

CityFibre further response to the WFTMR Consultation: PIA Remedies

Non confidential

27 Aug 2020

Contents

1	Executive Summary	3
2	Introduction	5
3	CityFibre’s views on PIA pricing proposals in the WFTMR Consultation	7
3.1	Proposal to remove cable coil and in-line splice hosting charges	7
3.2	Proposal to shift regulation to the new ‘simplified lead-in’ product	10
3.3	Proposal to adopt starting charge adjustments for pole rental prices	17
Annex 1	Reasons why we consider Ofcom’s RAB approach and assumptions will likely lead to PIA over-recovery by Openreach	19
Annex 2	Gel wraps	24

1 Executive Summary

- 1.1 This document sets out some points that we wish to make regarding the PIA remedy proposals in Ofcom's WFTMR Consultation, focussing specifically on the pricing remedies. This document should be considered in conjunction with our original WFTMR response (submitted on 22 May 2020).¹
- 1.2 While PIA has enormous potential to transform the business case for fibre deployment, it continues to frustrate users by not delivering the cost and time savings which it ultimately could if implemented effectively.
- 1.3 As one of the largest users of PIA, we consider that significant work is required in order to secure the full potential from PIA. As we set out in our main WFTMR response, we consider that the most straightforward and effective way to secure the full potential from PIA is by imposing strict equivalence of inputs (Eol).
- 1.4 Eol would provide the right incentives for Openreach to address issues with the PIA product (i.e. by forcing them to consume the same product as they offer rivals) in order to address concerns about Openreach being able to use its own infrastructure more effectively than its rivals. As Ofcom is well aware, it is only by following the imposition of Eol that other regulated products such as LLU and Ethernet have become effectively usable by Communication Providers (CPs).
- 1.5 Notwithstanding this, we wish to directly respond to Ofcom's proposed pricing remedies for PIA as set out in the WFTMR Consultation, which we do so in this supplemental response. The key messages from this response are as follows:
 - i. **Ofcom's proposal to remove cable coil and in-line splice hosting charges is entirely appropriate and will support the deployment of more space efficient network architectures**
 - ii. **The introduction of a simplified lead-in product will make using PIA much easier, will greatly simplify the administration of the product, and enable far more efficient planning and cost modelling. The impact of these changes will be to enable more efficient, cost effective fibre deployment. Notwithstanding this, we consider that a number of critical changes are required to make this simplified lead-in product effective:**
 - o 'Lead-in link' should be combined with the single bore duct product, not the simplified lead-in product, for the simple reason that Lead-in link is in effect shared space within a single bore spine duct.
 - o There should be more than one type of simplified lead-in product, to account for differing lead-in distances, and to provide incentives for efficient deployment. We consider there should be at least three types (short, medium, long) varying according to the maximum allowable lead-in length.
 - o CPs should only be charged for lead-in duct for as long as they are actively serving a customer and should not continue to face charges once the customer has churned away.
 - iii. **Ofcom is entirely right to propose starting charge adjustments for pole rental prices given that prices currently significantly diverge from underlying costs.**

¹ https://www.ofcom.org.uk/data/assets/pdf_file/0022/199201/cityfibre.pdf

iv. **Ofcom appears to be overestimating the PIA costs, which results in excessive prices for CPs and over-recovery of costs by Openreach.**

1.6 The remainder of this document is structured as follows:

- **Section 2:** sets out a high-level introduction, including a brief summary of the key points we made in our main WFTMR response.
- **Section 3:** sets out our views on PIA pricing proposals in the WFTMR Consultation, covering points 'i – iii' above.
- **Annex 1:** sets out the reasons why we believe Ofcom is overestimating the PIA costs which will lead to over recovery by Openreach, covering point 'iv' above.
- **Annex 2:** sets out a new issue with regard to Openreach seeking to charge us for using wrap around gel-filled closures ('gel wraps').

2 Introduction

- 2.1 This section provides relevant background and context for this supplemental response to the WFTMR Consultation.
- 2.2 We have produced this supplemental response on the basis of changes announced by Openreach in mid May 2020 and our evolved understanding of how we intend to make use of PIA going forward, something which has developed from the time of our original submission as we seek to use the product at scale.
- 2.3 Furthermore, our follow-up discussions with Ofcom after we submitted our original response has helped us to understand Ofcom's proposal better. We seek therefore to make clear in this supplemental response our position on key Ofcom proposals following our improved understanding of those proposals.
- 2.4 Noting the above, this document should be seen as a complement to our main (substantive) WFTMR response, dated 22 May 2020. In the interest of brevity, we will not repeat all our points from that document, but instead provide below a brief summary and refer the reader to that document and especially Section 5.1 where we set out in detail our assessment of the shortcomings of PIA.
- 2.5 We specifically noted in our original response the operational PIA issues which have emerged as Openreach has developed the processes necessary to use PIA at scale. Further issues have emerged as a result of changes announced by Openreach since we submitted our original response. These issues have compromised the effectiveness of the PIA product, and what specific outstanding issues will need to be addressed if PIA is to reach its full potential.
- 2.6 For the first seven years of its existence, very little use was made of PIA. This was because over that time the product was not usable for wide-scale deployments, not least because of the lack of information about available duct/pole capacity and the complicated and administratively burdensome ordering process.
- 2.7 Regulatory changes imposed by Ofcom in 2016 forced Openreach to adapt the product, which then started to yield some benefits from its use, to network builders like ourselves. However there still remain numerous substantive issues, which have become more apparent as PIA use has ramped up, that act to limit the benefits from using PIA (both in terms of time and cost saving).
- 2.8 What is perhaps most frustrating for operators seeking to make use of PIA is that, while the issues with PIA are many, none of them are especially complex. In Section 5.1 of our WFTMR submission we set out in detail the critical prevailing issues with PIA. These broadly fall into five categories: systems and processes, the Network Adjustment process; wayleaves; Openreach incentives and forecasting.
- 2.9 In Annex 2 of our WFTMR submission we set out the progress that has been made to date on addressing issues such as those listed above. The key conclusion we draw is that even after many years of proactive effort by those using or wanting to use PIA, many of the outstanding issues remain unaddressed.
- 2.10 We consider that these issues could be quickly and easily resolved if Openreach was so minded and appropriately incentivised to do so. Openreach has no commercial incentive to fix such issues, in fact the opposite is true since remedying problems with PIA would enhance the ability of rival providers to compete with the BT Group.

- 2.11 To date Ofcom has relied on imposing a no undue discrimination obligation on Openreach in respect of PIA provision. We consider that this will not be sufficient to deliver an effective PIA product within a reasonable timeframe, and therefore call on Ofcom to impose Equivalence of Inputs (Eol) on Openreach in respect of PIA provision. We note that other providers have made the same observation on remedies to make the product effective.
- 2.12 We consider that full equivalence is necessary to provide incentives for Openreach to address issues with the PIA product (i.e. by forcing them to consume the same product as it offers rivals) in order to address concerns about Openreach being able to use its own infrastructure more effectively than its rivals. As Ofcom is well aware, it is only following the imposition of Eol that other regulated products such as LLU and Ethernet became effectively usable by Communication Providers (CPs).

3 CityFibre's views on PIA pricing proposals in the WFTMR Consultation

3.1 In this section we set out our views on Ofcom's proposals to reform PIA pricing in relation to cable coils and in-line splice hosting.

3.2 We make three key points in this section:

- i) **Ofcom's proposal to remove cable coil and in-line splice hosting charges is entirely appropriate and will support the deployment of more space efficient network architectures**
- ii) **The introduction of a simplified lead-in product will make using PIA much easier, will greatly simplify the administration of the product, and enable far more efficient planning and cost modelling. The impact of these changes will be to enable more efficient, cost effective fibre deployment. Notwithstanding this, we consider that a number of critical changes are required to make this simplified lead-in product effective:**
 - o 'Lead-in link' should be combined with the single bore duct product, not the simplified lead-in product, for the simple reason that Lead-in link is in effect shared space within a single bore spine duct.
 - o There should be more than one type of simplified lead-in to account for differing lead-in distances, and to provide incentives for efficient deployment. We consider there should be at least three types (short, medium, long) varying according to the maximum allowable lead-in length.
 - o CPs should only be charged for lead-in duct for as long as they are actively serving a customer, and should not continue to face charges one the customer has churned away
- iii) **Ofcom is entirely right to propose starting charge adjustments for pole rental prices given that prices currently significantly diverge from underlying costs**

3.1 Proposal to remove cable coil and in-line splice hosting charges

3.3 In this section we set out our views on Ofcom's proposal to remove charges for cable coils and in-line splice hosting in Openreach chambers.

Summary of Ofcom's proposals and justification

3.4 As Ofcom sets out in Volume 4 of the WFTMR Consultation, PIA allows telecoms providers to install in-line splices / distribution joints and coils of cable in Openreach's footway boxes. Under the current regulatory regime for PIA (as established by the 2019 Physical Infrastructure Market Review (PIMR) Statement) these services currently attract additional rental charges.² However, Ofcom is proposing to remove rental charges for cable coil and in-line splice hosting from April 2021.

3.5 Ofcom justifies this proposal on the basis that:

² WFTMR Consultation, Volume 4, paragraph 5.40.

- i. rental charges for hosting cable coils and in-line splices are assumed to contribute very little to the recovery of footway box costs;
 - ii. these charges add complexity to the PIA product; and
 - iii. removing such charges will support investment by competing telecoms providers.
- 3.6 Notwithstanding the above points, Ofcom does note that charging for hosting could in theory incentivise telecoms providers to make efficient use of space inside footway boxes. However, Ofcom considers that efficient space usage can more effectively be achieved through the use of engineering rules (as is already the case to some extent).

CityFibre's views

- 3.7 We are very supportive of Ofcom's proposal to remove rental charges for cable coil and in-line splice hosting from April 2021. We consider that these charges are entirely unnecessary, adding significant complexity to the PIA product and undermining the efficient use of it by rival network builders to Openreach.
- 3.8 We set out below why we consider Ofcom is entirely correct to remove the regulated charges for cable coil and in-line splice hosting from April 2021, which largely builds on the points raised by Ofcom, as set out in paragraph 3.5 (above).

These charges make an insignificant contribution to footway box cost recovery

- 3.9 Ofcom has previously set out (in the 2018 WLA Statement) evidence which shows that joint hosting charges contribute an amount equivalent to 2% of the contribution from entry and exit charges.³
- 3.10 We fully agree with Ofcom that rental charges for hosting cable coils and in-line splices contribute very little to the recovery of footway box costs, and that in fact it is the entry and exit rental charges that are expected to account for the vast majority of PIA users' contribution to footway box costs.
- 3.11 Entirely aligned with Ofcom's analysis, we note that on the basis of our own PIA usage, our payments for hosting cable coils and in-line splices have hitherto accounted for a very small proportion of our overall PIA payments.

These charges currently add significant and unnecessary complexity to using PIA

- 3.12 As we noted in our original WFTMR response, the use of PIA involves significant systems and administrative complexity, largely the result of the cumbersome ordering processes and lengthy lead times. The cumulative effect is to ultimately delay our deployment and add administrative overhead which increases the cost of using PIA.
- 3.13 Given this, we fully believe that removing these charges will remove significant complexity enabling us to use PIA more effectively and efficiently. This will help to accelerate our deployment.
- 3.14 Furthermore, the absence of charges will greatly simplify the reconciliation of billing records, something which will be of benefit to CPs as well as to Openreach.

³ WFTMR Consultation, Volume 4, Footnote 86.

Removing these charges will not result in inefficient use of space in footway boxes

- 3.15 We consider that the efficient use of the limited space available should be actively encouraged, including through innovative solutions such as our approach to connectorization via gel wraps as we set out in Annex 2.
- 3.16 We do not consider that removal of these charges will result in less efficient use of the space. Were operators to use larger equipment with traditional fibre splicing, the cost of that equipment would be greater. This is not a matter of complex electronics where the price rises as the size decreases, in relation to this type of equipment the costs rise as the size increases. In other words, there is an implicit cost penalty on CP's utilising PIA space in an inefficient way.
- 3.17 Notwithstanding the above, even if there was concern about inefficient use of space (the risk of which we consider is very low for the reasons set out above) these concerns are best addressed through engineering rules and not pricing.
- 3.18 This is because, pricing alone is too blunt an instrument to provide the right incentives to make efficient use of space while at the same time also providing incentives to take-up and use PIA for the purposes of deploying competing fibre networks. In other words, price is a one-dimensional tool, that can have unintended consequences.
- 3.19 Furthermore, we note that at present pricing mechanisms do not impact Openreach at all since Openreach does not consume PIA and has no internal charges to pay for use of the network. As such, using pricing mechanisms to promote efficient use of PIA would not only be ineffective, but also discriminatory.
- 3.20 If Ofcom wants to achieve efficient space usage, it should impose clear usage rules in conjunction with a price, in order to support, i) the take-up of PIA and ii) efficient use of limited space. We note that Openreach already makes extensive use of such engineering principles to regulate the deployment of infrastructure.
- 3.21 In terms of specific engineering rules, we propose it would be reasonable to create a rule set through the engineering principles that stipulate the maximum volume for a joint placed within different sized chambers or manholes. Exceptions could be defined, as required, to take into account operational challenges, such as where no larger chambers are available or where an area is covered by a restriction under the New Roads and Street Works Act or is in private land. We expect that these rule sets could be defined by a working group involving both CPs and Openreach under the guidance of the OTA.

Removing these charges will support greater investment in fibre networks

- 3.22 For the reasons set out above, removing these charges will ultimately drive greater use of PIA by operators deploying fibre networks thereby supporting greater fibre network deployment (which should be significantly cheaper for deploying fibre compared to self-build).
- 3.23 A critical reason for this is that removing the charges will (as noted above) remove complexity from using PIA and thereby enable us to deploy networks more quickly and with less administrative burden.
- 3.24 Furthermore, (as set out above) by relying on engineering principles rather than charges to regulate the efficient use of space, the appropriate pricing signals can be set to establish the most effective use of PIA.

3.2 Proposal to shift regulation to the new 'simplified lead-in' product

3.25 Ofcom is proposing to amend its approach to regulating the various component PIA products used by CPs to connect an end-customer, by way of a 'simplified lead-in product' that has been created by Openreach. This was set out by Ofcom in the WFTMR Consultation:⁴

“telecoms providers using a lead-in cable to connect into one or more premises need to purchase a combination of PIA services and that we are consulting on a proposal to introduce a flat, aggregated charge for a Simplified Underground PIA Lead-in service. This would be a consolidated, fixed price lead-in rental service that would apply from the telecoms provider’s optical distribution point all the way to the building entry point of the end-customer premises.”

3.26 We are in principle in favour of any move to simplify the PIA product portfolio and ordering process. Given this, we support the introduction of a simplified lead-in service, for the following key reasons:

- The simplified lead-in product greatly simplifies the administration required, for both Openreach and PIA CPs. Given that Openreach has been grappling with the system developments needed to industrialise a range of largely manual driven processes and systems, simplification of the requirement is not to be underestimated.
- The simplified lead-in greatly simplifies our ability to model costs since we can use a single national figure to model costs rather than having to work out each premise on a case by case basis. This is a significant benefit which enhances our ability to consider use of PIA when planning network deployment.

3.27 As a result, we fully support the overall direction of travel to identify options for simplifying the lead-in product set. However, we consider that the current proposals will not deliver an effective and usable product, and so would not support the introduction of the simplified lead-in product in its current (proposed) form. However, with some amendments, we consider we would fully support this idea. We set out below our proposals:

- **“Lead-in link” should be combined with the single bore duct product, not the simplified lead-in product** – Lead-in link is in practice shared space within a single bore spine duct. Rather than combine this product with the price and product description for dedicated lead-in, this product should be combined with the single bore spine product.
- **There should be more than one type of simplified lead-in to account for differing lead-in distances, and to provide incentives for efficient deployment** – For the same reasons as above, while we are in favour of simplicity, it is not reasonable to use a single product to capture all possible types of lead-in. This is for the simple reason that the lengths will vary considerable by geography. As such, we consider there should be at least three types (short, medium, long) with prices varying according to the maximum allowable lead-in length.
- **CPs should only be charged for lead-in duct for as long as they are actively serving a customer** – Lead-in charges should cease where an end user ceases a service, even if the cable remains in place. The alternative that Ofcom proposes does not treat Openreach on an equivalent basis to other users of the duct and will not achieve the benefits it suggests.

⁴ WFTMR Consultation, Annex 20, Paragraph A20.36

3.28 Before discussing each of the above in turn, we first set out an overview of the simplified lead-in product.

Overview of the simplified lead-in product, and Ofcom's proposed regulatory approach

3.29 Lead-in ducts are used to link customer premises to the main, shared, duct network. Lead-in cables are generally pulled from a distribution point (i.e. a joint chamber and / or a footway box) into a spine duct (generally single bore), before passing through the lead-in duct to reach the end-customer premises.

3.30 Telecoms providers using a lead-in cable to serve a single premise currently need to purchase a combination of several infrastructure rental services, including lead-in duct (charged per metre), potentially Lead-in link duct (charged per metre), and one or more facility hostings (to enter and exit the distribution point and pass through any intermediate footway boxes or chambers).

3.31 Each of these services attract a separate charge. The lengths of lead-in ducts, lengths of lead-in link ducts and the number of facility hostings required to serve every premises are not known (because Openreach does not routinely keep records of its underground infrastructure beyond the distribution point). CPs are therefore required to record information relating to their use of lead-ins and submit this to Openreach. CPs are required to capture information (for each customer premises) relating to:

- i. Length of Lead-in ducts used
- ii. Length of Lead-in links used (and related cable sharing)
- iii. Number of facility hosting (i.e. number of ingress/egress from any chamber in the route)

3.32 Ofcom notes in the WFTMR Consultation that; *“Telecoms providers find this a significant administrative overhead and have sought a simpler approach for Lead-in products.”* As a result, Ofcom sets out that:

“To simplify recording for telecoms providers and provide greater predictability in charges, Openreach has proposed to offer a flat, aggregated price for a “Simplified Underground PIA Lead-in” product, i.e. a consolidated, fixed price lead-in rental service that would apply from the telecoms provider’s optical distribution point all the way to the building entry point of the end-customer premises. This would replace the existing services, i.e. the lead-in duct, the lead-in link duct, and the facility hosting(s). The pricing of the proposed fixed-price service is based on an estimated weighted-average usage of the existing three service components.

The introduction of this service will remove the current complex and burdensome process for telecoms providers and reduce administrative overheads such as verification and record-keeping. It will remove operational costs for telecoms providers and Openreach and provide a much greater degree of certainty for telecoms providers in developing the investment case for FTTP build in a particular area. We understand the proposal has received strong support from telecoms providers, on the condition that on average they do not pay more than for the current pricing for underground lead-ins.”

3.33 Ofcom sets out in the WFTMR Consultation that on the basis that Openreach is proposing to make a material change to the existing lead-in products which Ofcom currently charge control, Ofcom proposes to change the approach it took in the 2019 PIMR where each lead-in service attracts a separate charge to one that is based on Openreach's approach.

3.34 Ofcom goes on to state that:

"In setting prices for the new service, Openreach has estimated the average quantities of lead-in ducts, lead-in links and facility hosting components that are used to provide a connection.

[...] Openreach's proposed price of £9.25 per-lead-in per-annum is derived by using published pricing for the various components (lead-in duct, lead-in link duct and facility hosting) and assumes that:

a) the lead-in link ducts and chambers are shared by up to 3 cables;

b) there are [3] facility hostings per chamber in the route (i.e. ingress/egress from any chamber in the route).

These assumptions are also based on information from the above-mentioned sample of new premises from their inventory systems.

Openreach confirmed it believed "that this information can reasonably be applied to all sites across the UK because the sample size of [3] is a very large and statistically significant sample, and represents a spread across a wide range of geographies ... In addition, the analysis is based on the only significant recorded Lead-in information that we have access to ... and therefore represents the best Lead-in information available to us".

We have reviewed Openreach's approach and consider it to be reasonable. Therefore, we are proposing to impose a charge control on the new simplified lead-in service."

3.35 Ofcom is therefore proposing to establish regulation for this new product and introduce a regulated price based on estimated usage of the existing three service components.

'Lead-in link' should be combined with the single bore duct product, not the simplified lead-in product

3.36 As set out above, two of the three current lead-in products, set charges on the basis of the actual metres of duct used. These two charges relate to Lead-in link and lead-in duct.

3.37 Lead-in link is a separate product to a lead-in. As Openreach explains in its price list:⁵

"Where a lead-in passes into a 90mm duct from an Openreach junction box hosting the Copper DP, the Lead-in link product should be used. For this product, spine duct rates will apply for the portion of the route from the junction box to the swept-t joint or frontage-t joint. Lead-in rates apply thereafter."

3.38 Although the Lead-in link product is listed separately to single-bore spine, it is, as Openreach notes, priced at the level for each meter used. This is entirely appropriate as Lead-in link is equivalent to single bore spine (and not a separate duct or routing). As such, we propose that

⁵ [Openreach price list](#) footnote 2.

lead-in link simply be merged with single bore duct to create a single “single bore duct” product.⁶ This would allow the simplification that all parties are seeking by removing the separate Lead-in link product from the price list, but avoids the problems that would arise if it were merged instead with simplified lead-in.

- 3.39 While it is appropriate that Openreach should recover the reasonable cost of the duct network and should therefore be permitted to price different elements of its PIA network separately, it is not appropriate for the same PIA network elements to be priced differently depending on the use to which they are put.
- 3.40 It is irrelevant to Openreach’s costs for what purpose a user’s cable in a single bore duct is being used; only the length and diameter of that cable is relevant. There should therefore be no distinction, and no difference in the product specifications or prices between “single bore spine” and “Lead-in link”. By including Lead-in link within a simplified lead-in, Openreach would be implicitly introducing such a price differential.
- 3.41 On this basis, where an operator uses a section of single bore duct, it should be charged once only by Openreach for the length of duct used, and not, for example, both as single bore spine and again as Lead-in link. If an operator is already being charged for its use of the single bore duct there should be no additional charge levied when additional cable is added within the duct to connect a lead-in to the operator’s network, as the operator is already bearing its share of the costs of the duct.
- 3.42 The pricing model for single bore duct is based on two operators sharing the duct and not on the diameter of the space used by their cables. The single bore product should accordingly give access to the duct by the operator (or the two operators) paying the charge, with the only restriction on the number and diameter of cables that can be installed being the amount of space actually available. In other words, it should not be charged on the basis of 25mm equivalent space utilised, as this is not the basis on which the regulated price has been established/modelled.
- 3.43 We further note that including Lead-in link as part of the bundle of services within the ‘simplified lead-in product’ will in effect force many CPs to pay for something they don’t need. [3<]
- 3.44 Including lead-in link in the simplified lead-in product encourages deployment that ends further away from the customer, providing less certainty that we are able to deliver services either due to congestion or network damage. This is further exacerbated as network consumed as lead-in is not eligible for network adjustment funds, meaning that any blockages incurred in spine that is charged as part of the simplified lead-in product would not be eligible for cost recovery from Openreach.
- 3.45 As such, having combined Lead-in link with single-bore duct we consider that the simplified lead-in product should be re-designed such as to only include the span of network between the joint chamber and the end-user premise. This would mean that the span of network currently covered by the Lead-in link service would not be included in the simplified lead-in product.
- 3.46 Notwithstanding the above, we remain confused as to the precise product definition of Lead-in link as applied by Openreach in practice and how this compares with Ofcom’s understanding. The entry in Openreach’s price list quoted above suggests that spine duct

⁶ WFTMR Consultation Annex 20, Paragraph A20.37 a.

rates are applied to the segment that extends to the Swept Tee Connection ('Swept T'),⁷ from which dedicated lead-in continues to the customer premises.

- 3.47 However, Ofcom's modelling approach as set out in the 2018 WLA statement appears to assume that the dedicated lead-in begins instead at the underground jointing chamber.⁸ As such there appears to be a mis-match between Openreach's definition and application of Lead-in link, and Ofcom's modelling of the product, and associated prices.

There should be more than one type of simplified lead-in to account for differing lead-in distances, and to provide incentives for efficient deployment

- 3.48 While we fully support the need for simplifying the PIA product portfolio, we consider that reducing the various lead-in products (which currently are based on charges per metre used) down into a single product, regardless of duct length will likely lead to many CPs overpaying, especially if they have opted for a network architecture based on lower (than average) lead-in lengths.
- 3.49 In recent years we have been seeking to make efficiency improvements to our network architecture. A key example of this is our move to utilise a new architecture type that makes use of bundled blown fibre tubing splitting out to properties in the nearest feasible chamber.
- 3.50 The simplified lead-in product as currently drafted directly penalises CPs who have a network architecture based on very short lead-in lengths, in that such CPs in many cases would be forced to pay for much more lead-in than they are actually using.
- 3.51 Furthermore, CPs who are focussed on predominantly urban build, will in general be disadvantaged given that lead-in distances in urban areas are much shorter than the national average used by Openreach.
- 3.52 Given this, we consider a one-sized-fits-all approach is not appropriate. Instead we consider it will be necessary for there to be a menu of simplified lead-in products, each with a different 'up-to' lead-in distance. For instance, there could be three variants (i.e. short, medium, long) with the product terms engineered to deliver cost recovery equalling roughly one third from each.

CPs should only be charged for lead-in duct for as long as they are actively serving a customer

- 3.53 In this sub-section we discuss the two options proposed by Ofcom to set the basis for lead-in charges. We begin by summarising Ofcom's position and its reasons for preferring 'Option 2'. We then set out why we disagree and therefore consider that 'Option 1' is preferable.

Ofcom's assessment of its preferred option for charging CPs for lead-in duct

- 3.54 Currently, PIA users pay 100% of the unit cost of lead-in duct. There is no minimum term for PIA rental charges applicable to lead-in ducts; instead, rental charges are payable if the telecoms provider has a lead-in cable in place.

⁷ A 'Swept T' is connected to a main duct for the purposes of deploying fibre to the end-user premise. This is clearly shown in Openreach developers guide [[Link](#), see page 10].

⁸ 2018 WLA statement Annex 25, Paragraph A25.7

3.55 Ofcom states in its WFTMR Consultation that:⁹

“competing telecoms providers are unlikely to remove the lead-in just to avoid paying rental charges. This is because the costs of removing a lead-in when a customer churns and re-installing it when a customer reconnects are likely to be significantly higher than the rental charges incurred in the period where the connection is inactive. Also, leaving the lead-in in place will also mean they can offer quicker reconnection were they to win back the customer. As a result, a competing telecoms provider is likely to continue paying rental charges even though they are not receiving any revenue from the premises.”

3.56 As a result of this, Ofcom consider that:¹⁰

“the current approach is not consistent with there being a level playing field between Openreach and competing telecoms providers using PIA. For example, it could result in a competing telecoms provider paying 100% of the unit cost of a lead in duct, when another telecoms provider (e.g. Openreach or a third competing telecoms provider) is using that same lead-in duct to serve the customer and generate revenues. There is also a risk that Openreach will over-recover its costs, particularly in the event there is a third competing telecoms provider using the lead-in duct.

3.57 Ofcom proposes two possible options to address this issue:¹¹

- **Option 1:** Telecoms providers would be charged, but only for as long as they are actively serving a customer. If and when the customer switches to another telecoms provider, the rental charge would be paid by the new telecoms provider. To account for instances whereby a customer switches to an telecoms provider that does not use the lead-in duct, all telecoms providers with an active connection would pay an appropriate uplift i.e. overall PIA rental charges would be increased.
- **Option 2:** Telecoms providers would continue to be charged for lead-in ducts if they have lead-in cable in place, even when they lose the customer. However, the charge that they pay would be lower than the lead-in unit cost to account for the possibility that the operator may lose the customer.

3.58 Ofcom considers that Option 2 is the most appropriate approach for the following reasons:¹²

“a) Even when the telecoms providers do not have an end-customer connection they still occupy scarce space in Openreach’s infrastructure. Consistent with our approach to other PIA rental charges, telecoms providers should pay for this;

b) Telecoms providers (including Openreach) derive a benefit from keeping the lead-in connection in place even when they lose the customer in that they have a competitive advantage over telecoms providers who do not have a connection in place. This is because they can compete for the customer with more certainty over the connection process and offer a quicker customer connection;

⁹ WFTMR Consultation, Annex 20, Paragraph A20.29

¹⁰ WFTMR Consultation, Annex 20, Paragraph A20.30

¹¹ WFTMR Consultation, Annex 20, Paragraph A20.31

¹² WFTMR Consultation, Annex 20, Paragraph A20.32

c) This approach would still allow the previous and new telecoms provider to find an agreement to transfer the ownership of the installed lead-in if desired. This way the previous telecoms provider would not incur rental charges for the entire period the customer is being served by another telecoms provider. Telecoms providers could also put in place additional mechanisms to ensure they only pay when they have an active end-customer connection.”

Why we consider ‘Option 1’ to be preferable

- 3.59 We now turn to set out our own views on this matter, and specifically why we consider that Option 2 should not be the selection approach, and that in fact Option 1 is more appropriate. We start by considering each of Ofcom’s three objections to Option 1 in turn.
- 3.60 Firstly, we do not agree that space is so scarce that only one lead-in cable can be deployed at a time. [3<]
- 3.61 Secondly, while we agree that there is an advantage to any operator in having a cable in situ, it must be ensured that the charging model is symmetric between Openreach and other operators in order to ensure no undue discrimination. We therefore highlight that Openreach will generally keep its own cable in place in a lead-in alongside that of a new entrant operator.
- 3.62 Under Option 2 it would therefore generally be required to charge itself for cables left in place on the basis of 90% of the costs. Where a new operator is also present 180% of the costs would therefore be recharged, 270% for three and so on. This will likely lead to significant over-recovery of PIA costs.
- 3.63 However, under Option 1, only one operator is charged at any one time, allowing for complete cost recovery from the operator actually making use of that lead-in.
- 3.64 Thirdly, we do not believe there is any practical way for transferring usage of lead-in cable between different operators. [3<]
- 3.65 The pricing as proposed on Option 2 would therefore not encourage the efficient resale of lead-in cable access between operators. We understand that such processes do not exist today, even though operators are currently charged for cables left in place.
- 3.66 Furthermore, not only will Option 2 will not deliver the advantages that Ofcom suggests (for the reasons set out above), but it also introduces unnecessary financial risk for all parties. Under Option 1, when operators receive revenue from an end user, they pay Openreach for the lead-in, and when the revenue ceases, they cease to bear the cost. Openreach too will only bear the full cost of the lead-in where it has an end user on its own network.
- 3.67 The risk profile of the service is thus reduced for both Openreach and other operators under Option 1, whereas under Option 2 it will be possible to bear most of the lead-in cost without any end user revenue and vice versa. For example. if a customer churns to a new entrant and then back to Openreach, the new entrant will continue to bear 90% of the lead-in cost but Openreach will be receiving 100% of the corresponding revenue for that end user connection.
- 3.68 For the reasons above, we recommend that Ofcom should adopt Option 1 as the pricing mechanism for lead-in duct.

3.3 Proposal to adopt starting charge adjustments for pole rental prices

Overview of Ofcom's proposals

- 3.69 As Ofcom set out in the WFTMR Consultation following detailed and robust information obtained by Ofcom regarding pole costs, it is now clear that Openreach have been charging CPs significantly in excess of its costs.
- 3.70 The materiality of this overcharge is very significant; indeed, Ofcom is proposing that the pole rental charge must fall by around 65%.
- 3.71 Given Ofcom is estimating such a large decrease in the costs attributable to pole rentals, it is proposing to use a starting charge adjustment to align charges to cost in the first year of the charge control. In subsequent years, there will be a glidepath to align prices with our forecast of efficient cost in the final year of the control.

CityFibre's views

- 3.72 As a significant user of poles, we have had much more experience of dealing with the complex and (in most cases) frustrating pole rental product. We set out in our original WFTMR response the various issues we have encountered which demonstrates why Openreach is not providing a high quality pole product and that it is falling far short of the potential cost and time saving that could be delivered by an effective PIA service.
- 3.73 As a result we have long since considered that the price for pole rental is far in excess of what is reasonable, not least given the quality of the product and the reluctance on behalf of Openreach to invest in improving key PIA components, such as pole replacement and pole testing.
- 3.74 We are therefore not surprised to see that in fact Openreach has been overstating its underlying pole costs, and that Ofcom is now proposing to significantly reduce pole rental prices for the upcoming market review period. To the extent that reducing prices is necessary to ensure Openreach is not over recovering, then this is entirely appropriate.¹³
- 3.75 In deciding how best to adjust prices to cost, Ofcom must consider whether a glidepath, starting charge-adjustment, or some combination of the two is best.
- 3.76 In general terms, glidepaths avoid discontinuities in charges over time and can also promote both productive and dynamic efficiency, since they allow the regulated firm to keep the benefits of unit cost reductions, beyond those forecast when the charge control was set.
- 3.77 However, starting charge adjustments are likely to be more preferable when the risk to economic efficiency or competition from distorted pricing signals is particularly significant or where prices are significantly above or below cost for reasons other than efficiency or volume growth.

¹³ It is of course important that Openreach is allowed to earn a reasonable return on its infrastructure investments to appropriately award its investors. Ofcom's approach of calculating a regulatory asset base (RAB) using Openreach's indexed historic spend, less depreciation previously recovered, is well established. In addition, this approach has long been adopted internationally; for instance, the European Commission's 2013 guidance on broadband costing methodologies (2013/466/EU) clearly explains that "non-replicable reusable legacy civil engineering assets". i.e. PIA, should be valued using a RAB approach.

- 3.78 In the case of pole rentals, we observe that there is indeed a very significant divergence between prices and costs. As such, by adopting a glidepath, Openreach would be allowed to significantly over-recover on these services.
- 3.79 In terms of pricing continuity, while we recognise that glidepaths can in theory provide a clear price-path, that does not mean that pricing continuity is always best achieved through glidepaths. This is for the simple fact that in the case of large price adjustments, a glidepath actually introduces less pricing continuity given that each year the prices would need to change significantly to ensure price-cost alignment by the end of the charge control period.
- 3.80 In other words, a one-off price adjustment in year 1 with a stable and predictable price-path thereafter provides much greater price certainty than do large price changes (e.g. 10%) each year for the next 5 years.

Annex 1 Reasons why we consider Ofcom's RAB approach and assumptions will likely lead to PIA over-recovery by Openreach

- A1.1 Ofcom is, in effect, proposing to adopt a regulatory asset base (RAB) approach for setting the basis of regulated charges for PIA products, as it has done in previous price control periods. Such RAB models are used in many utility sectors to ensure that the regulated incumbent is able to receive a fair return on its investment.
- A1.2 In general terms we are fully supportive of a RAB-based approach to setting charges in markets (such as PIA) where there is no realistic scope of effective competition emerging.
- A1.3 However, while we are generally supportive of the need for a RAB, we consider that Ofcom's proposed approach and assumptions will allow Openreach to significantly over-recover in the PIA market. We note also that this risk is especially acute given the move to a five-year review period.
- A1.4 In this section we set out why Ofcom's proposed RAB approach is likely to lead to over-recovery of costs by Openreach. We reach this finding on the basis of the following four issues, which we hereafter discuss in turn:
- **WACC:** Ofcom is proposing to apply the Openreach WACC to PIA which we consider significantly overstates the risk profile of PIA. Ofcom should therefore disaggregate the Openreach WACC into 'PIA' and 'non-PIA' which would likely result in a PIA applicable WACC being more closely aligned to other utility sectors such as water and electricity.
 - **Efficiency (OPEX & CAPEX):** Achieving an optimal outcome in the PIA market will require clear efficiency targets. Furthermore, the duration of the upcoming review period (five years) creates a significant risk that if Openreach overachieve its efficiency targets early in the control period, it will be able to retain excess profits over more years than in previous controls, thereby delaying any benefits that will be achieved in prices by its immediate customers and therefore by end users..
 - **Opening value of RAB:** Ofcom continues to allow Openreach to use the figure extracted from its regulatory financial statements as the opening balance in its pricing model. This is full historic cost, indexed using RPI, with adjustment only for over-recovery of the capital on older duct made in the period up to 2005. The value of the duct and poles are not adjusted for any over-recovery (i.e. profits in excess of WACC) of their value that Openreach has made since 2005, not does it attempt to adjust for any inefficiencies that Openreach may have incurred in building this network.
 - **Deferred tax base:** Openreach, is able to claim a significant benefit by delaying payment of its corporation tax. Left unaddressed, this will result in material over-recovery.

WACC

- A1.5 In the WFTMR Consultation, Ofcom set out its proposals on the disaggregated (pre-tax nominal) WACC for BT Group and three disaggregations, we reproduce these in Table 1 (below).

Table 1 BT pre-tax nominal WACC for BT Group and disaggregated lines of business

	BT Group	Openreach	Other UK Telecoms	Rest of BT
Pre-tax nominal WACC	8.1%	7.1%	7.9%	10.9%

Source: A reproduction of Ofcom's Table A21.9 in the WFTMR Consultation

A1.6 Ofcom considers that when it calculates the fully allocated costs for PIA, the allowable return on capital employed should be based on the Openreach WACC of 7.1%:¹⁴

"We consider this to be the most appropriate assumption for the purpose of controlling PIA charges over the review period, as this WACC most closely reflects the risk associated with physical infrastructure."

A1.7 Under Ofcom's proposals, the Openreach WACC is applicable to a multitude of regulated services including; copper access lines, dark fibre, and FTTC services.¹⁵

A1.8 We consider that the risk profile for PIA is likely to differ significantly from that of services such as copper access and FTTC, given the long term expected usage and limited competition in the latter market and investors would accept a lower return on PIA due to its lower risk profile. Just as *"the Openreach category should continue to capture services associated with lower systematic risk than BT overall"*¹⁶ there should be a separate PIA category for services with a lower systematic risk than Openreach overall.

A1.9 In particular, an infrastructure network with long term expected usage and limited competition can sustain a much higher percentage of debt funding than the 40% assumed by Ofcom.

A1.10 This reality is recognised by the regulators in other utility sectors who have modelled much lower WACC values than the 7.1% being proposed by Ofcom. For instance, Ofwat has determined a wholesale cost of capital of 5.0%¹⁷ and Ofgem is currently proposing 4.4% and 4.7% for energy network operators¹⁸. These lower WACC values result from of a number of different assumptions, of which a higher gearing ratio is among the most significant.¹⁹

A1.11 On the basis of this we consider that Ofcom should further disaggregate the "Openreach WACC" into 'PIA' and 'non-PIA' services in order to recognise the material difference in risk profile.

¹⁴ WFTMR Consultation, Annex 20. Paragraph A20.3.

¹⁵ WFTMR Consultation, Annex 16, Paragraph A16.106.

¹⁶ WFTMR Consultation Annex 21, Paragraph A21.41

¹⁷ [Ofwat PR19 Final Determination Allowed Return on Capital Technical Appendix](#), page 5 - Wholesale allowed return on capital (vanilla) nominal of 4.98%

¹⁸ [Ofgem RIIO-2 Draft Determinations – Finance Annex page 92, table 31](#). Figures quoted in the text above are the nominal equivalents of Ofgem's CPIH real rates of 2.47% and 2.63%, assuming a ratio of 1.77 as used in Ofwat's calculations

¹⁹ Ofwat has assumed gearing of 60% in its calculations and Ofgem assumes either 55% or 60%

Efficiency

A1.12 We set out below our views on the (OPEX and CAPEX) efficiency assumptions in the model.

OPEX efficiency

- A1.13 Under the CPI-X approach that has been adopted by Ofcom for many years and which is continued here, then if Openreach achieves OPEX efficiency in excess of its targets, as has often been the case, it will be able to retain this as profits. Such an approach encourages productive efficiency by Openreach and should then result in lower prices in future review periods.
- A1.14 Ofcom has assumed an annual OPEX efficiency (in real terms) of 4.5% in its model. We consider that this value is reasonable on the basis that this is derived from the detailed reviews that Ofcom carried out for the 2019 BCMR and 2081 WLAMR and, as Ofcom notes, there appear to be no reason why these assumptions should no longer be applicable.²⁰
- A1.15 However, for the first time Ofcom is now adopting a five-year price control, rather than the two- or three-year periods it has used in the past. Should Openreach overachieve its efficiency targets early in the control period, it will be able to retain excess profits over more years than in previous controls, delaying any benefits that will be achieved in prices by its immediate customers and therefore by end users.
- A1.16 Ofcom could avoid this risk by incorporating a price adjustment mechanism in the formula by which prices are adjusted during the review period. Such a mechanism would share efficiency variances between Openreach and its customers, by adjusting prices to include some, but not all, of the efficiency variance. Such an approach is adopted by other UK regulators such as Ofwat and Ofgem in their industry network price controls.

CAPEX efficiency

- A1.17 Unlike OPEX, it is not clear from the model published by Ofcom what level of efficiency, if any, Ofcom has assumed for CAPEX for the upcoming market review period. While we do observe that Ofcom discusses a 1% to 5% range in respect of WLA in the WFTMR Consultation,²¹ there seems to be no mention of such a range for PIA. In respect of duct Ofcom appears to base its model on Openreach's own capex forecast²² while for poles, it assumes a unit capital cost that is indexed only for RPI, but not for efficiency²³,
- A1.18 We are strongly of the view that there needs to be a CAPEX efficiency target for PIA. This is especially the case given that the incentives for efficiency on Openreach are weak, as any CAPEX overspend will, if previous practice is followed, be added into the asset base and recovered in future price controls. Such an approach may also encourage Openreach to capitalise expenditure that might otherwise be expensed, or to avoid maintenance expenditure that might save subsequent CAPEX.
- A1.19 Ofcom should be clear on the CAPEX efficiency assumptions that are included in its model. Where Openreach does not meet these targets, it should not be permitted to carry any excess costs forwards as part of its RAB. Alternatively, a mechanism to share the impact of any

²⁰ WFTMR Consultation Annex 16, Paragraph A16.78

²¹ WFTMR Consultation, Annex 16, Paragraph A16.81 b) xi)

²² WFTMR Consultation, Annex 20, Paragraph A20.17 b)

²³ WFTMR Consultation, Annex 20, Paragraph A20.51 a)

efficiency variances between Openreach and its customers should be introduced. Such an approach is used by other UK regulators, including Ofwat and Ofgem.

Opening value of regulatory asset base

- A1.20 As is standard practice, the opening value of any RAB should be that of indexed historic costs less the costs recovered to date. For the purposes of establishing this, Ofcom uses the values in BT's Regulatory Financial Statements (RFS) which indexes historic spend at RPI, using a straight-line depreciation approach. Critically, Ofcom adjusts for one element of prior year over recovery, that relating to duct installed prior to 1997 which is only indexed from 2005.
- A1.21 Openreach has consistently made a return in excess of its regulated cost of capital, not only in the period to 2005 but also since then, for example as shown in the table below. In effect, Openreach has been recovering more than the book depreciation costs of its network for many years, as shown in Table 2 (below)

Table 2 Openreach ROCE relative to WACC since 2015/16

Year	Openreach return on capital employed	Ofcom determined WACC
2019/20	9.5%	8.1% to 9.3%
2018/19	10.8%	8.1% to 9.8%
2017/18	13.8%	8.8% to 9.8%
2016/17	10.8%	8.8% to 9.8%
2015/16	13.7%	8.6% to 10.8%

Source: BT RFS

- A1.22 The depreciation to date on Openreach's assets will thus be a significant underestimate of the percentage of the asset spend that Openreach has recovered on its ducts and poles since they were installed. Ofcom must therefore consider an additional reduction for prior year over-recovery to the opening RAB for duct and poles.

Deferred tax base

- A1.23 Unlike other UK regulators such as Ofwat and the CAA, Ofcom models Openreach's activities excluding corporation tax effects. In theory, this approach will give the same outcome as a post-tax approach if Openreach pays corporation tax at the statutory rate on the difference between its revenues and costs as projected in the model, and makes these tax payments in the same time periods as those in which the revenues and costs are recorded.
- A1.24 In practice however, Openreach, like other UK network operators, is able to claim a significant timing delay in the payment of its corporation tax. Such delay is granted to companies with a significant investment profile, who are permitted to deduct the cost of their capital investment from their profits for tax purposes some years earlier than they record these costs as depreciation.

- A1.25 The amount of tax that is deferred in this way must be recorded in a company's statutory accounts. At the end of 2019-20, BT Group showed deferred tax of £1.6bn on its balance sheet in respect of "fixed asset temporary differences".²⁴ It does not disclose how much of this relates to Openreach or to the PIA market, although it is likely to be substantial, as PIA assets make up a significant proportion of BT's asset base.
- A1.26 The cashflow benefits to Openreach from a deferral of tax has not been taken into account in Ofcom's modelling in the past, nor are they included in current proposals. Left unaddressed, these benefits will continue to accrue, and at an increasing rate, as Openreach grows its PIA network.²⁵
- A1.27 There a number of ways in which Ofcom could adjust the model to take these cashflow benefits into account. One simple approach would be to continue to assume tax is paid at the statutory rate in the model, but to deduct the deferred tax balance attributable to PIA from the RAB. This approach takes into account the timing differences that arise from the deferred payment of tax and is consistent with the approach adopted for net current liabilities, which are deducted from the RAB in Ofcom's model to take account of timing differences in payment for these items.

²⁴ [BT Annual Report 2019-20](#) Note 10 page 147

²⁵ As an illustration of the materiality of this issue, if including the deferred tax in the calculation resulted in a 10% fall in RAB value (which is a possible scenario given that the total Openreach RAB is £14.1bn), that would result in a 3% reduction in pole rentals and 6% reduction in duct prices, from the model.

Annex 2 Gel wraps

A2.1 In this section we set out an issue under the current regulatory regime (which also has direct relevance for Ofcom's WFTMR Consultation proposals) in regard to how Openreach has been seeking to charge CPs 'in-line splice hosting' charges in cases where no splicing has taken place.

A2.2 The remainder of this section is structured as follows:

- **Section A2.1** – sets out an overview of the regulated 'cable coil and in-line splice hosting' products and associated charges
- **Section A2.2** – describes the approach we have been using to connectorized continuous blown fibre tubes in our network, which involves no splicing whatsoever
- **Section A2.3** – proposed wording changes to Ofcom's PIA guidance that will ensure that Openreach understand that it has no right to charge CPs for simple fibre connectorization (i.e. where no splicing has occurred)

A2.1 Overview of cable coil and in-line splice hosting regulations and charges

A2.3 As Ofcom sets out in Volume 4 of the WFTMR Consultation, PIA allows telecoms providers to install in-line splices / distribution joints and coils of cable in Openreach's footway boxes. Under the current regulatory regime (as established by the 2019 PIMR Statement) these services attract additional rental charges.

A2.4 For instance, if a CP wishes to utilise 'Customer Apparatus In-line Splice hosting and distribution joints (per joint box splice)' then a charge of £18.81 would be applied.

A2.5 Such joints have traditionally been housed in comparatively bulky "Tube Distribution Closures", an example of which is shown in Figure 1 (below).

Figure 1 An example of a Tube Distribution Closures (Emtelle 7514)



Source: <https://www.alternetivo.cz/img.asp?attid=36044>

A2.6 The example shown above is 316mm long, 220mm wide and has a depth of 70mm.

A2.7 As set out in the Openreach PIA Product Description under 'Customer Apparatus In-line Splice hosting and distribution joints':²⁶

"This product allows you to install a distribution joint, in line splice and Tube Distribution Closures (TDC's) in one of our jointing or manhole chambers. This will depend on the amount of usable space available and the need to ensure that existing plant can be accessed and supported safely and securely. Any work should be undertaken in line with the Openreach Engineering Principles. Where installing a distribution joint/cable splice you are allowed up to 2 metres of cable to be coiled in the respective jointing chamber. If you require additional cable to be coiled then you will need to purchase the cable coil hosting product."

A2.8 As is clear from the product description, 'In-line Splice hosting and distribution joints' relates to the installation of large equipment which will take up significant space in the joint chamber. Furthermore, 'splicing' is generally regarded as the process of connecting two fibre cables end-to-end, hence the reference in the above product description to TDCs and distribution joints.

A2.2 Gel wraps do not meet the definition of 'In-line Splice hosting and distribution joints' nor the spirit of the regulation

A2.9 In this section we set out the following:

- i. We begin by describing a new technical innovation we have developed based on using wrap around gel filled closures ('gel wraps') to efficiently connect blown fibre tubes, negating the need to splice fibre;
- ii. The volume in joint chambers used by gel wraps is 10-60 times less than traditional joints, meaning they impose very little constraint on others also seeking to use space in such chambers; and
- iii. That gel wraps do not meet the definition of the 'In-line Splice hosting and distribution joints' product.

Description of gel wraps

A2.10 Given that space in the BT network is a finite resource and a significant constraint for using PIA in many instances, we believe strongly that using volume closures is a very inefficient solution for joints.

A2.11 By using such large volume equipment for all joints, any available space in footway boxes and manholes will be used up by only a small number of CPs which will directly constrain the scope for effective use of PIA and thereby effective competition in the market.

A2.12 In recognising this, we have developed a new and much more space efficient solution for joints, by making use of wrap around gel filled closures, what are referred to in the industry as 'gel wraps'.²⁷ Gel wraps have historically been used only for repairs, as an alternative form of closure. An example of a gel wrap is shown below at Figure 2. The figure shows a 23.8mm blown fibre tube coming into the left-hand side of the gel wrap.

²⁶

https://www.openreach.co.uk/orgp/home/products/ductandpoleaccess/ductandpoleaccess/downloads/PIA_Product_Description_PIMR_Update_Issued_v1_1.pdf

²⁷ See page 44 of [this](#) EMTELLE catalogue for information on wrap around closures.

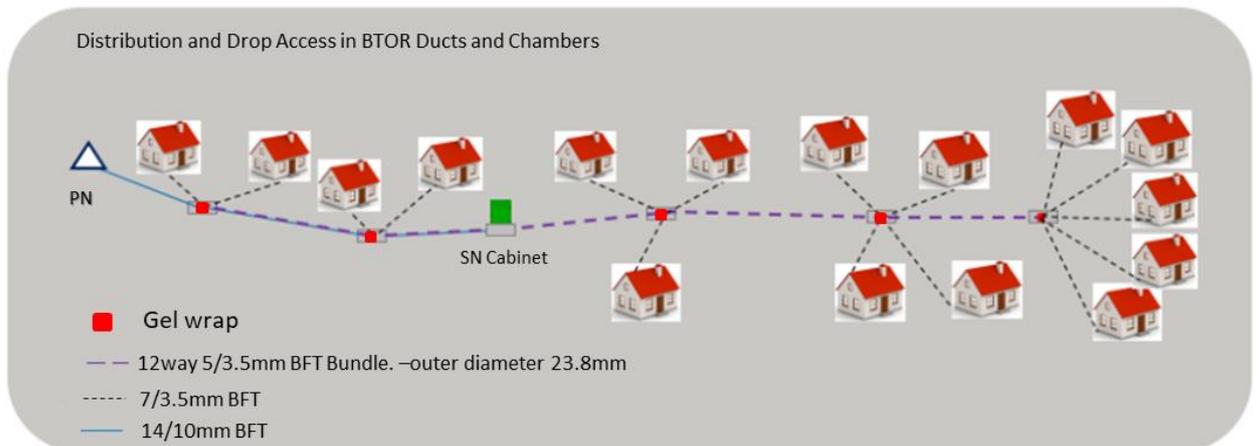
Figure 2 An example of a gel wrap being used



Source: CityFibre

- A2.13 Furthermore, gel wraps allow blown fibre tube sections to be plugged in as and when a customer orders service, allowing a single fibre to be blown through to serve the customer. There is no need to splice fibre.
- A2.14 The use of gel wraps forms a fundamental part of our planned network architecture for our ambition to deploy full fibre to up to 8m UK premises. Figure 3 (below) sets out a network architecture which makes use of gel wraps.

Figure 3 Example network architecture using gel wraps



Source: CityFibre

- A2.15 However, this architecture assumes that gel wraps do not incur a fee, as was the basis for our understanding when adopting this architecture.

The volume in joint chambers used by gel wraps is 10-60 times less than traditional joints

A2.16 Gel wraps are much smaller than traditional closures. Indeed, gel wraps have a maximum diameter ranging of 38mm and therefore take up significantly less space than the traditional enclosure. Figure 4 (below), taken from a gel wrap manufacturer, sets out a number of various gel wraps and their lengths and diameters.

Figure 4 Gel wrap enclosure sizing

Product Code	Description	Sizes Length	Product Diameter Range
71132	Gel Wrap Closure – 50/ 20-250	250 mm	20-38mm
70957	Gel Wrap Closure – 50/ 20-300	300 mm	20-38mm
71531	Gel Wrap Closure – 50/ 20-350	350 mm	20-38mm
71532	Gel Wrap Closure – 50/ 20-400	400 mm	20-38mm

Source: EMTELLE

A2.17 The above figure shows that gel wraps range from 250 mm to 400 mm in length and from 20 to 38 mm in diameter.

A2.18 We can use these values to calculate the range of possible volume that is taken up by a gel wrap (i.e. within a joint chamber). Doing this we see that gel wraps have a volume of between 78cm² and 454cm².²⁸

A2.19 In sharp contrast, a fibre splice joint (as shown in Figure 2) has a closure which typically measures 316 mm long, 220 mm wide and 70mm high. This equates to a volume of 4,774cm².²⁹ We also note that there are in fact other and larger types of TDC which would take up even more space.

A2.20 Comparing the volumes above, we can see that a traditional joint has a volume that is between 10 and 60 times bigger than a gel wrap. In other words, a CP could install between 10 and 60 gel wraps (into a joint chamber) for the same space as a single TDC.

A2.21 Clearly gel wraps are a much more space efficient solution and owing to their small size, are likely to remove any bottleneck in terms of space in joint chambers. As a result, the actual network bottleneck under a gel wrap architecture will be the duct capacity, in that Openreach would run out of duct space long before it runs out of space in its joint chambers.

A2.22 In addition to the above, we note that CPs will already be paying for a 25mm duct meaning that a gel wrap will in many cases (i.e. when the gel wrap diameter is 25mm or less) not take up any more space than the duct itself. In cases where a gel wrap’s diameter is more than 25mm, the additional space used is likely to be negligible relative to the space used by traditional joints.

²⁸ Volume estimates are based on the volume of a cylinder: $V=\pi R^2h$ (where R is the radius and h is the height). On the basis of the range of dimensions we have a lower bound value of 78cm² based on a height of 250mm (25cm) and a radius of 10mm (1cm), and an upper bound value of 454cm² based on a height of 400mm (40cm) and a radius of 19mm (1.9cm).

²⁹ Volume estimate is based on the volume of a rectangular prism: $V=L*W*H$ (length * width * height). On the basis of the stated dimensions we have a value of 4,774cm² based on a length of 310mm (31cm), width of 220mm (22cm) and height of 70mm (7cm).

Gel wraps do not meet the definition of the 'In-line Splice hosting and distribution joints' product

- A2.23 As noted above, gel wraps do not involve any fibre splicing, nor do they involve large (space hungry) equipment used for traditional joints. On this basis it is hard to imagine how gel wraps could be defined as an 'in-line splice'.
- A2.24 However, on 5th June 2020 in an industry call, Openreach announced that it had reviewed the use of gel wraps and had decided that they would now treat gel wrap usage in the same way as a traditional joint which use a TDC. As a result, it announced that it would impose on us a charge of £18.81 for each gel wrap used.
- A2.25 This seems to us completely unjustifiable, given that the reasons set out above. If Openreach were to charge for gel wraps in the same way it charges for traditional joints, then this would we feel be in violation of its existing regulatory obligations, given that gel wraps clearly do not meet the stated definition of in-line splice hosting.

A2.3 Ofcom should clarify in its guidance that gel wraps are should not be subject to any cable coil or in-line splice hosting charges

- A2.26 We recognise that the use of gel wraps was not envisaged at the time the PIA remedy was designed in the 2019 PIMR, and as a result does not form part of Ofcom's current PIA guidance.
- A2.27 However, we consider that in order to provide clarity to both Openreach and CPs making use of PIA, Ofcom should update its existing PIA guidance and/or provide a clear statement regarding the use of wrap around gel filled closures (i.e. 'gel wraps') for the purposes of connect blown fibre tubes, negating the need to splice fibre.
- A2.28 For such uses, Ofcom should make clear that no charge should be levied by Openreach.