifying this by saying that there is no equivalent process for how Openreach uses its own infrastructure. This raises two significant issues:



- If there is no equivalent process for Openreach itself, there is almost certainly some level of discrimination as PIA customers have to undertake additional processes to what Openreach faces; and
  - The processes used by Openreach for comparison may look superficially similar, but are for different products so it is clear that they are likely to be subject to different issues, challenges and thus timing to perform. For example, two desk-passed assessments are not automatically comparable.
- 6.34 Altnets have submitted a list of interfaces we believe should be subject to KPIs, but we are seeing limited progress. As for SLAs, Axione proposes that Ofcom conduct a separate, short, consultation to collect views of where KPIs should be applied. Mandating some specific KPIs does not need to result in any loss of flexibility. Processes to review and modify KPIs can be run as do the current KPI specification process.

### 6.1.3. The PIA product, systems and processes

- 6.35 Axione has extensive experience in deploying in rural areas where network economics tend to support a single open fibre network. We believe that current market arrangements in the UK are inefficient and that mutualisation of the distribution and last drop is essential at sensible “mutualisation points” in the network to allow sharing of the passive network from that point to the end-user premise.
- 6.36 At the very least, the last drop should be accessible by all network operators which has a direct impact on the PIA product. Axione believes that the UK PIA product would become significantly stronger if the final drop connection was mutualised, so that an operator would not need to take down its customer connection when an end-user decides to churn to another ISP active on a different network, and the new network operator would not need to put up a new customer connection.
- 6.37 At present the PIA product is consumed using processes that cannot support large scale consumption. There is work underway to develop APIs to support scale use, but this is competing for resources with other Openreach initiatives and is not progressing at the rate necessary to support scale deployment in the near future.
- 6.38 Whilst Axione’s current level of usage can be supported by the current systems it is clear from other larger users that their systems need to be industrialised and that this needs to be prioritised within Openreach. It is our understanding that the current systems and processes would not be able to support Axione’s planned level of PIA consumption in addition to a number of other Altnets’ requirements.
- 6.39 Axione believes that Ofcom could support the industrialisation process by changing the remedies to specifically include provisions obliging Openreach to deliver a product that can process a minimum number of orders and which is automated and presents open interfaces.

## 7. Assessing copper retirement proposals

- 7.1 Ofcom proposes that Openreach should be allowed to start its copper retirement process as part of the all-fibre deployment process. Axione agrees that this is reasonable and we offer our comments on Ofcom's proposed approach below.
- 7.2 Axione agrees that it is important for Ofcom to focus on protecting consumers in this transition period, and particularly vulnerable consumers. We do also think it is important for Ofcom to include in its considerations the potential impact on competition, including the assessment of whether the proposed framework would act as a constraint on Openreach's behaviour.
- 7.3 Ofcom specifically addresses the potential issues for competing infrastructure investors in paragraph 2.6 of V3 in the copper retirement section of the WFTMR: *"Our concern is that Openreach may have the incentive to deploy fibre in a way that deters competitor investment: by either targeting just those parts of an exchange area where competitors are present, or by deploying ultrafast in part of an area just sufficient to deter competitor investment in that area in the short term and then redeploying resources to provide coverage elsewhere. This could cumulatively deter competitor investment across a wider area. If this were to result in less network competition, Openreach would then have less incentive to return and complete ultrafast coverage in an area."*
- 7.4 Axione agrees that these are real concerns for competitive full-fibre providers and Axione has already seen evidence of tactical deployment by BT in rural pockets to spoil the altnet investment case. Axione is, however, concerned that Ofcom's proposals do not provide the protection necessary to prevent Openreach from engaging in such behaviour. In fact, there appear to be no specific proposals for how to deter Openreach from engaging in such behaviour.
- 7.5 If the only consequence for Openreach of engaging in these types of behaviour is that it cannot invoke a stop sell rule and it may delay its ability to retire its copper network, this may not be sufficient compared with its clear and strong incentive to deter competitive fibre deployment.
- 7.6 Ofcom acknowledges in V3 Paragraph 2.21 that Openreach will not retire its copper network until 2026 at the earliest. This means that there is considerable scope for Openreach to game the system by deploying just enough across a number of commercially attractive locations to deter competitive fibre deployment, without suffering any consequences other than a delay to the stop sell date.
- 7.7 Axione does not believe that Ofcom proposed remedies sufficiently address the explicit concerns it has set out in V3 para 2.6. In particular, we note that the section titled 'Impact of our proposals' does not address this issue.
- 7.8 Options that Ofcom could consider for addressing the issue of potential anticompetitive behaviour by Openreach to deter rival investment include:
- A minimum level of ultrafast network coverage by Openreach within the first 12 months of it commencing such deployment in a given town or city. For example no less than 50% of premises or [xx] premises, whichever is the lowest;
  - Planned coverage levels and deployment timetable to be included in the Openreach pre-notifications for ultrafast network deployment;
  - A 'good faith' deployment commitment by Openreach, including guidelines on what is meant by good faith – Such guidelines could for example include minimum deviation from published ultrafast deployment plan as published, not deployment of less than 50% of the total households in first wave deployment, and other similar parameters to indicate what type of behaviour is intended; and
  - A specific framework for reviewing Openreach deployment patterns and associated penalties for breach of 'good faith' deployment commitment.

## 7.1. Stop-sell provisions

- 7.9 Ofcom proposes that Openreach can implement a stop sell measure when it has notified Ofcom that it has reached 75% ultrafast coverage in an exchange area. This, however, presumes that it is Openreach that deploys the first or maybe the only ultrafast network in an exchange area.
- 7.10 Axione plans to deploy full-fibre networks in locations where it is likely that one single network is viable. Therefore, once Axione has deployed its network it is unlikely that Openreach will wish to overbuild. In that situation, Openreach should be allowed to implement the stop sell measure when any ultrafast network has reached 75% coverage of an exchange area.
- 7.11 Axione is a wholesale-only provider and will welcome BT as a wholesale customer to use its network. If Openreach does not plan to overbuild an existing fibre network, then it is essential that its obligation to provide new copper services is discontinued in a consistent manner with locations where Openreach does deploy its own fibre/ultrafast network. This would allow for an orderly transition and would assist the economics of the fibre network provider as it would start a gradual transition of customers from Openreach's copper network over to Axione's network.
- 7.12 Axione understands that Ofcom cannot mandate that Openreach implements a stop sell in response to an altnet fibre network deployment, but it is likely that, in single-network locations, other ISPs will want to migrate across to the fibre network in any case and it would therefore make commercial and operational sense for Openreach to gradually shut down its copper network with the BT retail businesses (or indeed Openreach itself if it wishes to) consuming access to the altnet fibre network.
- 7.13 We understand that Ofcom has expressed willingness to allow stop sell where altnet networks cover 75% of an exchange area and we welcome that. We are, however concerned that there is little transparency as to the actual exchange area definitions. We therefore urge Ofcom to mandate that Openreach must make available to altnets the geographic coverage details for all Openreach's exchange areas.

## 7.2. Removal of copper charge control

- 7.14 As for the stop sell provisions, it is also important that the charge control obligation on Openreach for copper-based services is withdrawn when an altnet fibre network reaches full coverage<sup>10</sup> of an exchange area (or at least 2 years after the stop sell is implemented). This will then enable Openreach to price copper in a manner that enables the eventual copper switch-off.
- 7.15 As for regulation of ultrafast prices in locations where only an altnet network is present, Axione accepts that it may be necessary to impose rules for the pricing and scope of wholesale access products, in order to protect consumer interests. Axione understands the responsibility associated with operating the single network in a location and is willing to work with Ofcom and stakeholders to define the appropriate regulatory interventions.
- 7.16 Axione agrees with Ofcom that it is important to have clarity with regards to the 100% ultrafast deployment rule for copper retirement and we look forward to seeing the forthcoming consultation on that subject.

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<sup>10</sup> We acknowledge that Ofcom will issue a further consultation in relation to how full coverage is defined.

## 8. Annexes

ANNEX 1 – [REDACTED]

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[REDACTED]

## ANNEX 2 – FIBRE COSTS MODELLING

## 8.1. Introduction

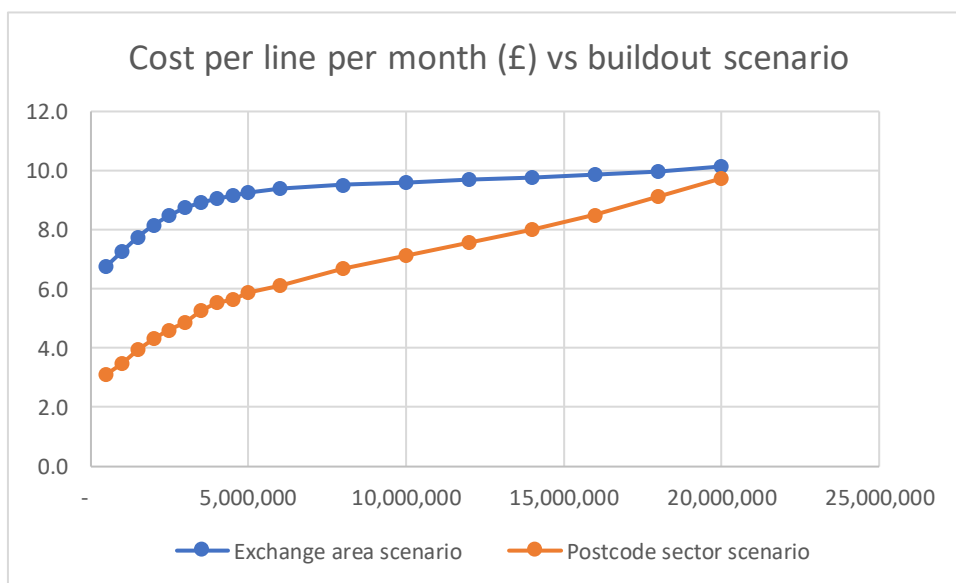
- 8.1 This annex describes some of the analysis performed by Axione on Ofcom's fibre model, focusing on key assumptions which affect the unit cost range determined by Ofcom for REO costs in Area 2 (i.e., £8.50 - £12.75 per line per month) and the capex outputs used for the RAB analysis.
- 8.2 We have not been able to exactly replicate Ofcom's cost range, as the published model has some randomised inputs. But for clarity, in the analysis presented below we have normalised the unit costs so that the impacts are referenced to Ofcom's base range (so, for example, a £0.50 change in the REO low unit cost is presented as  $£8.50 + £0.50 = £9$ , although as extracted from the published model it might appear as  $£8.20 + £0.50 = £8.70$ ).

## 8.2. Model scope

- 8.3 The scope of the fibre model is from the access node to the customer premises. As a result, the model fails to account for the non-access costs of serving a town such as the PoP, backhaul, systems etc. and ignores factors which would generate significant economies of scale. The model may also exclude costs incurred by altnets in providing the equivalent to BT's wholesale products.
- 8.4 We also believe that the lack of detailed bottom-up analysis of the recurring opex leads to an incorrect profile over time, and a real risk that elements of cost are excluded and opex is underestimated. The scale of such differences may account for an underestimation of the ARPU of up to £1 per line per month.
- 8.5 As a result of this scope limitation the fibre model is not useful in determining the viability of different areas for competitive investment. While we recognise that Ofcom is not actually using the model for this purpose, Axione believes that it is impossible to make robust decisions on the price remedies to be employed in an area without a proper assessment of economic viability.

## 8.3. Rollout sequence

- 8.6 Since the 2019 modelling consultation, we note that Ofcom has changed the methodology used to determine the order in which the model assumes that postcode sectors are built. It is now done by ensuring that complete exchange areas are built, in ascending order of cost (proxied by length of underground infrastructure). This change was made to address concerns raised by several stakeholders that the approach was too simplistic and not reflective of how networks are rolled out in practice.
- 8.7 We note that the new method does reduce the degree of fragmentation in the network build, but we do not believe that this change is sufficient to eliminate our concerns that the rollout sequence reflects reality.
- 8.8 The chart below compares the original postcode sector approach with the new exchange area approach, showing how the unit costs vary with coverage in Area 2.



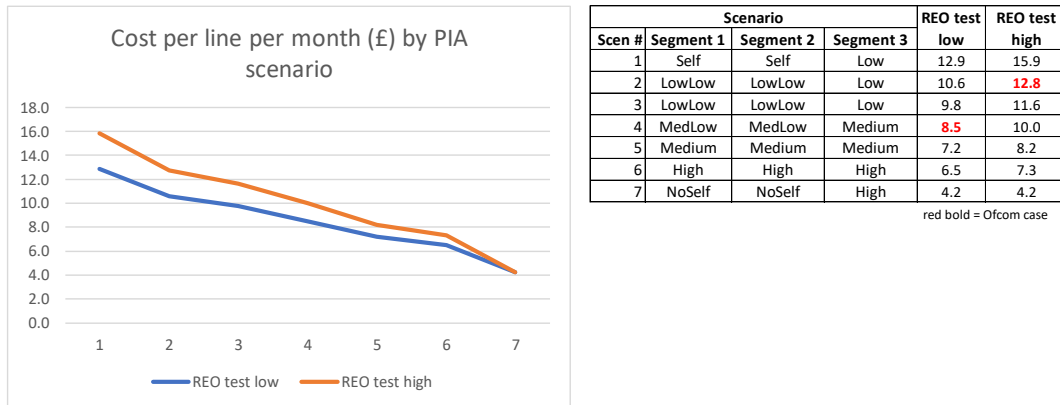
- 8.9 While the curve is flatter, especially at higher levels of coverage, there remains a considerable variation in unit cost as coverage varies up to 5m premises passed. This is particularly significant, as in the REO scenarios Ofcom has chosen to assume that only 3.5 million premises are covered by competitors to Openreach.
- 8.10 We have conducted some further analysis to compare the rollout to 3.5m premises (as in Ofcom's REO scenarios) to an alternative rollout to 8m premises. This has been done by taking Ofcom's postcode sectors for Area 2, as ordered by Ofcom's rollout sequence, and identifying the towns and cities which include each postcode sector. The towns and cities were identified by inspecting maps of postcode sectors. For each town and city, the number of premises included in the deployment is identified from the Ofcom data, considering 3.5m and 8m rollout scenarios. The results of this analysis are shown in the table below:

Town/City	Premises passed		Town/City	Premises passed	
	3.5m rollout	8m rollout		3.5m rollout	8m rollout
London	1,835,667	2,439,661	Nottingham	-	138,031
Edinburgh	237,604	247,936	Cardiff	-	118,013
Manchester	188,553	472,629	Bradford	-	108,186
Brighton	104,139	166,477	Belfast	-	98,997
Glasgow	88,587	293,481	Stockport	-	94,151
Sutton	80,714	86,169	Sunderland	-	85,255
Harrow	77,353	139,647	Blackpool	-	84,559
Croydon	72,108	99,467	Luton	-	81,282
Portsmouth	70,170	123,155	Rochester	-	71,644
Twickenham	67,385	176,242	Southend	-	71,488
Ilford	64,660	98,332	Dundee	-	70,692
Birmingham	64,508	375,978	Wolverhampton	-	69,553
Romford	59,628	193,663	Canterbury	-	59,834
Bristol	59,479	94,017	Torquay	-	54,649
Leeds	57,124	186,939	St Albans	-	44,121
Kingston upon Thames	51,199	94,429	Bolton	-	41,271
Bromley	48,258	68,139	Oldham	-	41,234
Chester	45,841	79,748	Reigate	-	40,973
Liverpool	43,416	256,566	Blackburn	-	37,553
Bournemouth	32,233	80,660	Leicester	-	36,546
Dartford	24,632	125,498	Oxford	-	24,824
Southampton	23,891	126,773	Dudley	-	19,570
Coventry	23,326	70,440	Milton Keynes	-	11,543
Southall	20,278	100,100	Warrington	-	5,033
Aberdeen	18,798	18,798	<b>Sub total</b>	-	<b>1,509,002</b>
Enfield	14,671	96,959	<b>Grand total</b>	<b>3,500,188</b>	<b>8,002,870</b>
Sheffield	13,193	169,192			
Plymouth	12,773	12,773			
<b>Sub total</b>	<b>3,500,188</b>	<b>6,493,868</b>			

- 8.11 The above table clearly shows that, in most cases, only a small part of each town or city is built in the 3.5m premises scenario. **As the coverage is extended to 8m premises, most of the additional build is directed at extending the coverage within existing towns, and only 1.5m premises are covered in new towns.**
- 8.12 This does not reflect the build sequencing that would be used by an efficient new entrant, which would adopt a much less fragmented approach and target network build at complete (or largely complete) towns. As a result, Axione believes that the costs of deployment in Ofcom's REO scenarios are significantly understated.
- 8.13 Ofcom's approach cherry-picks low-cost areas and underestimates costs of real full-town deployment. It is also contrary to Ofcom's desire for ubiquitous coverage of FTTP networks.

## 8.4. DPA usage and UG/OH ratio

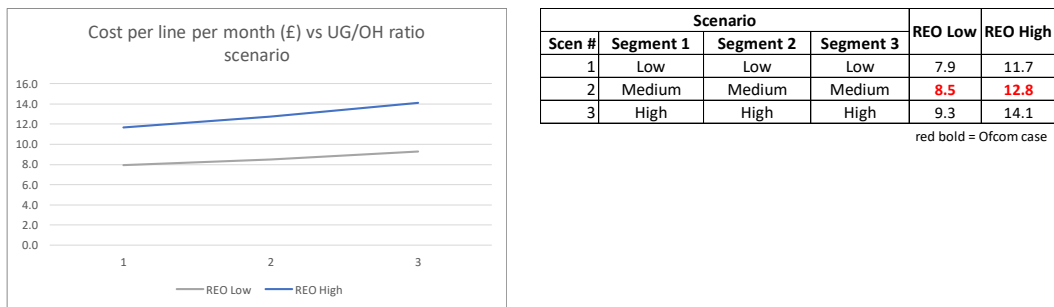
8.14 Axione notes that the unit costs of the various scenarios modelled are highly dependent on the assumptions for DPA usage. The chart below shows the impact on unit costs on a range of DPA scenarios:



8.15 Given the high degree of sensitivity to DPA usage, and the speculative nature of the assumptions used, Axione believes that before finalising its decision, Ofcom should further review these assumptions using the latest data from operators using DPA.

8.16 Axione would welcome Ofcom publishing its analysis that will support its final decision of REO cost levels.

8.17 We further note that the assumptions adopted for the proportion of infrastructure which is underground rather than overhead is also a significant factor. The chart below shows the impact on unit costs:

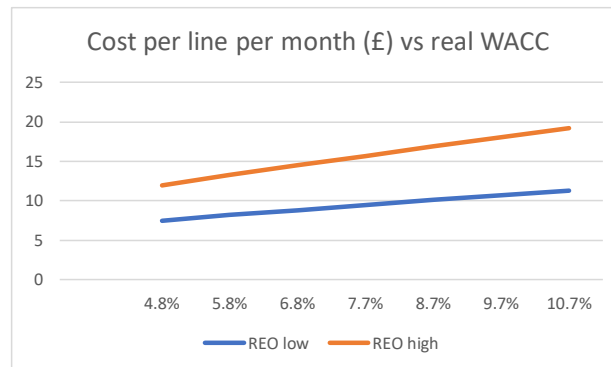


8.18 Again, Axione would welcome visibility of Ofcom's specific assumptions and the underlying data for that, when Ofcom makes its final decision on REO costs.



## 8.5. WACC

8.19 We note that the unit prices from the fibre model are strongly sensitive to the WACC used, as illustrated below:



Real WACC	REO low	REO high
7.7%	10.5	15.7
7.3%	10.0	14.9
6.8%	9.5	14.2
6.3%	9.0	13.5
<b>5.8%</b>	<b>8.5</b>	<b>12.8</b>
5.3%	7.9	12.0
4.8%	7.4	11.3
4.3%	6.9	10.6
3.8%	6.4	9.9

red bold = Ofcom case

8.20 Axione understands that Ofcom has chosen to use the “Other UK Telecoms” WACC to determine the FTTP costs for rollout of FTTP by Openreach (which reflects a premium of 80 basis points in real terms over the standard Openreach WACC used for copper and FTTC charge controls). However, Axione does not believe that this premium is adequate to fully reflect the risks that Openreach will face from increased infrastructure competition in Area 2, and the ramp-up risk in the move from copper to FTTP services.

8.21 We further note that Ofcom uses the same WACC for the REO scenarios as it uses for the Openreach-only scenarios. Openreach has a dominant position in the broadband market, with a large existing customer base and substantial revenues. New entrants will start with zero customers, and will face the risks and uncertainties of building market share. In the early stages of rollout especially, it seems clear that the risk profile is higher for altnet investment than for Openreach and that a further premium should be applied to the WACC.

8.22 Ofcom has suggested that the use of reduced asset lives in the REO scenarios to some degree compensates for not using a higher WACC by providing greater investor returns.

8.23 Axione has assessed the impact of these reduced asset lives, and this is shown below:

	REO Low	REO High
<b>Incumbent lives</b>	8.3	12.5
<b>REO lives</b>	8.5	12.8
<b>Change in unit costs</b>	2.3%	2.1%

8.24 The impact of reduced asset lives is small, around a 2.1 - 2.3% increase in unit costs. This would be equivalent to an increase of only around 20 basis points on the WACC. Axione does not believe that such a small increase would be sufficient to compensate for the extra risks faced by new entrant operators.

8.25 So Axione strongly believes that a higher WACC would be appropriate for the Openreach-only scenarios, and also that a further increase should be applied to the REO scenarios to reflect the increased risks face by new entrants compared to Openreach.

## 8.6. Impact analysis

8.26 Considering the high sensitivity of the model outputs to the assumptions we have discussed above, we have identified the potential impact of changes to these inputs on the REO cost range identified by Ofcom. The table below shows the impact:

Scenario	REO Low	REO High
<b>Ofcom Base Case</b>	<b>8.5</b>	<b>12.75</b>
Coverage set to 8m PP	+0.6	+0.6
PIA usage reduced	+1.3	+3.1
UG/OH ratio set to high	+0.8	+1.3
WACC +1%	+1.0	+1.5
<b>Revised range</b>	<b>12.2</b>	<b>19.25</b>

8.27 The effect of changing these four input assumptions gives a revised unit cost range for FTTP rental of £12.20 - £19.25 per month; in this scenario the lower end of the REO cost range coincides with the starting price for the CPI-0% charge control, while the upper end is considerably higher.

8.28 Axione therefore believes that there is a considerable risk that the CPI-0% charge control will not provide sufficient headroom for altnet deployments, and we suggest that the parameters used in Ofcom's REO scenario should be carefully reconsidered before Ofcom finalises its decision on the charge control.

## 8.7. Duct and cable lengths

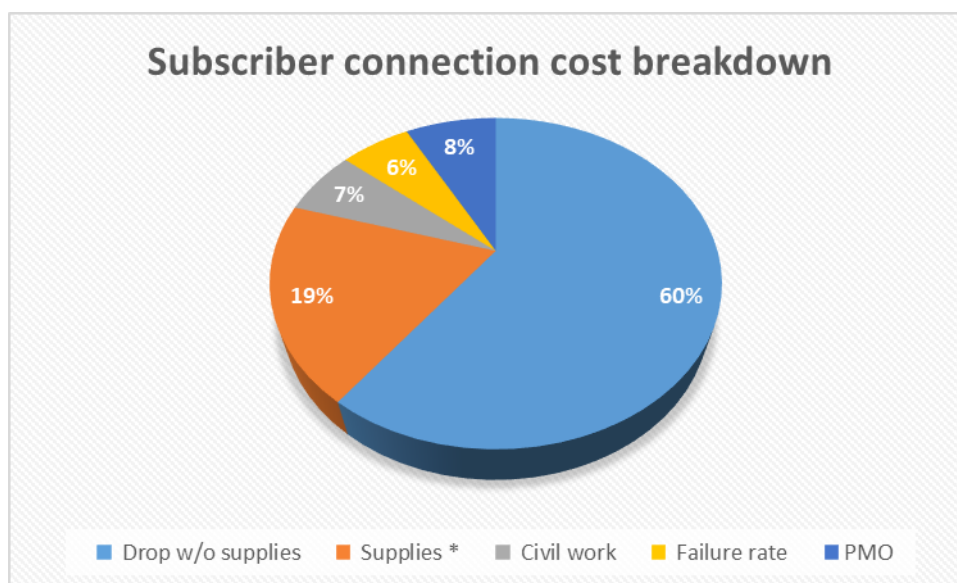
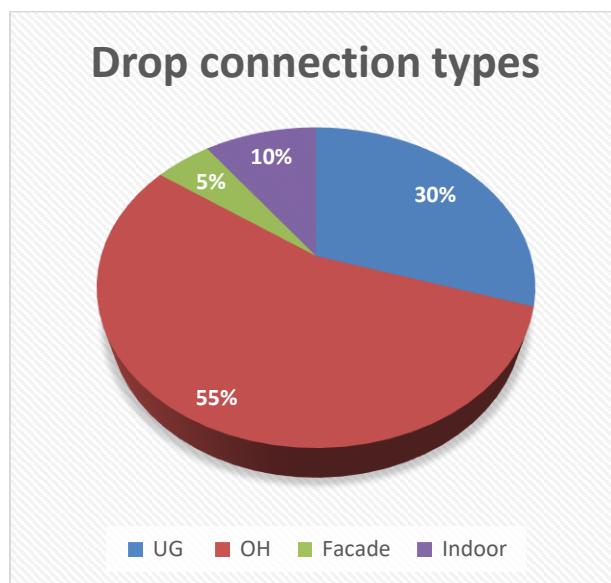
8.29 We have analysed the fibre model outputs for the REO High scenario, to assess the lengths of fibre cable and duct deployed across the three segments. The table below shows the results:

Metres of usage	Access node	Splitter -	ODP -	
	- Splitter	ODP	premises	
	Segment 1	Segment 2	Segment 3	Segment 1+2
<b>Duct - new</b>	3,098,060	14,268,869	1,892,785	17,366,929
<b>Duct - reused</b>	2,605,278	3,879,982	3,477,373	6,485,260
<b>Duct - total</b>	<b>5,703,338</b>	<b>18,148,851</b>	<b>5,370,158</b>	<b>23,852,189</b>
<b>Poles - reused</b>	13,412	231,537	4,799,767	244,949
<b>Duct/poles - total</b>	<b>5,716,750</b>	<b>18,380,388</b>	<b>10,169,925</b>	<b>24,097,138</b>
<b>Fibre cable UG</b>	26,576,477	12,817,341	6,094,837	39,393,818
<b>Fibre cable OH</b>	76,974	218,826	6,317,776	295,800
<b>Fibre cable total</b>	26,653,451	13,036,167	12,412,613	39,689,618
<b>Fibre UG cables per metre duct</b>	4.66	0.71	1.13	1.65
<b>Fibre OH cables per metre poles</b>	5.74	0.95	1.32	1.21
<b>Cable metres per PP</b>	7.58	3.71		11.29
<b>Cable metres per premises connected</b>			12.36	

- 8.30 While the results for segment 3 and for segments 1 and 2 combined appear plausible, we note a significant anomaly for segment 2. It appears that, on average, only 0.71 cables are present per metre of duct; this suggests that either the duct lengths are overstated or the cable lengths are understated for segment 2. For segment 1, however, the utilisation at 4.66 cables per metre of duct looks rather high. Axione also notes that Ofcom's model removes duct sections from segment 2 that have already been traversed by segment 1 cables; this suggests that the number of segment 2 cables per duct traversed assumed by the model is even lower than identified in the table.
- 8.31 We note that the analysis conducted by Ofcom in the "Checks" sheet of the Cost Recovery module does not consider this level of detail, as duct lengths are only considered in aggregate across segments 1 and 2, and cable lengths are not shown at all. It is only by conducting a more detailed analysis that this anomaly becomes apparent.
- 8.32 We remain unconvinced that the geographic modelling reflects the costs of an efficient operator, and we have significant doubts about the integrity of the fibre model. We recommend that Ofcom reviews the modelling in more detail and conducts more rigorous checks before using the fibre model to inform its view of REO costs.
- 8.33 Axione further notes that for segment 3, the length of cable per premises connected of 12.36m seems shorter than we would expect. We also observed that the number of premises passed per ODP is constant for all scenarios at around 12, and this seems higher than the average we would expect of around 7-8.

## 8.8. Connection costs

- 8.34 Axione notes that Ofcom has included segment 3 (customer connection) costs in the following categories:
- UG fibre for MDU and SDU;
  - OH fibre for SDU;
  - Fibre testing;
  - Duct, new and existing;
  - Pole, existing;
  - Connection civils;
  - ONT (this is excluded from the calculation of the rental price range)
- 8.35 We understand that these costs have been sourced from Openreach information, but it is not clear to us whether these categories encompass all of the costs that would be incurred in a real-world deployment. For example, we would expect to see allowances made for:
- project management activities;
  - a proportion of missed customer appointments;
  - shared infrastructure work on private land.
- 8.36 The charts below illustrate the typical breakdown of types of connection costs, based on Axione's extensive experience of drop connections in France, as well as UK sub-contractors tender costs.



**'Drop w/o supplies'** corresponds to the manpower for drop cable installation & testing (Average price for the mix of drop connection types shown in the pie-chart above).

**'Supplies'** includes drop cable, OTO (Optical Terminal Outlet) and allowance for miscellaneous apparatus (aerial bracketry, transition box, cable protection...), but without the ONT. (Average price for the mix of drop connection types shown in the pie-chart above).

**'Civil work'** is the allowance for limited UG works in private land (lead-in duct blockage).

**'Failure rate'** is the allowance to cover costs for missed appointments (subscriber not present or installation not feasible).

**'PMO'** is the project management cost

8.37 Axione currently uses an assumption of [£250] per connection for the average cost of the last drop, which is considerably higher than Ofcom's assumption of £190-195. We note that there are significant variations in the cost of connection according to geography. For example, whereas in England drop connections can be done from poles on the front of houses, this is not possible in Scotland where aerial drop cables must be routed from poles in the back garden, often located on private property, which increases the cost.