



WLA Market Review

Consultation on pricing proposals for Duct and Pole
Access remedies

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Consultation

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About this document

This consultation follows our Strategic Review of Digital Communications; and our 'Consultation on Duct and Pole Access remedies' ("April 2017 DPA Consultation") published in April 2017 as part of our wholesale local access (WLA) market review.

This consultation concerns Openreach's duct and pole access product. In our April 2017 DPA Consultation, we set out our proposals to require Openreach to provide physical infrastructure access, including on what it could be used for and how it should work in terms of process. Furthermore, we set out our general proposals on how rental charges could be set and how costs would be recovered, stating that we would set out further detail in the summer. This consultation further develops these pricing proposals.

We now set out our detailed pricing proposals on the setting of rental charges, the financial limit for the recovery of network adjustment costs, and changes to regulatory financial reporting requirements. These proposals form part of our WLA market review and this consultation supplements our April 2017 DPA Consultation.

This consultation will close on the 12 September 2017. Please send your responses via our website: <https://www.ofcom.org.uk/consultations-and-statements/category-2/pricing-proposals-duct-pole-access>

Contents

Section		Page
1	Executive summary	1
2	Introduction	5
3	Rental charges cap	8
4	Ancillary charges and a financial limit for network adjustments	31
5	Regulatory financial reporting	48
6	Legal tests	53
Annex		Page
1	Responding to this consultation	61
2	Ofcom's consultation principles	63
3	Consultation response cover sheet	64
4	Consultation questions	66
5	Asset cost component calculation	67
6	Draft legal instruments	75
7	Glossary	95

Section 1

Executive summary

Strategic context and market review

- 1.1 One of the key elements of our Strategic Review of Digital Communications is to make a strategic shift to encourage the large-scale deployment of new ultrafast broadband networks, including fibre direct to homes and businesses (sometimes called ‘full-fibre’). Full-fibre networks support advanced services, with very high speeds of 1Gbit/s or more. They also offer greater reliability and predictability, without the ‘up to’ speed limitations of copper-based broadband services.
- 1.2 A key element of our strategy to promote infrastructure-based competition is to make it quicker and easier for rival providers to build their own fibre networks by improving duct and pole access (DPA): access to the network of poles and underground ducts that carry telecoms cables.
- 1.3 We are examining access to BT’s ducts and poles as part of our review of the wholesale local access (WLA) market. In March, we published our market review proposals, setting out our provisional finding that BT continues to have significant market power (SMP) in the WLA market in the UK excluding the Hull Area.

Duct and pole access remedies

- 1.4 In April we set out our proposed duct and pole access remedies, reflecting our view that the competition concerns arising from BT’s SMP are best remedied in the long run by promoting infrastructure-based competition in local access networks. The main proposals we set out are: access to BT’s infrastructure on fair terms to ensure a level playing field; repairing faulty infrastructure so it is ‘ready for use’; allowing the deployment of ‘mixed-use’ local access networks offering both broadband and non-broadband services; streamlining processes to ensure efficient network deployment; and putting in place pricing to support competitive investment.
- 1.5 With regards to pricing, our initial view was that the current basis of charges condition did not provide potential investors with sufficient certainty as to the level of rental charges they would face. In relation to ancillary charges, our initial view was that charges for build and enabling works acted as an impediment to providers looking to use DPA for large scale deployment. To ensure a level playing field, our provisional view was that it would be appropriate for certain costs associated with the remedy to be pooled and recovered from all users of the infrastructure. We therefore proposed to:
 - impose a maximum cap on duct and pole rental charges using the current methodology;
 - retain the basis of charges condition for ancillary charges, apart from charges for network adjustments where we considered that Openreach should recover associated costs over all users of its infrastructure, subject to a financial limit; and
 - consider any necessary changes to BT’s reporting obligations.

Rental charges cap

- 1.6 In April, following our market analysis, we noted a risk of adverse effects and consequences for people and businesses arising from price distortion, given that BT might fix or maintain prices at an excessively high level. We set out our view that certainty and predictability over the level of charges is necessary to fully support investors' ability to build a viable business case for network deployment using BT's ducts and poles.
- 1.7 We are proposing to impose a cap on rental charges using the current price calculation methodology. We have reviewed the current methodology and updated the calculations to reflect the most recent cost data available from Openreach. Given limitations in the granularity of information available at this stage, and uncertainty about the take-up of duct and pole access, we consider this to be an effective and pragmatic means of providing certainty to investors for this review period.
- 1.8 In setting the proposed rental charge cap methodology, we have provisionally determined that the costs incurred in setting up and managing the remedy should be recovered from all users of the ducts and poles, to ensure a level playing field with the costs faced by Openreach itself when using the infrastructure. This has meant amending the calculation for rental charges by replacing these full costs (as features in the existing calculation) with an appropriate proportion of these costs.
- 1.9 We are consulting on the methodology we propose to adopt to calculate maximum charges, rather than on the resulting specific level of charges. However, to illustrate the effect of this methodology, the resulting cap for key rental charges is set out in the table below, alongside Openreach's current charges. We propose that we would set the rental cap by applying the methodology we adopt in our final decision to updated input data.

Table 1.1: Proposed cap on rental charges (per year)

	Current charge	Proposed cap
Single bore spine duct (per metre)	£0.60	£0.29 (-52%)
Lead-in duct (per metre)	£0.84	£0.45 (-46%)
Dropwire attachment to pole (per attach)	£8.85	£5.74 (-35%)

Ancillary charges and a financial limit for network adjustments

- 1.10 In April we recognised that, under the scope of our proposed access remedy, in some cases Openreach will be required to make certain adjustments to its physical infrastructure network for it to be 'ready for use'. We proposed that the associated costs should be recovered from all users of the infrastructure, to reduce the barriers to competitive network investment at scale and ensure a level playing field with the charges Openreach faces itself for using its own ducts and poles. However, to provide sufficient certainty of the level of costs that Openreach would need to recover in this way, we proposed that a financial limit should apply, with any costs incurred above the financial limit to be recovered directly from the telecoms provider making the request. In addition, a financial limit is likely to encourage more efficient use of existing capacity and reduce the incentive to request unnecessary adjustments which result in dispute.

- 1.11 We consider that the financial limit should scale with the size of the network deployment using duct and pole access. When a telecoms provider wants to make use of BT’s ducts and poles it will place an order with Openreach, requesting the use of specific duct segments and other physical infrastructure in a geographic area. For practicability and simplicity we propose to set a single financial limit for the order as a whole, which scales with the total number of kilometres of duct ordered. A telecoms provider would only pay an ancillary charge for network adjustments if the aggregate cost of all necessary network adjustments exceeds the total financial limit for the order.
- 1.12 To inform our proposed financial limit, we have considered the primary drivers of the total cost of network adjustments: adjustments driven by distance (e.g. repairing blocked ducts); and adjustments driven by the number of premises (those relating to the final connections to the premises, e.g. dropwires from poles). We have modelled situations where the network adjustments would clearly fall within the scope of the remedy, and the associated costs should be recovered from all users of the infrastructure. We have considered how often these adjustments are likely to be required, and the costs associated with the adjustments, recognising that the natural variation in costs means the cost of some adjustments will be below the average, and others will be above.
- 1.13 We have used our analysis to inform our regulatory judgment of an appropriate financial limit which is sufficient to cover the costs of typical network adjustments which are most likely to be necessary for telecoms providers to deploy their own networks, without necessarily covering cases of exceptionally costly adjustments.
- 1.14 The resulting proposed financial limit for network adjustments is set out below.

Table 1.2: Proposed financial limit for network adjustments

Proposed financial limit	
Financial limit per kilometre of duct	£4,000 to £6,000 per km

Regulatory financial reporting

- 1.15 Having set out our proposals for the pricing of duct and pole access, we need to be provided with the information necessary to ensure the regulation is effective, including monitoring compliance with the SMP conditions. Publishing appropriate information also provides transparency to the industry of the impact and effectiveness of the regulation. Our regulatory financial reporting requirements, which result in BT’s preparation of annual Regulatory Financial Statements, are designed to meet these objectives.
- 1.16 We are proposing that BT is required to publish service level information, including revenue, volume and average price information for the rental charges and ancillary charges of its duct and pole access product. In addition, we are proposing that BT provides us with confidential information regarding disaggregated revenues and volumes for specified duct and pole access services, in order for us to monitor the effectiveness of our pricing regulation.
- 1.17 In April we also proposed a ‘no undue discrimination’ condition on BT. We are proposing further financial reporting requirements to ensure that the way BT recovers the costs of its own network adjustments to support its downstream services should

not differ from the way it recovers the costs of network adjustments required by other telecoms providers using duct and pole access.

Next steps

- 1.18 Following responses to this consultation, we expect to publish our final decision in a Statement in early 2018, with new measures taking effect on 1 April 2018.

Section 2

Introduction

Background to this consultation

Wholesale Local Access market review

- 2.1 This document forms part of our WLA market review. This review considers the extent to which ex ante regulation may be required in the markets for the provision of wholesale local access services from April 2018.
- 2.2 In March we set out our provisional conclusion that BT has SMP in relation to the market for the supply of copper loop-based, cable-based and fibre-based wholesale local access at a fixed location in the United Kingdom excluding the Hull Area.¹ In April, we published our Consultation on Duct and Pole Access remedies (the “April 2017 DPA Consultation”)², which set out our proposals to impose a specific access remedy giving other telecoms providers access to BT’s duct and pole infrastructure. The consultation closed on 15 June 2017 and we will address stakeholder responses in due course.
- 2.3 This document should be considered alongside the April 2017 DPA Consultation. It sets out our detailed pricing proposals based on our initial views on pricing put forward in April.

Our Strategic Review of Digital Communications

- 2.4 In February 2016, we published our Strategic Review of Digital Communications (“Strategic Review”) setting out our approach to regulating communications markets for the next decade.³ We indicated a major strategic shift to encourage investment in new ultrafast networks, particularly using fibre to the premises (FTTP) technology. We considered that competition between different networks is the most effective spur for innovation and continued investment in high quality, fibre networks.⁴
- 2.5 In response to the Strategic Review, multiple stakeholders interested in using BT’s ducts and poles argued that the existing processes associated with the duct and pole access remedy, known as physical infrastructure access (PIA), were not fit for scale deployment of fibre networks. In response, we proposed actions in several areas to

¹ Ofcom, 2017. *Wholesale Local Access Market Review Consultation*, Volume 1, section 3, https://www.ofcom.org.uk/_data/assets/pdf_file/0033/99636/Vol1-Market-review.pdf

² Ofcom, 2017. *Wholesale Local Access Market Review: Consultation on Duct and Pole Access remedies*, https://www.ofcom.org.uk/_data/assets/pdf_file/0008/101051/duct-pole-access-remedies-consultation.pdf

³ Ofcom, 2016. *Making communications work for everyone: Initial conclusions from the Strategic Review of Digital Communications*, https://www.ofcom.org.uk/_data/assets/pdf_file/0016/50416/dcr-statement.pdf

⁴ This view was based on our analysis which indicated that the scale of FTTP coverage tends to correlate with the level of network competition. See the Strategic Review, paragraph 4.11; see also paragraphs 4.20-4.25.

address these challenges.⁵ This included a proposal to review pricing of the PIA remedy, in order to ensure it worked effectively.

Our proposed approach to pricing remedies

- 2.6 In our initial proposals to develop an effective PIA remedy (the “2016 PIA Consultation”)⁶, our initial view was that the current basis of charges condition undermined the effectiveness of the PIA remedy, as it did not provide potential investors with sufficient certainty as to the level of rental charges that they would face. We considered that a cap on the level of rental charges would provide greater certainty to investors and said that it might be appropriate to set a cap based on BT’s current methodology for calculating the charge. In relation to ancillary charges, our initial view was that, in general, the current basis of charges condition remained appropriate. However, we considered that the current ancillary charges for build and enabling costs acted as an impediment to providers looking to use PIA for large scale deployment.
- 2.7 In the April 2017 DPA Consultation, we presented several proposals related to PIA pricing and cost recovery. We proposed that we would:
- impose a maximum cap on PIA rental charges using the current methodology;
 - retain the basis of charges condition for ancillary charges, apart from ancillary charges for network adjustments where we considered that Openreach should recover network adjustment costs over all users of its infrastructure, subject to a financial limit; and
 - publish our proposals on any necessary changes to reporting obligations at a later date.

The scope of this consultation on Duct and Pole Access remedies

- 2.8 This document develops the pricing proposals we set out in the April 2017 DPA Consultation. In this consultation, we put forward detailed proposals on: the rental charges cap; the pricing of ancillary services and financial limit relating to recovering network adjustment costs across all user of the physical infrastructure; and future financial reporting and associated draft SMP services conditions.

Legal Framework

- 2.9 The regulatory framework for market reviews is set out in UK legislation and is transposed from five EU Directives. These Directives impose a number of obligations on relevant regulatory authorities, including Ofcom, one of which is to carry out periodic reviews of certain electronic communications markets. We set out the applicable regulatory framework and the market analysis framework in more detail in Annexes 5 and 6 of the March 2017 WLA MR Consultation, as well as in the April 2017 DPA Consultation from paragraphs 2.26 to 2.33.

⁵ Strategic Review, paragraph 4.30.

⁶ Ofcom, December 2016. *WLA Market Review: Initial proposals to develop an effective PIA remedy*, https://www.ofcom.org.uk/_data/assets/pdf_file/0024/95109/Wholesale-Local-Access-Market-Review.pdf

General impact assessment

- 2.10 The analysis presented in this consultation represents an impact assessment, as defined in section 7 of the Communications Act 2003 (“the Act”).

Equality Impact Assessment

- 2.11 Annex 7 of the March 2017 WLA MR Consultation sets out our equality impact assessment (EIA) for the WLA market review, of which the proposals set out in this document form part. Ofcom is required by statute to assess the potential impact of all our functions, policies, projects and practices on race, disability and gender equality. EIAs also assist us in making sure that we are meeting our principle duty of furthering the interests of citizens and consumers regardless of their background or identity.
- 2.12 It is not apparent to us that the outcome of our review is likely to have any particular impact on race, disability and gender equality. More generally, we do not envisage the impact of any outcome to be to the detriment of any group of society. Nor do we consider it necessary to carry out separate equality impact assessments in relation to race or gender equality or equality schemes under the Northern Ireland and Disability Equality Schemes.

Consultation period and next steps

- 2.13 The deadline for responses to this consultation is 12 September 2017. Annexes 1 to 4 set out the process for responding to the consultation.
- 2.14 We expect to publish our final decision in a statement in early 2018.

Document structure

- 2.15 The rest of this document is structured as follows:
- **Section 3: Rental charges cap** – our proposals for how to set the level of the cap on rental charges.
 - **Section 4: Ancillary charges and a financial limit for network adjustments** – our proposals for setting the financial limit for network adjustments, in addition to proposals for the pricing of ancillary activities.
 - **Section 5: Regulatory financial reporting** – our proposals on the regulatory financial reporting requirements that are appropriate to support the proposed PIA remedy.
 - **Section 6: Legal tests** – sets out why we consider that our proposals satisfy the legal tests set out in the Act and are consistent with relevant European requirements.

Section 3

Rental charges cap

- 3.1 In this section, we set out our proposals for setting the level of the cap on PIA rental charges.
- 3.2 The PIA remedy was originally introduced following our review of the WLA market in 2010, and we continued to impose the remedy following our review of this market in 2014. All charges are currently subject to a ‘basis of charges’ condition which requires that charges are reasonably derived from the costs of provision based on a forward looking long run incremental cost approach, allowing an appropriate mark up for the recovery of common costs, including an appropriate return on capital employed. However, the basis of charges condition does not specify how precisely charges should be calculated. Following imposition of the remedy in 2010, Openreach adopted a particular methodology to derive rental charges, which we refer to as the “current methodology”.⁷

Provisional conclusions in the April 2017 DPA Consultation

- 3.3 In the April 2017 DPA Consultation, we reached the following provisional conclusions:
- Given our provisional conclusion that BT has SMP in the WLA market, there is a relevant risk of adverse effects arising from a price distortion in that BT might fix or maintain its prices at an excessively high level so as to have adverse consequences for end-users of public electronic communications services. This could undermine the case for investment by competing telecoms providers and so undermine the effectiveness of the obligation to provide PIA, and could also result in higher retail prices, all of which is ultimately against the interests of consumers.
 - Some form of price regulation is required to support an obligation to provide PIA, in order to guard against the risk that BT engages in such behaviour.
 - Certainty as to the level of charges for PIA is necessary to fully support investors’ ability to build a viable business case for network deployment using PIA.
 - The current basis of charges condition on rental charges does not provide potential investors with sufficient certainty as to the level of rental charges they would face, given Openreach has freedom to revise the methodology it currently adopts to calculate rental charges, with potentially significant impacts on those charges.
 - Our duties are best met by addressing the excessive pricing risk we have identified through a cap on rental charges as this will provide investors with

⁷ The current methodology has remained stable since charges were first set in 2011. Although Openreach reduced some PIA charges in 2013, this reflected a change in the underlying cost inputs following the outcome of the appeal of the 2012 Regulatory Asset Value (RAV) adjustment, rather than a fundamental change to the methodology.

greater certainty over the level of these charges and thus facilitate building a credible business case for deploying a network using PIA.

- 3.4 We explained that it is not currently practicable to apply a price cap based on BT's fully allocated costs (as we do in some other charge controls) as the necessary cost data is not reported to the required level of granularity in BT's accounting systems.⁸ We considered a number of approaches to providing more certainty about PIA pricing, and provisionally concluded that imposing a cap on rental charges based on the current methodology would be an appropriate approach in this review period. In particular, this would be an effective and pragmatic means of providing certainty to investors over the market review period and would result in PIA rental charges being at a level which should avoid undermining network investment.
- 3.5 This section sets out how we propose to use the current methodology to calculate the maximum charges that should apply to PIA rental products for this review period. We are consulting on the methodology we propose to adopt to calculate maximum charges. To illustrate the effect of this methodology, we have used the most up to date input data available to us. We intend to set the rental cap by applying the methodology we adopt in our final decision to updated input data, which is likely to lead to some changes in the level of maximum charges as against the illustrative maximum charges set out in this document, although we do not expect these changes to be significant.

Our approach to using the current methodology

- 3.6 As explained in the April 2017 DPA Consultation, our main objective in using the current methodology is to provide certainty for the duration of this review period, in the expectation that more granular information will be available in future review periods.⁹ Given limitations in the granularity of information available at this stage, and uncertainty about the take-up of PIA, we do not believe determining our own methodology in this review period would lead to a more appropriate outcome in terms of the level of the maximum charges set.¹⁰ As this is a pragmatic means of providing certainty for a period of time, our approach has been not to depart from the current methodology unless it is clearly inappropriate.
- 3.7 An important consideration for us in adopting the methodology is its appropriateness as a transitional approach to any price regulation of PIA that Ofcom adopts in the

⁸ We also noted that such an approach is likely to be dependent on forecasts of costs and volumes, where the risk of forecast error seems high given uncertainty about the take-up of PIA at this stage.

⁹ We are working with BT and Openreach to make changes to the way BT reports physical infrastructure within its regulatory financial accounting systems. However, such changes are likely to take some time to investigate and implement.

¹⁰ In setting charges, we must do so in accordance with our duties and the legal tests set out in the Act, including setting such conditions as appear appropriate to us for the purposes of promoting efficiency, promoting sustainable competition and conferring the greatest possible benefit on end-users. We must also take account of the extent of BT's investment in its physical infrastructure. Communications Act 2003, section 88. We explain why we consider that our proposals satisfy these legal tests in Section 6. We recognise that when the current methodology was implemented in 2011, it was intended to set a broadly fair and stable allocation of costs to users of PIA given the uncertainties associated with future take-up. In our Strategic Review, we expressed the view that the resulting prices were broadly in line with international comparisons, and this view was supported by stakeholder submissions.

future. We recognise that certainty over the level of charges in the long term is important to potential investors, given the investment case for network deployment is typically evaluated over a relatively long time period.¹¹ We cannot prejudge what actions we will take in the future, as any pricing decisions in future reviews will be made in the light of the circumstances – such as how the physical infrastructure will be used by other telecoms providers and Openreach in future – and legal framework applicable at that time. However, while it is not possible to give long term certainty as to future PIA price levels, we think our application of the current methodology is pragmatic and reasonable, and results in charges which appear overall to be appropriate.¹²

- 3.8 Moreover, although we are setting maximum charges to apply only for the duration of the next review period, our proposals seek to implement our longer term strategy to promote greater network competition and therefore we expect future reviews to consider how any pricing decisions can support this goal. More generally, we recognise the importance of regulatory consistency and predictability over time. We think that investors will place considerable weight on us providing effective constraints on Openreach's ability to set inappropriate charges in the long term and in the short term.

Form of control

- 3.9 In what follows, we set out the form of the proposed cap on rental charges. Specifically, we propose that:

- maximum charges will be calculated for each PIA rental product;
- the maximum charges will apply from the start of the review period; and
- the maximum charges will be updated for inflation each year.

Maximum charges will be calculated for each PIA rental product

- 3.10 Openreach currently calculates rental charges for a number of PIA products which relate to the different ways in which the physical infrastructure can be used:

¹¹ Indeed, some telecoms providers have called for us to fix the level of the cap significantly beyond the duration of this review period (e.g. ten years). Given limitations in the granularity of information available at this stage, and uncertainty about the take-up of PIA, we do not think this would be appropriate. Even if we were to do this, the cap would be subject to review at start of each review period, limiting the degree of certainty provided.

¹² In particular, the overall share of the underlying costs of the physical infrastructure which is expected to be recovered from PIA, as opposed to Openreach's downstream products, seems appropriate. In addition to the question of sustainability of the level of charges, we would also be concerned if we knew our approach was likely to result in charges which did not represent a level playing field between Openreach and other telecoms providers, in terms of the share of physical infrastructure costs recovered from each.

- Duct rental (per metre) – different rates apply for lead-in duct, spine duct in a route containing a single bore, spine duct in a route containing two bores, and spine duct in a route containing three or more bores.¹³
 - Pole rental (per attachment) – different rates apply depending on whether the attached cable serves a single end-user (i.e. a single drop) or multiple end-users (i.e. a carrier cable). Separate rental charges are levied for placing equipment at the top of a pole (known as ‘manifolds’), and for each cable that runs down or up a pole.
 - Hosting cables and splices in joint boxes and manholes – there are three products: (i) rental for each sub-duct entering or exiting from the joint box or manhole; (ii) rental for in-line splice hosting (per splice); (iii) rental for housing a cable coil, with different rates depending on the length of cable. For all three products, different rates apply for joint boxes and manholes.
- 3.11 We propose to set a maximum charge for each of these products, reflecting the fact that the current methodology calculates charges for each product.
- 3.12 We recognise that it is possible that Openreach and other telecoms providers may wish to introduce new ways in which the physical infrastructure can be used and for which there is currently no rental product.¹⁴ However, in our view, the current product set which has been in place since 2011 captures the ways in which Openreach’s physical infrastructure is most likely to be used. In any event, our approach does not prevent Openreach from allowing the infrastructure to be used in new ways, nor does it prevent Openreach from introducing new rental products with associated rental charges.¹⁵
- 3.13 We propose to retain the existing basis of charges condition in respect of any new rental charges Openreach introduces which would not be covered by the cap to address the excessive pricing risk we have identified. This requires that charges are reasonably derived from the costs of provision based on a forward looking long run incremental cost approach, allowing an appropriate mark up for the recovery of common costs, including an appropriate return on capital employed. In considering whether charges for new rental products comply with the basis of charges condition, we would take into account the charges which are covered by the cap.¹⁶

¹³ Rental is for sub-duct of diameter up to 25mm. With respect to lead-ins, where a lead-in passes into a 90mm duct from an Openreach junction box hosting the copper distribution point, there is a ‘lead-in link’ product. For this product, spine duct rates apply for the portion of the route from the junction box to the swept-tee joint or frontage-tee joint. Lead-in rates apply thereafter.

¹⁴ For example, Openreach decided in 2016 to allow telecoms providers to install a wider range of cable joints in Openreach manholes and joint boxes.

¹⁵ Openreach cannot introduce products which are essentially equivalent in order to circumvent the control on pricing.

¹⁶ For example, if charges for new rental products were to comprise a contribution to asset costs already included in the calculation of the maximum charges for existing rental products, it may be the case that this would only be reasonable if PIA rental charges for certain existing products were set lower than the maximum charge. This is because the current methodology calculates PIA rental charges on the basis of an allocation of costs between the current product set (i.e. assuming costs will not be recovered from other products). In some situations, Openreach could allow new uses of the infrastructure without charging specific rental charges, where the new use is complementary to an

3.14 Some telecoms providers have called for a simplification of rental charges – for example, setting a single per metre charge for spine duct irrespective of the number of bores,¹⁷ or a single charge per cable attachment irrespective of whether it is a single drop cable or an aerial cable.¹⁸ As explained above, our approach has been not to depart from the current methodology unless it is clearly inappropriate. Although there may be some advantages to simpler charges, there are also reasons to adopt the more disaggregated approach under the current methodology. Setting disaggregated duct rental charges avoids the need to make assumptions about how telecoms providers would use the different duct types.¹⁹ Setting separate charges for dropwire attachments and aerial cable attachments means that the rental charges reflect the different utilisation of different pole types in the network (i.e. distribution poles which carry dropwires and carrier poles which carry aerial cables).²⁰ Therefore, we do not consider the current approach to be inappropriate as a basis for providing certainty over the level of rental charges for the next review period.

Maximum charges will apply from the start of the review period

3.15 Although we are proposing a cap based on the current methodology, we are proposing certain changes that will result in changes to current charges. Therefore, we have considered how charges should evolve from current levels to the maximum charges we calculate. We propose that the maximum charges we calculate should apply from the start of the review period.

3.16 Although we generally prefer glidepaths²¹ for price stability and their cost reduction incentives, these considerations are not as important in the present circumstances, and there is a strong case for aligning charges with costs quickly to ensure the PIA remedy is effective.

- Although glidepaths can help ensure a stable and predictable background against which investment decisions may be taken, we consider that price stability at the start of this review period is less important, as the current PIA remedy has been ineffective with relatively low take-up historically.²² As explained above, we see price stability as an important consideration going forward.

existing rental product. This is because the telecoms provider will still make a contribution to the costs of the infrastructure through paying rental charges for the existing rental products.

¹⁷ For example, CityFibre response to the 2016 PIA Consultation, page 15.

¹⁸ For example, Call Flow response to the 2016 PIA Consultation, page 4.

¹⁹ The precise assumption (implicit or explicit) could have a material impact on the resulting rental charge given the current methodology results in quite different rental charges for duct of different bore sizes.

²⁰ On average, carrier poles have fewer cable attachments than distribution poles and the function of those attachments differs (aerial cables support multiple premises whereas dropwires typically support a single premises). Broadly speaking, rental charges for aerial cable attachments therefore recover the costs of the components of the network being used to support those cables (i.e. carrier poles). Similarly, rental charges for distribution cable attachments recover the costs of the distribution poles used to support those cables.

²¹ Glidepaths involve setting the control so that there is a gradual convergence of charges from the current level to the target level.

²² Our proposals with respect to rental charges are in the context of a number of other proposed changes to the PIA remedy, which together are expected to have a significant bearing on investment decisions.

- In other charge controls, we have expressed the concern that aligning charges with costs immediately could undermine incentives to reduce costs.²³ However, the most important driver of the difference between the current rental charges and the maximum charges we propose reflects a change we are making to the methodology, rather than changes in the underlying costs.²⁴ Specifically, we have reflected in the calculation of maximum charges our proposal that the costs incurred in setting up and managing the remedy ('productisation' costs) should be recovered from all users of the physical infrastructure, to ensure a level playing field with the costs faced by Openreach itself when using the infrastructure. We consider that this change is required to ensure the effectiveness of the remedy, and should therefore be reflected in charges as soon as possible.²⁵

Maximum charges will be updated for inflation each year

3.17 We propose that the maximum charges we calculate will apply for the duration of the review period, but that in each year, the maximum charges will be updated for inflation, measured using the Consumer Prices Index (CPI).²⁶

Calculation of maximum charges

3.18 Our calculation of the maximum charge for each product comprises three components:

- asset costs;
- network adjustment costs; and
- productisation costs.

3.19 The asset cost component reflects a contribution to the costs associated with the underlying asset to which access is granted. Our calculation of this component is based on the current methodology, which specifies what proportion of the total cost associated with the asset type (e.g. duct) should be recovered from the telecoms provider gaining access through the different rental products.

3.20 The network adjustment cost component reflects a contribution to the costs associated with necessary adjustments undertaken to make Openreach's physical infrastructure ready for use, which under our proposals Openreach should recover across all users of the physical infrastructure, up to a financial limit. These costs are essentially asset costs, but as this is a new category of costs which Openreach has not incurred to date, these costs are not reflected in the asset cost component under

²³ One-off adjustments reduce the period of time over which the regulated firm benefits from cost reductions made prior to the new control period, reducing the incentives to make efficiency improvements in the first place. Likewise, if costs have increased, allowing a rapid rise in charges would signal that cost increases would quickly be passed through to charges, reducing the regulated firm's incentive to control costs.

²⁴ Although the underlying costs have changed, the impact of this in most cases is to increase charges. However, this is more than offset by the change in the treatment of productisation costs, which in most cases reduces charges.

²⁵ We have also corrected a number of technical errors in the calculation, which we think should be reflected in charges as soon as possible.

²⁶ The Consumer Price Index is our preferred measure of inflation for setting inflation minus/plus 'X' charge controls (see March 2017 WLA MR Consultation, paragraph 2.6).

the existing methodology. Therefore, we have included an allowance for a proportion of these costs in the calculation of maximum charges.

3.21 The productisation cost component reflects a contribution to the costs incurred in setting up and managing the PIA product, and processing individual PIA orders. Under the current methodology, forecast productisation costs are allocated to PIA rental products based on an expectation that these costs would be recovered exclusively from telecoms providers using PIA. In April, we proposed that productisation costs should be recovered across all SMP products that use the physical infrastructure (including PIA), in the same way Openreach recovers similar costs related to its own use of the physical infrastructure. Therefore, we have replaced the existing productisation cost component with our own calculation of an allowance for a proportion of these costs.

3.22 In what follows, we explain how each of the three components has been calculated.

Calculation of the asset costs component

3.23 We describe in detail the current methodology for calculating the asset cost component in Annex 5. At a very high level, there are two main steps to the calculation of the asset cost component of rental charges:

- First, the regulatory cost base is determined for the relevant infrastructure being accessed (i.e. lead-in duct, spine duct²⁷, poles, joint boxes or manholes).
- Second, the methodology determines what share of this cost should be included in the PIA rental products which make use of the relevant infrastructure.

3.24 Below, we provide an overview of these two steps, and comment on specific aspects where we have made changes to the current methodology, or where stakeholders raised issues in response to our 2016 PIA Consultation. As explained above, our approach has been not to depart from the current methodology unless it is clearly inappropriate.

Determining the relevant regulatory cost base

3.25 The regulatory cost base for the relevant infrastructure being accessed comprises a return on capital, depreciation (net of holding gains) and overheads, based on BT's forward looking costs.²⁸ These cost items are taken from BT's Regulatory Financial Statements (RFS), or from the systems which feed into the RFS.

²⁷ The regulatory cost base is determined for each of single bore spine duct, 2 bore spine duct and 3+ bore spine duct. For convenience, we sometimes just refer to spine duct.

²⁸ The asset cost component uses data from BT's RFS, which is based on a current cost accounting (CCA) cost approach that uses financial capital maintenance (FCM) and the fully allocated cost (FAC) standard. As well as allowing for depreciation of the historical cost of an asset, current cost accounting methods also have supplementary depreciation, which allows for changes in the asset valuation. This can be positive (if the asset has appreciated in value) or negative (if it has declined in value). The FCM approach seeks to maintain the value of originally invested capital. For modelling purposes, this involves including an allowance within the capital costs for the holding gains or losses associated with changes over the year in the value of the assets held by the firm. Holding gains (or losses) are subtracted (or added) from (or to) the depreciation charge.

- 3.26 Under the current methodology, the cost data used is based on a snapshot at a particular point in time. In setting maximum charges based on forward looking costs to apply over a number of years, we would usually look to forecast costs covering the period to which the control relates. However, BT does not report physical infrastructure costs or volumes at the required level of granularity to enable us to forecast these costs in the way we typically forecast costs in other charge controls. For present purposes, we think the approach of basing the asset costs on a recent snapshot of data is appropriate. This is because any under-recovery or over-recovery resulting from changes in costs over the review period is unlikely to be material given the likely scale of PIA usage relative to Openreach's internal consumption of physical infrastructure, and it does not appear that the risk of under- or over-recovery is asymmetric.^{29 30}
- 3.27 For the purposes of calculating illustrative rental charges under the methodology we are proposing, we have updated the underlying cost inputs for the financial year 2015/16 (i.e. the most recent year for which RFS information is available). In doing so, we have updated the weighted average cost of capital (WACC) used to calculate the return on capital, to reflect the latest estimate set out in the March 2017 WLA MR Consultation. In the original calculation, Openreach used the Openreach Copper WACC. We consider that this is the most appropriate assumption for the purposes of controlling PIA prices over this review period, as this WACC most closely reflects the risk associated with physical infrastructure.³¹ Updating the WACC estimate has the effect of reducing the regulatory cost base.
- 3.28 We have also added indirectly attributed overheads to the regulatory cost base.³² The current methodology includes directly attributed overheads, but does not include

²⁹ Even if we were to attempt forecasting asset costs, it is not clear that this would reduce this risk of under- or over-recovery given the risk of forecast error. In particular, we observe that over the past ten years, the net replacement costs of duct and copper (in which pole costs sit) have increased in some years and decreased in others. Although asset costs can be expected to increase as a result of network adjustments, we capture these costs in a separate component in the calculation (see below). See Openreach's response dated 26 June 2017 to questions 12 and 18 of the section 135 Notice dated 12 June 2017.

³⁰ Under the current methodology, holding gains are subtracted from the annual costs and added to the value of the asset. We recognise that by not forecasting costs over the review period, we are not reflecting the increase in annual depreciation charges and the increase in the return on capital in subsequent years which result from the holding gain. As such, we may be potentially understating costs in subsequent years by a small amount. We do not think the impact on rental charges, or on Openreach's cost recovery, is sufficiently material to warrant taking a more complex approach based on forecasts of costs over the review period. We note that PIA volumes are expected to account for only a relatively small proportion of the recovery of physical infrastructure costs over this review period compared to Openreach's downstream services.

³¹ Although PIA is intended to be used for the deployment of ultrafast broadband networks, the riskiness of the ultrafast investment is not the same as the risk associated with the underlying physical infrastructure shared by a number of services. Physical infrastructure is needed for all services, so the demand is not dependent on the success of ultrafast broadband. We recognise that network adjustments are potentially more risky but expect that the amount of cost, and therefore risk, transferred to Openreach will be relatively modest in this review period. See paragraph 7.84 of the April 2017 DPA Consultation.

³² Directly attributed overheads capture all operating costs directly attributed from the general ledger to the relevant activity or plant groups in BT's accounting system (e.g. the duct activity groups). Indirectly attributed overheads consist of other operating costs which are indirectly attributed to the

indirectly attributed overheads. Our current view is that this is not appropriate. Including indirectly attributed overheads reflects a more consistent treatment of overheads between the calculation of maximum PIA rental charges and the RFS, and is therefore consistent with creating a level playing field between Openreach and other telecoms providers.³³ This has the effect of increasing the regulatory cost base of duct assets and pole assets.

3.29 In its RFS, BT does not report costs at the level of the different types of infrastructure (lead-ins, spine duct, joint boxes, manholes, poles) but rather reports these infrastructure costs at a greater level of aggregation. Under the current methodology, these costs are split using separate estimates of the gross replacement cost of each of these different types of infrastructure:

3.29.1 BT reports the costs associated with all duct³⁴ assets in aggregate, comprising lead-ins, spine duct, joint boxes, manholes and cabinets.³⁵ This aggregate cost is split between these different types of infrastructure in proportion to their gross replacement cost, as estimated in a bottom-up absolute valuation carried out in 2012/13.³⁶ We have not fully updated the gross replacement cost figures for the financial year 2015/16 as doing so would require BT to perform an absolute re-valuation of the duct asset.³⁷ Our current view is that this is unlikely to have a sufficiently material impact on rental charges to warrant undertaking such an exercise, given our approach is intended to be a pragmatic means of providing certainty over the next review period.³⁸

relevant activity or plant groups from other activity groups – this includes general overheads including a proportion of costs relating to BT's internal service unit, Technology, Service & Operations (TS&O).

³³ In the RFS, indirectly attributed overheads are ultimately attributed to Openreach's downstream services which consume the physical infrastructure. Excluding these overheads from the PIA price calculation would not result in a level playing field between Openreach and other telecoms providers using PIA, as Openreach's downstream services would contribute to overheads which other telecoms providers using the physical infrastructure would not contribute to.

³⁴ This includes all duct costs rather than just those that relate to the access network, on the basis that a telecoms provider constructing a rival network using PIA might use any part of the Openreach duct network in its network deployment. Openreach response to question 6 of the section 135 Notice dated 27 January 2017.

³⁵ We have excluded from the calculation of PIA rental charges the costs associated with cabinets which are not reflected in PIA rental charges as these assets are not part of PIA. These costs appear to have been included in the regulatory cost base of spine duct in the original calculation, although we note they represent less than 1% of the total duct valuation. Openreach response dated 7 July 2017 to question 23 of the section 135 Notice dated 16 June 2017.

³⁶ The current methodology proceeds on the assumption that the gross replacement cost of duct as estimated in the absolute valuation does not include any lead-in duct. The gross replacement cost for lead-in duct is then estimated separately (see Annex 5). In the absence of more granular data, we consider this approach to be appropriate.

³⁷ BT moved to valuing duct on an indexed historic basis in 2012/13. Openreach response dated 30 June 2017 to question 15 of the section 135 Notice dated 16 June 2017.

³⁸ We have used partially updated figures based on 2012/13 prices and September 2015 volumes, as provided by Openreach, and have also updated the estimate of the gross replacement cost of lead-in duct. We note that the resulting split (in percentage terms) of the aggregate cost between the different types of infrastructure has not changed significantly since the original calculation.

- 3.29.2 BT reports the costs of poles in a single cost category with copper assets such as cables and joints. The pole costs are split out from the copper assets in proportion to the gross replacement cost, as estimated in a bottom-up absolute valuation carried out in 2009/10. We have not updated the gross replacement cost figures for the financial year 2015/16 as doing so would require BT to perform an absolute re-valuation of the relevant assets.³⁹ As in the case of duct assets, our current view is that this is unlikely to have a sufficiently material impact on rental charges to warrant undertaking such an exercise, given our approach is intended to be a pragmatic means of providing certainty over the next review period. However, we understand that the last absolute copper valuation was performed in 2012/13. We have not been able to update the calculation to reflect these more up to date estimates for the purposes of this consultation, but our current view is that these estimates should be reflected in any final decision.⁴⁰

Determining the share of the regulatory cost base to include in PIA rental charges

- 3.30 The methodology for determining what share of the regulatory cost base should be included in each of the PIA rental products which make use of the relevant infrastructure differs by product type.
- 3.31 In general, this second step in the calculation of the asset cost component relies on information about Openreach's physical infrastructure (e.g. the number of kilometres of a particular duct type, or the number of attachments on a pole) as well as a number of assumptions made by Openreach at the time of the original calculation. For the purposes of calculating illustrative rental charges under the methodology we are proposing, we have updated the physical infrastructure information to be consistent with the timing of the cost data (i.e. corresponding to the financial year 2015/16).⁴¹

Duct-related products

- 3.32 For each type of duct (lead-ins, single bore spine, 2 bore spine and 3+ bore spine), the share of the regulatory cost base that is reflected in the asset cost component for renting that type of duct is based on the proportion of utilised space in that type of duct that would be taken up by a 25mm diameter sub-duct. Specifically:⁴²

³⁹ BT moved to valuing copper on an indexed historic basis in 2012/13.

⁴⁰ Openreach indicated that a significant amount of work is required to update the calculation based on the 2012/13 valuation. Openreach response dated 30 June 2017 to question 20 of the section 135 Notice dated 16 June 2017.

⁴¹ In some cases, Openreach could not provide updated physical network data corresponding to the financial year 2015/16. Where this is the case, we have used the closest data available. We explain this in Annex 5.

⁴² By way of example, assume the regulatory cost base for a particular type of duct was £100m, the average number of 25mm sub-duct equivalents in that type of duct was 2.5 and the total route kilometres of that type of duct was 100,000 km. The asset cost component would be £0.40 per metre.

- The regulatory cost base for each type of duct is divided by the national average number of 25mm diameter sub-duct equivalents in that type of duct.⁴³
- The resulting portion of the regulatory cost base is then divided by the total route metres of that type of duct, to give a cost per metre.
- The asset cost component is equal to this cost per metre. In the case of spine duct, this is subject to a cap at 50% of the total regulatory cost per metre, which ensures that PIA users do not end up paying for more than 50% of the total duct costs for a particular route.⁴⁴ The cap only has an effect on the asset cost component for single bore spine duct.⁴⁵ For lead-in duct, no such cap applies.

The maximum charges apply to cables and sub-duct up to 25mm diameter

- 3.33 The current methodology is designed to derive a rental charge that applies to cables or sub-duct of up to 25mm diameter. Some telecoms providers have argued that telecoms providers should be allowed to install cables or sub-duct of smaller diameter than 25mm, with lower associated charges, to encourage more efficient use of duct space.⁴⁶
- 3.34 We asked Openreach why 25mm was chosen as the minimum unit of occupancy. Openreach explained that this reflected the anticipated engineering and deployment

⁴³ The average number of 25mm diameter sub-duct equivalents is based on actual usage of space by BT cables and sub-ducts, converted into the equivalent space occupied by 25mm diameter sub-ducts. We recognise that basing the calculation on current duct occupancy does not take into account any changes in duct occupancy over the review period. However, the likely extent of new network deployment over the next review period is unlikely to have a material impact on average duct occupancy figures which are calculated across the entire Openreach network as a whole. Moreover, any plausible increase in duct occupancy of single bore duct will not affect rental charges as the cap on the asset cost component is binding. We also note that duct occupancy appears to have fallen in multi-bore duct routes since 2011. Openreach response dated 7 July 2017 to question 13b of the section 135 Notice dated 16 June 2017.

⁴⁴ Where the average number of 25mm diameter sub-duct equivalents is less than 2, the resulting cost per metre would be more than 50% of the total duct costs for that route. We understand that Openreach recognised that in 2011 this could be construed as creating an unlevel playing field. We consider that the level of the cap (50%) seems appropriate for the purposes of using the current methodology to set maximum prices for this review period, particularly given the limited expectation that more than one PIA based competitor will enter any single geographical area in this review period, and based on our understanding that in single bore spine duct, a single 25mm sub-duct is generally likely to be sufficient for deploying a rival network. Openreach response dated 7 July 2017 to question 13b of the section 135 Notice dated 16 June 2017.

⁴⁵ The cap only affects single bore spine duct because the average number of 25mm diameter sub-duct equivalents in single bore spine duct routes is 1.28 (i.e. less than 2). In all other spine duct routes, the average number of 25mm diameter sub-duct equivalents is significantly greater than 2 (4.68 for 2 bore duct, and 10.20 for 3+ bore duct). These figures are derived using modelling assumptions based on the existing PIA model sub-duct equivalent methodology, as set out in Openreach response dated 7 July 2017 to question 13c of the section 135 Notice dated 16 June 2017.

⁴⁶ See, for example, responses from Call Flow, GTC and Hyperoptic to the 2016 PIA Consultation.

practices of the prospective PIA users at the time.⁴⁷ Openreach also explained that the use of the 25mm unit charging basis provided some protection against the setting of an unsustainable PIA rental charge. In particular, setting a reduced charge for smaller sub-duct or cables which perform the same function and have the same substitutional impact as a larger sub-duct risks leaving Openreach unable to recover its full duct costs without increasing duct access prices in the future.

- 3.35 In our view, the minimum diameter increment chosen by Openreach results in an appropriate share of overall duct costs to be recovered from PIA users (as opposed to Openreach's own downstream services).⁴⁸ Whilst we recognise that setting lower prices for smaller cables or sub-duct could provide incentives for more efficient use of the existing space available in Openreach's ducts, this could result in PIA users making a much smaller contribution to duct costs, which we do not think appropriate in the short run and which may prove unsustainable in the long run.⁴⁹ Therefore, we do not propose to depart from the current methodology in this review period (i.e. the maximum charges we set are for cables or sub-duct up to 25mm in diameter).

How charges should apply to multiple cables or sub-duct

- 3.36 Our approach does not prevent telecoms providers from installing smaller cables or sub-ducts, but Openreach can charge up to the maximum charge for these, as is currently the case. However, we consider the way Openreach currently applies the duct rental charges to multiple cables (or sub-ducts) in the same duct is inappropriate. Currently, telecoms providers are charged for each cable or sub-duct up to 25mm. If a telecoms provider deploys a 25mm sub-duct and fills that sub-duct with multiple cables, they will only incur a single rental charge in respect of the 25mm sub-duct. However, if a telecoms provider installs multiple cables without housing them in a sub-duct, these multiple installations would be charged separately, even if the total cross sectional area was the same as that taken by a 25mm diameter sub-duct. This can result in rental charges significantly exceeding the total regulatory cost per metre.
- 3.37 We recognise that the current approach has advantages in terms of encouraging telecoms providers to house cables in sub-duct. However, in some circumstances, this is not possible. One such case relates to lead-ins, where multiple cables run

⁴⁷ Openreach explained to us that 25mm was considered to be a reasonable space to enable network deployment with room for growth and/or an ability to manage their own cabling capacity. 25mm was also strongly linked to network engineering installation and maintenance practices as standard equipment for activities such as 'rodding and roping' was (and still is) designed to operate within a 25mm diameter space to test, clear and pull cables through duct. Openreach response to question 39 of the section 135 Notice dated 6 March 2017.

⁴⁸ The current methodology results in 21% of the regulatory cost base of 2 bore spine duct being allocated to rental charges for this type of duct. The corresponding figures for 3+ bore spine duct and lead-in duct are 10% and 78% respectively. The operation of the cap means that 50% of the regulatory cost base for single bore spine duct is allocated to rental charges for this type of duct.

⁴⁹ Openreach's own network is currently based on a mix of copper and fibre whereas a rival telecoms provider could deploy a new fibre network using less duct space than Openreach. Therefore, a rival telecoms provider deploying in a particular area could cover the same customer base as Openreach, but make a smaller contribution to the costs of the shared physical infrastructure. We recognise that this could change in the future as Openreach recovers copper from its physical infrastructure (in the March 2017 WLA MR Consultation, we explained that we consider it likely that the E-side copper scrap will be fully recovered 12 years after the start of the charge control).

between the distribution point and each of the customer premises. As these cables run to different end-points, it is not possible to house these cables in a single sub-duct.⁵⁰ Another case relates to congested duct, where there may not be sufficient space for a sub-duct, but there may be space to nestle multiple smaller cables.

- 3.38 In our view, where multiple cables or sub-ducts are installed in Openreach's ducts, and they occupy the same or less space as a 25mm diameter sub-duct, they should not attract rental charges in aggregate which exceed the maximum charge for a 25mm diameter sub-duct. If they occupy more space than a 25mm diameter sub-duct, then the applicable charge should be for the equivalent number of 25mm diameter sub-ducts.⁵¹ We propose that Openreach work with industry to determine how this is implemented in practice.

Lead-in charges

- 3.39 When a telecoms provider deploys a lead-in cable in a lead-in duct, it will usually get all the revenue associated with that lead-in duct.⁵² However, when that customer churns, the telecoms provider will get none of the revenue.⁵³
- 3.40 We recognise that there are various ways of approaching rental charges for lead-in duct to deal with this. Under the current methodology, a rival telecoms provider will pay rental for as long as they have a lead-in cable installed in Openreach's lead-in duct.⁵⁴ As no cap applies to lead-in rental charges, the asset cost component amounts to 78% of the total regulatory cost base per metre.⁵⁵
- 3.41 Under this approach, when a customer churns, the rival telecoms provider can either remove their lead-in cable to avoid paying rental charges, or leave it installed on the basis that this enables it to reconnect the customer more easily in future (making it worthwhile to continue paying the rental charges).
- 3.42 Determining whether the current approach, and the resulting level of contribution to lead-in costs, would be appropriate over the longer term requires a better understanding of likely usage of duct lead-ins by rival telecoms providers and the costs of the various actions involved (e.g. removing and re-installing lead-in cables). However, we do consider that it is appropriate for the purposes of calculating a maximum rental charge for this review period. This is because churn is likely to be

⁵⁰ Telecoms providers may also have to put their distribution point equipment further from the premises, given space constraints in existing chambers. This potentially extends the distance over which the telecoms provider needs to run separate cables.

⁵¹ This is also consistent with the way in which the current duct occupancy figures used in the calculation of the asset cost component have been calculated.

⁵² We expect that telecoms providers will deploy lead-in cables upon acquisition of the customer.

⁵³ Most lead-in ducts serve a single premises, but some lead-in ducts serve multiple premises, so in these cases the telecoms provider may only have a share of the revenue.

⁵⁴ The rental charges thus reflect the fact that the telecoms provider is occupying space in Openreach's infrastructure. There are others ways in which rental charges for lead-in duct could apply. For example, when an end customer is lost, the obligation to pay rental charges could stop. Telecoms providers could be permitted to leave their lead-in cable in place, unless another telecoms provider (including Openreach) requires the space.

⁵⁵ The national average number of 25mm diameter sub-duct equivalents for lead-ins is assumed to be 1.28. Therefore, the asset cost component is equal to 1/1.28 of the total regulatory cost base. Openreach response dated 7 July 2017 to question 13 of the section 135 Notice dated 16 June 2017.

limited over this review period, and so the number of lead-ins deployed that do not serve a connected customer will also be limited. As such, we do not propose to depart from this aspect of the current methodology for the purposes of providing certainty for this review period.

Box-related products

3.43 The regulatory cost base associated with joint boxes is divided by the total number of joint boxes to give a regulatory cost per joint box. The same is done for manholes. The share of this regulatory cost per box that is reflected in the asset cost component for the different box-related PIA rental products is then determined as follows:⁵⁶

- For box entry and exit, the regulatory cost per box is divided by the expected number of entries/exits per box (based on an assumption about average usage of boxes under PIA).
- For cable-coils and in-line splices, the asset cost component is based on assumptions about the proportion of space in the box used, and in the case of joint boxes, the types of joint box that can host cable coils.

3.44 These steps are underpinned by a number of assumptions, which are set out in detail in Annex 5. We asked Openreach to explain the basis of these assumptions. Openreach told us that these were working assumptions at the time of the original calculation six years ago but was unable to locate what evidence was used to determine or support these assumptions.

3.45 With respect to box entry and exit, the assumption about average usage of boxes under PIA does not seem inappropriate.⁵⁷ However, we have no firm basis on which to evaluate the appropriateness of the assumptions underpinning the cable coil and in-line splice rental charges.⁵⁸ Although alternative approaches could be adopted in relation to cable coil and in-line splice hosting (including not setting rental charges at all), our current view is that we should retain the current methodology and assumptions. This is on the basis that we have not so far identified the current approach to be inappropriate, and it is not obvious that alternative approaches would be superior.⁵⁹ Moreover, we understand that in developing the current methodology Openreach assumed that take-up of cable coil and in-line splice hosting products would not be significant. We are particularly interested in stakeholders' views on this.

⁵⁶ The regulatory cost base per box is adjusted downwards to mitigate the risk of over-recovery, given charges for box entry and charges for cable coils and splice hosting could apply simultaneously.

⁵⁷ The expected number of entries/exits per box is assumed to be equal to the current average number of 25mm sub-duct equivalents assumed to be crossing that box type (e.g. joint boxes) multiplied by three. The number of entries/exits per box must be at least equal to two (to reflect both ends of the cable). Three does not seem to be an implausible assumption for average usage of manholes/joint boxes under PIA, particularly given boxes serve as points where cables are disaggregated (e.g. one entry and two exits).

⁵⁸ We also have no firm basis on which to evaluate the appropriateness of the downward adjustment to the regulatory cost per box.

⁵⁹ For example, we recognise the value of a mechanism to incentivise efficient use of space in boxes in respect of cable coil and in-line splice hosting. The current methodology provides for this, whereas removing the charges completely would not.

Pole-related products

- 3.46 The regulatory cost base for poles is divided by the total number of poles to give a regulatory cost per pole. The share of this regulatory cost per pole that is reflected in the asset cost component for the different pole-related rental products is then determined as follows:
- This regulatory cost per pole is first allocated between cable attachments, manifold attachments (i.e. equipment at the top of the pole) and cable up a pole attachments (i.e. cables that run up the pole).
 - For cable attachments, the asset cost component is equal to the relevant part of the regulatory cost per pole divided by the average number of cable attachments per pole expected under PIA. This is done separately for single-end-user attachments (i.e. dropwires) and multi-end-user attachments (i.e. aerial cables) to reflect the significant difference in the number of attachments on poles which carry dropwires and poles which carry aerial cables.⁶⁰
 - For manifold attachments and cable up a pole attachments, the asset cost component is equal to the relevant part of the regulatory cost base divided by the average number of manifold attachments or cable up a pole attachments expected under PIA.
- 3.47 Openreach explained to us that the basis for charging separately for different pole attachments is to incentivise more efficient use of the pole asset by telecoms providers.⁶¹ The specific proportions of cost attributed to each type of attachment are based on assumptions made at the time of the original calculation six years ago. Although Openreach was unable to locate the underlying rationale for these assumptions, they do not appear to be inappropriate in terms of the resulting incentives.⁶²
- 3.48 The current methodology is underpinned by a number of assumptions about the number of relevant attachments expected under PIA, which are set out in detail in Annex 5. We do not consider these assumptions to be inappropriate, particularly in light of the high degree of uncertainty around take-up of PIA in the future.⁶³
- 3.49 Specifically with respect to the expected number of single premises (i.e. dropwire) attachments, the current methodology assumes that another telecoms provider's

⁶⁰ On average, carrier poles have fewer cable attachments than distribution poles and the function of those attachments differs (aerial cables support multiple premises whereas dropwires typically support a single premises).

⁶¹ 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.

⁶² The proportion of cost attributed to each type of attachment (in particular, the relative proportions allocated to cable up a pole attachments and manifold attachments) determines the point at which it becomes cheaper to use pole top equipment to aggregate incoming cables. Under the current assumptions, if a telecoms provider is to attach three or more dropwires to a pole, it is cheaper to use pole top equipment to aggregate incoming cables than to run separate cables down the pole.

⁶³ We note that Openreach considered that certain assumptions were conservative (i.e. leading to lower rental charges) on the basis that actual attachments under PIA have been much lower than expected. In our view, the underlying assumptions do not seem implausible on a forward-looking basis.

attachments are fully substitutional for Openreach's existing attachments. In many respects, this is similar to the way in which rental charges are set for lead-in duct. For the same reasons set out above, we do not propose to depart from this aspect of the current methodology for the purposes of providing certainty for this review period.

Calculation of the network adjustment costs component

- 3.50 In the April 2017 DPA Consultation we proposed that the costs of network adjustments should be recovered across all SMP products that use the physical infrastructure, subject to a financial limit. We explained that we would include an allowance for a proportion of the costs of making network adjustments (appropriately capitalised) in the calculation of PIA rental charges.
- 3.51 To implement this, we have applied an uplift to the regulatory cost base to reflect the network adjustment costs that need to be recovered from all users of the infrastructure over the review period. The methodology for calculating the asset cost component (described above) then also applies to these additional costs, such that a proportion of these costs is included in PIA rental charges.
- 3.52 We have modelled the network adjustment costs that need to be recovered from all users of the infrastructure over the review period in the following way:
- In Section 4, we estimate the maximum amount of network adjustment costs that should be recovered across all SMP products that use the physical infrastructure to be £73 to £105 per premises passed. For the purposes of illustrating the impact of our methodology, we have assumed the mid-point of this range (i.e. £89 per premises passed). This reflects our expectation that the financial limit will not be reached in many cases.
 - To estimate the total cost incurred by Openreach over the next review period, we multiply this per premises passed figure by an estimate of the number of premises passed by new networks built using Openreach's physical infrastructure over this period – by other telecoms providers or Openreach itself.⁶⁴ For the purposes of illustrating the impact of our methodology, we assume that 1.5 million premises will be passed by new networks built using Openreach's physical infrastructure, giving a total cost incurred by Openreach of £134m.⁶⁵
 - We consider most of these costs to be duct related capital costs and so propose to spread the total amount over an asset life of 40 years.⁶⁶ Furthermore, we have included a return on capital, assuming the same WACC as in the asset cost

⁶⁴ Under our proposals, the cost of network adjustments (within the financial limit) related to Openreach's own network deployment will also need to be recovered across all users of the physical infrastructure.

⁶⁵ We use the medium case forecast in the March 2017 WLA MR Consultation for the number of premises passed by a new access network built by other telecoms providers using PIA (500,000 premises passed by the end of the review period). These are phased as follows: 5% in year 1, 15% in year 2 and 80% in year 3. (We are aware of stakeholder responses on these assumptions but do not address these here given we are only illustrating the impact of our methodology.) We assume 1 million premises will be passed by a new network built by Openreach itself. Openreach has stated that it has an ambition to deploy FTTP to 2m homes by 2020, but this includes build in areas where Openreach has no existing physical infrastructure (and therefore network adjustments are not relevant).

⁶⁶ This is consistent with the approach taken in the March 2017 WLA MR Consultation.

component calculation (8%). This gives a total cost of around £9m to be recovered from users of the infrastructure over the next review period.

- 3.53 As explained in paragraph 3.26 above, we are calculating maximum PIA rental charges for the review period based on a snapshot of costs in a single year. Therefore, we need to include a single annual figure for network adjustment costs in the calculation. We do not expect network adjustment costs to be constant in each year over the review period. Rather, we expect that network adjustment costs are likely to increase each year as telecoms providers ramp up their rate of deployment (and our medium case forecast anticipates this). In addition, PIA rental volumes, and therefore the contribution to these costs in each year, will increase over the review period. Therefore, we have assumed a single figure for network adjustment costs that is intended to generate the same cost recovery from PIA rental charges compared to if the network adjustment cost component were updated on an annual basis. This gives an annual figure of around £7m to be recovered from all users of the physical infrastructure.⁶⁷
- 3.54 We split this amount between the regulatory cost base of all duct (comprising lead-ins, spine duct, joint boxes and manholes) and poles in line with the proportion of network adjustment costs related to duct (including chambers) and poles.⁶⁸ Ultimately, this means allocating around 10% of the £7m to poles (equivalent to an uplift of around 0% to 5% [\approx] to the regulatory cost base) and around 90% of the £7m to all duct (equivalent to an uplift of around 0% to 5% [\approx] to the regulatory cost base).⁶⁹
- 3.55 The proportion of network adjustment costs included in PIA rental charges then follows the proportion of the regulatory cost base which is included in the asset cost component, as described in the previous sub-section. The remainder of the network adjustment costs are expected to be recovered in the WLA charge control (i.e. allocated across wholesale line rental (WLR)⁷⁰ and metallic path facility (MPF) Rentals).⁷¹

⁶⁷ This figure is higher than a third of the total figure because most of the volumes and therefore PIA rental revenues are expected to occur in the final year. The over-recovery in the first two years is offset by the under-recovery in the third year.

⁶⁸ Specifically, the costs of relieving congestion on capacity constrained distribution poles account for around £9 per premises passed, or around 10% of our estimate of total network adjustment costs (£89 per premises passed).

⁶⁹ We recognise that basing the network adjustment cost component on the network adjustment costs likely to be incurred over this review period means that this component can be expected to increase over time as more network adjustments are undertaken. However, we do not consider that there is a risk of encouraging unsustainable entry, and note that stakeholders should be able to apply our methodology above to see how this component might increase over time.

⁷⁰ Although we are not setting a charge on services within the wholesale fixed analogue exchange lines market (i.e. WLR) these services have common assets with WLA services. We have therefore included WLR services in our charge control modelling in order to be able to determine appropriate common cost allocations.

⁷¹ In practice, we include total network adjustment costs in the WLA charge control and avoid over-recovery by netting-off PIA revenues in the WLA charge control.

Calculation of the productisation costs component

- 3.56 In April, we explained that we would implement our proposals on the recovery of productisation costs by removing the existing calculation of productisation costs in PIA rental charges and replacing this with an allowance for a proportion of the productisation costs in the calculation of PIA rental charges.
- 3.57 Consistent with our approach to network adjustment costs, we have applied an uplift to the regulatory cost base to reflect the total productisation costs that need to be recovered from all users of the infrastructure over the review period. The methodology for calculating the asset cost component (described above) then applies to these additional costs, such that a proportion of these costs is included in the PIA rental charges.⁷² Our approach effectively spreads the productisation costs across all parts of the physical infrastructure, to be recovered from all users of the infrastructure.⁷³
- 3.58 We have modelled the productisation costs that need to be recovered from all users of the infrastructure over the review period in the following way.
- **Setting up the PIA product:** We include upfront costs which Openreach has incurred to date, which we estimate to be around £1.25m to £1.5m.⁷⁴ It is likely that the majority of these costs are capital costs related to assets which are still being used, and excluding them could undermine Openreach's incentives to invest in the PIA product in future.⁷⁵ We also include an estimate for future systems development costs of around £3m over this review period, incurred over a two year period.⁷⁶ Consistent with the March 2017 WLA MR Consultation, we propose to spread these costs over five years, and have included a return on capital. We assume the same WACC as in the asset cost component calculation (8%). This gives a total cost of around £3m to be recovered over this review period.
 - **Managing the PIA product:** In the current methodology, selling, general and administrative (SG&A) costs are assumed to be £0.4m per annum. In April, we said that we would review these costs to ensure these are appropriate. Openreach could not provide us with complete information on the actual SG&A

⁷² The remainder of these costs are then expected to be recovered in the WLA charge control. In practice, we include total productisation costs in the WLA charge control (similar to how existing asset costs are treated) and avoid over-recovery by netting-off PIA revenues in the WLA charge control.

⁷³ As a result, rental charges for cable up a pole attachments and manifold attachments now attract productisation costs, whereas previously they did not (on the basis that these products were seen as ancillary to cable attachments). See Openreach response to question 2 of the section 135 Notice dated 27 January 2017.

⁷⁴ This includes costs associated with systems developments and process design. See Openreach response to question 1 of the section 135 Notice dated 27 January 2017, and Openreach response dated 26 June 2017 to question 22 of the section 135 Notice dated 12 June 2017.

⁷⁵ We also note that a large part relates to investment undertaken since Openreach renewed its focus on PIA, resulting in several improvements to its PIA product. See April 2017 DPA Consultation, paragraphs 2.20-2.21.

⁷⁶ Mott MacDonald, April 2017. *DPA Solution System Requirements Specification*. We understand that Openreach has budgeted to spend a further £250k to £500k for systems development costs, which we have included in our estimate. See Openreach response dated 26 June 2017 to question 13 of the section 135 Notice dated 12 June 2017.

costs incurred, but did provide an estimate of £0.3m in 2016/17.⁷⁷ For the purposes of illustrating the impact of our methodology, we assume a figure of £0.4m per annum. This reflects the fact that Openreach will be required to undertake significantly more work in revising the Reference Offer.⁷⁸

- **Per order processing costs:** We are proposing that all order processing costs be recovered through rental charges.⁷⁹ Currently, only a proportion of order processing costs are recovered through rental charges, with the rest being chargeable to the telecoms provider. Openreach provided an estimate of non-chargeable order processing costs in 2018/19 of around £0.2m. Using other information provided by Openreach, we estimate that total order processing costs (i.e. chargeable and non-chargeable) could be around £0.8m in 2018/19.⁸⁰ We recognise that as take-up of PIA increases, manual processing costs could increase. However, at the same time, we expect systems developments to lead to reductions in manual processing costs. For the purposes of illustrating the impact of our methodology, we assume a figure of £0.8m per annum.⁸¹

3.59 Therefore, the total productisation costs to be recovered over the next review period from all users of the physical infrastructure is around £7m.⁸² As with the network adjustment cost component, we need to include an annual figure for productisation

⁷⁷ Openreach noted that SG&A costs are likely to have been lower in previous years.

⁷⁸ We intend to request further information from Openreach to refine this assumption, but do not expect it to have a material impact on the final rental charges. In the April 2017 DPA Consultation, we noted that Openreach had explained that current SG&A costs in the PIA cost stack are not determined on a consistent basis with SG&A costs allocated to other products. Specifically, SG&A costs in the PIA cost stack reflect a number of FTEs within the Customer, Commercial and Propositions team within Openreach, whereas elsewhere, the costs of this team are allocated to products based on a split of FTE time.

⁷⁹ In Section 4 of this document, we identify a set of current ancillary activities that we consider represent productisation costs. We propose that the charges for those activities should be capped at zero and the costs recovered through the PIA rental charge.

⁸⁰ Openreach provided an estimated breakdown of manual processing costs in 2016/17 split between chargeable and non-chargeable. Only 27% is non-chargeable, the rest is chargeable.

⁸¹ We intend to request further information from Openreach to refine this assumption, but do not expect it to have a material impact on the final rental charges.

⁸² In April, we noted that we may also need to include an allowance in PIA rental charges for similar costs related to Openreach's own consumption of its ducts and poles. We asked Openreach to identify the costs associated with activities in relation to its own use of the physical infrastructure which are similar or equivalent to the productisation activities we capture above. Although Openreach could identify activities, it was unable to provide the granularity of financial information required to identify the associated costs (or how those costs are treated in the RFS) in the time available. We expect many of these costs to be reflected in the overheads already included in the calculation of the asset cost component. For example, Openreach told us that system related costs (e.g. the costs of PIPeR, BT's physical network inventory tool) are directly attributed to duct activity groups (BT response to question 6 of the section 135 Notice dated 27 January 2017). We will continue to work with Openreach to refine this aspect of the calculation as appropriate, but do not expect it to have a material impact on charges.

costs in the calculation of maximum PIA rental charges. We therefore assume a figure of around £2m to be recovered across all users of the physical infrastructure.⁸³

- 3.60 We split this amount between the regulatory cost base of all duct (comprising lead-ins, spine duct, joint boxes and manholes) and poles in proportion to their regulatory cost base under the asset component calculation. Ultimately, this means allocating around 60-80% [X] of the £2m to duct-related assets and around 20-40% [X] to pole-related assets (equivalent to an uplift of between 0% and 5% [X] to the regulatory cost bases).⁸⁴
- 3.61 As with network adjustment costs, the proportion of productisation costs included in PIA rental charges then follows the proportion of the regulatory cost base which is included in the asset cost component, as described earlier in this section.⁸⁵

Illustrative charges under the proposed methodology

- 3.62 As explained above, we are consulting on the methodology we propose to adopt to calculate maximum charges, rather than on the charges that will result from the application of that methodology. However, to illustrate the effect of this methodology on rental charges, we have used the most up to date input data available to us (as described above). We intend to update the input data before reaching any final decision, which will lead to some changes in the level of maximum charges, although we do not expect these changes to be significant.
- 3.63 Table 3.1 shows the current rental charges (as per the Openreach price list) and the maximum charges under our proposed methodology. In most cases, the maximum charges under our proposed methodology are lower (by between 13% and 62%). Rental charges for manifold and cable up a pole attachments are 1% lower and 2% higher, respectively. This reflects the fact that these charges do not currently include any productisation costs.

⁸³ To be consistent with the approach we have taken to network adjustment costs, we have calculated a figure which generates the same cost recovery compared to if the productisation cost component were updated on an annual basis. However, given most productisation costs are assumed to be relatively stable over the review period, this results in a figure which is very similar to dividing the total cost over the three years by a factor of three.

⁸⁴ We recognise that basing the productisation cost component on the productisation costs likely to be incurred over this review period means that this component can be expected to increase over time. However, we do not consider that there is a risk of encouraging unsustainable entry, and note that stakeholders should be able to apply our methodology above to see how this component might increase over time as more PIA orders are placed and the product develops further. Moreover, we expect manual processing costs to fall over time due to future systems developments. We also note that the case for pooling and spreading these costs may fall away if Openreach were ultimately to consume the PIA product on the same terms as other telecoms providers.

⁸⁵ The remainder of the productisation costs are expected to be recovered in the WLA charge control (i.e. allocated across WLR and MPF Rentals). In practice, we include total productisation costs in the WLA charge control and avoid over-recovery by netting-off PIA revenues in the WLA charge control.

Table 3.1: Current PIA rental charges and illustrative maximum charges under our proposed methodology

Product	Current charge (£)	Illustrative maximum charge (£)	% change
Facility in Spine duct per metre – single bore	0.60	0.29	-52%
Facility in Spine duct per metre – 2 bores	0.43	0.18	-58%
Facility in Spine duct per metre – 3+ bores	0.37	0.14	-62%
Facility in Lead-in duct per metre	0.84	0.45	-46%
Facility on pole for Multi-end-user attachment	15.48	13.40	-13%
Facility on pole for Single-end-user attachment	8.85	5.74	-35%
Pole top equipment (manifold)	3.72	3.70	-1%
Cable up a pole (per cable)	2.39	2.44	2%
Facility hosting (per manhole entry)	11.18	8.63	-23%
Facility hosting (per joint box entry)	5.11	2.06	-60%
Customer Apparatus Cable Coil Hosting – small (per manhole)	25.90	15.18	-41%
Customer Apparatus Cable Coil Hosting – medium (per manhole)	40.06	30.36	-24%
Customer Apparatus Cable Coil Hosting – large (per manhole)	54.23	45.55	-16%
Customer Apparatus Cable Coil Hosting – small (per joint box)	18.46	9.49	-49%
Customer Apparatus Cable Coil Hosting – medium (per joint box)	31.42	18.97	-40%
Customer Apparatus Cable Coil Hosting – large (per joint box)	44.38	28.46	-36%
Customer Apparatus In-line Splice hosting and distribution joints (per manhole splice)	40.06	30.36	-24%
Customer Apparatus In-line Splice hosting and distribution joints (per joint box splice)	31.42	18.97	-40%

Source: Ofcom. Charges shown are per annum (excluding VAT). Rental charges for 'lead-in link' rental products not shown, as these are equal to the corresponding spine duct rates. The maximum charges for these products are therefore set equal to the maximum charges for the corresponding spine duct rates.

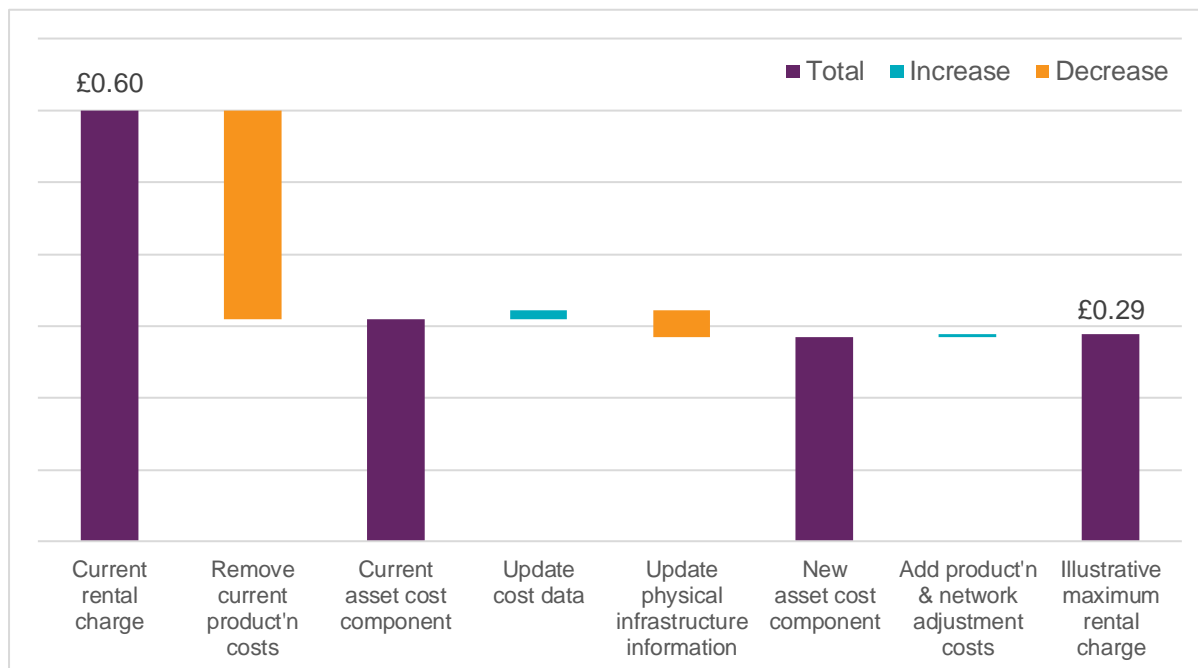
3.64 The difference between current PIA rental charges and the maximum charges above reflect a number of changes, which are discussed above. In summary:

- **updates to cost data:** we have updated the cost inputs used to determine the regulatory cost base, for the financial year 2015/16. In doing so, we have also included indirectly attributed overheads and updated the WACC. Overall, these updates increase the asset cost component of most PIA rental charges, although by differing amounts.
- **updates to physical infrastructure information:** we have updated the physical infrastructure information used to determine the share of the regulatory cost base that should be included in the PIA rental products. These updates increase the asset cost component of some PIA rental charges and reduce the asset cost component of others.

- **productisation costs:** we have replaced the full productisation costs (as features in the calculation of current rental charges) with a proportion of these costs. This results in a significant reduction in most PIA rental charges.⁸⁶
- **network adjustment costs:** we have included a proportion of network adjustment costs, which increases PIA rental charges by a small amount.

3.65 The following chart illustrates the impact of these changes on rental charges for single bore spine duct.

Figure 3.2: Illustrative impact of changes to the current rental charge for single bore spine duct



Source: Ofcom

Commencement of rental charges and duration of minimum term

3.66 In the April 2017 DPA Consultation, we recognised that where a telecoms provider places an order for PIA that includes a requirement to build additional capacity, it will not generally be able to fully deploy its network (and therefore offer services over that network) until the additional capacity is provided. We considered that where a telecoms provider was requesting build works as part of a PIA order then Openreach should only be able to commence rental charges relating to any part of that order when all build works for that order were complete. However, we recognised that a limit would need to be set on the size of an order and proposed that this requirement

⁸⁶ Productisation costs make up a varying proportion of current PIA rental charges. For duct-related rental products, productisation costs account for between 35% and 80% of the rental charge. For pole-related rental products, they account for between 0% and 35% of rental charges. For box-related rental products, they account for between 12% and 54% of rental charges.

should, therefore, be bounded to orders up to the size of an area served by an Optical Local Exchange.^{87 88 89}

- 3.67 As anticipated by the April 2017 DPA Consultation, we have considered as part of this consultation how our proposed policy position set out in April on the commencement of PIA rental charges should be implemented.
- 3.68 While we continue to consider that the proposed policy position set out in the April 2017 DPA Consultation remains appropriate, we recognise that there may be circumstances, for example when a telecoms provider makes arrangements with Openreach to undertake build works themselves (i.e. self-provision), where alternative arrangements would need to be agreed for the commencement of rental charges. Consequently, we do not consider that it is appropriate to impose a strict requirement on Openreach, in all circumstances, to commence rental charges relating to any part of an order for an area served by an Optical Local Exchange only when all build works for that order are complete.
- 3.69 Under the proposed SMP Condition 8.2(f) BT is required to publish a Reference Offer that includes relevant charges, terms of payment and billing procedures. We consider that it would be appropriate for Openreach and industry to work together to agree the specific requirements relating to the commencement of rental charges to be included in the new PIA Reference Offer.
- 3.70 In our April 2017 DPA Consultation, we referred to suggestions from stakeholders relating to terminating rental charges from the point that a telecoms provider relinquishes the use of the asset. We indicated that we would consider this further in this consultation.⁹⁰
- 3.71 We note that Openreach's current PIA rental charges (including ancillary rentals) are typically subject to a five-year minimum term.
- 3.72 Under the proposed SMP Condition 8.2(m) BT is required to publish a Reference Offer that includes details of the duration and renegotiation of the agreements. Our view is that it would be appropriate for Openreach and industry to consider the minimum term of PIA rentals (including ancillary rentals) as part of developing the new PIA Reference Offer.

Consultation question

Question 3.1: Do you agree with our proposals for setting the level of the cap on PIA rental charges? Please provide reasons and evidence in support of your views.

⁸⁷ April 2017 DPA Consultation, paragraphs 6.98-6.103.

⁸⁸ An Optical Local Exchange area is the area between network termination points (i.e. customers' premises) and the local access node serving those network termination points. There is no requirement for telecoms providers' local access networks to be bound to BT's topology.

⁸⁹ We will consider stakeholder responses to our proposal relating to the commencement of PIA rental charges from the April 2017 DPA Consultation alongside those received to the pricing proposals set out in this document, prior to reaching any final decision.

⁹⁰ April 2017 DPA Consultation, paragraph 7.25, footnote 227.

Section 4

Ancillary charges and a financial limit for network adjustments

- 4.1 In our April 2017 DPA Consultation, we proposed that BT's network access obligation should include a requirement to provide ancillary services as may be reasonably necessary to enable and support the provision of PIA.
- 4.2 The current PIA product has a range of associated ancillary activities for which a telecoms provider will face charges where these are performed by Openreach on its behalf. These ancillary activities include:
- activities related to network adjustments (e.g. new infrastructure build and enabling works);
 - order processing activities (e.g. providing network records or validating telecoms providers' plans); and
 - other miscellaneous activities related to using PIA (e.g. survey activities applicable in situations when Openreach is required or is requested to be in attendance during a survey; and accreditation activities).
- 4.3 The current regulation requires all ancillary activity charges to be set at a level that is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach allowing an appropriate mark-up for the recovery of common costs, including an appropriate return on capital employed. This is commonly referred to as a 'basis of charges' requirement.
- 4.4 In our April 2017 DPA Consultation, we proposed that subject to being within a financial limit, the costs of network adjustments should be recovered from all products in the market in which BT has SMP and which use BT's physical infrastructure (including PIA), and a basis of charges requirement should apply for other ancillary charges.
- 4.5 In this section, we set out:
- our proposals for setting the financial limit related to network adjustments; and
 - our proposals for pricing other PIA ancillary activities.

Network adjustment costs and a financial limit

- 4.6 In our April 2017 DPA Consultation, we proposed to impose a specific access remedy in the form of physical infrastructure access, which would require BT to allow other telecoms providers to deploy their own networks in BT's underground ducts and chambers or overhead on its telegraph poles. We explained that the PIA network access obligation should include a requirement for Openreach to make certain adjustments to its physical infrastructure where this is necessary for that infrastructure to be available to telecoms providers to deploy their own networks, including relieving congested physical infrastructure.

- 4.7 In relation to such adjustments, we noted that Openreach's current approach of charging telecoms providers the full upfront cost of any works undermined the effectiveness of the PIA remedy as a basis for scale roll-out of ultrafast broadband networks. Consequently, in the April 2017 DPA Consultation we proposed that the costs of such adjustments should be recovered from all products in the market in which BT has SMP and which use Openreach's physical infrastructure (including PIA), to reduce the barriers to competitive network investment at scale and ensure a level playing field with the charges Openreach faces itself for using its own ducts and poles.
- 4.8 However, we recognised that this proposed approach may lead to a degree of uncertainty around the total costs Openreach will be required to recover across all SMP products that use the physical infrastructure; and that requiring Openreach to recover the costs of network adjustments across all SMP products that use the physical infrastructure is likely to increase the incentive on telecoms providers using PIA to request changes. Therefore, to mitigate these risks, we proposed to apply a financial limit on the network adjustment costs that Openreach should be required to recover across all SMP products. We explain below our proposals for this financial limit.

Scope of PIA network adjustments

- 4.9 In the April 2017 DPA Consultation we considered whether we should specify the precise extent of the proposed requirement on Openreach to make adjustments to its network where this is necessary for its physical infrastructure network to be available to telecoms providers for the purpose of deploying their own networks. Our view was that specifying the precise extent of the proposed requirement would lead to a risk of regulatory failure since what is necessary is likely to depend on the specific circumstances of any case.
- 4.10 Instead, we proposed to maintain the general PIA network access requirement but supplement this with guidance on where this obligation would be likely to apply. In formulating this guidance, we took into account the factors set out in section 87(4) of the Act. These are also the factors we would expect to take into account in determining whether it is necessary for Openreach to make an adjustment to the network as part of providing access under PIA in any given case.
- 4.11 In our proposed guidance, we essentially identified three broad categories and provided guidance on which categories certain types of adjustment might fall into. We identified:
- those adjustments that we consider are clearly in scope, e.g. repair of blocked duct so it is 'ready for use' ("category A adjustments");
 - those adjustments which may or may not be in scope depending on case specifics, e.g. addressing insufficient capacity up to the final distribution point ("category B adjustments"); and
 - those adjustments that we consider are clearly out of scope, e.g. extension of the existing duct network footprint ("category C adjustments").

Objectives of applying a financial limit

- 4.12 As explained above, we proposed in the April 2017 DPA Consultation that a financial limit should apply to network adjustment costs.⁹¹ This financial limit would apply such that Openreach would recover the costs of network adjustments up to the financial limit from SMP products that use the physical infrastructure (including PIA). Any costs incurred above the financial limit would then be recovered directly from the telecoms provider requesting the network adjustment, through ancillary charges (similar in methodology to how charges for any additional construction required for Ethernet Access Direct (EAD) services are currently applied).
- 4.13 We considered that a financial limit was appropriate for two reasons:
- first, since there is uncertainty around the total costs Openreach would be required to recover across all SMP products that use the physical infrastructure, there is a risk that our proposal has a greater impact on Openreach (in terms of its financial impact) and consumers (due to high prices) than we anticipate; and
 - second, we also recognised that requiring Openreach to recover the costs of network adjustments across all SMP products that use the physical infrastructure is likely to increase the incentive on telecoms providers using PIA to request changes to Openreach’s physical infrastructure, given that they do not face the full cost of these network adjustments. For example, telecoms providers encountering capacity constrained spine duct may be less inclined to seek out alternative routes, or look for ways to make more efficient use of the existing capacity available. Accordingly, we considered it desirable that access seekers bear some of the costs of network adjustments in circumstances where these were likely to be particularly costly.

Approach for identifying an appropriate financial limit

- 4.14 We explained in the April 2017 DPA Consultation that in terms of setting the financial limit for network adjustments, this would need to be based on estimates of the incidence and cost of the network adjustments required to make Openreach’s physical infrastructure available for the purposes of deploying rival networks. Consistent with this, we have sought to understand the likely incidence and associated costs of PIA network adjustments.
- 4.15 Given our position in the April 2017 DPA Consultation on scope, namely that what is necessary is likely to depend on the specific circumstances of any case, it is not possible to estimate the incidence of all network adjustments with any degree of precision; specifically, while it is possible to estimate the incidence of category A adjustments, it is very challenging a priori to calculate the incidence of adjustments in category B that would fall in scope.
- 4.16 We recognise that even for category A adjustments, ultimately whether or not they fall within the scope of PIA will depend on the specific facts. However, we have a high degree of confidence that such adjustments will in most, if not all, cases be in

⁹¹ It should be noted that the proposed financial limit is separate from the scope of the network access obligation. By proposing a financial limit, we are explicitly accepting that in specific cases there may be adjustments, while falling within the scope of what can be required of Openreach under PIA, the costs of which will be recovered from PIA customers directly upfront.

scope and therefore, for the purposes of our calculations, we have made the simplifying assumption that all such category A adjustments are in scope.

4.17 Consequently, in order to set an appropriate financial limit, we propose to use our estimates of the costs and incidence of category A adjustments. In making such estimates, we have used a higher figure than our estimate of average costs of category A adjustments. This is for two reasons:

- to capture typical or normal category A adjustment costs that are above the average, recognising there is a distribution of category A costs;⁹² and
- to provide some allowance for in-scope category B adjustments.

4.18 We recognise that there is a distribution of costs associated with category A adjustments, and for some PIA orders the cost of these adjustments will be below the average, and for other PIA orders the cost will be above the average. We propose to take this into account by setting a financial limit based on category A adjustment costs above our estimate of the average. Our view is that this should be set at a level sufficient to cover the costs of typical or normal network adjustments, without necessarily covering exceptional cases where the cost of a network adjustment is significantly higher than the average cost for that particular type of work.

4.19 We also recognise that there should be some allowance for in-scope category B adjustments within the financial limit. Making no allowance for these adjustments would undermine our proposal that the costs of necessary network adjustments should be recovered from all SMP products that use the physical infrastructure.⁹³ However, for these types of adjustments, where the case specifics are more important in determining whether the adjustment falls within the scope of the remedy, as noted in paragraph 4.13, there may be a greater risk of telecoms providers requesting potentially unnecessary adjustments which result in dispute. The financial limit is likely to help mitigate this risk given the telecoms provider may be required to make a contribution to the network adjustment, particularly in exceptionally costly cases.

4.20 We consider that the financial limit should be based on the scale of the deployment using PIA, and applied to each order on a per kilometre basis. We propose that the financial limit should apply in aggregate to all reasonable adjustments within scope. For orders where the costs of category A adjustments are lower (in some cases this may be below the average cost), or for larger orders where we would expect the variations in costs to tend towards the average, we would not expect the financial limit to be reached in resolving category A adjustments. In these cases, there would be a greater remaining allowance for in-scope category B adjustments falling within the financial limit.

⁹² April 2017 DPA Consultation, paragraph 7.58.

⁹³ Further, if Openreach does not face any of the cost of these network adjustments it may have a decreased incentive to make efficient use of existing capacity (e.g. removing inactive cables from existing duct before building new duct capacity).

Analysis to inform an appropriate financial limit

4.21 Following on from the above, we have sought to identify category A adjustments, taking as our starting point the guidance set out in the April 2017 DPA Consultation.⁹⁴ In doing so, we have considered two categories, reflecting the primary drivers of the total cost of network adjustments:

- adjustments driven per kilometre (network adjustments up to the distribution point); and
- adjustments driven per premises passed (network adjustments on lead-ins and associated physical infrastructure).⁹⁵

4.22 In calculating the financial limit, we have sought to estimate the likely incidence of each type of adjustment being required, and the average cost associated with making that adjustment. We have used Openreach's PIA price list for ancillary activities, notified on 23 June 2017 and effective from 1 October 2017, as an estimate of the associated average cost.^{96 97}

Adjustments driven per kilometre

Repair of blocked or damaged duct (excluding ducted lead-ins)

4.23 We explained in the April 2017 DPA Consultation that, in general, we would expect works by Openreach to repair or unblock existing infrastructure to comprise a network adjustment falling within the scope of PIA.⁹⁸ Therefore, for the purposes of calculating the financial limit, we have assumed that such works up to the distribution point are category A adjustments.

4.24 Analysis of Openreach data indicates an average incidence of between 1 and 2 [§<] duct blockages per kilometre.⁹⁹ We have then taken a figure of £490 derived from

⁹⁴ In undertaking this analysis, in some cases we have revised or refined our position from the guidance set out in the April 2017 DPA Consultation. We expect to update that guidance in our final Statement in light of stakeholder responses to this consultation and the April 2017 DPA Consultation.

⁹⁵ The other example given in our guidance is the extent to which an adjustment might include an extension of the existing network footprint. However, given that we consider that this will almost always fall outside the scope of a network access obligation (a category C adjustment), we do not consider this further in this document.

⁹⁶ Openreach response dated 7 July 2017 to question 3e of the section 135 Notice dated 16 June 2017. We note that Openreach's new PIA prices for a number of ancillary activities are set at a level equal to the Excess Construction Charges price (regulated under the business connectivity market review) for the corresponding activity, plus an additional 10%.

⁹⁷ This approach is consistent with our proposal to determine whether the financial limit for a given PIA order has been exceeded by using the relevant ancillary activity charges to calculate the aggregate costs of network adjustments requested (see paragraph 4.54).

⁹⁸ We noted that one likely exception to this concerns underground lead-ins. See paragraph 4.38 of the April 2017 DPA Consultation.

⁹⁹ In the April 2017 DPA Consultation we noted that Openreach implicitly assumes it will encounter 2.23 duct blockages per kilometre in its own Next Generation Access (NGA) deployment business modelling. We have now analysed a broader data set of 79 build programmes which results in a weighted average incidence of 1 to 2 [§<] duct blockages per kilometre, after the removal of one clear outlier. It should be noted that the number of blockages per kilometre can vary significantly depending

Openreach's PIA price list¹⁰⁰ to estimate an average cost for repairs of between £490 and £990 [§<] per kilometre.

Addressing insufficient capacity (up to the distribution point)

- 4.25 In the April 2017 DPA Consultation we noted that where there is insufficient capacity in physical infrastructure up to the final distribution point (e.g. in spine duct or in chambers), we will need to consider whether the network adjustment requested, in any particular case, is necessary for Openreach to make its physical infrastructure network available. Therefore, for the purposes of calculating the financial limit, we have assumed that this is a category B adjustment.
- 4.26 Since the April 2017 DPA Consultation, we have recognised that chambers have a finite capacity for duct entries on each wall, and where duct walls are congested it will be necessary to provide additional chamber capacity to accommodate new ducts. We would expect that enlarging existing chambers by Openreach, where this is necessary to make its physical infrastructure network available,¹⁰¹ would generally be considered a network adjustment falling within the scope of PIA. For the purposes of calculating the financial limit, we have assumed that this is a category A adjustment.
- 4.27 In its own Next Generation Access (NGA) deployment business modelling, Openreach assumes that it will encounter the need to install between 0.5 and 1 [§<] new jointing-chambers per kilometre when building fibre to the cabinet (FTTC) or FTTP.¹⁰² We have used this figure as a proxy for the likely incidence of this network adjustment being required. We have then taken a figure of £1,800 derived from Openreach's PIA price list¹⁰³ to estimate an average cost for enlarging chambers of between £900 and £1800 [§<] per kilometre.

Adjustments driven per premises passed

Addressing insufficient capacity in underground lead-ins

- 4.28 Our April 2017 DPA Consultation explained that we do not think that it is necessary for Openreach to relieve congestion where premises are served by lead-ins which are either directly buried (i.e. there is no existing duct available) or installed in ducts

on scenario, geography, etc. Openreach response to question 6 of the section 135 Notice dated 12 June 2017.

¹⁰⁰ This is the simple average of the PIA price for 'Blockage clearance (initial)' and 'Blockage clearance (subsequent)' per blockage, rounded to two significant figures.

¹⁰¹ In these situations, Openreach would typically enlarge the chamber by replacing the existing chamber with a larger one whilst leaving existing cables and ducts in situ. In most cases, absent Openreach undertaking such works, we understand that telecoms providers would need to construct their own chambers and add new duct section alongside Openreach's to bypass the congestion.

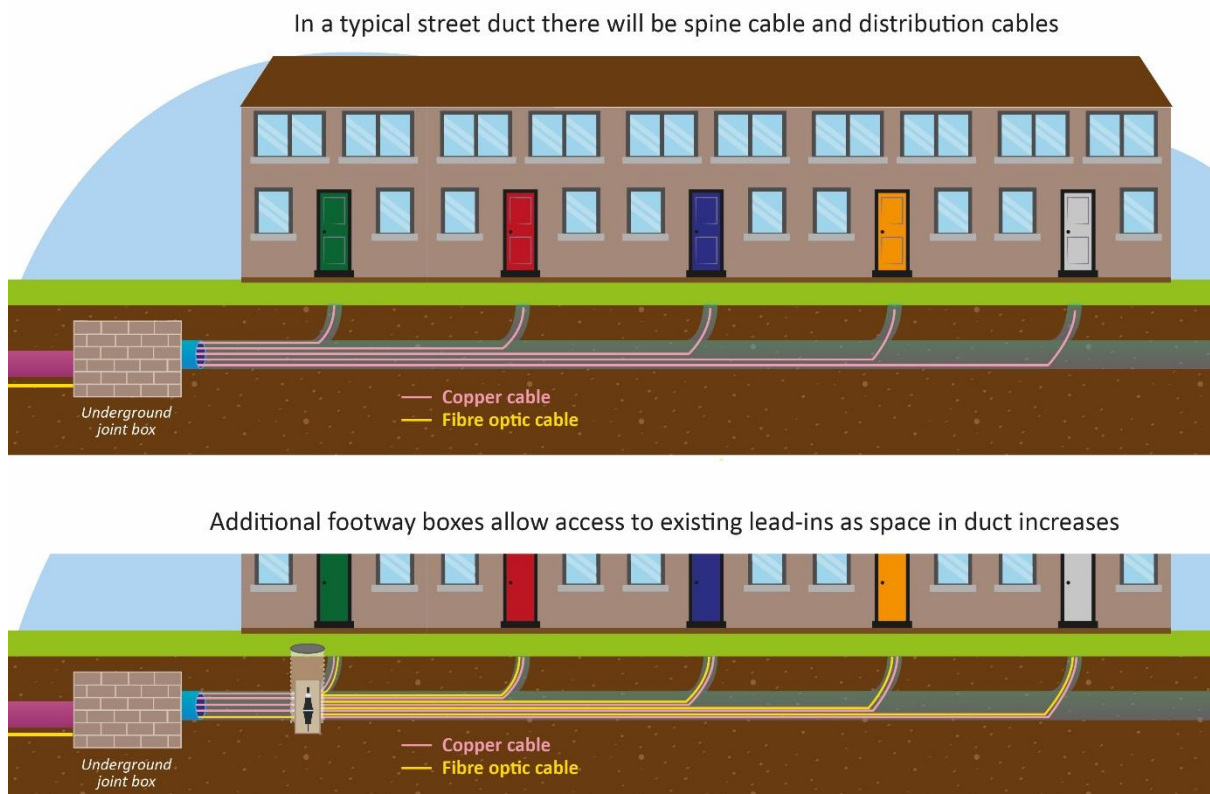
¹⁰² Openreach response to the section 135 Notice dated 16 June 2017. Noting that this is a modelling assumption, actuals may vary significantly depending on deployment scenarios, geography etc.

¹⁰³ We have taken the average of the PIA price (rounded to two significant figures) for a 'New medium carriageway box' and for a 'New medium footway box', weighted by the proportion of national duct corresponding to carriageway (13%) and footway or soft surfaces (87%) following our analysis of the model submitted by Openreach in response to question 25 of the section 135 Notice dated 6 March 2017. These were modelling assumptions used by Openreach and are not directly linked to deployment actuals.

which are too small to accommodate an additional cable. This is therefore, a category C adjustment and is excluded from the financial limit calculation.

- 4.29 We also noted that it may be necessary for Openreach to install a footway box outside the property so that the competing telecoms provider can make use of any spine duct passing the property and leading back to the distribution point. We have considered situations which may require the installation of footway boxes in more detail. Our view is that a requirement to install footway boxes is most likely to be necessary where there are ducted lead-ins, connected to congested spine duct running down the street with a 'swept-tee' joint (see Figure 4.1 below).
- 4.30 To make use of the lead-in ducts, telecoms providers must be able to access the spine duct to which lead-in ducts are connected, and as swept-tee joints are directional, the existing copper cable architecture must be followed. This results in a 'pinch point' close to the distribution point where the existing copper lead-in cables converge. Depending on the number of premises served and the number and size of any other cables in the spine duct, there may be insufficient capacity to accommodate a second set of lead-in cables for a fibre network. This congestion can be relieved by adding footway boxes along the spine duct so that the congested sections of duct can be bypassed and the swept-tee connections to the lead-ins accessed. Figure 4.1 below is illustrative of this arrangement. For the purposes of calculating the financial limit, we have considered this a category A adjustment.

Figure 4.1: Relieving a congested swept-tee lead-in



Source: Ofcom

- 4.31 While Openreach's records for lead-in duct are insufficient to determine the occurrence of these pinch points in practice, we have sought to estimate how often additional footway boxes may be needed, through analysing available information relating to: the capacity of spine duct serving the swept-tee joints, the diameter of

existing copper cables and fibre lead-in cables, and the number of premises served by the distribution point.

- 4.32 Our analysis suggests that in many cases there would be sufficient spine duct capacity from the distribution point to accommodate a second set of lead-in cables for a fibre network and hence no additional footway boxes would be necessary.¹⁰⁴ Our analysis also suggests that only exceptionally would more than one additional footway box be required per distribution point.¹⁰⁵ As a result, our view is that a reasonable estimate of the additional footway boxes required per distribution point would fall between 0 and 1. We have therefore assumed a figure of 0.5 additional footway boxes per distribution point, at an average cost of £880, from the PIA price list.¹⁰⁶ Noting that 24% of premises¹⁰⁷ are served by underground ducted lead-ins, and on average a distribution point serves 6.2 premises¹⁰⁸, we derive an average cost estimate for additional footway boxes of £17 per premises passed.
- 4.33 Since the April 2017 DPA Consultation we have further developed our views and have also identified that where there is no space in a chamber or a relevant adjacent chamber for passive network components, the provision of additional chamber capacity would ordinarily comprise a network adjustment falling within the scope of PIA. Therefore, for the purposes of calculating the financial limit, we have assumed that this is a category A adjustment.
- 4.34 Figure 4.2 below shows the passive components of a typical gigabit passive optical network (GPON): (i) primary splitter node, housing passive optical splitters used to join a single upstream fibre to multiple downstream fibres; (ii) splitter distribution point, housing passive optical splitters providing a second layer of fibre sharing; and (iii) manifold, joining blown fibre ducts from customer premises to a single upstream blown fibre duct.¹⁰⁹

¹⁰⁴ We use the modelling assumptions provided by Openreach in its response to the section 135 Notice dated 27 January 2017 that the average number of premises per underground distribution point (DP) is 6.2. Our analysis indicates that there would typically be sufficient space in the spine duct to accommodate fibre final-drop cables where no more than 10 premises are served by the DP and there are no other cables in the spine duct.

¹⁰⁵ Our analysis suggests that two or more footway boxes would be required only where 12 or more premises are served by the DP or where cables other than final-drop cables occupy a significant proportion of the spine duct capacity.

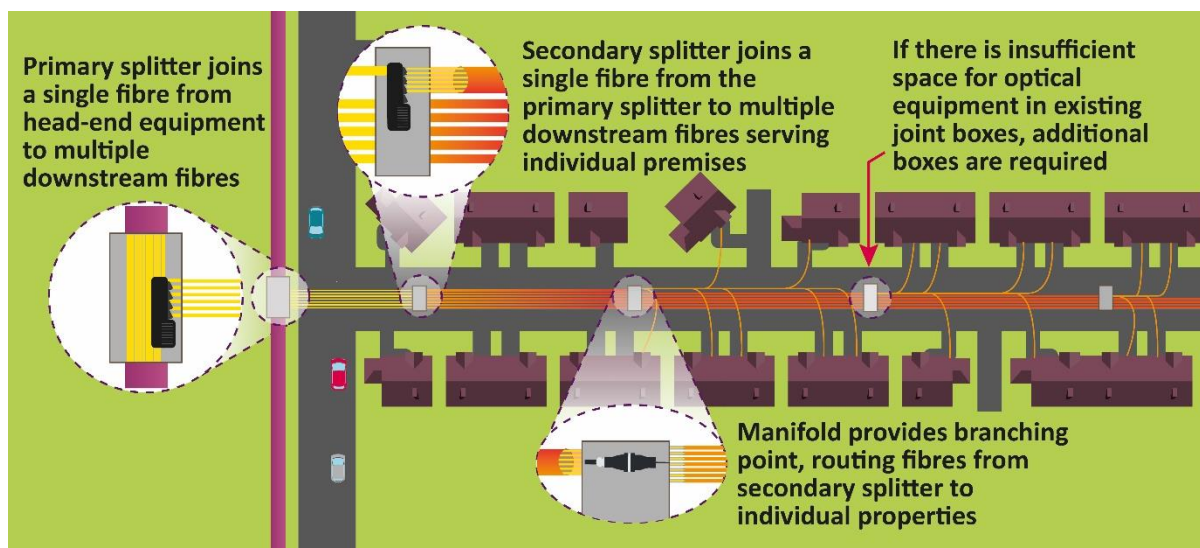
¹⁰⁶ We have taken the PIA price for 'New small footway box', rounded to two significant figures.

¹⁰⁷ Using the modelling assumptions set out in Openreach's updated PIA pricing model, provided in its response to the section 135 Notice dated 27 January 2017, we assume that the number of underground lead-ins is 7.6 million. This is calculated using the assumed number of underground distribution points (1.2 million) multiplied by the assumed average number of premises per distribution point (6.2). After removing the 11% of underground lead-ins which Openreach estimates to be direct buried, this leaves 6.8 million ducted lead-ins. This is divided by our assumption of the total number of premises nationally, 28 million, to give a proportion of premises served by ducted lead-ins. It should be noted that the 28 million premises include all points that the copper access network serves including buildings, mobile masts, power substations, traffic light controls etc. (Source: Openreach presentation to Ofcom 23 March 2011).

¹⁰⁸ Openreach response to the section 135 Notice dated 27 January 2017.

¹⁰⁹ Openreach refers to each of these components as: (i) splitter node, (ii) intermediate joint, (iii) connectorised block terminal.

Figure 4.2: Passive components of a GPON fibre network



Source: Ofcom

- 4.35 Telecoms providers are likely to have some flexibility to choose the location of the passive components of their networks and might be able to select adjacent chambers if their first choice of chamber has insufficient space, within distance constraints. However, where there is no suitable alternative it will be necessary to provide additional chamber capacity.
- 4.36 In its own Next Generation Access (NGA) deployment business modelling, Openreach has assumptions relating to the likelihood that a chamber has insufficient capacity to accommodate each of the three types of passive components above, and the number of adjacent chambers that could be utilised in each case before additional chamber capacity is required.¹¹⁰ We have used these assumptions to inform our estimated figure for the incidence of this network adjustment,¹¹¹ and used an average cost of £880 from the PIA price list¹¹² to calculate an average cost of £8.40 per premises passed.

Addressing insufficient capacity for overhead lead-ins

- 4.37 Our position in the April 2017 DPA Consultation was that it is necessary for Openreach to relieve congestion on capacity constrained distribution poles used to

¹¹⁰ These relate to Openreach’s assumptions for a Blown Fibre Dual Split FTTP design. For primary splitter nodes Openreach assumes 60% of chambers have insufficient capacity and up to five adjacent chambers could be used; for splitter distribution points Openreach assumes 40% of chambers have insufficient capacity and up to three adjacent chambers could be used; and for underground manifolds Openreach assumes 12.5% of chambers have insufficient capacity and up to two adjacent chambers could be used. See Openreach ‘Modelling Rules & Costs’ v12.1.

¹¹¹ We have assumed that primary splitters ultimately serve 128 premises, splitter distribution points serve 8 premises and underground manifolds serve 8 premises (for the 49% of premises served by underground lead-ins). We calculate the incidence as $(0.6^5 \div 128) + (0.4^3 \div 8) + (0.125^2 \div 8 \times 49\%) = 0.01$ per premises passed. We note that under Openreach’s Blown Fibre Dual Split FTTP design, as set out in Openreach’s ‘Modelling Rules & Costs’ v12.1’ Openreach assumes a primary splitter may serve up to 128 premises, splitter distribution points may serve up to 32 premises, and a manifold may serve up to 12 premises.

¹¹² We have taken the PIA price for ‘New small footway box’, rounded to two significant figures.

carry overhead lead-ins.¹¹³ Since the publication of our April 2017 DPA Consultation, we have also refined our position and consider that relieving congestion should include making poles (used for providing overhead lead-ins) climbable if they are currently unclimbable due to being damaged, decayed or defective as this is necessary to enable other telecoms providers to use such poles.¹¹⁴ We have considered these network adjustments as category A adjustments.

- 4.38 However, under our proposals Openreach would be able to choose how to meet the obligation to provide capacity on distribution poles and could do so by removing or replacing dropwires, at relatively low cost (compared to adding or replacing distribution poles, or other options available to a rival telecoms provider). In light of the above, we have considered whether the costs of making these types of adjustments should be treated differently from other network adjustment costs given our objectives for applying a financial limit outlined in paragraph 4.13. We consider that:
- given the costs of removing or replacing dropwires per premises passed are readily identifiable and constrained, there is greater certainty around the total costs Openreach will be required to recover as a result of this adjustment, subject to forecasts of the number of premises passed; and
 - given Openreach would choose how to relieve congestion on capacity constrained poles used for providing overhead lead-ins, the risk that telecoms providers will have an incentive to request inefficient changes is less of a concern.
- 4.39 Therefore, our view is that these costs should be treated differently from other network adjustment costs. Accordingly, we are not proposing to include such pole adjustments when calculating financial limits. Instead, we propose that the costs of such adjustments should be recovered from all products in the market in which BT has SMP and which use Openreach's physical infrastructure, without limitation.
- 4.40 We have considered the likely average cost of these adjustments for the purpose of understanding the implications for Openreach cost recovery. We have estimated an average cost to relieve congestion on capacity constrained poles that carry overhead lead-ins, by considering: (i) unclimbable poles and (ii) all other poles carrying overhead lead-ins. Openreach has informed us that 4.6% of its 3.7 million poles are

¹¹³ Since the publication of our April 2017 DPA Consultation, we have refined our position to include distribution poles, which act as the distribution point for overhead lead-ins, and feeder poles, which are sometimes used to carry lead-ins beyond the distribution point, or mixed poles which have at least one of these functions.

¹¹⁴ This includes poles which telecoms providers are unable to use because they are leaning in a particular way.

unclimbable and that all of its unclimbable poles carry overhead lead-ins.^{115 116} For simplicity we assume that for each of these poles a replacement pole would be necessary at a cost of £980, according to the PIA price list.¹¹⁷ For all other poles, we have assumed that 10%¹¹⁸ of the 51% of premises¹¹⁹ served by overhead lead-ins would have a capacity constrained pole and require the dropwire to be removed or replaced at a cost of £54.^{120 121} This results in an average cost estimate of £8.60 per premises passed on average.¹²²

Proposed financial limit

- 4.41 As a result of the above analysis, in aggregate the costs associated with the category A adjustments that we have identified are around £2,100 for adjustments driven by kilometre and around £25 for adjustments driven by premises passed.
- 4.42 Although we have estimated some of these costs on a per premises passed basis, we recognise there may be challenges to using this as an appropriate practical measure for the purposes of implementing the financial limit.¹²³ Objective information on the number of premises passed on any particular PIA order may be less readily available and more likely to lead to disputes and possible gaming. Given that

¹¹⁵ Openreach response to question 9 of the section 135 Notice dated 6 March 2017. We assume that all of these poles carry overhead lead-ins as they are either distribution poles or feeder poles; none are poles used only for cables up to the distribution point. We have included all of these in our calculations although consider it unlikely that telecoms providers will require additional capacity on feeder poles as these tend to be in more rural areas and are less likely to be capacity constrained. We therefore consider this an upper bound.

¹¹⁶ This includes poles that cannot be climbed due to damage, decay or leaning. We have not considered poles that cannot be climbed as they are next to a hazard, because we do not expect that these would be replaced.

¹¹⁷ We have taken the PIA price for 'Replacement DP pole', rounded to two significant figures.

¹¹⁸ Information provided by Openreach on 21 September 2016 at the Passive Infrastructure Working Group indicates that 7% of distribution poles have no capacity to take any further dropwires. In addition, Flomatik has provided us with information which indicates that 12% of distribution poles could not accommodate an additional half of the wires currently installed. This has informed our assumption that there would not be sufficient capacity for an additional dropwire to 10% of premises. See Flomatik's response to the 2016 PIA Consultation, page 6, in addition to Flomatik's response to question 1 of the section 135 Notice dated 9 March 2017.

¹¹⁹ We assume the total number of homes served by overhead lead-ins is the sum of dropwire and cable attachments to distribution poles. This relies on the modelling assumptions outlined in Openreach's updated PIA pricing model, which it provided in its response to the section 135 Notice dated 27 January 2017, and that there are 28 million premises nationally.

¹²⁰ As discussed above, we acknowledge that Openreach has a number of options when creating capacity on a pole. We assume that Openreach will replace the existing dropwire with a hybrid copper/microtube, and that the price is the PIA price of renewing a dropwire (£54 rounded to two significant figures).

¹²¹ For simplicity, we have assumed that Openreach would need to create capacity at the distribution point only, as telecoms providers are unlikely to require feeder poles for their overhead lead-ins.

¹²² We assume there are 28 million premises nationally, and calculate an average cost per premises as: $(4.6\% \times 3.7\text{m} \times £980 \div 28\text{m}) + (95.4\% \times 51\% \times 10\% \times £54) = £8.60$.

¹²³ Our initial view in the April 2017 DPA Consultation, paragraph 7.59, was to set a financial limit per kilometre for all network adjustments up to the distribution point and a financial limit per premises for all network adjustments related to lead-ins.

Openreach currently prices many key PIA sub-products on a per metre basis, for reasons of practicability and simplicity we propose to set a single financial limit which applies to the total number of kilometres of duct requested as part of a particular PIA order.

- 4.43 We have therefore converted our average cost estimate of £25 per premises passed to a figure of around £1,600 per kilometre.¹²⁴ Expressed in terms of a per kilometre figure, this results in aggregate costs associated with the category A adjustments identified of £3,700 per kilometre.
- 4.44 As explained above, having identified the average costs associated with category A adjustments, we then propose to increase this to: (i) capture normal category A adjustment costs that are above the average, recognising there is a distribution of category A costs; and (ii) provide some allowance for in-scope category B adjustments that should fall within the financial limit.
- 4.45 While we can analyse the distribution of costs for adjustments (where we have data) to reflect the first point,¹²⁵ the nature of category B adjustments means we are unable to undertake any similar analysis, absent case specifics, to reflect the second point. In considering what the appropriate uplift should be we have therefore exercised our regulatory judgement, informed by our analysis of the distribution of costs. Analysing the available distribution of costs information suggests that a 50% uplift would likely be sufficient to capture typical or normal category A adjustment costs.¹²⁶ We also consider that such an increase should provide an allowance for the in-scope category B adjustments which are most likely to be necessary for telecoms providers to deploy their own networks, recognising the greater remaining allowance in the case of larger orders (see paragraph 4.20). We therefore propose an increase of 50% above our estimate of average costs for category A adjustments. This results in a figure of around £5,600 per kilometre.
- 4.46 Recognising the limitations of the data available to us to estimate the cost of network adjustments (particularly to inform the allowance above the average costs of adjustments that we have modelled), we are consulting on a range for the financial limit. We consider that the lower end of the range should be sufficient to cover the average costs of category A adjustments that we have identified; and the upper end of the range should cover an appropriate allowance above average costs, as

¹²⁴ Based on an average of 16 metres of duct per premises passed (the estimated 451,000 km of duct in total, divided by 28 million premises). The figure for the total length of duct is a modelling assumption set out in Openreach's updated PIA pricing model, which it provided in its response to the section 135 Notice dated 27 January 2017.

¹²⁵ We have analysed the distribution of duct blockages and the associated costs for repair across 79 Openreach programmes. We have also analysed the distribution of capacity constrained duct sections by BT local exchange areas. Our analysis was conducted using information provided as part of Openreach's response to question 6 of the section 135 Notice dated 12 June 2017, in addition to Openreach's response dated 7 July 2017 to question 10 of the section 135 Notice dated 16 June 2017.

¹²⁶ For example, in the case of capacity constrained duct sections, our analysis of current available network records (taken from a snapshot from Openreach's records) found an average of 10% of duct sections are capacity constrained at a national level. Uplifting this average by 50% would give a threshold of 15%. We found that the significant majority (92%) of BT local exchange areas have less than 15% of duct sections which are capacity constrained. It should be noted that network records do not necessarily record all network features, which will vary widely between different geographic regions (and within regions). Local Occupancy level will also likely vary according to geographic area.

discussed above. We are therefore consulting on a range of £4,000 to £6,000 per kilometre.

Table 4.3: Proposed financial limit for network adjustments

Proposed financial limit	
Financial limit per kilometre	£4,000 to £6,000 per km

- 4.47 Our proposed implementation of this financial limit is set out in our proposed SMP conditions in Annex 6.

Implications for Openreach cost recovery

- 4.48 Our first objective in setting a financial limit is to provide greater certainty to Openreach around the total costs that it will be required to recover across all SMP products that use the physical infrastructure. We have therefore considered the likely implications for Openreach in terms of cost recovery following on from our proposed financial limit.
- 4.49 Our proposed financial limit of £4,000 to £6,000 per kilometre equates to £64 to £96 per premises passed.¹²⁷ In addition, we have proposed that the costs of relieving congestion on capacity constrained poles used to carry overhead lead-ins should also be recovered across all SMP products that use the physical infrastructure. This gives a maximum financial exposure of £73 to £105 per premises passed. In some cases this will represent expenditure on the physical infrastructure that Openreach would have incurred in due course in any event. While we would not expect the financial limit to be reached in many cases, this is likely to mean that Openreach will make a substantial contribution to the costs of ensuring its physical infrastructure network is 'ready for use' by other telecoms providers. To put these figures in perspective, the costs of deploying a FTTP network is typically considered to be in the region of £500 per home passed.¹²⁸
- 4.50 In the April 2017 DPA Consultation, we noted that information from stakeholders on the speed at which a new access network can be deployed, in the first years of deployment, suggests that up to 1 million homes could be passed by the end of our review period using PIA. This would imply a maximum financial exposure due to the

¹²⁷ Based on an average of 16 metres of duct per premises passed, derived from Openreach's modelling assumptions.

¹²⁸ Virgin Media cited a build cost of about £600 per premises (incl. connection) for Project Lightning (Source: Enders Analysis: "Virgin Media Q4 2014 results: Growing and building", February 2015); TalkTalk cited a build cost under £500 per premises in York (TalkTalk Group Preliminary Results, 10 May 2017); KCOM cited a build cost of £400 per premises, <http://www.ispreview.co.uk/index.php/2016/09/kcoms-ftp-broadband-roll-hull-uk-reaches-100000-premises.html> (accessed 28 July 2017).

costs of adjustments required by other telecoms providers in the region of £70m to £110m over this period.^{129 130 131}

- 4.51 In this context, we consider that our proposed financial limit strikes an appropriate balance between an effective access obligation, enabling rival telecoms providers to use PIA to deploy their own fibre networks in competition with BT, while giving certainty on Openreach's cost exposure and providing appropriate incentives for telecoms providers in terms of sharing the costs of particularly high cost network adjustments.

Ancillary charges

Network adjustments

- 4.52 As a consequence of our proposals in relation to network adjustments (and the setting of a financial limit), we are proposing changes to BT's pricing for related ancillary activities.
- 4.53 We explain above that for network adjustments that are within the scope of BT's network access obligation, we propose that costs up to a financial limit are recovered from all products in the market in which BT has SMP and which use BT's physical infrastructure. Costs for network adjustments above the financial limit should be recovered directly from the telecoms provider. However, there are two exceptions to this.
- 4.53.1 In paragraphs 4.37-4.40, we propose that the costs of network adjustments in response to a request for capacity for overhead lead-ins should be recovered from all products in the market in which BT has SMP and which use BT's physical infrastructure, and would not be subject to a financial limit. Accordingly, we propose that when Openreach undertakes ancillary activities in response to a request for capacity for the provision of overhead

¹²⁹ This is based on our estimate of the maximum number of premises that could be passed by PIA users over the review period. In order to calculate illustrative maximum PIA rental charges we have used the medium case forecast in the 2017 WLA MR Consultation of 500,000 premises.

¹³⁰ This does not include the costs of adjustments required by Openreach to deploy FTTP, which we expect to be recovered in the same way. In order to calculate the cap on rental charges, we estimate the total cost of making adjustments to the infrastructure that will be recovered by Openreach, including the cost of adjustments required by Openreach itself. For the purposes of calculating illustrative maximum PIA rental charges, we assume that 1 million premises would be passed by Openreach's FTTP network over the next review period. Using this assumption and the medium case forecast in the WLA MR Consultation that 500,000 premises will be passed by other telecoms providers leads to an estimate of £134 million, for the total costs of making adjustments to the infrastructure that will be recovered across all users of the physical infrastructure. This falls within the estimate of £140m that we incorporated in our WLA charge control consultation in March for PIA network adjustments.

¹³¹ If Openreach were to incur £100 million in costs of network adjustments to serve 1 million homes (our upper bound estimate of the number of homes passed), this would require net benefits to those consumers (above the costs of fibre deployment incurred by the telecoms provider) equivalent in value to around 5% of their current broadband bill over 10 years. This seems very plausible given the benefits of a better quality service (higher bandwidth, greater reliability) and greater choice and competition that will arise from fibre deployment.

lead-ins from a pole, the associated costs should not be included for the purposes of determining whether the financial limit has been exceeded.¹³²

- 4.53.2 We also explain that the costs of network adjustments for the purposes of making poles (used for providing overhead lead-ins) climbable which are currently unclimbable poles because they are damaged, decayed or defective should be recovered from all products in the market in which BT has SMP and which use BT's physical infrastructure, and would not be subject to a financial limit. Accordingly, we propose that when Openreach undertakes ancillary activities in response to making an unclimbable pole (used for providing overhead lead-ins) climbable, the associated costs should not be included for the purposes of determining whether the financial limit has been exceeded.
- 4.54 When calculating whether network adjustments for any particular order exceed the applicable financial limit, we propose that a basis of charges approach is used to calculate the ancillary activity charges for such network adjustments.¹³³ As such, where a network adjustment is requested by a telecoms provider, the relevant ancillary activity charge (set on a basis of charges approach) is used to calculate the aggregate costs of network adjustments associated with the order, and to determine whether the financial limit for the order has been exceeded. Where the financial limit for the order has been exceeded this would give rise to charges above the financial limit being paid directly by the telecoms provider.
- 4.55 The draft legal instruments at Annex 6 specify the set of ancillary activities (from Openreach's price list) that are relevant to network adjustments and determining whether the financial limit has been met.
- 4.56 In our April 2017 DPA Consultation, we proposed that the PIA Reference Offer should include conditions on which telecoms providers may elect to undertake build works on behalf of BT (i.e. a self-provision model) and undertake enabling works (with the opportunity to seek to recharge Openreach for those works). We consider that industry is best placed to agree the details of the mechanism and the applicable costs (or rates) that a telecoms provider can recover for completing the network adjustment.
- 4.57 However, although we propose that a basis of charges approach is used to determine whether a network adjustment falls within the proposed financial limit, our initial view is that it may be inappropriate for a telecoms provider to recover costs set at this level for undertaking work on behalf of BT, since the basis of charges approach includes a contribution to BT's common costs.
- 4.58 In the remainder of this section, we set out our proposals for the pricing of other ancillary activities.

¹³² In our April 2017 DPA Consultation, paragraph 6.169, we considered that Openreach should have the flexibility to choose the solution for providing capacity related to overhead lead-ins with the proviso that the method for providing capacity is interoperable. Therefore, where Openreach has offered a means of providing necessary additional capacity for an overhead dropwire on a pole to the telecoms provider, we consider that it will be meeting its regulatory obligation.

¹³³ In paragraphs 4.63-4.66, we discuss the rationale for proposing a basis of charges approach more generally.

Productisation related activities

4.59 In our April 2017 DPA Consultation, we described productisation costs as those relating to the following categories of activities.

- upfront costs: costs incurred by Openreach in setting up the PIA product (for example, process design and systems development costs);
- per order processing costs: costs incurred by Openreach when processing PIA orders; and
- sales, general and administration (SG&A) costs: ongoing administration costs incurred by Openreach to support the PIA product.

4.60 We proposed that productisation costs relating to PIA should be recovered across all SMP products that use the physical infrastructure.

4.61 We have reviewed Openreach’s Ancillary Activity price list and have identified a number of activities that we consider represent productisation activities since they relate to order processing activities and/or activities undertaken by Openreach for the ongoing support of PIA. These are listed in Table 4.4 below.

Table 4.4: Productisation related ancillary activities

Ancillary activity	Price (excluding VAT)
Route Plan provision; per hour	£75.00
Network records administration charge; per hour	£75.00
Technical Validation (survey, approval, build); per hour	£75.00
Joint box breakthrough administration charge	£12.00
Overhead network data report for established Physical Infrastructure Access (PIA) telecoms providers	£500

Source: Openreach price list

4.62 Consistent with our proposed approach to the recovery of productisation costs, we propose that the costs of the ancillary activity services identified above should be recovered across all SMP products that use the physical infrastructure. We therefore propose that charges for these services will be capped at zero as we are allowing for these costs to be recovered elsewhere.¹³⁴

¹³⁴ We note that the ancillary activity ‘Route Plan provision’ charge is relevant to providing telecoms providers using PIA with information about the location of BT’s physical infrastructure. Our view is that this is likely to represent a legacy activity relating to manually providing and processing network records that pre-dates the development of the Openreach PIA Digital Map Tool. Therefore, with the exception of Openreach providing information manually relating to sensitive network areas (which is not included in the Openreach PIA Digital Map Tool), we envisage that the manual process will be irrelevant going forwards. Nevertheless, consistent with our proposals for the recovery of productisation costs, to the extent that manual processes remain, we propose that these should be capped at zero. Similarly, we consider that the overhead network data report represents a legacy activity that pre-dates the development of the Openreach PIA Digital Map Tool.

All other ancillary activities

Basis of charges approach for ancillary activities

- 4.63 For all other ancillary activities, we propose that the charges are set on a basis of charges approach. We consider that this is an appropriate approach for the following reasons.
- 4.64 As explained in the April 2017 DPA Consultation, we consider that given our provisional conclusion that BT has SMP in the WLA market, it appears to us that there is a risk that BT might fix and maintain some or all of its prices at an excessively high level so as to have adverse consequences for end-users. It follows from this that it is likely that BT would have the incentive and ability to set excessively high prices for ancillary activities in order to:
- maximise the profit it earns from providing access to its physical infrastructure; and
 - increase the overall costs 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.
- 4.65 Given this risk, we consider that some form of price regulation is required for ancillary activities and propose to impose a basis of charges condition in relation to the pricing of PIA ancillary activities. Specifically, we propose that charges will continue to be derived from the costs of provision based on a forward looking long run incremental cost approach allowing an appropriate mark-up for the recovery of common costs, including an appropriate return on capital employed.
- 4.66 We consider that a basis of charges approach for setting ancillary activity charges is the appropriate and proportionate approach in the context of this market review for the following reasons:
- A basis of charges requirement should provide a reasonable level of stability and predictability for telecoms providers on ancillary activity charges. Such stability and predictability should assist telecoms providers develop business cases for network deployment using PIA.
 - Ancillary activity charges are largely reflective of the incremental costs of providing those services (and have a relatively small component of common costs), therefore there is less scope for Openreach to change how common costs are allocated to ancillary activities which could cause uncertainty as to the level of the charges.

Consultation question

Question 4.1: Do you agree with our proposals for setting a financial limit for network adjustments? Please provide reasons and evidence in support of your views.

Question 4.2: Do you agree with our proposals for ancillary charges? Please provide reasons and evidence in support of your views.

Section 5

Regulatory financial reporting

Introduction

- 5.1 In the March 2017 WLA MR Consultation we proposed to impose regulatory financial reporting requirements on BT in the WLA market in the UK excluding the Hull area, including imposing cost accounting and accounting separation SMP conditions. These requirements included proposing certain directions on BT as to the consistency, form and content of BT's regulatory reporting.
- 5.2 In this section, we set out our proposals on the specific regulatory financial reporting requirements that are appropriate to support the proposed PIA remedy as set out in this document and the April 2017 DPA Consultation. These supplement the requirements proposed in the March 2017 WLA MR Consultation.

Consistency with regulatory decisions

- 5.3 In the 2014 Regulatory Reporting Statement¹³⁵ and the 2015 Directions Statement¹³⁶, we explained that Regulatory Financial Reporting should, as far as possible, be consistent with our regulatory decisions as set out in our Regulatory Accounting Principles.¹³⁷ In general terms, we would expect regulatory decisions to be reflected in the RFS unless we consider that there were good reasons not to.
- 5.4 In our April 2017 DPA Consultation and in Section 4 of this document, we set out a number of proposals that we consider should be reflected in changes to BT's Regulatory Financial Reporting Requirements. These are as follows:
- We propose that Openreach should recover the costs of network adjustments for other telecoms providers over all products in which BT has SMP in the WLA market and which use BT's physical infrastructure (including PIA).¹³⁸
 - We propose to apply a financial limit, of £4,000 to £6,000 per kilometre, to the cost of network adjustments that Openreach should be obliged to recover over all products in which BT has SMP in the WLA market and which use BT's physical infrastructure (including PIA).¹³⁹ Accordingly, any costs incurred for network adjustments above the financial limit would be recovered directly from the telecoms provider requiring the adjustment through ancillary charges.¹⁴⁰ In Section 4, we propose how the financial limit will be set.

¹³⁵ Ofcom, May 2014. *Regulatory Financial Reporting: Final Statement*, https://www.ofcom.org.uk/_data/assets/pdf_file/0025/78460/financial-reporting-statement-may14.pdf.

¹³⁶ Ofcom, March 2015. *Directions for Regulatory Financial Reporting: Statement*, Annex 3, https://www.ofcom.org.uk/_data/assets/pdf_file/0018/59112/statement.pdf.

¹³⁷ Regulatory Accounting Principle number 4 requires that Regulatory Financial Reporting must be consistent with Ofcom's regulatory decisions as set out in the Regulatory Accounting Guidelines.

¹³⁸ April 2017 DPA Consultation, paragraphs 7.47-7.51.

¹³⁹ As discussed in Section 4, we propose that the cost of network adjustments relating to overhead lead-ins would not be subject to a financial limit.

¹⁴⁰ April 2017 DPA Consultation, paragraph 7.55.

- We propose that the way in which BT recovers the costs of its own network adjustments to support its downstream services should not differ from the way it recovers the costs of network adjustments required by other telecoms providers using PIA.¹⁴¹

5.5 To ensure that the RFS is consistent with our regulatory policy, we propose the following:

- Network adjustments below the financial limit are separately identified and recorded from those above the financial limit in BT's Regulatory Financial Reporting System.
- Network adjustments below the financial limit (including those in relation to supporting BT's own downstream services such as FTTP and G.fast beyond the cabinet) are capitalised within the existing asset base and recovered over all products in which BT has SMP in the WLA market and which use BT's physical infrastructure (including PIA).
- Network adjustment costs that exceed the financial limit will be recovered directly from the customer requesting the network adjustment. In the case of other telecoms providers using PIA these should be recovered through ancillary charges. In the case of BT's own downstream services these should be recovered from unregulated products and services.
- BT must ensure that the costs are recovered over PIA and other WLA products on the same basis that we set the charge control, as set out in paragraph 7.60 of the April 2017 DPA Consultation. This said that "we would include an allowance for a proportion of the costs of making network adjustments (appropriately capitalised) over all lines in the WLA charge control".

5.6 We propose to implement the requirements set out above by including these in the direction proposed in the March 2017 WLA MR Consultation in relation to consistency with regulatory decisions. We indicate in Annex 6 those additions and amendments we are proposing to make by reference to the draft direction we consulted on in the March 2017 WLA MR Consultation.

5.7 We set out below the proposed reporting requirements that will allow monitoring of this obligation.

Preparation, delivery, publication, form and content of the RFS

5.8 In the following sub-section, we set out the financial information that we propose BT is required to provide for PIA services, both in the RFS and confidentially to Ofcom, to allow us to monitor its compliance with the proposals described above.

Public information

5.9 The published RFS reports financial information for specific markets at broadly three levels: market level information; service level information; and network component cost level for reported services.

Service level information

¹⁴¹ April 2017 DPA Consultation, paragraph 7.48.

- 5.10 We propose that BT should publish revenue, volume and average price information for PIA services (where practical) in line with the basis on which the charge controls are proposed to be set. This means that BT will be required to publish revenue, volume and average price information for PIA Rental Charges and PIA Ancillary Charges. We also propose that this information is reported separately for internal¹⁴² and external customers.
- 5.11 In light of the current low service volumes we do not propose that BT is required to publish revenue, volume and average price information in the RFS at the individual PIA Rental Charges level or PIA Ancillary Charges level.
- 5.12 We are not proposing that BT publish any information on fully allocated costs (FAC) since FAC information for these individual services does not currently exist. As noted in paragraph 5.30 below, we will be working with BT on a longer-term project to resolve this.
- 5.13 We propose that BT publishes two new notes relating to network adjustments as part of the WLA Market Summary in the RFS.
- 5.14 We propose a first note that discloses:
- (1) Gross internal¹⁴³ and external revenues relating to network adjustments and related FAC costs;
 - (2) Internal and external revenues relating to network adjustments above the financial limit and related FAC costs;
 - (3) Net internal and external network adjustment costs (i.e. (1) – (2)) that should be recovered across all users of the physical infrastructure in the WLA market.
- 5.15 We consider that this note is required to demonstrate BT's compliance with our proposals in paragraphs 5.4 and 5.5. In particular, it will ensure that BT does not capitalise ancillary charges related to network adjustments above the financial limit (and thereby over recover these costs); and ensure that the costs of network adjustments in relation to BT's own network deployments are recovered on the same basis as telecoms providers using PIA.
- 5.16 We are also proposing that network adjustments above the financial limit should be included in the detailed service analysis information in the RFS to ensure that the total revenues and costs within the WLA market are correct. We therefore propose to require publication of internal and external revenue, volume and FAC data for network adjustments in the RFS.
- 5.17 We propose a second note that discloses the split of network adjustment costs below the financial limit that is recovered from PIA products and other WLA products. We consider that this note is necessary to demonstrate that BT is allocating the costs of network adjustments below the financial limit between PIA products and other WLA regulated services on a similar basis.

¹⁴² Currently Openreach does not consume PIA however we have included this if the situation changes.

¹⁴³ Internal revenue is defined as the revenue equivalent to the cost incurred by BT in using PIA which Openreach recovers via a transfer charge from BT's downstream services.

Confidential information

- 5.18 As explained in the March 2017 WLA MR Consultation, in addition to information reported in the published RFS, BT also provides information to us confidentially which, overall, ensures that we have the information necessary to make informed regulatory decisions; monitor compliance with SMP conditions; ensure that those SMP conditions continue to address the underlying competition issues; and investigate potential breaches of SMP conditions and anti-competitive practices.
- 5.19 BT currently provides several additional financial information (AFI) schedules confidentially to us.
- 5.20 Given our proposals on PIA, we propose that BT provides two new AFI's to us:
- additional detailed service reporting for PIA services; and
 - updated inputs for our PIA pricing model.

Additional detailed reporting for PIA services

- 5.21 We propose that BT provides us with revenue information for each of a specified group of PIA services.¹⁴⁴
- 5.22 We also propose that BT should provide individual internal and external revenue and volume information for every disaggregated service within each specified PIA group of services where the annual revenues for that service exceed £1m. This information should be provided to us annually as an additional AFI. We propose that BT should also include a reconciliation with the disclosures in the published RFS (see paragraph 5.10 above).
- 5.23 We require this information to enable us to understand volume and revenue changes for PIA services, which will allow us to assess the effectiveness of our PIA remedies.
- 5.24 We also propose that BT provides us with updated inputs for our PIA pricing model on an annual basis within an AFI. We require this information to enable us to update our PIA pricing model going forward, to track our estimates of PIA costs against actual costs.
- 5.25 We propose to implement the requirements set out above by including these in the direction proposed in the March 2017 WLA MR Consultation in relation to the preparation, delivery, publication, form and content of the RFS in respect of PIA services in the WLA market. We indicate in Annex 6 those additions and amendments we are proposing to make by reference to the draft direction we consulted on in the March 2017 WLA MR Consultation.

Transparency

- 5.26 One of the purposes of imposing a cost accounting obligation is to ensure that fair, objective and transparent criteria are used to prepare the RFS. Therefore, the

¹⁴⁴ The specified groups correspond to the service groups on Openreach's price list (<https://www.openreach.co.uk/orpg/home/products/pricing/loadProductPrices.do?data=kKE%2F%2FCftg8LAZY%2B8EUaz9dpyYOJW58IELJ3a1hFsXScqDWVqEbA2PDIT5Y2OhxKv>), which are: duct products; poles products; ancillary rentals; exchange access rentals; ancillary activities; new build including enabling works; cancellations and cessations; licences: and early termination charges.

purpose of any such direction is to ensure that any information, material or explanatory document prepared by BT in respect of the RFS is sufficiently transparent such that a suitably informed reader can gain a clear understanding of the information presented. To preserve the integrity and consistency of the RFS, we consider that all markets should be subject to the same transparency direction.

- 5.27 Consistent with this policy, we therefore expect BT to prepare and maintain accounting records, Accounting Methodology Documents and the RFS in accordance with the transparency direction. We already proposed a transparency direction in respect of the WLA market in the March 2017 WLA MR Consultation which will also apply to the PIA services.

Compliance information

- 5.28 We do not propose that BT should supply any information related to compliance with the maximum PIA rental charges. This is because stakeholders can assess compliance by reference to BT's price list.

Next steps – consultation relating to financial reporting

- 5.29 We explained in our April 2017 DPA Consultation that although Openreach sets different PIA rental charges for different types of ducts on a per metre basis, as well as separate rental charges for using manholes and joint boxes, BT records and reports those network component costs in aggregate.
- 5.30 Given our long-term strategy to promote infrastructure-based competition improving duct and pole access, we consider that it is important that BT makes changes to the way that it reports its physical infrastructure with its regulatory financial reporting systems in relation to the granularity of the information that it records. Therefore, we are currently conducting further work with the aim of better understanding how BT infrastructure costs are recorded and reported to allow us to further our long-term strategic aims.
- 5.31 We intend to publish a further financial reporting consultation in the Autumn that will consider financial reporting issues arising out of the WLA and WBA market reviews (including those to support our DPA proposals).

Consultation question

Question 5.1: Do you agree with our proposals for BT's regulatory financial reporting in relation to PIA services? Please provide reasons and evidence in support of your views.

Section 6

Legal tests

- 6.1 We set out in Sections 3 to 5 our provisional conclusions on regulating PIA pricing and cost recovery. In summary, we propose:
- to impose a maximum cap on duct and pole rental charges using the current methodology (Section 3);
 - to retain the basis of charges condition for ancillary charges, apart from charges for network adjustments where we considered that Openreach should recover associated costs over all users of its infrastructure, subject to a financial limit (Section 4); and
 - to make changes to BT's reporting obligations (Section 5).
- 6.2 To give regulatory effect to the proposals set out in Sections 3 and 4 we propose two SMP conditions under section 87(9) of the Act: condition 6 (Basis of Charges) and condition 7D (PIA Charge Control). The text of these proposed conditions is set out in Annex 6.
- 6.3 To give regulatory effect to our proposals in relation to regulatory financial reporting set out in Section 5, we propose to give directions under section 49 of the Act and proposed SMP condition 12.4. We set out our proposals which take the form of amendments to the proposed directions in relation to regulatory financial reporting set out at Annex 23 of the March 2017 WLA MR Consultation. The text of the proposed directions is set out at Annex 6.
- 6.4 We explain below why we consider that our proposals are appropriate and satisfy the legal tests set out in the Act.

Legal tests

- 6.5 Section 87(1) of the Act provides that, where we have made a determination that a person (here BT) has SMP in an identified services market (here the supply of copper loop-based, cable-based and fibre-based wholesale local access at a fixed location in the UK excluding the Hull Area), we shall set such SMP conditions authorised by that section as we consider appropriate to apply to that dominant provider in respect of the relevant network or relevant facilities and apply those conditions to that person.
- 6.6 Section 87(9) of the Act authorises the setting of SMP services conditions to impose on the dominant provider:
- such price controls as Ofcom may direct in relation to matters connected with the provision of network access to the relevant network, or with the availability of the relevant facilities;
 - such rules as Ofcom may make in relation to those matters about the recovery of costs and cost orientation;

- such rules as they may make for those purposes about the use of cost accounting systems; and
 - obligations to adjust prices in accordance with such directions given by Ofcom as they may consider appropriate.
- 6.7 Both the basis of charges condition and the PIA charge control condition fall within the scope of section 87(9).
- 6.8 Before setting conditions falling within section 87(9) we are required to:
- ensure that the condition satisfies the tests set out in section 88 of the Act (as the basis of charges condition and PIA charge control equate to a condition about network access pricing); and
 - be satisfied that the condition satisfies the test set out in section 47(2) that the condition is objectively justifiable, not unduly discriminatory, proportionate and transparent.

Section 88 tests

- 6.9 Section 88 of the Act states that Ofcom should not set an SMP condition falling within section 87(9) except where it appears from the market analysis that there is a relevant risk of adverse effects arising from price distortion¹⁴⁵ and it also appears that the setting of the condition is appropriate for:
- promoting efficiency;
 - promoting sustainable competition; and
 - conferring the greatest possible benefits on the end-users of public electronic communications services.
- 6.10 Under section 88(2) of the Act, when setting an SMP condition falling within section 87(9), we must take account of the extent of the investment in the matters to which the condition relates of BT.
- 6.11 In our opinion, the proposed conditions 6 and 7D satisfy section 88 of the Act.
- 6.12 For the reasons set out below, we consider that the proposed conditions satisfy the requirements of section 88(1).
- 6.13 For the reasons set out in Sections 3, 4 and 5, it appears to us from our market analysis that there is a relevant risk of adverse effects arising from price distortion in that BT might fix or maintain its prices at an excessively high level so as to have adverse consequences for end-users of public electronic communications services. Specifically, given our provisional conclusion that BT has SMP in the WLA market, it is likely that BT would have the incentive and ability to set excessively high prices for PIA. This could undermine the case for investment by competing telecoms providers,

¹⁴⁵ For the purposes of section 88 there is a relevant risk of adverse effects arising from price distortion if the dominant provider might (a) so fix and maintain some or all of his prices at an excessively high level, or (b) so impose a price squeeze, as to have adverse consequences for end-users of public electronic communications services.

undermining the effectiveness of the obligation to provide PIA, and could also result in higher retail prices, all of which is ultimately against the interests of consumers.

- 6.14 In relation to the conditions we are proposing, overall we consider that our objective to encourage other telecoms providers to invest in their own networks in order to develop competition for superfast and ultrafast broadband services is consistent with our obligations under section 88. In general, our view is that our approach to rental charges and charges for ancillary services will promote sustainable competition, which we consider is likely to be the most effective way of benefiting end-users of public electronic communications services. This will bring significant benefits to consumers in the longer term from innovation (including innovation to increase efficiency and lower costs), choice, stronger incentives to price keenly to attract consumers and higher quality of services.

Basis of charges

- 6.15 The proposed condition 6.4 requires BT to ensure that its charges for PIA services are reasonably derived from the costs of provision based on a forward looking long run incremental cost approach, allowing an appropriate mark up for the recovery of common costs, including an appropriate return on capital employed. We consider that this requirement promotes efficiency and sustainable competition and provides the greatest possible benefits to end-users by enabling competing providers to buy network access at levels that might be expected in a competitive market.
- 6.16 The extent of investment of the dominant operator has been taken into account as the approach provides for an appropriate return on the capital employed to be included in the charges.

Rental charges

- 6.17 The proposed conditions 7D.1 and 7D.2 require BT to ensure that its charges for the current set of PIA rental products do not exceed the maximum charges we have calculated.
- 6.18 Capping PIA rental charges will promote sustainable competition in that it provides potential investors with increased certainty as to the level of rental charges they would face as it removes the risk of changes to the methodology currently adopted to calculate rental charges, which could have potentially significant impacts on those charges. Providing investors with greater certainty that the level of PIA rental charges will not be excessive facilitates the building of credible business cases for deploying a network using PIA. We consider this is necessary in order to realise the significant benefits resulting from other telecoms providers deploying ultrafast networks at scale. Encouraging such entry and expansion provides the greatest possible benefits to end-users.
- 6.19 The form of control also encourages Openreach to increase its productive efficiency, as it allows Openreach to keep any profits it earns within the defined period by reducing its costs compared to those envisaged in setting the control.¹⁴⁶

¹⁴⁶ The benefits of any cost savings would potentially accrue to the regulated company in the short run and this would give BT incentives to make those efficiency savings. In the longer run, these cost savings could be passed to consumers through reductions in prices, either as a result of competition or through subsequent charge controls. In our view, this form of price regulation is also preferable to a rate of return type of control.

- 6.20 As explained in Section 3, there are also a number of aspects of the approach we have adopted which promote efficient use of the existing space in Openreach's physical infrastructure.
- 6.21 The extent of investment of the dominant operator has been taken into account as our approach provides for an appropriate return on the capital employed to be included in the charges.

Charges for ancillary activities related to productisation

- 6.22 The proposed condition 7D.3 requires BT not to charge separately for ancillary services related to order processing. This gives effect to our proposal that productisation costs should be pooled and recovered from all users of the physical infrastructure.
- 6.23 In the absence of this requirement, Openreach could seek to recover these costs from PIA users alone (either through rental charges or ancillary charges). Any resulting disparity in costs faced by Openreach and the costs faced by other telecoms providers in respect of using the physical infrastructure has the potential to undermine confidence in the effectiveness of the PIA remedy as a basis on which to build competing networks at scale. Pooling these costs and spreading them across all SMP products that use the physical infrastructure would eliminate the differential, thereby ensuring a level playing field and promoting network competition. Again, encouraging such investment provides the greatest possible benefits to end-users.
- 6.24 As set out in paragraphs 7.101 to 7.103 of the April 2017 DPA Consultation we have considered whether our proposed approach to the recovery of productisation costs promotes inefficient investment. However, we do not consider this to be a significant risk. Moreover, with respect to systems developments, Openreach retains a significant degree of control over costs as it decides how the systems development is undertaken. We consider that our proposed approach provides Openreach with incentives to undertake these developments efficiently.
- 6.25 The extent of investment of the dominant operator has been taken into account as the PIA rental charge calculation, and our approach in the WLA charge control, provide for Openreach to recover the relevant costs. Also, our approach provides for an appropriate return on the capital employed to be included in the charges.

Charges for network adjustments

- 6.26 The proposed conditions 7D.4, 7D.5 and 7D.6 require BT not to charge separately for network adjustments falling within the financial limit we have calculated. This condition gives effect to our proposals that the costs of network adjustments should be pooled and recovered from all users of the physical infrastructure, subject to a financial limit.
- 6.27 For the reasons explained in the April 2017 DPA Consultation, the current approach of charging telecoms providers the full upfront cost of network adjustments undermines the business case, rendering the remedy ineffective. Recovering these costs from all users of the physical infrastructure ensures a level playing field with the costs faced by Openreach itself when using the infrastructure and promotes sustainable competition. As above, encouraging such investment provides the greatest possible benefits to end-users.

- 6.28 If telecoms providers have to pay the full cost incurred in undertaking any network adjustments this could deter efficient investment, as it does not reflect the benefits to BT and other telecoms providers, now and in the future. As a result, there may be some cases where competitive network investment will not take place because the telecoms provider does not value the required network adjustment enough to pay the full cost, but all parties that benefit (now and in the future) would be prepared to share the cost if faced with that decision. Therefore, sharing the cost of network adjustments can unlock competitive network investment that would not otherwise take place.
- 6.29 As discussed in paragraphs 4.12 to 4.13 we consider that the limit on the amount Openreach has to recover in this way further promotes efficient use of existing capacity.
- 6.30 The extent of investment of the dominant operator has been taken into account as the PIA rental charge calculation, and our approach in the WLA charge control, provide for Openreach to recover the relevant costs. Also, our approach provides for an appropriate return on the capital employed to be included in the charges.

Section 47(2) tests

- 6.31 In addition to the requirements in sections 87(9) and 88 discussed above, Ofcom must be satisfied that any SMP Condition satisfies the test in section 47(2) of the Act which requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent.
- 6.32 As set out above we consider that the proposed conditions are objectively justifiable because, given our provisional conclusion that BT has SMP in the WLA market, the conditions are required to ensure that retail competition is not distorted by BT using its SMP to set excessively high prices for PIA (in respect of rental products and charges for ancillary services). In the absence of any control, BT would be able to set charges unilaterally and above the competitive level. In addition, Openreach's freedom to revise the methodology it currently adopts to calculate rental charges does not provide potential investors with sufficient certainty as to the level of rental charges they would face. The risk of high prices and the current lack of certainty could undermine the case for investment by competing telecoms providers, all of which is ultimately against the interests of consumers.

Undue discrimination

- 6.33 We consider that the proposed conditions do not discriminate unduly against BT as it is the only telecoms provider to hold SMP in the WLA market (for the UK excluding the Hull Area) and the proposed controls seek to address that market position, including BT's ability and incentive to set excessive charges for services falling within the controls.

Proportionality

- 6.34 We set out our reasons for imposing proposed conditions 6 and 7D in Sections 3 and 4. We are satisfied the conditions are proportionate because the conditions we have proposed go no further than is necessary to ensure that there are reasonable charges, and sufficient certainty concerning charges, for PIA services which we consider are critical to the development of a competitive market.

- 6.35 As set out in Section 3 we have proposed a cap on rental charges. We consider that this proposal addresses our identified competition concerns while going no further than is necessary, having regard to our objective to provide conditions that guard against the risk of excessive prices and support investors' ability to build a viable business case for network deployment using PIA.
- 6.36 As set out in Section 4 we have proposed a basis of charges approach to ancillary charges. We have proposed that productisation costs relating to PIA should be recovered across all SMP products that use the physical infrastructure and that ancillary charges that relate to necessary network adjustments should be subject to a financial limit. We consider that these proposals address our identified competition concerns while going no further than is necessary.
- 6.37 The basis of charges obligation addresses the risk of excessive prices while setting out that charges should be reasonably derived from the costs of provision based on a forward looking long run incremental cost approach. This allows for an appropriate mark up for the recovery of a fair and reasonable share of common costs including an appropriate return on capital employed, which might include a 'risk premium' where appropriate.
- 6.38 As set out in Section 4 we have further proposed an obligation requiring that the costs of adjustments to physical infrastructure, where these are necessary for that infrastructure to be available to telecoms providers to deploy their own networks, be recovered from all products in the market in which BT has SMP and which use Openreach's physical infrastructure (including PIA). This is necessary to reduce the barriers to competitive network investment at scale and ensure a level playing field with the charges Openreach faces itself for using its own ducts and poles. To limit the potential impact of this approach on Openreach, our proposals include a financial limit on the network adjustment costs that Openreach should be required to recover across all SMP products.

Transparency

- 6.39 We consider that the proposed charge controls are transparent in relation to what they are intended to achieve. The aims and effects of the proposed basis of charges condition and charge control are clear and they have been drafted so as to secure maximum transparency. We are consulting fully on the proposed basis of charges condition and charge control and our reasoning in this document.
- 6.40 The text of the proposed conditions has been published in Annex 6 and the operation of those conditions is aided by our explanations in this document. Our final statement will set out our analysis of responses to this consultation and the basis for any final decision that we take.

Section 49(2) tests

- 6.41 Under proposed Condition 12.4 set out at Annex 23 to the March 2017 WLA MR Consultation, Ofcom may from time to time make such directions as they consider appropriate in relation to BT's obligations under proposed Condition 12. Section 49(2) of the Act requires that Ofcom must be satisfied that any direction satisfies the test in section 49(2) of the Act which requires directions to be objectively justifiable, non-discriminatory, proportionate and transparent.

Proposed Direction for the consistency with regulatory decisions

- 6.42 We have considered our proposals to amend the Consistency with Regulatory Decisions Direction against the tests set out in section 49(2) of the Act and for the reasons set out in Section 5 above, we consider that they are:
- objectively justifiable because it is necessary for us to give a direction specifying changes to the accounting treatment of PIA costs as the current treatment does not comply with our Regulatory Accounting Principles;
 - not unduly discriminatory because it reflects BT's market position in the UK excluding the Hull Area;
 - proportionate because our proposal is no more than is required to ensure compliance with the Regulatory Accounting Principles. Further, BT retains an important role in determining the basis of preparation of the RFS; and
 - transparent because the intention of our proposal is to ensure that BT's RFS are consistent with the Regulatory Accounting Principles.

Proposed Direction for the preparation, delivery, publication, form and content of the RFS

- 6.43 We also consider that the proposed amended direction meets the tests set out in section 49(2) of the Act in that it is:
- objectively justifiable because the Direction will reflect the proposals in this consultation. Our proposals concerning the additional information to be provided, both in public and in confidence, seek to ensure that BT's customers have sufficient information about the products and services they purchase to provide them with reasonable confidence about BT's compliance with its SMP conditions and that we have sufficient information necessary to carry out our functions;
 - not unduly discriminatory because it reflects BT's market position in the UK excluding the Hull Area. We have explained in this consultation the reasons for requiring relevant information from BT both publicly and in confidence;
 - proportionate because the Direction will be no more than is required to ensure the effectiveness of the proposals in this consultation and ensures that Ofcom and stakeholders are provided with a sufficient level of information, and does not extend beyond these; and
 - transparent because the intention of the Direction will be to make sure that the RFS remain fit for purpose and that Ofcom and the industry are provided with a sufficient level of information.

Ofcom's duties under section 3 and 4 of the Act

- 6.44 When setting SMP conditions and giving directions we are also required to carry out our functions in accordance with our duties under sections 3 and 4 of the Act. We consider that the proposed conditions and directions are consistent with our duties under sections 3 and 4 of the Act.
- 6.45 For the reasons set out above, we consider that the obligations proposed in this consultation will, in particular, further the interests of citizens and of consumers in the

relevant market by the promotion of competition in line with section 3 of the Act. In particular, the proposed charge control seeks to ensure the availability of physical infrastructure to promote the deployment of competing electronic communications services. In proposing the charge control, we have had regard to the desirability of promoting competition in the relevant market, the desirability of encouraging investment and innovation in the relevant market, including by third party telecoms providers, and the desirability of encouraging the availability and use of high speed data transfer services throughout the UK.

- 6.46 Further, we consider that, in line with section 4 of the Act, the proposed conditions will, in particular, promote infrastructure based competition and will encourage innovation and continued investment for the purpose of securing efficiency and sustainable competition in the downstream market for electronic communications networks and services, resulting in the maximum benefit for retail consumers.

Consistency with European Commission Recommendations and BEREC Common Positions and Guidance

- 6.47 In accordance with section 4A of the Act, in formulating the proposals set out in this consultation, Ofcom has also taken due account of all applicable recommendations issued by the European Commission under Article 19(1) of the Framework Directive and the utmost account of any relevant opinion, recommendation, guidelines, advice or regulatory practice adopted by the Body of European Regulators for Electronic Communications (BEREC pursuant to Article 3(3) of Regulation (EC) No 1211/2009).¹⁴⁷

¹⁴⁷ Regulation (EC) No 1211/2009 of the European Parliament and the Council of 25 November 2009 establishing the Body of the European Regulators for Electronic Communications (BEREC) and the Office.

Annex 1

Responding to this consultation

How to respond

- A1.1 Ofcom would like to receive views and comments on the issues raised in this document, **by 5pm on 12 September 2017**.
- A1.2 You can download a response form from <https://www.ofcom.org.uk/consultations-and-statements/category-2/pricing-proposals-duct-pole-access>. You can return this by email or post to the address provided in the response form. We also provide a cover sheet (<https://www.ofcom.org.uk/consultations-and-statements/consultation-response-coversheet>) for responses sent by post; please fill this in, as it helps us to maintain your confidentiality, and speeds up our work. You do not need to do this if you respond using the form.
- A1.3 If your response is a large file, or has supporting charts, tables or other data, please email it to piaremedy@ofcom.org.uk, as an attachment in Microsoft Word format, together with the cover sheet (<https://www.ofcom.org.uk/consultations-and-statements/consultation-response-coversheet>).
- A1.4 Responses may alternatively be posted to the address below, marked with the title of the consultation.
- Shaun Tey
Ofcom
Riverside House
2A Southwark Bridge Road
London SE1 9HA
- A1.5 If you would like to submit your response in an alternative format (e.g. a video or audio file), please contact Shaun Tey on 020 7981 3000, or email piaremedy@ofcom.org.uk.
- A1.6 We do not need a paper copy of your response as well as an electronic version. We will acknowledge receipt if your response is submitted via the online web form, but not otherwise.
- A1.7 You do not have to answer all the questions in the consultation if you do not have a view; a short response on just one point is fine. We also welcome joint responses.
- A1.8 It would be helpful if your response could include direct answers to the questions asked in the consultation document. The questions are listed at Annex 4. It would also help if you could explain why you hold your views, and what you think the effect of Ofcom's proposals would be.
- A1.9 If you want to discuss the issues and questions raised in this consultation, please contact Shaun Tey on 020 7981 3000, or by email to Shaun.Tey@ofcom.org.uk.

Confidentiality

- A1.10 Consultations are more effective if we publish the responses before the consultation period closes. In particular, this can help people and organisations with limited

resources or familiarity with the issues to respond in a more informed way. So, in the interests of transparency and good regulatory practice, and because we believe it is important that everyone who is interested in an issue can see other respondents' views, we usually publish all responses on our website, www.ofcom.org.uk, as soon as we receive them.

- A1.11 If you think your response should be kept confidential, please specify which part(s) this applies to, and explain why. Please send any confidential sections as a separate annex. If you want your name, address, other contact details or job title to remain confidential, please provide them only in the cover sheet, so that we don't have to edit your response.
- A1.12 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and try to respect it. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.
- A1.13 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's intellectual property rights are explained further at <https://www.ofcom.org.uk/about-ofcom/website/terms-of-use>

Next steps

- A1.14 If you wish, you can register to receive mail updates alerting you to new Ofcom publications; for more details, please see <https://www.ofcom.org.uk/about-ofcom/latest/email-updates>

Ofcom's consultation processes

- A1.15 Ofcom aims to make responding to a consultation as easy as possible. For more information, please see our consultation principles in Annex 2.
- A1.16 If you have any comments or suggestions on how we manage our consultations, please call our consultation helpdesk on 020 7981 3003 or email us at consult@ofcom.org.uk. We particularly welcome ideas on how Ofcom could more effectively seek the views of groups or individuals, such as small businesses and residential consumers, who are less likely to give their opinions through a formal consultation.
- A1.17 If you would like to discuss these issues, or Ofcom's consultation processes more generally, please contact Steve Gettings, Ofcom's consultation champion:

Steve Gettings
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Email corporation.secretary@ofcom.org.uk

Annex 2

Ofcom's consultation principles

Ofcom has seven principles that it follows for every public written consultation:

Before the consultation

- A2.1 Wherever possible, we will hold informal talks with people and organisations before announcing a big consultation, to find out whether we are thinking along the right lines. If we do not have enough time to do this, we will hold an open meeting to explain our proposals, shortly after announcing the consultation.

During the consultation

- A2.2 We will be clear about whom we are consulting, why, on what questions and for how long.
- A2.3 We will make the consultation document as short and simple as possible, with a summary of no more than two pages. We will try to make it as easy as possible for people to give us a written response. If the consultation is complicated, we may provide a short Plain English / Cymraeg Clir guide, to help smaller organisations or individuals who would not otherwise be able to spare the time to share their views.
- A2.4 We will consult for up to ten weeks, depending on the potential impact of our proposals.
- A2.5 A person within Ofcom will be in charge of making sure we follow our own guidelines and aim to reach the largest possible number of people and organisations who may be interested in the outcome of our decisions. Ofcom's Consultation Champion is the main person to contact if you have views on the way we run our consultations.
- A2.6 If we are not able to follow any of these seven principles, we will explain why.

After the consultation

- A2.7 We think it is important that everyone who is interested in an issue can see other people's views, so we usually publish all the responses on our website as soon as we receive them. After the consultation we will make our decisions and publish a statement explaining what we are going to do, and why, showing how respondents' views helped to shape these decisions.

Annex 3

Consultation response cover sheet

- A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, www.ofcom.org.uk.
- A3.2 We have produced a cover sheet for responses (see below) and would be very grateful if you could send one with your response (this is not needed if you respond using the response form provided at <https://www.ofcom.org.uk/consultations-and-statements/category-2/pricing-proposals-duct-pole-access>). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.
- A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their cover sheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.
- A3.4 We strongly prefer to receive responses using our response form, which incorporates the cover sheet. If you are responding via post, or via email but are not using the response form, you can download an electronic copy of this cover sheet in Word or RTF format from the 'Consultations' section of our website at <https://www.ofcom.org.uk/consultations-and-statements/consultation-response-coversheet>.
- A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title: Consultation on pricing proposals for Duct and Pole Access remedies

To (Ofcom contact): Shaun Tey

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

Please tick below what part of your response you consider is confidential, giving your reasons why

Nothing

Name/contact details/job title

Whole response

Organisation

Part of the response

If there is no separate annex, which parts?

If you want part of your response, your name or your organisation not to be published, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here.

Name

Signed (if hard copy)

Annex 4

Consultation questions

Question 3.1: Do you agree with our proposals for setting the level of the cap on PIA rental charges? Please provide reasons and evidence in support of your views.

Question 4.1: Do you agree with our proposals for setting a financial limit for network adjustments? Please provide reasons and evidence in support of your views.

Question 4.2: Do you agree with our proposals for ancillary charges? Please provide reasons and evidence in support of your views.

Question 5.1: Do you agree with our proposals for BT's regulatory financial reporting in relation to PIA services? Please provide reasons and evidence in support of your views.

Annex 5

Asset cost component calculation

Introduction

A5.1 This annex explains the detailed steps of the methodology we use to allocate costs per unit of each PIA product. This is based on the methodology adopted by Openreach to derive rental charges following imposition of the remedy in 2010.

A5.2 The calculation comprises of two key parts:

- First, the regulatory cost base is calculated for each type of PIA asset (i.e. single bore spine duct, 2 bore spine duct, 3+ bore spine duct, lead-in duct, manholes, joint boxes, and poles).
- Second, the regulatory cost base of each type of PIA asset is allocated to each unit of the relevant PIA rental product (e.g. the regulatory cost base of 1 bore spine duct is allocated to each metre of single bore spine duct rental).

Regulatory cost base

A5.3 The regulatory cost base of each type of PIA asset is an annual amount of costs attributed to that type of asset. Asset costs include return on capital, depreciation (net of holding gains) and overheads. They are calculated as follows:

- Return on capital is based on the 2015/16 current cost accounting (CCA)¹⁴⁸ mean¹⁴⁹ net replacement cost (NRC) of the relevant asset base as per the RFS, multiplied by the weighted average cost of capital (WACC) for Openreach Copper business in the final year of this control period (8%).¹⁵⁰
- Depreciation includes historical cost accounting (HCA)¹⁵¹ depreciation and supplementary depreciation (reflecting the impact of CCA re-valuation) as per 2015/16 RFS.
- Holding gains¹⁵² are based on the 2015/16 CCA mean NRC of the relevant asset base as per the RFS, multiplied by a normalised view of the annual increase in

¹⁴⁸ Under CCA, assets are re-valued annually to their current cost.

¹⁴⁹ We use the mean value of the asset base, as per the updated version of Openreach's PIA pricing model provided to Ofcom on 12 August 2016. This is a change from the original calculation in 2011 which was based on the closing value of the asset base.

¹⁵⁰ See Annex 16 of the March 2017 WLA MR Consultation. We use the estimated WACC for the final year of this control period (2020/21) as most of the PIA take-up during this control period is expected in the final year.

¹⁵¹ Under HCA, assets are carried at their historical cost.

¹⁵² Holding gains represent an increase in the value of the asset base due to the annual CCA re-valuation. It is subtracted from the regulatory cost base in the year when it arises, but will lead to an increase in the regulatory cost base in the following years through supplementary depreciation and higher return on capital (through a higher value of mean NRC).

the regulatory asset value.¹⁵³ A normalised view of the holding gain has been used because the actual view from the regulatory asset value (RAV) model can be subject to large adjustments.¹⁵⁴ In its original PIA pricing model Openreach assumed the regulatory asset value of duct and copper would increase year on year by 3% to calculate holding gains. We have retained this assumption for the purposes of calculating illustrative rental charges.¹⁵⁵

- Overheads are based on the 2015/16 CCA RFS and include the operating costs directly attributed from the general ledger to duct/copper activity/plant groups, as well as costs indirectly attributed to duct/copper activity/plant groups through other activity/plant groups.¹⁵⁶

Duct, manholes and joint boxes

- A5.4 The costs of the relevant asset base for duct, manholes and joint boxes are based on the regulatory asset value adjusted¹⁵⁷ CCA costs of the Class of Work “LDD” (Local Distribution Duct) as per the RFS, which includes duct, manholes, joint boxes and cabinets.
- A5.5 Overheads are based on the CCA value of operating costs directly and indirectly attributed to the duct Activity Groups from the ledgers, excluding the duct costs themselves.
- A5.6 The regulatory cost bases of all spine duct, manholes, joint boxes and lead-in duct are split out of the Class of Work “LDD” costs in proportion to their gross replacement cost (GRC). The GRCs are estimated as follows:

¹⁵³ Openreach explained that under the current methodology, holding gains are based on the increase in the Retail Price Index (RPI). Openreach explained that the increase in RPI provides a “normalised” view of the holding gain, rather than the actual view which can vary significantly from year to year. Openreach noted that using RPI is consistent with the fact that the gross replacement cost of the duct and copper assets is calculated on an indexed historic basis using RPI. Openreach response to question 11b of the section 135 Notice dated 27 January 2017; Openreach response dated 7 July 2017 to question 29 of the section 135 Notice dated 16 June 2017.

¹⁵⁴ Openreach response to question 11b of the section 135 Notice dated 27 January 2017.

¹⁵⁵ Openreach explained that given the reduction in RPI in recent years, this assumption may be overstated and in need of an update. Openreach response dated 7 July 2017 to question 29 of the section 135 Notice dated 16 June 2017. In an updated version of the PIA pricing model provided to Ofcom on 12 August 2016 (the “updated PIA pricing model”), Openreach used the 2015/16 RPI. However, we note that current RPI is higher than the 2015/16 RPI figure and the Office for Budget Responsibility forecasts that it will continue to be so over the next review period.

¹⁵⁶ For example, the costs of vehicles and associated services are first recovered in line with transfer charges, which are at commercial rates, and then further attributed based on previously allocated pay and return on assets. Openreach response to question 11d of the section 135 Notice dated 27 January 2017.

¹⁵⁷ In the 2009/10 RFS Openreach changed its valuation methodology of its post-August 1997 duct, which had the effect of increasing the valuation by around £1.9bn. Since Ofcom had not accepted the new methodology, Openreach made an additional RAV adjustment to estimate what the value of the RAV would have been had the methodology not changed. The “RAV adjustment” in the model represents the adjustment to the RAV cost stack required to re-value the post-August 1997 assets to a valuation based on rolling forward the previous methodology. See Openreach response to question 6c of the section 135 Notice dated 27 January 2017.

- GRC estimates for duct, manholes, joint boxes and cabinets are based on Openreach's bottom-up valuation using 2012/13 prices and September 2015 volumes. The valuation of duct includes some, but not all, lead-in duct. However, it is not possible to identify how much is included or separate this out.¹⁵⁸ In the absence of more granular data, we assume that the gross replacement cost of duct as estimated in the bottom-up valuation is fully attributable to spine duct (i.e. it does not include any lead-in duct).¹⁵⁹
- The GRC of lead-in duct is then estimated separately, by multiplying the GRC per metre of single bore spine duct by an estimate of the route length of lead-in duct.¹⁶⁰ ¹⁶¹ This approach reflects the methodology used by Openreach in the model which it used to calculate the rental price in 2011 ("the original PIA pricing model").¹⁶²

A5.7 The regulatory cost base of spine duct is further split between single bore spine duct, 2 bore spine duct and 3+ bore spine duct based on their relative GRC using a bottom-up valuation as of 2012/13 (not updated for 2015 volumes). Similar to the valuation of duct, manholes, joint boxes and cabinets referred to above, the valuation of single bore spine duct relies on data from the PIPeR system, which also includes some, but not all, lead-in duct.¹⁶³

¹⁵⁸ In its response dated 30 June 2017 to question 14c of the section 135 Notice dated 16 June 2017, Openreach explained that its bottom-up ("absolute") valuation methodology relies on information in BT's network inventory system (PIPeR), which records some, but not all lead-in duct.

¹⁵⁹ This leads to potential over-allocation of costs to duct relative to manholes and joint boxes. However, we consider this assumption to be preferable to the alternative assumption that lead-in duct is fully reflected in Openreach's bottom-up valuation. This is because we expect that only a relatively small proportion of lead-in duct is actually reflected in Openreach's bottom-up valuation. In particular, Openreach told us that it did not believe the inclusion of the "few" kilometres of lead-in duct that are recorded in PIPeR has a material impact. See Openreach response dated 30 June 2017 to questions 12c and 25 of the section 135 Notice dated 16 June 2017.

¹⁶⁰ The GRC of single bore spine duct per metre is calculated by dividing the GRC of single bore spine duct by the route length of single bore spine duct. The GRC of single bore spine duct is calculated by multiplying (i) the GRC of all spine duct by (ii) the proportion of spine duct GRC that is 1 bore spine duct, where (i) is based on the GRC estimates from Openreach's bottom-up valuation using 2012/13 prices and September 2015 volumes discussed above, and (ii) is based on GRC estimates from Openreach's bottom up valuation using 2012/13 prices (not updated for 2015 volumes, and referred to in paragraph A5.7).

¹⁶¹ The estimate of the route length of lead-in duct is not sourced from PIPeR. We have used an estimate from the updated PIA pricing model which Openreach provided to Ofcom on 12 August 2016. We note that this estimate is lower than the estimate in the original calculation.

¹⁶² In the updated PIA pricing model provided to Ofcom on 12 August 2016, Openreach modified the methodology used to estimate lead-in costs. However, we were unable to satisfy ourselves that the changes are appropriate.

¹⁶³ As above, in the absence of more granular data, we assume that the gross replacement cost of single bore duct is fully attributable to single bore spine duct (i.e. it does not include any lead-in duct). This leads to potential over-allocation of costs to single bore spine duct relative to 2 bore spine duct and 3+ bore spine duct. Openreach told us that it is unable to separate the GRC of lead-in duct from the GRC of single bore spine duct in its 2012/13 bottom-up duct valuation. As noted above, we expect that only a relatively small proportion of lead-in duct is actually reflected in Openreach's bottom-up

Poles

- A5.8 The costs of the relevant asset base for poles are based on the CCA costs of the Class of Work “LDC” (Local Distribution Cable) as per the RFS, which includes poles as well as other Openreach copper access assets. 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 2009/10.¹⁶⁴
- A5.9 Overheads are based on the CCA value of operating costs and include cost items identified as specifically relating to poles (for example, pole testing and pole renewals) as well as items attributed to the Class of Work “LDC”. Items attributed to the Class of Work “LDC” are split based on either the share of total copper maintenance costs attributable to poles or in proportion to the GRC estimates referred to in the previous paragraph.

Allocation of regulatory costs per unit of PIA products

Spine and lead-in duct

- A5.10 The regulatory cost base of each type of duct (single bore spine duct, 2 bore spine duct, 3+ bore spine duct and lead-in duct) is divided by the average number of 25mm diameter sub-duct equivalents in that duct type as of June 2017. The resulting portion of the regulatory cost base is then allocated per metre of duct based on the route length for each type of duct as of August 2015. The duct route length analysis for the different numbers of bores relies on data from the PIPeR system, which includes some, but not all of lead-in duct.¹⁶⁵
- A5.11 The average number of 25mm diameter sub-duct equivalents is a national average for each type of duct and is based on actual usage of space by BT cables and sub-ducts, converted into the equivalent space occupied by 25mm diameter sub-ducts.¹⁶⁶ Figure A5.1 illustrates how the actual duct fill is normalised into 25mm diameter sub-duct units for a duct nest of four bores.¹⁶⁷ As the average number of 25mm diameter sub-duct equivalents is calculated using information from BT’s physical network inventory system, the duct occupancy figures for single bore duct include both single bore spine duct and lead-in duct. In the absence of more

valuation. See Openreach response dated 30 June 2017 to question 14 of the section 135 Notice dated 16 June 2017.

¹⁶⁴ In 2009/10 Openreach used an “absolute valuation” methodology to value its Copper Cable assets (Class of Work “LDC”). This methodology was based on a count of assets multiplied by the latest replacement costs for the materials themselves and the cost of construction was calculated from standard task times multiplied by standard labour rates. Openreach response to question 7b of the section 135 Notice dated 27 January 2017.

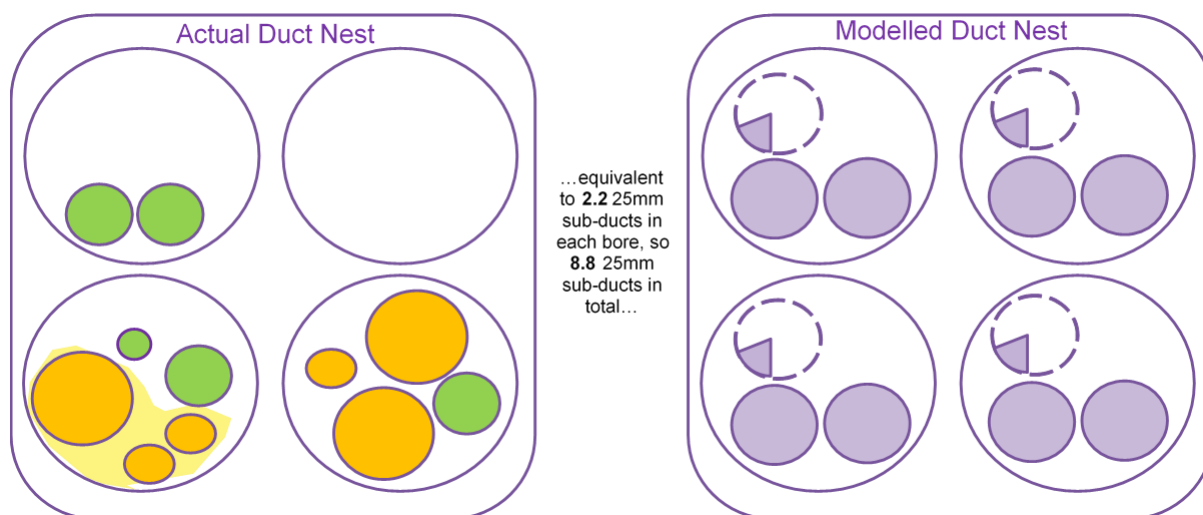
¹⁶⁵ Openreach response dated 30 June 2017 to question 12b of the section 135 Notice dated 16 June 2017. As above, in the absence of more granular data, we assume that the duct route length of single bore duct is fully attributable to single bore spine duct (i.e. it does not include any lead-in duct). As noted above, we expect that only a relatively small proportion of lead-in duct is actually reflected in the duct route length of single bore duct.

¹⁶⁶ Openreach response to question 4 of the section 135 Notice dated 27 January 2017.

¹⁶⁷ Openreach re-submitted response dated 11 July 2017 to question 40 of the section 135 Notice dated 6 March 2017; Openreach response dated 3 July 2017 to question 26 of the section 135 Notice dated 16 June 2017.

granular data, we assume the duct occupancy figure for single bore duct is representative of both single bore spine duct and lead-in duct.

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.

A5.12 Finally, the regulatory cost allocated per metre of a 25mm sub-duct equivalent in spine duct is capped at 50% of the regulatory cost per metre of duct for each duct nest size. There is no cap on the regulatory cost per metre of a 25mm sub-duct equivalent in lead-in duct.

Manholes and joint boxes

A5.13 The regulatory cost base of manholes and joint boxes is allocated to manhole/joint box entries and exits, as well as cable coil and in-line splice hosting. Most telecoms providers are assumed to both enter and exit a manhole or a joint box, in which case they will be charged for each entry and exit. However, in some circumstances, Openreach would charge a hosting fee, as well as a charge for entry/exit in the manhole/joint box. Therefore, there is a risk of over-recovery of costs by Openreach that would arise from telecoms providers paying for both entry and hosting, which is mitigated by scaling the regulatory cost base of manholes/joint boxes down by 2%.¹⁶⁸

A5.14 The respective scaled down regulatory cost base of manholes and joint boxes is then allocated to each manhole/joint box based on the number of manholes/joint boxes as of August 2015. The number of joint boxes has increased significantly compared to Openreach’s original PIA pricing model, which may be due to:

- The PIPeR data being incomplete in 2011, consisting of ~1,000 out of ~5,500 exchanges;
- Identification of joint boxes being problematic in 2011 whereas there is now a specific attribute that can be used within the PIPeR data source; and

¹⁶⁸ Openreach response dated 30 June 2017 to question 22 of the section 135 Notice dated 16 June 2017.

- New joint boxes being built.¹⁶⁹

Manhole and joint box entries

- A5.15 The regulatory cost per manhole/joint box is divided by the expected number of entries/exits per manhole/joint box. The expected number of entries/exits per manhole/joint box is equal to the current average number of 25mm sub-duct equivalents assumed to be crossing a manhole/joint box multiplied by three, to reflect an assumption of average telecoms providers' usage of manholes/joint boxes under PIA.¹⁷⁰
- A5.16 Because of their size, joint boxes are typically connected with smaller duct nests and manholes are typically connected with larger duct nests.¹⁷¹ Therefore, the current average number of 25mm sub-duct equivalents assumed to be crossing joint boxes is based on the average number of 25mm sub-duct equivalents occupied in ducts with 1-4 bores, as of June 2017. The current average number of 25mm sub-duct equivalents assumed to be crossing manholes is based on the average number of 25mm sub-duct equivalents occupied in ducts with 3+ bores, as of June 2017.

Hosting of cable coils and in-line splices

- A5.17 The cost allocation per medium-sized cable coil hosted in a manhole is based on 11.5% of the regulatory cost per manhole, reflecting the assumed share of a manhole space occupied by a medium-sized cable coil.¹⁷² This is a working assumption adopted in the absence of PIA usage information.¹⁷³
- A5.18 The cost allocation per medium-sized cable coil hosted in a joint box is based on 33% of the regulatory cost per joint box, reflecting the assumed share of a joint box space occupied by a medium-sized cable coil, and multiplied by four, reflecting the assumption that only large joint boxes can host cable coils and that the cost of a large joint box is four times the cost of an average joint box. These are working assumptions adopted in the absence of PIA usage information.¹⁷⁴
- A5.19 The cost allocations per medium-sized cable coil are scaled down by 50% for a small cable coil and up by 50% for a large cable coil. These are working assumptions adopted in the absence of PIA usage information.¹⁷⁵

¹⁶⁹ Openreach response dated 9 February 2017 to question 14 of the section 135 Notice dated 27 January 2017.

¹⁷⁰ Openreach response dated 21 March 2017 to question 41a of the section 135 Notice dated 6 March 2017.

¹⁷¹ Openreach's original PIA pricing model, sheet 'Duct & Box Allocations'.

¹⁷² Openreach's updated PIA pricing model, sheet 'JB & MANHOLE PRODUCT COST', cell J40.

¹⁷³ Openreach response dated 7 July 2017 to question 27d of the section 135 Notice dated 16 June 2017.

¹⁷⁴ Openreach response dated 7 July 2017 to questions 27a-c of the section 135 Notice dated 16 June 2017.

¹⁷⁵ Openreach response dated 7 July 2017 to question 28 of the section 135 Notice dated 16 June 2017.

- A5.20 The cost allocations per in-line splice are assumed to be equal to the cost allocations per medium-sized cable coil.

Poles

- A5.21 The regulatory cost base of poles is divided by the total number of poles as of June 2015, to give a regulatory cost per pole.
- A5.22 This regulatory cost per pole is split between cable attachments (90%), cables up poles (3%) and manifolds (7%). Openreach was unable to confirm the basis for these specific proportions.¹⁷⁶
- A5.23 Each of the regulatory cost bases of cable attachments, cables up poles and manifolds is then divided by the total number of poles as of June 2015.

Cable attachments

- A5.24 There are two different types of cable attachments depending on the number of end-users connected: single-premises attachments and multi-premises attachments. The allocation of costs is performed for each type of attachment.
- A5.25 Some types of poles are only used to carry single-premises attachments. These are the 'pure' distribution point (DP) poles and 'pure' feeder poles. Similarly, cable poles are only used to carry multi-premises attachments. There are also 'mixed' DP poles and 'mixed' feeder poles that carry both single- and multi-premises attachments.
- A5.26 The calculation of costs allocated per each type of cable attachment is developed in two steps. First, the regulatory costs are allocated per each type of cable attachment based on the average number of those attachments per pole calculated for 'pure' poles only (i.e. 'pure' DP poles and 'pure' feeder poles for single-premises attachments and cable poles for multi-premises attachments). Second, the costs allocated per attachment are adjusted to avoid over-recovery due to the additional attachments on 'mixed' poles. The detailed steps are described below.
- A5.27 The regulatory costs per pole allocated to cable attachments are divided by the expected average number of single-premises cable attachments per pole, which is based on the average number of single-premises cable attachments per pole on pure DP and pure feeder poles (i.e. excluding mixed poles) as of June 2015. No uplift is applied as single-premises PIA attachments are assumed to be fully substitutional to Openreach's existing attachments.¹⁷⁷
- A5.28 Separately, the same regulatory costs per pole allocated to cable attachments are divided by the expected average number of multi-premises cable attachments per pole, which is based on the average number of multi-premises cable attachments per pole on cable poles (i.e. excluding mixed poles) as of June 2015, increased by one attachment per pole, reflecting the expected additional PIA attachments. The

¹⁷⁶ Openreach response dated 30 June 2017 to question 30 of the section 135 Notice dated 16 June 2017. We note that these proportions resemble the proportions of the respective assumed numbers of current BT pole attachments used in Openreach's original PIA pricing model, which are 87%, 5% and 8%.

¹⁷⁷ Openreach's original PIA pricing model, sheet 'Pole Allocations'.

uplift by one attachment per pole is applied as multi-premises PIA attachments are not assumed to be fully substitutinal to Openreach's existing attachments.¹⁷⁸

A5.29 A preliminary total cost recovery is calculated as the sum of:

- A preliminary cost recovery for single-premises attachments based on the above cost allocation per single-premises attachment multiplied by the total number of those attachments on all poles, including mixed poles, as of June 2015; and
- A preliminary cost recovery for multi-premises attachments based on the above cost allocation per multi-premises attachment multiplied by the expected total number of those attachments on all poles, including mixed poles. This is based on the total number of multi-premises attachments on all poles, including mixed poles, as of June 2015, which is scaled up by the ratio of the expected increase in the average number of attachments per cable pole.

A5.30 The cost allocations per single- and multi-premises attachment calculated above are then scaled down by the ratio of the regulatory cost base of cable attachments to the preliminary total cost recovery.

Cables up poles

A5.31 The regulatory costs per pole allocated to cables up poles are divided by the average expected number of those attachments per pole. This is based on the estimated total number of cables up pole as of June 2015, scaled up by 80% and divided by the total number of all poles, reflecting the expected additional PIA cables up pole. The 80% uplift recognises that cable up a pole attachments may not be substitutinal to Openreach's existing attachments and that Openreach poles also carry transmission cables (hence a 100% uplift is not appropriate).¹⁷⁹ The estimated total number of cables up pole as of June 2015 is based on the total number of poles as of that date multiplied by the average number of cables up pole per pole as of 2011.¹⁸⁰

Manifolds

A5.32 The regulatory costs per pole allocated to manifolds are divided by the average expected number of those attachments per pole. This is based on the total number of manifolds as of June 2017, scaled up by the total number of DP poles as of June 2015, reflecting the expected additional PIA manifolds. The uplift by the total number of DP poles recognises that PIA manifold attachments may not be substitutinal to Openreach's existing attachments, assuming one additional manifold for each existing copper DP pole.¹⁸¹

¹⁷⁸ Openreach's original PIA pricing model, sheet 'Pole Allocations'.

¹⁷⁹ Openreach response dated 21 March 2017 to the section 135 Notice dated 6 March 2017, question 41c.

¹⁸⁰ In its response dated 7 July 2017 to question 18a of the section 135 Notice dated 16 June 2017, Openreach told us that an updated figure for cables up pole as of June 2015 is not available.

Openreach suggested estimating the updated number of cables up pole based on the updated total number of poles multiplied by the average number of cables up pole per pole as of 2011.

¹⁸¹ Openreach response dated 21 March 2017 to question 41d of the section 135 Notice dated 6 March 2017.

Annex 6

Draft legal instruments

Proposals for SMP services conditions

NOTIFICATION OF PROPOSALS UNDER SECTION 48A OF THE COMMUNICATIONS ACT 2003

Proposals for setting SMP services conditions in relation to BT under section 45 of the Communications Act 2003

Background

1. On 31 March 2017, Ofcom published a consultation entitled “*Wholesale Local Access Market Review 2017*”¹⁸² (the “**2017 WLA Consultation**”). The 2017 WLA Consultation set out Ofcom’s proposals to identify the market for the supply of copper loop-based, cable-based and fibre-based wholesale local access at a fixed location in the United Kingdom excluding the Hull Area for the purpose of making a determination that BT has significant market power in relation to that identified market. As a result of this proposed significant market power determination, Ofcom proposed to set SMP conditions on BT under section 45 of the Act.
2. The proposed market power determination and the proposed SMP conditions are set out in the notification under sections 48A and 80A of the Act, at Annex 23 of the 2017 WLA Consultation (the “**March 2017 Notification**”).
3. On 20 April 2017, Ofcom published a consultation entitled “*Wholesale Local Access Market Review: Consultation on Duct and Pole Access remedies*”¹⁸³ (the “**April 2017 DPA Consultation**”). The April 2017 DPA Consultation set out Ofcom’s proposals in relation to duct and pole access, including proposals to set SMP conditions on BT under section 45 of the Act which are set out in a notification under section 48A of the Act at Annex 8 (the “**April 2017 Notification**”). The April 2017 DPA Consultation stated that Ofcom’s proposals in relation to physical infrastructure access pricing and regulatory

¹⁸² <https://www.ofcom.org.uk/consultations-and-statements/category-1/wholesale-local-access-market-review>

¹⁸³ https://www.ofcom.org.uk/_data/assets/pdf_file/0008/101051/duct-pole-access-remedies-consultation.pdf

financial reporting would be set out in a separate notification under section 48A of the Act.

Proposals in relation to physical infrastructure access pricing

4. With reference to the proposed significant market power determination and the proposals in the March 2017 Notification, Ofcom is proposing to set, in relation to the market identified in paragraph 1 above, the SMP conditions as set out in the Schedule to this notification to be applied to BT to the extent specified in that Schedule, which SMP conditions shall, unless otherwise is stated in that Schedule, take effect from 1 April 2018 or such other date specified in any notification under sections 48(1) and 79(4) of the Act adopting the proposals set out in this Notification. The Schedule sets out the SMP conditions Ofcom is proposing to make in addition to the SMP conditions proposed in the March 2017 Notification and the April 2017 Notification. The additional SMP conditions comprise Ofcom's proposals relating to physical infrastructure access pricing in the market identified in paragraph 1 above.

Ofcom's duties and legal tests

5. The effect of, and Ofcom's reasons for making, the proposals in relation to SMP conditions referred to in this notification are set out in the consultation document accompanying this notification.
6. Ofcom considers that the proposed SMP conditions comply with the requirements of sections 45 to 47 and 87 and 88 of the Act, as appropriate and relevant to each such SMP condition.
7. In making all of the proposals referred to in this notification, Ofcom has considered and acted in accordance with its general duties set out in section 3 of the Act and the six Community requirements in section 4 of the Act. In accordance with section 4A of the Act, Ofcom has also taken due account of all applicable recommendations issued by the European Commission under Article 19(1) of the Framework Directive and the utmost account of any relevant opinion, recommendation, guidelines, advice or regulatory practice adopted by the Body of European Regulators for Electronic Communications (BEREC pursuant to Article 3(3) of Regulation (EC) No 1211/2009).

Making representations

8. Representations may be made to Ofcom about any of the proposals set out in this Notification and the accompanying consultation document by no later than 12 September 2017.
9. Copies of this notification and the accompanying consultation document will be sent to the Secretary of State in accordance with section 48C(1) of the Act.

Interpretation

10. For the purpose of interpreting this notification (which for the avoidance of doubt includes the Schedule):
 - a) except in so far as the context otherwise requires, words or expressions have the meaning assigned to them in paragraph 11 below, and otherwise any word or expression has the same meaning as it has in the Act;
 - b) headings and titles shall be disregarded;
 - c) expressions cognate with those referred to in this Notification shall be construed accordingly; and
 - d) the Interpretation Act 1978 shall apply as if this Notification were an Act of Parliament.
11. In this notification:
 - (a) **“2017 WLA Consultation”** means the consultation described in paragraph 1 above;
 - (b) **“April 2017 Notification”** means the notification described in paragraph 3 above;
 - (c) **“March 2017 Notification”** means the notification described in paragraph 2 above;
 - (d) **“Act”** means the Communications Act 2003 (2003 c. 21);
 - (e) **“BT”** means British Telecommunications plc, whose registered company number is 1800000, and any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 1159 of the Companies Act 2006;

- (f) **“Framework Directive”** means Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services, as amended;
- (g) **“Hull Area”** means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communication (Hull) plc, (now known as KCOM);
- (h) **“Ofcom”** means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002 (2002 c. 11);
- (i) **“United Kingdom”** has the meaning given to it in the Interpretation Act 1978 (1978 c. 30).

12. For the purpose of interpreting this notification, except in so far as the context otherwise requires, the terms or descriptions of products and/or services used in the Schedule shall be construed as having the same meaning as those provided by the Dominant Provider on its website for definitions and explanations of its products in addition to future product updates. For PIA product information, please refer to:

<https://www.openreach.co.uk/orpg/home/products/pricing/loadProductPrices.do?data=kK E%2F%2FCftg8LAZY%2B8EUaz9dpyYOJW58IELJ3a1hFsXScqDWVqEbA2PDIT5Y2Oh xKv>

13. The Schedule to this notification shall form part of this notification.

Signed



Yih-Choung Teh

Competition Policy Director, Ofcom

A person duly authorised in accordance with paragraph 18 of the Schedule to the Office of Communications Act 2002

1 August 2017

Schedule 1: SMP conditions (BT)

Condition 6 – Basis of charges

- 6.4** Except where condition 7D applies, unless OFCOM directs otherwise from time to time, the Dominant Provider must secure, and must be able to demonstrate to the satisfaction of OFCOM, that each and every charge offered or payable when averaged over each Relevant Year for Physical Infrastructure Access provided under conditions 1 and 2 is reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.
- (WLA – PIA)**

Condition 7D – Physical Infrastructure Charge Control

7D.1 In the First Relevant Year the Dominant Provider shall not charge more than:

- (a) for Facility in Spine duct per metre – single bore, the amount of [£0.29];
- (b) for Facility in Spine duct per metre – 2 bores, the amount of [£0.18];
- (c) for Facility in Spine duct per metre – 3+ bores, the amount of [£0.14];
- (d) for Facility in Lead-in duct per metre, the amount of [£0.45];
- (e) for Facility in Lead-in link duct per metre (lead-in rate), the amount of [£0.45];
- (f) for Facility in Lead-in link duct per metre (spine single bore rate), the amount of [£0.29];
- (g) for Facility in Lead-in link duct per metre (spine 2 bore rate), the amount of [£0.18];
- (h) for Facility in Lead-in link duct per metre (spine 3+ bore rate), the amount of [£0.14];
- (i) for Facility on pole for Multi-end-user attachment, the amount of [£13.40];
- (j) for Facility on pole for Single-end-user attachment, the amount of [£5.74];
- (k) for Pole top equipment (manifold), the amount of [£3.70];
- (l) for Cable up a pole (per cable), the amount of [£2.44];
- (m) for Facility hosting (per manhole entry), the amount of [£8.63];
- (n) for Facility hosting (per joint box entry), the amount of [£2.06];
- (o) for Customer Apparatus Cable Coil Hosting – small (per manhole), the amount of [£15.18];

- (p) for Customer Apparatus Cable Coil Hosting – medium (per manhole), the amount of [£30.36];
- (q) for Customer Apparatus Cable Coil Hosting – large (per manhole), the amount of [£45.55];
- (r) for Customer Apparatus Cable Coil Hosting – small (per joint box), the amount of [£9.49];
- (s) for Customer Apparatus Cable Coil Hosting – medium (per joint box), the amount of [£18.97];
- (t) for Customer Apparatus Cable Coil Hosting – large (per joint box), the amount of [£28.46];
- (u) for Customer Apparatus In-line Splice hosting and distribution joints (per manhole splice), the amount of [£30.36];
- (v) for Customer Apparatus In-line Splice hosting and distribution joints (per joint box splice), the amount of [£18.97].

7D.2 In each Relevant Year except the First Relevant Year, for each of the services specified in condition 7D.1(a) to (v) the Dominant Provider shall not charge more than the amount charged for that service in the Prior Year multiplied by $(1 + \text{CPI})$.

7D.3 In each Relevant Year the Dominant Provider shall not charge more than:

- (a) for Route Plan provision; per hour, the amount of £0.00;
- (b) for Network records administration charge; per hour, the amount of £0.00;
- (c) for Technical Validation (survey, approval, build); per hour, the amount of £0.00;
- (d) for Joint box breakthrough administration charge, the amount of £0.00;
- (e) for Overhead network data report for established Physical Infrastructure Access (PIA) CPs, the amount of £0.00.

7D.4 Where the Dominant Provider provides PIA Adjustment Services, the Dominant Provider must not charge for such PIA Adjustment Services, unless the total amount of charges for PIA Adjustment Services in the PIA Order exceeds the PIA Adjustment Limit, in which case the Dominant Provider may only charge the Third Party, as a maximum, the amount in excess of the PIA Adjustment Limit for providing such PIA Adjustment Services for that PIA Order.

7D.5 The charges for each separate PIA Adjustment Service for the purposes of condition 7D.4 shall be reasonably derived from the costs of provision based on a forward looking long run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed, except PIA Adjustment Services that are:

- a) PIA Pole Adjustment Services undertaken to provide capacity on a pole to facilitate the provision of a drop wire; and
- b) PIA Pole Adjustment Services undertaken to replace Defective Pole used for drop wires;

where the charges for such services shall be zero.

7D.6 The PIA Adjustment Limit for the purposes of condition 7D.4 shall be calculated by multiplying the total number of kilometres of duct requested as part of the PIA Order by [£4,000-£6,000].

7D.7 Where:

- (i) the Dominant Provider makes a material change (other than to a charge) to any service which is subject to this condition 7D; or
- (ii) there is a material change in the basis of the Consumer Prices Index;

condition 7D shall have effect subject to such reasonable adjustment to take account of the change as OFCOM may direct to be appropriate in the circumstances.

For the purposes of this condition 7D.7 a material change to any service which is subject to this condition 7D includes (but is not limited to) the introduction of a new service wholly or substantially in substitution for that existing service which

is subject to this condition 7D or a change to the billing practice for any service which is subject to this condition 7D.

7D.8 The Dominant Provider must record, maintain and supply to Ofcom in an electronic format, no later than three months after the end of each Relevant Year, the data necessary for Ofcom to monitor compliance of the Dominant Provider with this Condition 7D. The data must include:

- (i) the relevant published charges at the start of each Relevant Year; and
- (ii) such data as OFCOM may from time to time direct.

7D.9 OFCOM may direct that conditions 7D.1 to 7D.8 shall not apply to the extent specified in any such direction.

7D.10 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this condition 7D.

7D.11 In this condition 7D:

- (a) “**Consumer Prices Index**” means the index of prices compiled by an agency or a public body on behalf of Her Majesty’s Government or a governmental department (which is the Office for National Statistics at the time of publication of this notification) from time to time in respect of all items;
- (b) “**CPI**” means the amount of the change in the Consumer Prices Index in the period of 12 months ending on 30 September immediately preceding the start of the Relevant Year, expressed as a percentage (rounded to one decimal place) of that Consumer Prices Index as at the start of that first mentioned period;
- (c) “**Defective Pole**” means a pole that has been identified by the Dominant Provider as hazardous for an engineer to climb due to the pole being decayed, damaged or defective (including leaning);

- (d) **“First Relevant Year”** means a period beginning on 1 April 2018 and ending on 31 March 2019;
- (e) **“Physical Infrastructure”** includes any conduit, tunnel, subway, pipe, structure, pole or other thing in, on, by or from which an electronic communications network is or may be installed, supported, carried or suspended over Physical Infrastructure Access;
- (f) **“Physical Infrastructure Access”** means network access comprising predominantly of the provision of space, anchorage, attachment facilities and/or such other facilities as may be reasonably necessary to permit a Third Party to occupy parts of the Dominant Provider’s Physical Infrastructure located between Network Termination Points and Local Access Nodes serving those Network Termination Points, sufficient to facilitate the establishment, installation, operation and maintenance of the electronic communications network of a Third Party at that location;
- (g) **“PIA Adjustment Service”** means all of the products and/or services listed from time to time for the purposes of Part 1 of the Annex to this condition 7D where the provision of the product and/or service is necessary for the provision of Physical Infrastructure Access in accordance with conditions 1 and 2;
- (h) **“PIA Pole Adjustment Service”** means the **PIA Adjustment Services** listed from time to time for the purposes of Part 2 of the Annex to this condition 7D where the provision of the product and/or service is necessary for the provision of Physical Infrastructure Access in accordance with conditions 1 and 2;
- (i) **“PIA Adjustment Limit”** has the meaning given to it in condition 7D.6;
- (j) **“PIA Order”** means a request for Physical Infrastructure Access between Network Termination Points and the Local Access Node serving those termination points, submitted to the Dominant Provider by a Third Party;
- (k) **“Prior Year”** means, in relation to:

- (i) the First Relevant Year, the 12 months from 1 April 2017 to 31 March 2018 (inclusive);
 - (ii) the Second Relevant Year, the First Relevant Year;
 - (iii) the Third Relevant Year, the Second Relevant Year;
- (l) **“Relevant Year”** means each of the following three periods:
 - (i) the First Relevant Year;
 - (ii) the Second Relevant Year; and
 - (iii) the Third Relevant Year.
- (m) **“Second Relevant Year”** means a period beginning on 1 April 2019 and ending on 31 March 2020;
- (n) **“Third Party”** means a person providing a public electronic communications service or a person providing a public electronic communications network; and
- (o) **“Third Relevant Year”** means a period beginning on 1 April 2020 and ending on 31 March 2021.

Annex to Condition 7D

Part 1

Meaning of PIA Adjustment Services

For the purposes of condition 7D, the expression “**PIA Adjustment Services**” shall be construed as including the following products and/or services, subject to such changes as OFCOM may direct from time to time following any proposal by the Dominant Provider to introduce a new product and/or service or to substitute one or more of these products or services for another (in which case this list shall be construed accordingly):

Activity
New Small Footway Box
New Medium Footway Box
New Large Footway Box
New Small Carriageway Box
New Medium Carriageway Box
New Large Carriageway Box
New Duct - soft; per metre
New Duct - footway; per metre
New Duct - carriageway; per metre
New Pole
Replacement Carrier Pole (expedite)
Replacement Carrier Pole
Replacement DP Pole (expedite)
Replacement DP Pole
Renew and/or provide a Pole Stay
Provide pole top ring-head
Customer changeover, per pole visit
Customer changeover - hourly rate
Cable recovery (light) - per 100m
Cable recovery (heavy) - per 100m
Cable recovery (large) - per 100m
Blockage clearance (initial) - per blockage
Blockage clearance (subsequent) - per blockage
Aborted clearance of a blockage in a duct per aborted clearance
Aborted clearance of an additional blockage in a duct per aborted clearance
Joint box breakthrough
Pole recovery (removal) per pole
Removal of locked lids - visit
Removal of locked lids - per hour
Provision of an Earth Spike for pole
Renew, provide and/or re position Pole steps on Pole - per pole
Install a lightning protection module
Provision of a 'BT 66B' for lightning protection
Lay Copper Earthing Strip in an open trench
Lay Copper Earthing Strip in Soft or Unsurfaced
Lay Copper Earthing Strip in Footway
Lay Copper Earthing Strip in Carriageway
Retention, Refix and Renewal of aerial Cable
Retention, Refix and Renewal of drop wire
Work undertaken on the British Outer Islands
Ferry travel for Scottish Islands (as per ticket price)
Local Authority fees (as per fees)
Road closures (cable works) (as per fees)

Part 2

Meaning of PIA Pole Adjustment Services

For the purposes of condition 7D, the expression “**PIA Pole Adjustment Services**” shall be construed as including the following products and/or services subject to such changes as OFCOM may direct from time to time following any proposal by the Dominant Provider to introduce a new product and/or service or to substitute one or more of these products or services for another (in which case this list shall be construed accordingly):

Activity
New Pole
Replacement DP Pole (expedite)
Replacement DP Pole
Renew and/or provide a Pole Stay
Provide pole top ring-head
Pole recovery (removal) per pole
Customer changeover, per pole visit
Customer changeover - hourly rate
Provision of an Earth Spike for pole
Renew, provide and/or re position Pole steps on Pole - per pole
Retention, Refix and Renewal of drop wire

Proposals for directions relating to regulatory financial reporting requirements

Notification of proposals under sections 49 and 49A of the Communications Act 2003 and proposed SMP Services Condition 12.4 specifying the requirements in relation to consistency with regulatory decisions and the preparation of the Regulatory Financial Statements on a regulatory asset value adjusted current costs basis, and setting the requirements in relation to preparation, delivery, publication, form and content of the Regulatory Financial Statements

Background

1. On 20 May 2014, Ofcom published a policy statement entitled “Regulatory Financial Reporting – Final Statement” (“**2014 RFR Statement**”), which set out Ofcom’s conclusions on the requirements for regulatory financial reporting that Ofcom considered should be applied to BT in markets in which BT has SMP.
2. On 31 March 2017, Ofcom published a consultation entitled “Wholesale Local Access Market Review Consultation” (“**2017 WLA Consultation**”), on proposals identifying markets, making market power determinations and setting SMP conditions. In the 2017 WLA Consultation, Ofcom is proposing to identify the market for the supply of copper loop-based, cable-based and fibre-based wholesale local access at a fixed location in the United Kingdom excluding the Hull Area, determine that BT has significant market power in relation to such market and to impose, among other things, SMP conditions with respect to regulatory financial reporting on BT (proposed Condition 12).
3. Under proposed Condition 12 set out at Annex 23 to the 2017 WLA Consultation BT will be required to prepare, deliver to Ofcom and publish the Regulatory Financial Statements as directed by Ofcom from time to time.
4. Under proposed Condition 12.10 BT shall prepare all Regulatory Financial Statements, explanations or other information required by virtue of proposed Condition 12 on the regulatory asset value adjusted current costs basis.
5. Under proposed Condition 12.4 Ofcom may from time to time make such directions as they consider appropriate in relation to BT’s obligations under proposed Condition 12.

6. On 31 March 2017 Ofcom issued Notifications proposing directions under proposed condition 12 titled:
 - i. Notification of proposal under sections 49 and 49A of the Communications Act 2003 and proposed SMP Services Condition 12.4 setting the requirements in relation to preparation, delivery, publication, form and content of the Regulatory Financial Statements; and
 - ii. Notification of proposal under sections 49 and 49A of the Communications Act 2003 and proposed SMP Services Condition 12.4 specifying the requirements in relation to consistency with regulatory decisions and the preparation of the Regulatory Financial Statements on a regulatory asset value adjusted current costs basis.
7. On 1 August 2017 Ofcom published a consultation entitled “WLA Market Review, Consultation on pricing proposals for Duct and Pole Access Remedies (**“August 2017 DPA Consultation”**)” setting out proposals in relation to Physical Infrastructure Access pricing and regulatory financial reporting.
8. This Notification sets out proposals to amend the proposed directions set out in paragraph 6 above by specifying further requirements in relation to:
 - i. ensuring consistency with Ofcom’s regulatory decisions;
 - ii. the preparation of the Regulatory Financial Statements on a regulatory asset value adjusted current cost basis;
 - iii. preparation, delivery, publication, form and content of the Regulatory Financial Statements;

in respect of Physical Infrastructure Access in the market set out in paragraph 2.

Proposal to give directions

9. Ofcom is proposing, in accordance with section 49 of the Communications Act 2003 (the **“Act”**), to give directions pursuant to proposed Condition 12.4 specifying the requirements in relation to consistency with regulatory decisions and the preparation of the Regulatory Financial Statements on a regulatory asset value adjusted current costs basis, and setting the requirements in relation to preparation, delivery, publication, form

and content of the Regulatory Financial Statements in relation to the market set out in paragraph 2.

10. The proposed directions are set out at Annex 23 to the 2017 WLA Consultation, as amended in accordance with Schedule 1 and 2 to this Notification.
11. The effect of and reasons for giving the proposed directions are set out in the 2017 WLA Consultation, and where amended by Schedule 1 and 2 to this Notification, in the August 2017 DPA Consultation accompanying this Notification.

Ofcom's duties and legal tests

12. For the reasons set out in the 2017 WLA Consultation and the August 2017 DPA Consultation, Ofcom considers that the proposed directions referred to in paragraph 10 complies with the requirements of section 49(2) of the Act.
13. In making the proposals referred to in paragraph 10, Ofcom has considered and acted in accordance with its general duties set out in section 3 of the Act, the six community requirements set out in section 4 of the Act and the duty to take account of European Commission recommendations for harmonisation in section 4A of the Act.

Making Representations

14. Representations may be made to Ofcom about the proposals set out in the Notification by no later than 12 September 2017.
15. In accordance with section 49C(1)(a) of the Act, a copy of this Notification will be sent to the Secretary of State.

Interpretation

16. Except as otherwise defined, words or expressions used shall have the same meaning as they have been ascribed in the proposed SMP conditions set out at Annex 23 of the 2017 WLA Consultation and Annex 6 of the August 2017 DPA Consultation. Otherwise any word or expression shall have the same meaning as it has in the Act.

Signed

A handwritten signature in black ink that reads "Yih-Choung Teh". The signature is written in a cursive, flowing style.

Yih-Choung Teh

Competition Policy Director, Ofcom

**A person duly authorised in accordance with paragraph 18 of the Schedule to the
Office of Communications Act 2002**

1 August 2017

Schedule 1

The proposed Direction under section 49 of the Communications Act 2003 and proposed Condition 12.4 specifying the requirements in relation to regulatory asset value at annex 23 of the WLA Consultation is amended as follows:

1. In Part 2: Requirements to ensure the Regulatory Financial Statements are consistent with specified regulatory decisions made by Ofcom in the WLA Statement after paragraph 5 insert:

“6. BT shall separately identify and record charges for PIA Adjustment Services below the PIA Adjustments Limit from those above the PIA Adjustments Limit in BT’s Regulatory Financial Reporting System.

7. BT shall capitalise charges for PIA Adjustment Services below the PIA Adjustments Limit within the existing asset base and recover over all products in which BT has SMP in the WLA Market and which use BT’s Physical Infrastructure.

8. Where charges for PIA Adjustment Services provided to Third Parties exceed the PIA Adjustments Limit, BT shall recover these costs through ancillary charges directly from the Third Party requesting the PIA Adjustment Services.

9. Where charges for PIA Adjustment Services required for BT’s own downstream services exceed the PIA Adjustments Limit, BT shall recover these costs from unregulated products and services.”

Schedule 2

The proposed direction under section 49 of the Communications Act 2003 and Condition 12.4 setting the requirements in relation to preparation, delivery, publication, form and content of the Regulatory Financial Statements at annex 23 of the WLA Consultation is amended as follows:

1. After paragraph 17(b)(viii) insert:

“ix. Provision of Additional Financial Information in respect of PIA Services”;

2. After paragraph 21(a) insert:

- a. “PIA Services’ means services and facilities for the provision of Physical Infrastructure Access in accordance with SMP services conditions 1 and 2 of the legal instrument at [*annex x to the Wholesale Local Access Market Review Statement*];

3. In Annex A, under the heading “Notes to the Statement entitled “Market/Technical Area Summary””, after paragraph 1(xviii) insert:

“xix. PIA rentals

xx. PIA ancillary charges

xxi. PIA Adjustment Services above the PIA Adjustments Limit per kilometre”;

4. In Annex A, after “Notes to the statement entitled “Market/Technical Area Calculation of FAC based on component costs and usage factors” insert:

“Notes to the statement entitled ‘PIA new build and enabling works revenues and costs

BT shall disclose the financial information shown in the ‘PIA new build and enabling works revenues and costs’ as follows:

PIA Adjustment Services										
For the year ended 31 March 20XX										
Detailed service analysis										
Service	Internal Revenue	External Revenue	Total Revenue	Internal Volume	External Volume	Measure	Internal Average Price	External Average Price	Internal FAC	External FAC
	£m	£m	£m				£	£	£m	£m
Gross PIA Adjustment Services within WLA market	xx	xx	xx						xx	xx
Less PIA Adjustment Services above PIA Adjustments Limit - per km	(xx)	(xx)	(xx)						(xx)	(xx)
Net PIA Adjustment Services	xx	xx	xx						xx	xx
Net PIA Adjustment Services included in PIA products									xx	xx
Net PIA Adjustment Services included in Other WLA Products									xx	xx
									xx	xx

5. In Annex B, after 5(b)(ix) insert:

Additional Financial Information to be provided in respect of PIA Services		
5c(i)	Revenue and volume information for PIA services	Provide internal and external revenues and volumes for each specified group of PIA services and each service within the specified groups with revenue over £1m.
5c (ii)	Inputs for the PIA pricing model	<p>Provide updated inputs for the PIA pricing model:</p> <ol style="list-style-type: none"> 1. CCA costs for Class of Work Local Distribution Duct, based on RAV adjusted values 2. CCA operating costs directly attributed to the duct Activity Groups 3. CCA operating costs indirectly attributed to the duct Activity Groups 4. CCA costs for Class of Work Local Distribution Cable 5. CCA operating costs directly attributable to D-Side Copper Cable and D-Side Copper Cable Maintenance Plant Groups 6. CCA operating costs indirectly attributable to D-Side Copper Cable and D Side Copper Cable Maintenance Plant Groups 7. CCA operating costs related to “Capex – safety assurance”

Annex 7

Glossary

Access Network: The part of a telecoms provider's network that connects customers' premises to the telecoms provider's Local Access Node.

Additional Financial Information (AFIs): Detailed financial information provided in confidence to Ofcom as part of the Regulatory Financial Statements.

ADSL: Asymmetric Digital Subscriber Line, a technology used to provide an internet connection over a copper telephone line with faster speeds than using a traditional voiceband modem. The bandwidth and transmission rate are asymmetrical, and are greater in the direction of the customer premises than the reverse.

Ancillary Services: Services that are of an ancillary nature, but which enable and/or support BT's provision of Physical Infrastructure Access services.

Bandwidth: The amount of data that can be transmitted in a fixed amount of time. Usually expressed in bits per second (bps).

BEREC: Body of European Regulators for Electronic Communications.

CAT: Competition Appeal Tribunal.

Chamber: An underground structure at which ducts terminate. Used for cable pulling and cable jointing.

Charge Control: A control which sets the maximum price that a telecoms provider can charge for a particular product or service. Most charge controls are imposed for a defined period.

Common Costs: Costs which are shared by all the services supplied by a firm.

Consumer Price Index (CPI): The official measure of inflation of consumer prices in the United Kingdom.

Core Network: The backbone of a communications network, which carries different services such as voice or data around the country.

Cost Orientation: The principle that the price charged for the provision of a service should reflect the underlying costs incurred in providing that service.

DCMS: Department for Digital, Culture, Media & Sport.

Digital Communications Review (DCR): Also referred to as the Strategic Review of Digital Communications, the DCR is a document Ofcom published in February 2016 which set out a ten-year vision for communications services in the UK.

Distribution Point (DP): A flexibility point in BT's access network where final connections to customer premises are connected to D-side cables. Usually either an underground joint or a connection point on a telegraph pole where dropwires are terminated.

Downstream BT: BT's downstream operations, by which we mean BT Wholesale & Ventures, BT Consumer or any other downstream operation owned or operated by BT.

Dropwire: An overhead cable, connecting BT's access network to a customer's premises.

Duct and Pole Access (DPA): A wholesale access service allowing a telecoms provider to make use of the underground duct network and the telegraph poles of another telecoms provider.

EC: European Commission.

Ethernet: A packet-based technology originally developed for use in Local Area Networks (LANs) but now also widely used in telecoms providers' networks for the transmission of data services.

Ethernet Access Direct (EAD): A wholesale BT product providing point-to-point data connectivity between sites, available at a range of different speeds.

FAMR: Fixed Access Market Review.

Fibre To The Cabinet (FTTC): An access network structure in which the optical fibre extends from the exchange to a street cabinet. The street cabinet is usually located only a few hundred metres from the subscriber's premises. The remaining part of the access network from the cabinet to the customer is usually copper wire but could use another technology, such as wireless.

Fibre To The Premises (FTTP): An access network structure in which the optical fibre network runs from the local exchange to the end-user's house or business premises. The optical fibre may be point-to-point – there is one dedicated fibre connection for each home – or may use a shared infrastructure such as a GPON. Sometimes also referred to as fibre to the home (FTTH), or full-fibre.

Footway box: A underground chamber in the footway used as a point for access to duct or cables to the premises and BT's physical infrastructure.

Fully Allocated Cost (FAC): An accounting approach under which all the costs of the company are distributed between its various products and services. The fully allocated cost of a product or service may therefore include some common costs that are not directly attributable to the service.

G.fast: A broadband transmission standard that increases the speeds possible over short distances on copper lines, compared to ADSL and VDSL technologies.

Gigabit Passive Optical Network (GPON): A passive Optical Network standard defined by the International Telecommunications Union (standard G.984). GPON has a downstream bandwidth of 2.5Gbit/s and an upstream bandwidth of 1.2Gbit/s.

Hull Area: The area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under Section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc (KCOM).

Lead-in: The final connection between a telecoms provider's Access Network and a customer's premises.

Local Access Node: An operational building at which local access network connections are terminated; generally the operational building housing the optical distribution frame on which the fibre access network serving Network Termination Points is located.

Local Loop: The access network connection between the customer's premises and the local serving exchange, usually comprised of two copper wires twisted together.

Long Run Incremental Cost (LRIC): A measure of the change in total costs of the firm that arises from a discrete increment in output in the long run.

Network Termination Point: a demarcation point marking where a telecoms provider's network terminates at a customer's premises.

Next Generation Access (NGA) Networks: Wired access networks which consist wholly or in part of optical elements and which are capable of delivering broadband access services with enhanced characteristics (such as higher throughput) as compared to those provided over copper networks. In most cases, NGA networks are the result of an upgrade of an already existing copper or co-axial access network.

Original PIA Pricing Model: The original model used by Openreach to calculate the PIA rental charge in 2011. This is the basis of the current PIA rental charge.

Openreach: The access division of BT established by Undertakings in 2005.

Passive Optical Network (PON): A fibre access network that uses unpowered (passive) optical splitters to create a point-to-multipoint architecture such that individual fibres in spine segments of the network are shared by multiple end-users.

Physical Infrastructure Access (PIA): A regulatory obligation under which BT is required to allow telecoms providers to deploy NGA networks in the physical infrastructure of its access network.

Reference Offer: A document setting out matters relating to the charges, terms and conditions of a product or service.

Regulatory Financial Statements (RFS): The financial statements that BT is required to prepare by Ofcom. They include the published RFS and Additional Financial Information provided to Ofcom in confidence.

Return on Capital Employed (ROCE): The ratio of accounting profit to capital employed.

Significant Market Power (SMP): The significant market power test is set out in European Directives. It is used by National Regulatory Authorities (NRAs), such as Ofcom, to identify those telecoms providers which must meet additional obligations under the relevant Directives.

Superfast Broadband: A broadband connection that can support a maximum download speed of between 30Mbit/s and 300Mbit/s.

SG&A: Sales, general and administration costs.

Telecoms provider: A person who provides an electronic communications network or provides an electronic communications service.

The Act: The Communications Act 2003.

Updated PIA Pricing Model: As part of its regular review of PIA rental charges, Openreach updated its PIA pricing model and provided this model to Ofcom on 12 August 2016. Openreach later resubmitted this PIA pricing model to Ofcom in response to a section 135 Notice dated 27 January 2017.

Ultrafast Broadband: Ofcom currently defines ultrafast as broadband services which deliver download speeds greater than 300Mbit/s, which use technology capable of supporting speeds of 1Gbit/s and above. Furthermore, these services do not have the unpredictable 'up to' speed limitations of copper-based broadband services, offering greater reliability.

VDSL: Very-high-bit-rate Digital Subscriber Line, a technology which provides a faster internet connection over a copper telephone line than ADSL does.

Wholesale Local Access (WLA): The market that covers fixed telecommunications infrastructure, specifically the physical connection between customers' premises and a local exchange.