

PIA Pricing

INCA Submission to the Ofcom TAR 2026-31

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Executive Summary

- 1 The provision of Physical Infrastructure Access ('PIA') services has been, and will continue to be, critical to the establishment of competitive broadband infrastructure markets in the UK. The competition concerns indicating a need for a price control on Openreach's prices for PIA rental services identified by Ofcom in the 2021 WFTMR remain and, if anything, will become more acute as the Altnets shift their focus from network build to ongoing operations.
- 2 This paper reviews the approach Ofcom took to determining price ceilings for PIA products in the WFTMR and explains why that approach has not met the objectives Ofcom set out in the WFTMR for cost recovery, setting a level playing field and being simple and easy to implement (and which INCA considers remain valid for the period of the TAR).
- 3 INCAS' proposals are:
A simplified approach to PIA costing and pricing
- 4 Ofcom's approach in the FTMR of setting prices for three types of spine duct, two types of pole attachment and prices for use of manholes and junction boxes is unnecessarily complicated and based on a problematic approach to determining costs and prices at a time of transition from a copper to fibre access network. INCA proposes a much simpler approach of a single price for pole attachments and a single price for spine duct which includes use of manholes and junction boxes, which are in line with Ofcom's assumptions for a Reasonably Efficient Operator and are not dependent on assumptions on the amount of copper in the network.
- 5 The approach would not be expected to cause significant changes in the average price paid by Altnets for spine duct, and a small reduction in average pole attachment price which would reduce over time as take-up on their network increases.

Improvement to Ofcom's 'future benefits' approach to setting duct prices

- 6 In the event that Ofcom decides to keep its current approach for duct prices for different duct services, INCA proposes that Ofcom amends its current assumptions that each sub-duct user derives the same benefit from using that duct (in effect the same market share) to reflect in its assumptions a realistic estimate of the market share for Altnets over the period of the TAR charge control.

Equivalence of Pricing

- 7 BT's internal customers do not pay the same price for PIA products as external customers. Over the period 2021-2024 BT's internal customers have been charged £1.1bn less than they would have done had they paid the same prices as external customers. It is inconsistent with Ofcom's stated objective of creating a level playing field and could support anti-competitive pricing and investment decisions within BT.
- 8 Ofcom should require BT's internal customers to price PIA services on the same basis as applied to external customers.

External PIA prices should be discounted to reflect lack of operational equivalence

- 9 External users of PIA face a wide range of operational disadvantages in using Openreach's PIA infrastructure compared to internal users which result in additional costs and delays in roll-out.
- 10 INCA considers that these disadvantages should be reflected in a price discount which remains in place until Openreach meets key targets indicating full operational equivalence.

Pricing spine duct access in 5mm increments

- 11 The current spine duct increment of 25mm penalises PIA users who want to install smaller dimensioned subducts or cables, leading to inefficient use of the PIA network, higher Network Adjustment costs and unnecessarily high PIA prices for Altnets.

- 12 INCA recommends that PIA spine duct pricing should be based on 5mm increments.

Duct asset costs should be reduced to take account of the copper dividend

- 13 BT could realise more than £1bn from the sale of its redundant copper cables. In INCA's view this 'copper dividend' should not end up in the pockets of BT's shareholders, nor be used to cross subsidise its fibre network roll-out. Rather, the net proceeds of the sale of copper cable should be netted off against the unrecovered value of BT's PIA network and delivered to consumers through lower PIA prices in a way which supports fibre roll out by all. This approach would also go some way to setting prices on the basis of Modern Equivalent Assets which Altnets have previously argued for, but which Ofcom has decided against.

Long-term PIA Tenant Product Option

- 14 The mismatch of the life of fibre cable (+/-20 years) and the PIA rental contract period of 5 years discriminates between Altnets and BT's internal customers and increases risks and costs for the Altnets. INCA recommends that Openreach is required to provide a long-term rental option of at least 20 years to meet Ofcom's objective of levelling the playing field, provide investors with real pricing certainty and support long-term investment in the PIA network by Openreach. The pricing of this long-term product should reflect the benefits to Openreach of securing long-term PIA tenants and long-run average costs based on an efficient fibre-only network

BT's Regulatory Financial Statements

- 15 In preparing its submissions to Ofcom INCA has noted several problems, and apparent inconsistencies or errors in BT's Regulatory Financial Statements ('RFS') which have made it difficult to properly understand BT's performance in the PIA market. INCA requests that Ofcom ensures that these are investigated, and that BT is asked to provide corrected or more complete information as soon as possible.

Incremental cost-based PIA pricing

- 16 INCA considers that setting PIA prices based on incremental rather than fully allocated costs would be a sensible way for Ofcom to balance its competing objectives of supporting investment, enabling BT to recover its costs and promoting consumer welfare.

Reducing PIA prices to reflect over-recovery of copper costs

- 17 INCA considers that Ofcom's approach in the WFTMR of setting an FTTP anchor price based on the price of copper based FTTC service was the right one to encourage investment in FTTP networks by both BT and Altnets. However, an inevitable consequence of that approach was that BT has and will continue to over-recover costs on its copper products.
- 18 To prevent the unfair advantage that BT gains from this over-recovery, reduce BT's ability to fund anti-competitive prices encourage competitive investment and enable consumers to benefit from lower prices, INCA proposes that in the TAR, Ofcom reduces the price of PIA products to offset over-recovery of costs in legacy copper markets.

PIA Asset Lives

- 19 INCA considers that fibre networks being rolled out by Openreach and Altnets have extended the remaining useful life of BT's PIA assets and that this should be reflected in resetting the remaining useful asset lives for purpose of calculating depreciation.
- 20 In particular, the remaining asset lives for all duct assets should be reset to 40 years to reflect the assumption that the fibre network will be in use for 40 years (as per Ofcom's cost recovery model). When fibre is replaced in this period, it is reasonable to assume that it will use the existing ducts, and so the life of any existing duct assets will be extended to the life of the network.

- 21 INCA expects that this will significantly reduce PIA costs, for example, duct installed 25 years ago currently has 15 years remaining. Resetting this remaining life to 40 years will reduce depreciation charge for that asset by 62.5%
- 22 For pole assets, INCA suggests that Ofcom requires Openreach to provide evidence on the remaining useful life of its pole. Ofcom should then reset remaining pole asset lives if the evidence suggests that useful economic life for current assets exceeds the average remaining life of the assets in the fixed asset register.

Background

- 23 The provision of Physical Infrastructure Access ('PIA') services has been, and will continue to be, critical to the establishment of competitive broadband infrastructure markets in the UK. The competition concerns indicating a need for a price control on Openreach's prices for PIA rental services identified by Ofcom in the 2021 WFTMR remain and, if anything, will become more acute as the Altnets shift their focus from network build to ongoing operations.
- 24 INCA has set out its concerns with Openreach's operational delivery of PIA services under the WWFTMR in its submission to Ofcom on July 4th.
- 25 INCA's views on determining the appropriate level of costs to be considered in setting PIA prices are set out in INCA's paper, *PIA Costing*.
- 26 This paper reviews the approach Ofcom took to determining price ceilings for PIA products in the WFTMR and explains why that approach has not met the objectives Ofcom set out (and which INCA considers remain valid for the period of the TAR). We also set out INCA's proposals for determining cost-based PIA prices in a way which we consider will better meet those objectives.

1.1 Objectives for PIA Pricing

- 27 In the WFTMR, Ofcom considered that there was a need to impose price caps on Openreach's PIA services to address the following competition problems:
- There was a risk that BT set high prices relative to cost to maximise the profit it earns from providing access to its physical infrastructure.
 - There was a risk that BT set high prices relative to cost to increase the overall cost of building a network using PIA, with the intention of preventing or limiting the emergence of further network competition by undermining the investment case for network deployment based on PIA.

- These adverse price effects could undermine the effectiveness of the obligation to provide PIA, and result in higher retail prices, all of which were ultimately against the interests of consumers.¹

28 In the WFTMR, Ofcom explained its approach in setting price limits for PIA services was “*aimed [at] promoting competition and investment in gigabit-capable networks by Openreach and other telecoms providers*”². Given that overall objective, Ofcom developed an approach which it considered would ensure that:

- Openreach could recover its efficiently incurred costs.
- A level playing field existed between Openreach and those that make use of PIA to provide downstream products.
- The way it set prices was simple and easy to implement.³

29 INCA considers that these competition concerns and pricing objectives remain valid for the period of the TAR, but that the current approach to pricing has not realised Ofcom’s objectives.

¹ Ofcom WWFTMR Volume 4: Pricing remedies, 18 March 2021, Paragraph 4.9.

² Ofcom WWFTMR Volume 4: Pricing remedies, 18 March 2021, Paragraph 4.11.

³ Ofcom WWFTMR Volume 4: Pricing remedies, 18 March 2021, Paragraph 4.12.

INCA's Proposals

1.2 A simplified approach to PIA costing and pricing

- 30 Ofcom's approach in the WFTMR of setting prices for three types of spine duct and two types of pole attachment is unnecessarily complicated and based on a problematic approach to determining costs and prices at a time of transition from a copper to fibre access network. Key issues with the current approach are:
- It relies on inconsistent and unreliable data
 - The calculation of costs and prices and their reporting in the RFS is opaque and lacks transparency
 - The costing and pricing structure reflect a redundant copper network
 - Ofcom's 'benefits' approach to determining prices as a percentage of unit costs relies on arbitrary assumptions on the benefits of access to customers
 - For spine duct, PIA users pay very different prices for installing sub-ducts in different sized spine ducts. PIA users have no choice in what type of spine duct they are installing their sub-ducts in and effectively face arbitrary differences in prices which reflect the dimensions of an obsolete copper network.
 - It is unnecessarily costly to administer
- 31 INCA, therefore, proposes a simplified approach of single prices for spine duct and pole attachments.
- 32 The calculation of unit costs for disaggregated products is complex, and reliant on a large amount of financial and non-financial data from BT. In summary, this means that whilst total costs derived from BT's regulatory costing system have some level of robustness, at a disaggregated level they do not, and so any resulting differentials are unreliable. We explain this further in Annex 2 – PIA Costing Issues.
- 33 We discuss BT's reporting of PIA products in Section 1.10.

Single spine duct price

- 34 In the WFTMR, Ofcom argued that a ‘usage based’ approach to setting duct prices which took into account the very high proportion of physical capacity used by copper could lead to unstable prices as copper was withdrawn from the network. It therefore adopted an approach which attempted to align the benefits in terms of number of end users, which could be reached by different types of duct, to different types of duct based on the dimensions of the duct. As discussed in section 1.3, this required Ofcom to adopt essentially arbitrary assumptions which were, in part, justified by the fact that the resulting prices were similar to previous usage-based assumptions.
- 35 Altnet’s using BT’s duct services do not have any choice in which type of spine duct they use for a given route – they must use and pay for whatever type is available. Disaggregated duct prices serve no useful purpose in terms of signalling efficient asset use or investment decisions and do not necessarily reflect any difference in the benefit received by Altnets, rather they reflect differences in cost of building a network dimensioned for copper. Whether a particular duct route is single bore, two bore or multi bore is an outcome of the topology of BT’ ‘tree and branch’ copper network, which has increasing duct sizes as the network approaches the exchange in order to house increasing volumes of single copper strands. Fibre networks do not have the same physical cable aggregation characteristics, as traffic can be aggregated onto single fibres, and so they do not require anything like the level of higher duct volumes the nearer the network gets to the aggregation point – and in effect a single duct throughout the network could suffice.
- 36 INCA considers that a single spine duct product for any sub-duct in the spine network, irrespective of the bore size, has significant benefits compared to the current approach. INCA’s proposal is as follows:
- Aggregate all spine duct costs into a single post pool
 - Determine the average cost per kilometre

- Calculate the duct price per kilometre as 33% of the unit cost, reflecting Ofcom's take-up assumption for a Reasonably Efficient Operator' ('REO') which it used in the WFTMR to assess the viability of its WLA prices⁴

37 This approach would have the following advantages:

- It is far simpler to calculate and does not require unreliable data on disaggregated costs.
- It would be more transparent and easier to report in the RFS.
- It would better reflect the pricing structure of a Modern Equivalent Asset ('MEA') fibre only network (but not the absolute price level) because the single average price approach is not 'distorted' by the different bore sizes in a copper network which are not needed in an MEA fibre network.
- Using Ofcom's REO assumption of an average of three operators with a long-run equal market share, provides for consistency across Ofcom's regulatory framework and avoids the need to make arbitrary assumptions around relative benefits of different types of duct dimensioned for a redundant copper network.
- It removes price differentials for different duct sizes for over which Altnets have no choice and which provide no meaningful difference in benefit.
- It would be much simpler and less costly to administer.

38 INCA's calculations (albeit based on FY23 RFS data which appears to include some errors) suggest that this simplified approach would be broadly cost-neutral for external users of PIA. If Ofcom adopts this simplified approach, it should not do so in a way that increased average prices charged to Altnets as this would be contrary to Ofcom's key regulatory objectives of stability and ensuring Altnets are able to make a fair bet return on their fibre investments.

⁴ WFTMR Annexes, A15.83

Joint boxes and Manholes

39 In the WFTMR, Ofcom set separate prices for use of BT's manholes and joint boxes based on unreliable unit cost data (as explained in Annex 2) and assumptions of the likely share of benefits for PIA users.

40 For manholes, Ofcom explained that a price for use was set at 3.3% of the unit cost on the basis that:

*"it could be reasonable to assume that most manholes are used to connect routes involving multi bore ducts – mainly 3+ bores – and that an appropriate share might therefore be around half of the 3+ bore duct routes, i.e. around 5% per entry or exit. For manholes the share we have decided to adopt is slightly lower than this but is consistent with the share we proposed in both the 2019 PIMR and the January 2020 Consultation."*⁵

41 It is not at all clear why a share of half of the bore ducts is appropriate or why Ofcom used a share of 3.3% compared to the 5% it initially calculated, other than that was consistent with the approach under a different methodology. In summary, INCA considers that Ofcom's assumption of 3.3% is based on arbitrary assumptions which are not supported by any evidence.

42 For junction boxes, Ofcom justified the 15% share of unit costs used to determine the PIA price on the basis that:

*Most joint boxes are nearer the periphery of the Openreach network and so we consider it reasonable to assume that they generally connect duct routes with relatively few bores. Our share of 30% lies between the share for single bore duct (50%) and the share for 2 bore duct (25%). It is similar to the share that currently applies."*⁶

43 Again, Ofcom's assumptions are not based on any evidence of actual network configuration or use of junction boxes, and the assumption is arbitrarily made with the justification that it is consistent with the outcome of a different methodology.

⁵ WFTMR Volume 4, paragraph 4.107.

⁶ WFTMR Volume 4, paragraph 4.106.

- 44 INCA proposes that Ofcom require BT to incorporate access to its joint boxes and manholes in the single spine duct product, and set the price on an REO basis based on the total costs of the spine duct, manholes and joint box assets divided by the total spine duct length divided by

Single pole attachment price

- 45 Openreach currently charge different prices for different types of pole cable attachment:
- A single end-user attachment where the cable is connected to an individual customer
 - A multi-end user attachment where the cable is ultimately connected to more than one customer
- 46 The prices for the two are significantly different (£6.60pa for a multi-end user attachment and £2.58pa for a single end-user attachment).
- 47 The calculation of separate costs for different types of pole attachments is complex, inconsistent and ultimately unnecessary, as discussed in Annex 2.
- 48 Ofcom's rationale for setting different charges for different types of pole attachment was explained in the 2018 WLA Market Review Statement:
- On average, drop-wire poles carry fewer attachments compared to poles that carry distribution cables
 - Charging higher prices for different pole attachments will incentivise operators to encourage more efficient space on poles, "In particular, if a telecoms provider wishes to connect several premises to a pole, they will be incentivised to use pole top equipment to aggregate incoming cables as it is cheaper than running separate cables down the pole"⁷

⁷ Ofcom WLA Market Review Statement Volume 3 Physical infrastructure access remedy, 28 March 2018, paragraph 5.44.

49 INCA's view is that separate prices for different types of attachment are not justified:

- The current definition of pole types is based on BT's network configuration which involves a huge amount of copper drop wires and copper cables.
- The cost allocation/pricing calculation assumes an equal capital cost per pole type, whereas distribution poles are likely to be lighter, lower cost poles.
- In practice the differential in pricing in attachment types has no practical impact on Altnets' use of poles and does not incentivise use of pole top equipment to reduce the number of single end user attachments. This is because the costs of installing aggregating equipment at the top of a pole will always represent a lower cost compared to installing single end-user cables across multiple poles, irrespective of pole attachment price differentials.
- Setting an average price per attachment would be simpler and less prone to error or spurious accuracy.

50 INCA notes that Ofcom's approach of setting different prices for different types of cable attachment has not been used by any other regulator that we are aware of suggesting that its potential benefits are, at best, limited.

51 INCA therefore proposes a single price for any type of pole attachment which would have the following benefits:

- Eliminate the risk of unreliable price differentials resulting from unreliable data.
- Reduce the complexity of the overall PIA structure, and so reduce time and costs associated with administration, accounting and billing.

1.3 Lead-in duct

52 In the WFTMR Ofcom explained that each lead-in duct serves a single premise, and that the provider using that asset should, in principle, pay its full cost. It then

considered whether a PIA user should pay for the Lead-in duct if a customer churned off its network. Ofcom considered that it should, and so reduced the percentage of unit cost to 90% to reflect the average churn in the period.⁸

- 53 INCA considers Altnets should only be charged for lead-in ducts where they have a paying end customer connected to that lead-in. The main reason for this is to prevent over-recovery of costs by Openreach. Unlike other PIA assets, the lead-in duct is unique to a single end- customer. If an Altnet installs a lead-in duct to connect a customer which then churns to another Altnet, under the current approach Openreach would be recovering 180% of the cost of that lead-in duct (i.e. 2 X 90%). If the end customer churned to an operator using Openreach products that internal user would be allocated only 10% of the cost. This is because the costs allocated to BT's internal users are calculated as the difference between total costs and costs allocated to external users based on external volumes.⁹
- 54 Ofcom acknowledged the risk of over-recovery in the WFTMR "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.... That said, given typical levels of churn, the extent of any over-recovery over this 5 year charge control period is likely to be minimal". INCA considers that the simplest and most effective way to ensure that BT does not over-recover its costs is for Altnets not to be charged for Lead-ins which they are not using to deliver services. Under-recovery is not an issue as where the lead-in is in use by BT or another operator, the cost will always be recovered.

⁸ Ofcom WFTMR, Volume 4, paragraphs 4.91 - 4.98.

⁹ The PI cost to be attributed to downstream Openreach services represents total PI rental costs (including a return on capital employed) net of any external purchases of PI (e.g. from sales to external customers and other parts of BT like BT Enterprise), Ofcom WFTMR Volume 6: BR Regulatory Financial Reporting, paragraph 3.138.

1.4 Improving Ofcom's 'future benefits' approach to setting PIA spine duct prices

55 INCA considers that a single average price for all spine duct services is preferable to the current approach. If, however, Ofcom decides to continue with a disaggregated product set based on assumed benefits, INCA proposes that Ofcom makes several changes to the current approach to address a number of issues

56 Ofcom's approach to determining prices in the WFTMR was to set maximum PIA prices as a percentage of the estimated unit cost of each PIA service:

*"based on various assumptions which we consider meet our objective of ensuring a level playing field exists between Openreach and competing telecoms providers, while providing Openreach with an opportunity to recover its efficiently incurred costs"*¹⁰

57 Ofcom justified the percentages of unit cost used to calculate PIA prices based on *"our assessment of how competing telecoms providers might use the physical infrastructure over the medium term, the opportunity to earn revenues related to that usage, and the consequential impact on Openreach's opportunity to earn revenues from its own network."*¹¹

58 The proportions determined by Ofcom and their rationale are shown in the table below.

PIA Unit Cost Assumptions for Pricing

| PIA component | Number of subducts | Share of unit costs |
|------------------|--------------------|---------------------|
| Single bore duct | 2 | 50% |
| 2 bore duct | 4 | 25% |
| 3+ bore duct | 10 | 10% |

Source: Ofcom WFTMR¹²

¹⁰ Ofcom, WLA Market Review, Consultation, Volume 4, paragraph 5.25

¹¹ Ofcom, WLA Market Review, Consultation, Volume 4, paragraph 5.26

¹² Ofcom WFTMR Volume 4, Tables 4.4 and 4.5.

59 Ofcom's general approach in setting unit prices for spine duct is to share costs equally across the expected number of sub-ducts being used by different operators on the basis that each sub-duct user will have access to the same number of ultimate end customers served by that section of duct and therefore derive the same benefit from using the subduct. The % of unit cost for each subduct is then determined by the number of sub-ducts.

60 As Ofcom states:

- *"it is appropriate to set prices which reflect the opportunity they have to serve customers and consider that it is consistent with ensuring a level playing field."*¹³
- *"there is no uniquely correct answer as to what the shares should be"*¹⁴

Single bore duct

61 In the WFTMR Ofcom set the price for single bore spine duct at 50% of the unit cost on the basis that only one CP is likely to share duct with Openreach and that *"we think it is reasonable to assume that competing telecoms providers deploying one sub-duct will be able to compete for the same end customers served by that duct in the medium term"*¹⁵

62 The implicit assumption Ofcom makes that any Altnet using a single bore duct will secure a 50% market share is unrealistic:

- It is inconsistent with Ofcom's own market share assumptions in its Altnet fibre cost recovery model.
- It takes no account of current or forecast market shares of PIA users.

¹³ Ofcom WFTMR Statement, Volume 4, paragraph 4.100

¹⁴ Paragraph 103

¹⁵ Ofcom WFTMR Statement, Volume 3 paragraph 4.100

- It does not take into account the advantage BT has, given its incumbent position in wholesale and retail markets and wider range of services provided compared to Altnets.
- It is inconsistent with Ofcom’s definition of its ‘Distribution of Benefits’ cost recovery principle.¹⁶

63 In its WFTMR fibre cost model, which Ofcom used to assess the recoverability of PIA costs, Ofcom assumed FTTP take-up (i.e. market share) of 25%-31% in the WFTMR period and a long-term take-up of 33%. If a take-up rate of 33% is considered realistic by Ofcom for the purposes of assessing Altnet viability, it is inconsistent to then assume a 50% market share for the purposes of determining PIA prices.

64 Current and likely market shares of PIA users are well below 50%. In its 2023 survey on the UK independent network sector prepared for INCA¹⁷, Point Topic report a 15% take-up rate for Altnets. In assessing longer term market share scenarios, as well as current levels, it is important to note that early success by the Altnets in take-up are threatened by BT overbuild, as INCA noted in its September 2023 report: *“In locations where Altnets have deployed full fibre, they often achieve 20-30% take-up relatively quickly, but if they are subsequently overbuilt by BT/Openreach with the large ISP brands attached, that level of market share is difficult to sustain”*.¹⁸

65 Ofcom’s approach implicitly assumes that any Altnet using a single bore duct will be able to recover that cost from the same range of services which BT will do. This is unrealistic. No Altnet provides the same wide range of services sold by Openreach, BT Wholesale and BT Retail, and so, even if the duct gives access to a

¹⁶ See Annex 1

¹⁷ Point Topic report for Altnets – Metrics for the UK independent network sector, page 8.

¹⁸ INCA, Securing long-term benefits for broadband customers, Embedding infrastructure competition in the UK, Footnote 14, [INCA-Policy-Report-Sept2023.pdf](#)

group of customers, it is wrong to assume an Altnet can provide them with the same range of services.

- 66 In the WFTMR, Ofcom noted that operators competing with BT ‘may’ achieve lower take-up but argued that an approach which reflected the ‘opportunity’ to serve customers, rather than the expected level of take up, provided more of a level playing field. This approach is inconsistent with Ofcom’s own cost recovery principle of ‘Distribution of Benefits’¹⁹ which states that costs should reflect benefits **received** (emphasis added). The principle clearly requires any measure of benefit to be one which reflects actual or forecast differences in benefits, in this case measured by market share.
- 67 In INCA’s view, the take-up assumption for single-bore spine duct in a benefits-based approach should be set at the average market share expected by users of the duct based on evidence from PIA users’ business plans.

2- bore and 3-bore ducts

- 68 In the WFTMR, Ofcom set the price for a 25mm sub-duct price in a multi-bore spine as the unit cost of the spine duct divided by the assumed number of sub-ducts in the spine duct – (i.e. each 2 bore duct has four 25mm sub ducts, so the price = 25% of the unit cost, and for 3+ bore ducts, the average number of subducts is ten, so the price = 10% of the unit cost). Ofcom justified this approach by arguing that (a) all PIA sub-duct users would benefit from access to the same proportion of end customers, and (b) that the proportions were consistent with the previous usage-based approach.
- 69 As explained above for single-bore duct, INCA considers that Ofcom’s assumption that all sub-duct users will derive the same benefit from using a sub-duct is unrealistic.

¹⁹ See Annex 1

- 70 The benefits of access to BT's multi-bore duct will vary widely across different areas of the network depending on users' own network build, mix of services provided, market shares and network topology. Given that, Ofcom's assumptions are not unreasonable, and INCA would support Ofcom's stated approach in the WFTMR of maintaining consistency of input assumptions.

1.5 Pricing equivalence between BT and Altnets

- 71 BT's internal customers do not pay the same price for PIA products as external customers. Instead, in BT's regulatory financial statements, PIA products are charged at a price which generates the return that Ofcom considered appropriate (around 7% in the WFTMR).
- 72 Over the period 2021-2024 BT's internal customers have been charged £1.1bn less than they would have done had they paid the same prices as external customers.
- 73 Such an approach is clearly discriminatory and inconsistent with Ofcom's stated aims of creating a level playing field. Also, BT's use of very different prices for PIA services compared to its external customers could support anti-competitive pricing decisions in downstream markets, for example by justifying what would otherwise be an anti-competitive margin squeeze.
- 74 The current approach also makes the use of BT's regulatory financial statements for assessment of BT's performance in these markets very difficult. The RFS does not provide meaningful answers around Openreach's financial performance in the PIA SMP market, or clarity around discriminatory costing or pricing. It is, therefore, difficult to assess BT's compliance with its wider SMP obligations of cost orientation and non-discrimination.
- 75 INCA notes that its proposal to set a single price for all spine duct services based on a REO with a 33% market share will mean that, if these prices are applied to BT's actual duct usage including capacity used for copper cables, the reported returns in the RFS are likely to be very high. However, as BT removes copper and

reduces the volume of duct it uses, these returns will fall, and in the long-run they will trend towards the allowed cost of capital.

- 76 INCA therefore proposes that BT's internal customers pay the same price as its external customers.

1.6 External PIA prices should be discounted to reflect lack of equivalence

- 77 As set out in INCA's paper on short term improvements on the PIA remedy, external users of PIA face a wide range of disadvantages in using Openreach's PIA infrastructure compared to internal users.²⁰ These include:

- Bundling of PIA Products
- Sub-duct product specification
- IT and systems-related inefficiencies, delays
- Access to duct and pole maps
- Inefficiencies in network adjustment process
- Delays in order completion
- Lengthy wait for pole repairs
- Delays in Self Provide Orders (SPO) processes
- Delays in damages claims processes
- Slow and inefficient billing and payment processes

- 78 All these issues represent failure by BT to fully comply with its regulatory remedies as set out in the WFTMR. Whilst these issues remain, there cannot be a 'level playing field', a core objective of the WFTMR and, INCA assumes, for the TAR

²⁰ *Short-term requirements for improvements to the PIA remedy under the WFTMR, Urgent action required by Ofcom, INCA, June 2024*

- 79 These difficulties faced by Altnets result in additional costs and, more critically, delays in network roll-out neither of which are faced by BT.
- 80 INCA considers that these differences should be reflected in a price discount to:
- Incentivise Openreach to improve PIA delivery
 - Compensate Altnets for the delays and additional costs they face because of inefficient PIA processes
- 81 It would be straightforward to define a set of metrics against which to measure Openreach's performance, which could then determine whether PIA service delivery had improved sufficiently for the 'equivalence failure' discount to be removed.

1.7 Duct asset costs should be reduced to take account of any copper dividend

- 82 BT has previously stated that "as we replace old copper networks with fibre, we'll be able to recover and sell up to 200k tonnes of copper through the 2030s"²¹. At today's prices (6.30/kg)²² this would suggest total revenues from sale of scrap copper of £1.26bn.
- 83 INCA notes that BT is benefitting from selling copper cables before they have been scrapped:

*"In FY24 we received an upfront prepayment of £105m from entering into a forward agreement to sell copper granules created from surplus copper cables which are currently recognised within property, plant and equipment. As this is expected to be the only cash flow that occurs as part of this transaction the cash receipt has been included as a separate line within cash flows from investing activities."*²³

²¹ BT Annual Report 2022, page 47 - [BT Group plc Annual Report 2022](#)

²² [Today's Scrap Metal Prices from UK Metals](#) 6 June 2024

²³ BT Group results for the full year to 31 March 2024, 16 May 2024, footnote 5, page 16 [Results for the full year to 31 March 2024 \(bt.com\)](#).

- 84 Any net profit from the sale of scrap copper²⁴, whether it comes from the closure of exchanges, or removal of copper from ducts in the network should be distributed to consumers and not BT shareholders as a ‘windfall gain’:
- The net proceeds of copper sales represent the value of copper which consumers have already paid for – and a ‘fair’ outcome would be one where they are compensated for this
 - In a competitive market, future scrap values would be reflected in current pricing levels.
 - BT’s shareholders are not bearing any risks associated with stranded copper assets. Rather they are protected against the risk of being unable to recover the cost of any stranded assets through the regulatory regime which has allowed for accelerated depreciation of copper being recovered through pricing of BT’s copper services.²⁵
- 85 The most efficient way to distribute any net copper proceeds across the broadest customer base would be by lowering the cost of PIA asset components which are used across all of BT’s network services.

1.8 Pricing duct in 5mm increments

- 86 Openreach currently prices for PIA duct access in increments of 25mm. In practice, operators can install smaller subducts, or even smaller single fibres, but are not incentivised to do so in the current regime.
- 87 As Ofcom itself noted when first mandating BT to provide PIA:

²⁴ After deducting the costs of removal and any undepreciated asset value

²⁵ In the WFTMR Ofcom stated that: “under our approach we bring forward depreciation for copper assets stranded by migration to FTTP into the charge control period. This has the effect of increasing costs by £365m (in present value terms) in total” (WFTMR A16.47)

“In order to encourage CPs to make efficient use of infrastructure capacity, we proposed that charges for infrastructure usage should reflect the proportion of the useable capacity that is occupied. We noted that this approach has been adopted in other countries where charges for duct usage are based on the cross sectional area of the cable and the length of the duct occupied”²⁶

88 Many other regulators mandate prices based on actual occupancy on the basis it encourages efficient duct occupancy.²⁷ Encouraging the most efficient use of the network is clearly a worthy objective, and incentivising Altnets to install smaller volume sub-ducts by pricing in increments of less than 25mm will achieve that.

89 The use of a 25mm subduct as the (only) standard product appears to be based on the fact that much of BT’s own subducts are 25mm. However, restricting the pricing of PIA services to units of 25mm discriminates between Openreach and external customers in a number of ways:

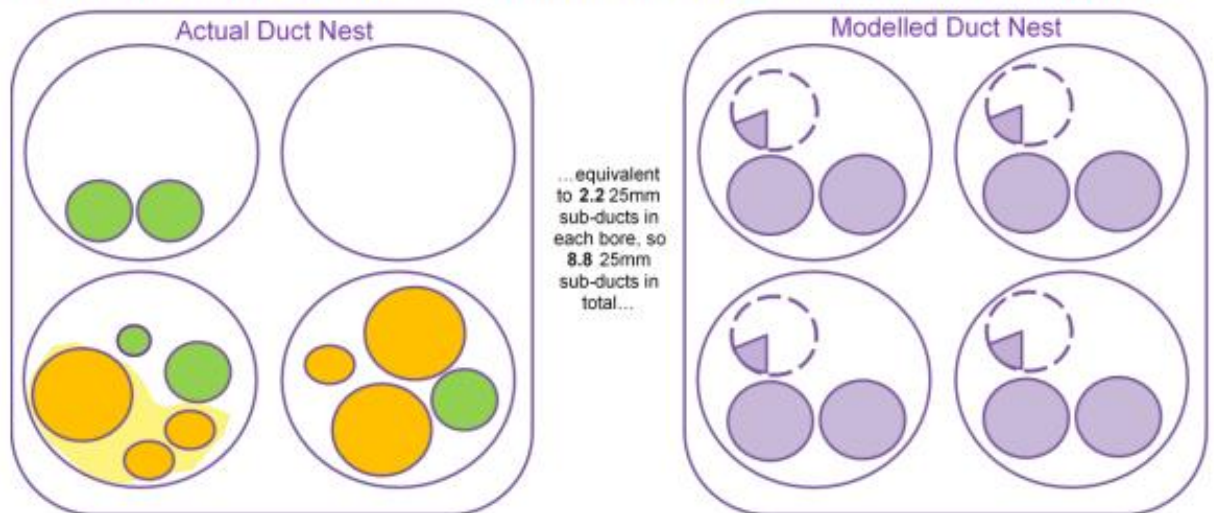
External customers pay for capacity they do not use, internal customers do not

90 The current PIA service for external customers is for a minimum 25mm capacity, irrespective of the diameter used. In contrast, internal usage is priced in a way that aggregates all cables and subducts, which does not require internal customers to purchase in increments of 25mm. This is illustrated in the following diagram from Ofcom’s 2017 DPA consultation:

²⁶ Ofcom, Review of the wholesale local access market Statement on market definition, market power determinations and remedies, 7 October 2010, paragraph 7.15

²⁷ For examples see Annex 1, particularly France and Portugal.

Figure A5.1: Illustration of normalisation of actual duct fill into 25mm sub-duct units



Source: Openreach: "Ofcom Discussion – PIA Pricing Approach", 17 February 2011. BT's physical infrastructure records do not actually indicate which cable is in which bore. Figures are illustrative.

Source: Ofcom: Consultation on pricing proposals for Duct and Pole Access remedies²⁸

- 91 As illustrated in this diagram, BT's regulatory costing system aggregates all internal use of the duct in a way that allows for increments of less than one 25mm subduct – in this case an increment of 0.8 of a 25mm subduct.

Openreach can recover costs twice from CPs

- 92 If 2 or more CPs install subducts or cables of less than 25mm - say 2 X 10mm cable - then Openreach would charge both CPs for 25mm capacity and hence recover the same costs twice.

²⁸ Ofcom, 1 August 2017, [Consultation on pricing proposals for Duct and Pole Access remedies \(ofcom.org.uk\)](https://www.ofcom.gov.uk/consult/condocs/ductandpole/ductandpole.pdf)

1.9 Long-term PIA Rental Product Option

- 93 The mismatch of the life of fibre cable (+/-20 years) and the PIA rental contract period of 5 years discriminates between Altnets and Openreach's internal customers and increases risks and costs for the Altnets.
- 94 A PIA contract period of 5 years presents Altnets with a renewal risk which is not faced by BT's internal customers. This can be a problem for Altnets providing services to customers in a long-term contract (over 5 years) as some customers require critical input contracts to be in place for the duration of the contract. A long-term PIA contract would directly address this.
- 95 A long-term PIA contract also provides Altnets with greater pricing security and financing and tax planning flexibility (if a single up-front payment is available).
- 96 INCA recommends that Openreach is required to provide a long-term rental option of at least 20 years to meet Ofcom's objective of levelling the playing field, providing investors with real pricing certainty and support long-term investment in the PIA network by Openreach. The pricing of this long-term product should reflect the benefits to Openreach of securing long-term PIA tenants and long-run average costs based on an efficient fibre-only network.

1.10 BT's RFS

- 97 In reviewing BT's RFS to inform its submissions to Ofcom, INCA has identified several issues with BT's RFS which have highlighted the problems of the current approach and also make it difficult for stakeholders to understand BT's performance in the PIA market.
- 98 These include:
- The approach of setting transfer prices equal to costs has meant that internal users have paid lower (and on occasion negative) prices for use of PIA (as discussed in INCA's paper on PIA costing)

- There are errors in the prices or volumes in the FY23 RFS for spine duct services – revenues do not equal volumes multiplied by the internal price)
- Reported volumes for BT’s internal use of spine ducts for single bore duct in FY23 are the same as for FY22 – suggesting they have not been updated.
- In the FY23 RFS the unit costs implied by the reported total costs and volumes are very different for each PIA component. It is not clear why this is the case, and suggests a problem with the underlying cost allocation calculations

99 A key function of the RFS is to enable stakeholders to understand BT’s performance in SMP markets – given the issues above, this has not been possible, and INCA urges Ofcom to investigate and ensure that BT’s RFS are fit for purpose.

1.11 Incremental cost-based PIA Prices

100 INCA recognises that in the TAR Ofcom will need to balance a range of potentially conflicting objectives:

- Incentivising competing investment and ensuring Altnets can earn a fair bet level of return on their fibre investments
- Allowing BT to earn a fair bet return on its investments and recover its efficiently incurred costs
- Supporting a competitive ISP retail market
- Minimising long-term prices for consumers

101 INCA considers that changing the approach of setting PIA prices from a fully allocated cost to a pure incremental cost could enable Ofcom to better balance out these competing objectives.

102 Under an incremental cost approach, the common costs associated with, say BT’s corporate overheads, would not be allocated to BT’s PIA portfolio. Rather they would be recovered over the rest of its regulated and unregulated markets (including leased line and fibre components).

103 Under this approach:

- BT would still have the opportunity to recover all of its costs
- Any possible temporary negative impact on consumers through increases in prices of BT's wholesale active services would arguably be more than offset by the dynamic advantages of increased infrastructure competition which the approach would be supporting.
- PIA prices would be reduced, improving the Altnet's financial position and ability to compete against BT's incumbency advantages

104 INCA request that Ofcom considers this approach and whether it would help it better achieve its overall objectives of supporting investment, competition and consumer welfare.

1.12 Reducing PIA prices to reflect over-recovery of copper costs

105 INCA considers that Ofcom's approach in the WFTMR of setting an FTTP anchor price based on the price of copper based FTTC service was the right one to encourage investment in FTTP networks by both BT and Altnets. However, an inevitable consequence of that approach was that BT has and will continue to over-recover costs on its copper products.

106 To prevent the unfair advantage that BT gains from this over-recovery, reduce BT's ability to fund anti-competitive prices encourage competitive investment and enable consumers to benefit from lower prices, INCA proposes that in the TAR, Ofcom reduces the price of PIA products to offset over-recovery of costs in legacy copper markets.

107 This approach to dealing with the problem of over-recovery of costs in copper markets whilst keeping copper based broadband prices high enough to incentivise fibre investment during the technology transition period was proposed by Professor Martin Cave et al in 2012:

“Past over-payments in temporary periods of revaluation can be recovered and focussed upon duct prices; or alternatively specifically upon the price of ducts used to convey fibre networks as a means of speeding up the fibre transition.”²⁹

1.13 PIA Asset life assumptions

108 In the WFTMR, Ofcom used the following asset lives for PIA assets:

- Poles: 40 years
- Ducts: 40 years

109 These asset lives are the same as BT uses in its financial reporting. Accounting standards require assets to be depreciated over their ‘useful life’ which is defined as ‘*the period over which an asset is expected to be available for use by an entity*’.³⁰

110 INCA considers that fibre networks being rolled out by Openreach and Altnets have extended the remaining useful life of BT’s PIA assets and that this should be reflected in resetting the remaining useful asset lives for purpose of calculating depreciation.

111 In particular, the remaining asset lives for all duct assets should be reset to 40 years to reflect the assumption that the fibre network will be in use for 40 years (as per Ofcom’s cost recovery model). When fibre is replaced in this period, it is reasonable to assume that it will use the existing ducts, and so the life of any existing duct assets will be extended to the life of the network.

112 INCA expects that this will significantly reduce PIA costs, for example, duct installed 25 years ago currently has 15 years remaining. Resetting this remaining life to 40 years will reduce depreciation charge for that asset by 62.5%.

²⁹ *The Price of Copper and the Transition to Fibre*, Communications & Strategies, No85, 1st Quarter, 2012 Martin Cave, Antoine Fournier and Natalia Shutova, Page 10.

³⁰ [IFRS - IAS 16 Property, Plant and Equipment](#)

- 113 For pole assets, INCA recognises that the physically poles can deteriorate and have a finite life in the way that properly maintained duct assets do not. However, INCA considers that the average remaining useful life of poles is likely to be significantly higher than the remaining asset life of pole assets in BT's fixed asset register.
- 114 INCA therefore suggests that Ofcom requires Openreach to provide evidence on the remaining useful life of its pole. Ofcom should then reset remaining pole asset lives if the evidence suggests that useful economic life for current assets exceeds the average remaining life of the assets in the fixed asset register.

Annex 1 Ofcom's Principles of cost recovery³¹

Cost causation - costs should be recovered from those parties whose actions cause the costs to be incurred at the margin

Cost minimisation - the mechanism for cost recovery should ensure that there are strong incentives to minimise costs

Distribution of benefits - costs should reflect benefits received

Effect on competition - the mechanism for cost recovery should not undermine or weaken the pressures for effective competition

Reciprocity - where services are provided reciprocally, charges should also be reciprocal; and

Practicability - the mechanism for cost recovery needs to be practicable and relatively easy to implement.

³¹ Ofcom, *Proposed guidance as to how Ofcom may interpret the meaning of "fair, reasonable and non-discriminatory" and other regulatory conditions when assessing charges and terms offered by regulated providers of Technical Platform Services*, 2 November 2005, page 17

[Proposed guidance as to how Ofcom may interpret the meaning of "fair, reasonable and non-discriminatory" and other regulatory conditions when assessing charges and terms offered by regulated providers of Technical Platform Services](#)

Annex 2 PIA Costing Issues

- 115 In the WFTMR, Ofcom explained that BT's accounting systems had not recorded costs separately for different PIA assets, but rather recorded these costs at a greater level of aggregation (i.e. all duct assets and all pole assets). In order to calculate costs for individual PIA services, it was therefore necessary to attribute these costs firstly between the different PIA assets, and secondly across different types of assets or services. Each of these steps involves the use of arbitrary assumptions and unreliable data.
- 116 Ofcom noted that BT had provided an attribution methodology for PIA costs, but one that was very different to the methodology it had used in the 2018 WLA market review. Ofcom decided that, since a change in methodology could lead to an abrupt change in charges, it would use different attribution methods for assets incurred before and after 31 March 2018:
- for assets installed prior to 2018, Ofcom applies the same attribution methods used to set prices in the 2018 WLA charge control,
 - for assets installed after that date, Ofcom applies a different attribution method based on data in BT's regulatory financial reporting system.

1.14 Duct Costs

- 117 BT's Accounting Methodology Document explains that duct costs in the RFS are split into 2 plant groups: assets installed pre- and post- March 2018.

118 Pre-March 2018 assets (plant group PG101D) are allocated “based on the percentages set out by Ofcom in the 2021 WFTMR”³². These appear to be the percentages in Ofcom’s PIA Charge control model:

| | |
|--------------------------|--------|
| Lead-in duct | 9.35% |
| Spine duct – single bore | 36.63% |
| Spine duct – 2 bores | 9.66% |
| Spine duct – 3+ bores | 15.29% |
| Joint boxes | 17.40% |
| Manholes | 11.67% |
| Sub-total | 100.0% |

119 The basis of these percentages appears to be a calculation that Ofcom undertook in the 2018 WLA Market Review based on disaggregating total PIA asset costs using a variety of data points and estimates:

- Duct, manholes and joint boxes are recorded in aggregate and then split out based on their Gross Replacement Cost (‘GRC’) in a bottom-up network valuation undertaken in 2015 using 2012/13 prices. This suggests that the total value for all spine duct assets is only an estimate based on out-of-date values.
- Spine duct costs were allocated across different bore sizes in proportion to their Gross Replacement cost, as estimated in a 2009/10 bottom-up valuation. This then suggests that the split of spine duct costs across the different types is not based on the actual mix of duct assets but rather the ratios in an out-of-date bottom-up valuation.

³² BT, Accounting Methodology Documentation Relating to the 2023 Regulatory Financial Statements Page 230

- 120 BT did not record lead in duct separately from single bore duct and so the GRC for lead-in duct was estimated separately “based on a proxy estimate which is commonly used or referred to by the Openreach Chief Information Officer team and/or Competition Finance team”³³. It is not clear at all on what basis BT then split out the cost of lead-in duct from single bore duct.
- 121 All of the above suggests that the calculation of disaggregated asset costs for pre-March 2018 assets lacks transparency and that any resulting price differentials cannot be relied on. Ofcom explains that post-2018 assets were attributed using Openreach calculations which were done “using a methodology analogous to that we and Openreach had used in previous market assessments”³⁴ but which “were however very different to those that Openreach had provided previously, implying significant increases in the proportion to be attributed to single bore duct and much less to 3+ bore duct”.³⁵ Ofcom does not explain why one approach is preferable to the other or the reasons for the differences.
- 122 Other assumptions Ofcom made in relation to PIA duct asset cost attributions which lack transparency are:
- The unit cost of lead-in duct is assumed to be the same as single bore spine duct, on the basis that this was the previous approach and that Openreach did a bottom-up comparison to support that.³⁶
 - An adjustment is made to standard unit costs to reflect the fact that some 2-bore ducts are made up of two single-bore ducts – Ofcom did not explain what that adjustment was or how it was made.
- 123 In INCA’s view the decision to use disaggregated prices, which are not based on reliable, consistent, audited data, but rather ad hoc calculations or assumptions carries with it a high risk of creating spurious price differentials.

³³ Ofcom Wholesale Local Access Market Review: Statement Annex 25, 28 March 2018, paragraph A25.7

³⁴ Ofcom WFTMR A18.19

³⁵ Ofcom WFTMR A18.19

³⁶ Ofcom WFTMR A18.21

124 INCA notes that the decision to disaggregate spine duct access into separate services depending on the size of the spine duct is not a regulatory requirement (the requirement to offer duct access was first set out in the 2010 WLA statement).³⁷ Rather the decision to disaggregate spine duct access prices using the number of bores was BT's, as discussed in a press article at the time:

"BT has also broken down many of its PIA products "into their component parts", which will allegedly provide ISPs with "greater flexibility and choice" because they will now be able to pick and mix which services they buy from BTOpenreach and which they deliver themselves. It also makes the process more complex with over 100 PIA products and services."

For example, we note that BT's original price for ISPs wanting to rent spine duct access in its underground cable ducts was £1.16 per metre (per annum), which is now based on the number of cables a duct can carry and will in some cases fall to just £0.44. It's unclear how common the lower end of such pricing would be."³⁸

125 INCA notes that BT's RFS shows that the average duct price for spine duct paid by Altnets is 6% higher (in 2022/23) than that which would be paid by BT's internal users (if they paid the price rather than the cost). Setting an average price would help set the 'level playing field', which Ofcom has set as an objective for its PIA pricing.

126 A spine duct network in an efficient network designed for a fibre only network (i.e. a Modern Equivalent Asset or 'MEA' network) would not require the large multi-bore duct system constructed for a copper network.

³⁷ Ofcom. Review of the wholesale local access market, statement, 7 October 2010. [wla_statement.pdf](#) ([ofcom.org.uk](#))

³⁸ Article in ISP Review 7 October 2011 - [UPD BT Reveal Lower Prices for UK Superfast Broadband PIA Cable Duct Access - ISPreview UK](#)

127 INCA notes that Ofcom’s approach of setting different prices for spine duct based on bore-size does not appear to have been used by any other regulators suggesting that its potential benefits are, at best, limited.

1.15 Pole attachments

128 Similarly, the basis for allocation of costs across multi-end-user and single end-user attachments is that used in the 2018 WLA Statement:

“Pole costs are not separately recorded by BT, but are included in records for a class of work and “The pole costs are split out from the copper assets in proportion to their GRC, as estimated in a bottom-up valuation carried out in 2009/10”³⁹

129 Total pole costs are split between cable attachments, cables up poles and manifolds on an uncertain basis: *“Openreach was unable to confirm the basis for these specific proportions”⁴⁰*

130 Attachment volumes assumed in the PIA Charge Control model used to determine prices in the FTMR were significantly underestimated: for FY2021, the charge control model assumed total attachments of 19.9m, compared to total (internal attachments) of 22.0m in the RFS – an underestimate of volumes (and hence prices) of 10%.

131 Ofcom’s costing ignores cost differences between different pole types and the fact that typically DP poles are lighter than feeder poles or cable poles and so would have been cheaper to install.

132 INCA therefore proposes a single pole attachment price based on the average cost per attachment calculated for all pole and attachment types. This approach would avoid the creation of unnecessary price differentials reliant on inconsistent and unreliable data.

³⁹ Ofcom Wholesale Local Access Market Review: Statement Annex 25, 28 March 2018, paragraph A25.6.

⁴⁰ Ofcom Wholesale Local Access Market Review: Statement Annex 25, 28 March 2018, paragraph A25.25.