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# Promoting competition and investment in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26

Volume 1: Overview, summary and structure

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[Volume 1: Overview, summary and introduction](#) – Welsh translation



**STATEMENT:**

Publication date: 18 March 2021

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# 1. Overview

**This document sets out Ofcom’s decisions for our regulation of the fixed telecoms markets that underpin broadband, mobile and business connections, for the period from April 2021 to March 2026. These decisions are designed to promote competition and investment in gigabit-capable networks<sup>1</sup> – bringing faster, better broadband to people across the UK.**

The coronavirus (Covid-19) pandemic has underlined how important reliable broadband is to people and businesses, as millions have worked and learned from home in the last year. And with UK households using 40% more data every year through applications like streaming TV shows, video calls and online gaming, and, more recently, online schooling, investment in upgrading the UK’s telecoms infrastructure is vital.

Future-proof gigabit-capable broadband can deliver the networks people and businesses will rely on for years to come. Since we introduced our pro-investment regulation in 2018, several companies have been building new gigabit-capable networks. Gigabit-capable broadband is available to 7.9 million homes (27% of the UK) and more than 5 million homes (18% of the UK) can now access full-fibre broadband – with companies rolling out these networks at their fastest-ever rate over the last year. We expect commercial deployments, through a combination of Openreach and other competing networks, to deliver gigabit-capable network coverage of 80% of the UK by mid 2020s.

Our approach to supporting investment in gigabit-capable networks is focused on encouraging competition between different networks where viable, which will provide high quality services, choice and affordable broadband for consumers throughout the UK. We recognise that it will require significant investment from private companies to upgrade the UK’s networks, so they are fit for the future. Our decisions incentivise that investment – giving regulatory certainty and allowing companies to make a fair return whilst ensuring consumers continue to have access to affordable broadband as new networks are rolled out.

Our regulation complements public funding programmes. The UK Government is investing at least £1.2bn between now and 2024/25 to subsidise rollout in the hardest-to-reach areas across the UK as part of a £5 billion funding commitment. We expect this to extend coverage beyond the 80% of the UK that is expected to be achieved through commercial deployments. This is alongside other broadband investment programmes from devolved governments in the UK’s nations including in Wales the Superfast Cymru programme, in Scotland the Reaching 100% (R100) programme, and in Northern Ireland Project Sratum.<sup>2</sup>

Our decisions today follow a thorough consultation process and take account of the responses we have received.

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<sup>1</sup> Broadband services able to provide download speeds of 1 Gbit/s typically delivered over full-fibre networks and latest versions of hybrid fibre/coaxial cable networks.

<sup>2</sup> Ofcom, December 2020, [Connected Nations 2020](#) [accessed 8 March 2021].

## Our decisions

We have identified BT to have market power in the provision of physical telecoms infrastructure, and in the wholesale markets underpinning broadband and leased line services (except in Central London). We address that market power by regulating in a way that promotes competition and investment while protecting customers. Our decisions to support investment in faster, gigabit-capable networks include:

**Access to Openreach's telegraph poles and underground ducts.** Openreach will continue to be required to allow all network operators to lay their own fibre networks using Openreach's infrastructure through its Physical Infrastructure Access (PIA) product. This access facilitates competition by cutting the upfront cost of building these competing networks by around half, and several firms are already using Openreach's ducts and poles to connect thousands of homes and businesses without having to dig up streets multiple times. Orders continue to increase despite the challenges caused by Covid-19, and there are now over 100 customers and c.23,000km of duct and c.140,000 poles being used by providers to deploy their networks. We will continue to monitor the development of the PIA product to ensure that Openreach meets its commitments to make the product as accessible and efficient as possible for all operators who want to use it.

**Different approaches to regulating Openreach's residential broadband products in different parts of the UK.** We will vary how we regulate Openreach's broadband products, depending on the level of current or prospective competition in an area.

- **In competitive areas (referred to as Area 1 in our analysis)** where there is established competition, we will not regulate Openreach's broadband products. We have not identified any such areas at this stage but expect to do so in the future. Customers in these areas would benefit from the choice of multiple networks, so we could remove regulatory restrictions.
- **In areas with the potential for material competition (70% of UK, referred to as Area 2 in our analysis),** Openreach will continue to be required to provide wholesale access to its network. We are setting flat, inflation-adjusted, regulated prices for Openreach's entry-level superfast broadband service, which has a download speed of up to 40 Mbit/s. We are not regulating the prices of Openreach's higher-speed services – providing an incentive for investment by Openreach and competing networks. This provides stability and regulatory certainty to investors and allows all companies the potential to earn a fair return, while also helping make sure people can still get affordable broadband.
- **In the remaining areas (30% of UK, referred to as Area 3 in our analysis)** where Openreach is the only operator providing a large-scale network, we are setting a cost-based charge control which allows Openreach to recover the costs of both its existing copper network and its investment in a new full-fibre network. In light of BT's commitment to deploy full fibre to 3.2 million premises by March 2026, we have decided to align the level and scope of the charge control to be the same as in the areas with potential for material competition. We recognise that there are a number of small operators who are planning to invest in some of these areas, and this pricing approach also supports them.

**Allowing Openreach to charge more for full-fibre broadband:** To further help the investment case, Openreach will be able to charge more (£1.70 per month extra) for the 40 Mbit/s service if it is delivered over full fibre. This reflects the additional customer benefits, such as speed and reliability, that fibre offers over copper.

**Promoting network competition:** Openreach will continue to be prohibited from offering geographic discounts on its superfast broadband wholesale services and we have decided to extend this to full fibre. It is also required to give at least 90 days' notice of the introduction of certain commercial terms (such as volume discounts) that might prevent retail ISPs from using competing networks, so stifling investment. This allows Ofcom to assess those deals before they take effect.

**Clarity on our future regulation of fibre.** This document sets out our regulation until March 2026, but we recognise that the investments being made by all network operators in gigabit-capable networks have longer payback periods. While our future decisions will depend on the circumstances that exist when we carry out our next reviews, we are setting out a long-term path for approaching future decisions.

- We currently do not expect to introduce cost-based price controls until at least 2031. Moreover, we would expect the same wholesale access prices to apply throughout the UK, as we expect ongoing investment, commercial and state funded, in both Area 2 and Area 3 throughout the period to 2031.
- Beyond 2031, if competition and investment are still in the process of emerging, we would expect to continue to regulate in a way that supports the continued development of competition and investment.
- Finally, if there is a need to move to cost-based regulation in the future, we will honour the fair bet principle. In setting controls, we would expect to allow BT to keep the upside (i.e. returns in excess of its cost of capital it has earned up to that point), as well as ensuring it can earn its cost of capital going forwards. This means that BT would have the opportunity to earn a return above its cost of capital over the whole fibre investment cycle.

**Support for Openreach in retiring its old copper network.** As it lays a new full-fibre network to replace the ageing copper network, Openreach should not have to incur unnecessary costs in running two parallel networks. In addition, the faster consumers migrate from copper to full fibre, the stronger the business case for investment in the full-fibre network becomes. We are promoting investment by Openreach by supporting the migration to full-fibre services through our regulation. We will progressively transfer regulation (including price protections) from copper to full-fibre services in exchange areas where fibre is built.

**Regulating leased lines in a similar way to residential broadband.** We are regulating Openreach's leased lines – high-speed data connections used by large organisations, which form the backbone of the UK's mobile and broadband networks – in a similar way to residential broadband products, by varying our approach geographically to reflect the level of current or prospective competition. In Area 3 Openreach will be required to provide dark fibre links at cost to support mobile and other network growth.

**Maintaining quality of service safeguards.** To ensure that Openreach provides the quality of service customers need, we have broadly maintained the existing rules for how quickly it must carry out

repairs and installations. However, in light of the impact of Covid-19, we have set the requirements in the first year (i.e. 2021/22) at slightly lower levels (2019/20 levels for broadband services) than the rest of the review period.

The overview section in this document is a simplified high-level summary only. The decisions we have taken and our reasoning are set out in the full document.

## 2. Detailed summary of our decisions

- 2.1 This section describes the regulatory framework, sets out the strategic context for our decisions and our legal duties, and provides a detailed summary of our decisions on market definition, SMP findings and remedies.
- 2.2 In this review we have reviewed the following markets:
- Wholesale Fixed Analogue Exchange Lines (WFAEL) market on which we made a statement in November 2017<sup>3</sup>
  - Integrated Services Digital Network (ISDN) markets on which we made a statement in November 2017<sup>4</sup>
  - Wholesale local access market (WLA) on which we made a statement in April 2018<sup>5</sup>
  - Wholesale broadband access (WBA) market on which we made a statement in July 2018<sup>6</sup>
  - Business connectivity markets on which we made a statement in June 2019<sup>7</sup>
  - Physical infrastructure market on which we made a statement in June 2019<sup>8</sup>
- 2.3 The new regulation set out in this statement will take effect from April 2021, immediately after the existing charge controls expire in March 2021.

### Regulatory framework

#### Market review process

- 2.4 Annex 1 provides an overview of the market review process. As required by the regulatory framework, we have reviewed the markets listed above in three analytical stages:
- we have identified and defined the relevant markets;
  - we have assessed whether the markets are effectively competitive, which involves assessing whether any operator has SMP in any of the relevant markets; and
  - where we find SMP, we apply appropriate remedies, based on the nature of the competition problems identified in the relevant markets.

#### Forward look

- 2.5 Market reviews look ahead to how competitive conditions may change in the future. For the purposes of this review, for each market we have conducted a forward-looking assessment of the market, taking into account expected or foreseeable developments that may affect competition in the market for the period up to March 2026.

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<sup>3</sup> Ofcom, November 2017. [Narrowband Market Review: Statement](#) [accessed 4 March 2021].

<sup>4</sup> Ofcom, November 2017. [Narrowband Market Review: Statement](#) [accessed 4 March 2021].

<sup>5</sup> Ofcom, March 2018. [Wholesale Local Access Market Review: Statement](#) [accessed 4 March 2021].

<sup>6</sup> Ofcom, July 2018. [Wholesale Broadband Access Market Review: Statement](#) [accessed 4 March 2021].

<sup>7</sup> Ofcom, June 2019. [Business Connectivity Market Review: Statement](#) [accessed 4 March 2021].

<sup>8</sup> Ofcom, June 2019. [Physical Infrastructure Market Review: Statement](#) [accessed 4 March 2021].

- 2.6 The prospective nature of our assessment over this period means that we have gathered a range of evidence to assess actual market conditions as well as to produce forecasts that we consider will appropriately reflect developments over time. This is particularly the case in our assessment of market definition and market power, and in our detailed modelling work underpinning the charge controls, PIA and QoS remedies. Where appropriate, we have exercised our regulatory judgement to reach decisions on the evidence before us with a view, ultimately, to addressing the competition concerns we identify in order to further the interests of citizens and consumers in these markets.

## Strategic context and legal framework

- 2.7 Our Strategic Review of Digital Communications (DCR) in 2016 set out how we intended to exercise our functions to regulate communications markets in accordance with our duties.<sup>9</sup> It set out our intention to regulate to encourage large-scale deployment of new full-fibre networks both to homes and businesses, drive widespread availability of competing ultrafast broadband services and support the roll out of 5G networks.
- 2.8 We think the best way to achieve this and deliver these outcomes for consumers is through sustained support for competition in gigabit-capable networks in as many areas of the UK as possible. Therefore, in this review we want to promote investment in such networks by BT and other companies in order to promote network-based competition. We want to encourage BT's competitors to build their own networks, rather than relying on network access from Openreach. In areas of the UK where there is unlikely to be material and sustainable competition to BT in the commercial deployment of competing networks, we want to promote investment by BT and ensure appropriate access to competitors in the interests of consumers.

## Our duties under the Act<sup>10</sup>

- 2.9 We consider that adopting this strategic approach and its implementation through the decisions set out in this statement meets our duties in section 3 of the Communications Act 2003 (the Act). This includes our principal duty to further the interests of citizens in relation to communication matters, and to further the interests of consumers in relevant markets, where appropriate by promoting competition. In particular, we further the interests of citizens and consumers by setting our regulation to create appropriate conditions to incentivise both Openreach and other operators to invest in gigabit-capable networks, through network competition where viable, and appropriate investment incentives where not.
- 2.10 The resulting network competition should bring benefits to consumers in the long term from innovation (including innovation to increase efficiency and reduce costs), choice, stronger incentives to price keenly to attract customers, and higher quality of service. It also may allow deregulation in certain areas. However, we also recognise the need to

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<sup>9</sup> Ofcom, February 2016. [Strategic Review of Digital Communications](#) [accessed 4 March 2021].

<sup>10</sup> Annex 1 describes our statutory duties and the matters we should have regard to in the performance of our functions.

maintain retail competition and to protect consumers' interests, including in relation to pricing and quality of service, in the period while network competition develops and in areas of the UK where network competition is unlikely to be viable.

- 2.11 We consider that our decisions are also consistent with the requirement on us to secure, in carrying out our functions, the availability throughout the UK of a wide range of communications services. As noted above, we consider that incentivising network investment, through both network competition and the right investment incentives, is the best way to meet the growing demand for high speed and data intensive communications services and will provide a platform for innovative new services to develop. The deployment of gigabit-capable networks will also support the delivery of other communications services, such as the roll out of 5G mobile and fixed wireless access networks. As noted above, our objective is to incentivise widespread investment in gigabit-capable networks to deliver these benefits across all parts of the UK.
- 2.12 In reaching our decisions, we have had regard, in particular, to the desirability of promoting competition in relevant markets, the desirability of encouraging investment and innovation in relevant markets, the desirability of encouraging the availability and use of high speed data transfer services throughout the United Kingdom and to the interests of consumers in respect of choice, price, quality of service and value for money.
- 2.13 We have also had regard to the principles under which our regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases where action is needed.
- 2.14 We consider that our decisions are also consistent with our duties set out in section 4 of the Act, in particular, and for the reasons set out above:
- the first requirement to promote competition;
  - the second requirement to promote the interests of all members of the public in the United Kingdom;
  - the third requirement to take account of the desirability of Ofcom's carrying out of its functions in a manner which, so far as practicable, does not favour one form of or means of providing electronic communications networks, services or associated facilities over another (i.e. to be technologically neutral);
  - the fourth requirement to encourage the provision of network access for the purposes of securing efficiency and sustainable competition, efficient investment and innovation and the maximum benefit for persons who are customers of communications providers and of persons who make associated facilities available; and
  - the sixth requirement to promote connectivity and access to very high capacity networks by members of the public and businesses in the United Kingdom.

## **Benefits of gigabit capable networks**

- 2.15 Increased investment in gigabit capable networks has the potential to deliver significant benefits to customers of communications services (including both consumers and businesses) and citizens in general because the technology is faster, more reliable, and

more future proof. It is widely recognised, for example by the UK Government and European Commission<sup>11</sup>, that deployment of such networks is a priority.

- 2.16 Unlike copper networks which were developed for traditional voice telephony, gigabit-capable networks are built for broadband and leased lines. They offer many advantages, including:
- much higher and more symmetrical speeds, which depending on the nature of deployment could reach 1 Gbit/s or more;
  - speeds that do not deteriorate over distance, as they do over a network that uses copper;
  - performance (particularly speed) which is more stable, especially at peak times, as it does not suffer from electromagnetic interference between lines;
  - lower fault rates than copper networks, primarily because they are less affected by water ingress and corrosion; and
  - other aspects of network performance.<sup>12</sup> This is partly due to the additional electronics in a copper network, which can contribute to lower network performance compared to gigabit-capable access networks.
- 2.17 Overall, we expect gigabit-capable networks to deliver better connectivity which will in turn allow all sectors of the economy to realise higher productivity, give a significant boost to innovation, and provide the best services to consumers.
- 2.18 The benefits of gigabit-capable networks are particularly large when demand for speeds and reliability grows rapidly. Data used by broadband customers has increased in recent years, most recently during the Covid-19 pandemic, and those subscribing to faster speeds used on average more data than those subscribing to lower speed packages.<sup>13</sup>
- 2.19 While consumers and businesses are starting to recognise the speed and reliability benefits that full fibre can offer, demand for higher broadband speeds is currently limited. However, new networks will take a long time to build. If investment in full fibre is delayed (for example because regulation failed to incentivise it), consumer demand will soon outpace the capabilities of the current copper network and it will take considerable time for telecoms providers to catch up. During that time, consumers would be unable to obtain the services they need. So, telecoms providers need to build their networks in advance of demand, and our regulation needs to promote investment in them.

## Benefits from greater network competition

- 2.20 Our strategy is to promote investment in gigabit-capable networks through network competition in areas where this is sustainable. We consider that network competition

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<sup>11</sup> See for example, the Government's [Future of Telecoms Infrastructure Review](#), and the European Commission's policy on [Connectivity for a European Gigabit Society](#).

<sup>12</sup> For example, full-fibre networks may be better in terms of latency, jitter and packet loss. Latency is the measure of the time taken for a packet to travel from one end of the end network to the other. Jitter is the measure of the variation in latency between packets. Packet loss is the measure of how many packets are lost crossing the network.

<sup>13</sup> See Volume 2, Section 2 paragraphs 2.28-2.30.

brings potentially significant benefits to consumers, compared to competition based on regulated access to BT's network and wholesale services.

- 2.21 Network competition is a more effective spur for innovation and investment in high quality networks than access-based competition. This is because network providers have much greater scope for product differentiation and can strive to win customers and generate higher margins by offering a better service than their competitors. For example, network providers can differentiate on important attributes such as speed and reliability. The threat this poses to legacy networks of losing customers to new and existing network competitors is a powerful driver of continued investment in high quality networks, delivering long-term benefits to consumers. By exposing more of the value chain to competition, network competition also provides strong incentives for firms to innovate, to become more efficient and reduce costs.<sup>14</sup>
- 2.22 Network competition allows market forces to play a much stronger role in shaping decisions about what networks to build, what technologies to use, and how to deliver them more cost effectively. It also promotes more aggressive competition to attract and retain customers by offering them the services they want.
- 2.23 We recognise that promoting network competition may entail the replication of network investments. However, it will deliver significant benefits to consumers in the longer term from innovation (including innovation to increase efficiency and reduce costs), choice, stronger incentives to price keenly to attract customers, and higher quality of service.

## Implementation of our strategy

- 2.24 Over the last five years, we have pursued our DCR strategy to deliver a regulatory framework designed to promote competition and investment:
- in March 2018, in our Wholesale Local Access Market Review, we implemented a new pricing approach for access services which included encouragement of rival investment in access networks;
  - in June 2019, in our Physical Infrastructure Market Review, we required BT to provide unrestricted access to its duct and pole infrastructure; and
  - in June 2019, in our Business Connectivity Market Review, we maintained pricing stability for active leased line services by holding prices flat until 2021. We also introduced dark fibre for connections between the least competitive BT exchanges.
- 2.25 There are already signs that our strategy and the steps we have taken so far are significantly contributing to a more positive environment for investment. Gigabit-capable broadband is available to 7.9 million homes (27% of UK homes). Full-fibre broadband is now available to 5.1m homes (18% of total UK homes). This is 2.1m more premises (an

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<sup>14</sup> Without network competition, even vigorous competition between service providers will not prevent customers being disadvantaged by inefficient or otherwise sub-optimal choices concerning the underlying network.

additional 8% of UK homes) than a year ago, and represents the highest year on year increase seen so far.<sup>15</sup>

- 2.26 Our regulation of ducts and poles has also resulted in significant interest and activity from existing and prospective competitors to Openreach, with over 100 customers and c.23,000km of duct and c.140,000 poles being used by providers to deploy their networks.<sup>16</sup>
- 2.27 We have seen announcements for large scale deployment plans of gigabit-capable networks, including:
- BT has updated its full-fibre target to reach 20m premises by the mid- to late-2020s;<sup>17</sup>
  - CityFibre has increased its rollout ambition from 5 million to up to 8 million premises in more than 100 towns and cities;<sup>18</sup>
  - Virgin Media plans to have its whole network – covering 15 million premises – capable of gigabit speeds by the end of 2021.<sup>19</sup>
  - Hyperoptic is pursuing a target of rolling out its full fibre network to 2 million premises (both residential and business) by the end of 2021 and 5 million by 2024.<sup>20</sup>
- 2.28 We continue to implement our strategy in this review. We expect the combination of competitor build plans and Openreach’s commercial plans to result in gigabit-capable network coverage of 80% of the UK by mid 2020s through commercial investment.

## Strategic Statement Position

- 2.29 Our strategic approach is consistent with the government’s ambition to provide gigabit-capable networks and making them widely available across the UK. Specifically, our approach is supportive of the government’s target of at least 85% of premises having access to a gigabit service by 2025.<sup>21</sup>
- 2.30 As required by section 2B (2) of the Communications Act 2003, we have had regard to the UK Government’s Statement of Strategic Priorities (SSP) for telecoms, management of radio spectrum and postal services. In particular, we have had regard to the following priority areas covered by the SSP: world-class digital infrastructure, furthering the interests of telecoms consumers and ensuring secure and resilient telecoms infrastructure. We set out in Section 1 of Volume 3 further details of how we have done this.

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<sup>15</sup> Ofcom, December 2020, [Connected Nations 2020](#), p2 [accessed 4 March 2021].

<sup>16</sup> Position at December 2020. Information provided by Openreach.

<sup>17</sup> BT, 7 May 2020, [Results for the full year to 31 March 2020](#) [accessed 4 March 2021].

<sup>18</sup> CityFibre, 27 March 2020, [CityFibre completes its acquisition of FibreNation increasing its rollout plans to pass up to 8 million premises](#), [accessed 4 March 2021].

<sup>19</sup> Virgin, 10 November 2020, [Three things you need to know about Virgin Media’s gigabit broadband](#) [accessed 4 March 2021].

<sup>20</sup> Ofcom, December 2020, Connected Nations Report 2020, p 16 [accessed 4 March 2021].

<sup>21</sup> HM Treasury, November 2020, [CP 329 – National Infrastructure Strategy – Fairer, faster, greener](#) [accessed 4 March 2021].

## Market definition and SMP findings

### Market definitions relevant for physical telecoms infrastructure, broadband and leased lines services

- 2.31 We have defined a single national (excluding Hull) upstream product market for the supply of telecoms physical infrastructure.
- 2.32 We have defined three product markets downstream of the physical infrastructure market:
- a product market for the supply of wholesale local access (WLA) at a fixed location;
  - a product market for the supply of leased line access (LL Access); and
  - a product market for the supply of inter-exchange connectivity (IEC).
- 2.33 For the wholesale local access and leased line access markets, we have identified geographic markets in which the conditions of competition are different.
- 2.34 For wholesale local access we have identified two geographic markets:
- WLA Area 2 – postcode sectors in which there is, or there is likely to be potential for, material and sustainable competition to BT in the commercial deployment of competing networks; and
  - WLA Area 3 – postcode sectors in which there is not, and there is unlikely to be potential for, material and sustainable competition to BT in the commercial deployment of competing networks.
- 2.35 For leased lines access we have identified four geographic markets:
- the Central London Area;
  - High Network Reach (HNR) Area – other postcode sectors where there are two or more rival networks to BT in the provision of leased lines; and
  - For the remaining postcode sectors in the rest of the UK:
    - LL Access Area 2 – postcode sectors in which there is, or there is likely to be potential for, material and sustainable competition to BT in the commercial deployment of competing networks;
    - LL Access Area 3 – postcode sectors in which there is not, and there is unlikely to be potential for, material and sustainable competition to BT in the commercial deployment of competing networks.
- 2.36 The premises covered by the Area 2 and Area 3 geographic markets are the same for WLA and LL Access, except for those postcode sectors that are included in the Central London Area or High Network Reach Area.

2.37 In relation to IEC, we identify each new BT+2 exchange,<sup>22</sup> and each BT+1 and BT Only exchange as a distinct geographic market.<sup>23</sup>

## SMP findings

2.38 We find BT has SMP in the physical infrastructure market.

2.39 For wholesale local access we find:

- WLA Area 2 – BT has SMP; and
- WLA Area 3 – BT has SMP.

2.40 For leased lines access we find:

- Central London Area – no SMP finding;
- High Network Reach Area – BT has SMP;
- LL Access Area 2 – BT has SMP; and
- LL Access Area 3 – BT has SMP.

2.41 For IEC we find:

- BT+2 – no SMP finding;
- BT+1 – BT has SMP; and
- BT Only exchanges – BT has SMP.

## Other markets

2.42 We have also reviewed the markets for WFAEL, ISDN and WBA. Given the changes to the markets since we last reviewed them and also prospective changes in how voice services are going to be offered in the future, we must deregulate them on the grounds that the three criteria test set out in section 79((2B) of the Act is not met.

## Remedies

2.43 In the light of our SMP findings we are imposing a number of remedies in each of the relevant markets.

2.44 In each of these relevant markets we have imposed a general network access obligation supplemented by transparency, non-discrimination and financial reporting requirements, plus price controls and quality of service requirements where appropriate. We also require a number of specific network access remedies, which require Openreach to provide particular forms of network access in each product market. Our remedies for each of the markets we have identified are set out in the following tables.

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<sup>22</sup> We do not revisit our assessment of exchanges categorised as BT+2 in previous reviews, unless their categorisation has changed on the basis of our most recent data.

<sup>23</sup> BT Only, BT+1 and BT+2 refer to the number of rival Principal Core Operators (PCOs) present at a particular exchange. A PCO is a telecoms provider with its own network infrastructure, which has a substantial footprint, and offers a wholesale inter-exchange connectivity service to other telecoms providers.

## Physical infrastructure market

2.45 The table below sets out our remedies for addressing BT's SMP in the physical infrastructure market.

**Table 2.1: Summary of our remedies for physical infrastructure market**

PIA Specific Access Remedy	Network access <sup>24</sup>	Trans- parency <sup>25</sup>	Charge control	Quality of Service	EOI / Non-discrimination	No geographic discounts
Physical infrastructure access	✓	✓	Cost based	✗ Voluntary KPIs	Non discrimination	✗

## Wholesale local access and leased line access

2.46 In the wholesale local access and leased line access markets, we have identified geographic markets in which the conditions of competition are different. While we have identified separate markets for wholesale local access and leased line access, we consider that it is appropriate at times to consider our approach to remedies across product markets. This is because we have observed an increasing trend towards investment in networks that service both markets and for competition in one market to provide new opportunities for competition in the other.

2.47 Accordingly, our approach to remedies in the WLA and LL Access markets reflects differing competitive conditions as follows:

- Area 2: This refers to the WLA Area 2 and the LL Access Area 2, where in both cases our market analysis has indicated that there is, or there is likely to be potential for, material and sustainable competition to BT in the commercial deployment of competing networks. In this area our objective is to promote competition and investment in gigabit-capable networks by Openreach and other operators. These networks typically offer both broadband and leased lines services. The resulting network competition will provide increasing protection for consumers in the long term, and in many areas effective competition may emerge such that the need for regulation falls away. This will take time and therefore we seek to protect consumers and existing models of downstream competition in the short term.
- Area 3: This refers to the WLA Area 3 and the LL Access Area 3 where in both cases there is not, or is unlikely to be, potential for material and sustainable competition to BT in the commercial deployment of competing networks. In this area our objective is to promote investment by Openreach in a gigabit-capable network. We also seek to

<sup>24</sup> Network access includes a requirement for Openreach to have a Statement of Requirements (SoR) process under which access seekers can request new forms of access.

<sup>25</sup> Transparency includes requirements to publish a reference offer, provide notifications for changes to existing terms and conditions and for new forms of network access, and notify technical information. There is also a requirement for financial reporting.

promote downstream competition based on access to Openreach's networks, including dark fibre, and protect consumers.

- Leased lines access in High Network Reach Area. In this area, where there is a high number of competing networks to Openreach, our objective is to promote that network competition while continuing to protect retail competition and customers through access to Openreach's network as a safeguard.

2.48 Tables 2.2 to 2.5 summarise our remedies in the WLA and LL Access markets.

**Table 2.2: Summary of our remedies in the WLA Area 2 and LL Access Area 2 Markets**

WLA Specific Access Remedies - Area 2	Network access <sup>26</sup>	Trans- parency <sup>27</sup>	Charge Control	Quality of Service <sup>28</sup>	EOI / Non- discrimination	No geographic discounts
<b>MPF</b> <sup>29</sup> (anchor)	✓ Removal of Network Access requirement for new copper services	✓	Flat prices in real terms	Repair, provision, and appointment standards. KPIs.	EOI	✓
<b>FTTC 40/10</b> (anchor)	✓	✓	Flat prices in real terms	Repair, provision, and appointment standards. KPIs.	EOI	✓
<b>FTTC</b> (all other bandwidths)	✓	✓	✗	Repair, provision, and appointment standards. KPIs.	EOI	✓
<b>FTTP or G.fast</b> (all bandwidths)	✓	✓	✗ 40/10 where no copper service is available	✗ KPIs only	EOI	✓

<sup>26</sup> Network access includes a requirement for Openreach to have a Statement of Requirements (SoR) process under which access seekers can request new forms of access.

<sup>27</sup> Transparency includes requirements to publish a reference offer, provide notifications for changes to existing terms and conditions and for new forms of network access, and notify technical information. There is also a requirement for financial reporting.

<sup>28</sup> We have decided to apply different WLA QoS standards for Year 1 and Years 2-5 of the review period to account for the ongoing impacts of Covid-19 on Openreach's ability to meet WLA QoS standards. We set this out in more detail in Volume 5.

<sup>29</sup> There is also a SLU network access requirement. See Section 4 of Volume 3 for further detail on SLU.

Leased lines Specific Access Remedies – Area 2	Network access <sup>24</sup>	Transparency <sup>25</sup>	Charge Control	Quality of Service <sup>30</sup>	Eol / Non-discrimination	No geographic discounts
<b>CI Leased lines</b> <sup>31</sup> (all bandwidths)	✓	✓	Flat prices in real terms	Repair, provision, and iCDD certainty standards. KPIs.	EOI	✓
<b>Dark fibre</b>	✗	✗	✗	✗	✗	✗

<sup>30</sup> We do not consider it appropriate to apply different CI Leased lines QoS standards for Year 1 and Years 2-5 as we have done for WLA. Our CI Leased lines QoS standards therefore apply for Years 1 -5. We set this out in more detail in Volume 5.

<sup>31</sup> Contemporary Interface (CI) refers to Openreach’s Ethernet and WDM products.

Table 2.3: Summary of our remedies in the WLA Area 3 and LL Access Area 3 Markets

WLA Specific Access Remedy - Area 3	Network access <sup>32</sup>	Transparency <sup>33</sup>	Charge Control	Quality of Service <sup>34</sup>	EOI / Non-discrimination	No geographic discounts
<b>MPF</b> <sup>35</sup> (anchor)	✓ Removal of Network Access requirement for new copper services	✓	Flat prices in real terms	Repair, provision, and appointment standards. KPIs	EOI	✓
<b>FTTC 40/10</b> (anchor)	✓	✓	Flat prices in real terms	Repair, provision, and appointment standards. KPIs	EOI	✓
<b>FTTC</b> (all other bandwidths)	✓	✓	✗	Repair, provision, and appointment standards. KPIs	EOI	✓
<b>FTTP or G.fast</b> (all bandwidths)	✓	✓	✗ 40/10 where no copper service is available	✗ KPIs only	EOI	✓
Leased lines Specific Access Remedy – Area 3	Network access <sup>24</sup>	Transparency <sup>25</sup>	Charge Control	Quality of Service	EOI / Non-discrimination	No geographic discounts
<b>CI Leased lines</b> (all bandwidths)	✓	✓	Flat prices in real terms	Repair, provision, and iCDD certainty standards. KPIs	EOI	✗
<b>Dark fibre</b>	✓	✓	Cost-based	As per CI leased lines	EOI, external sales only	✗

<sup>32</sup> Network access includes a requirement for Openreach to have a Statement of Requirements (SoR) process under which access seekers can request new forms of access.

<sup>33</sup> Transparency includes requirements to publish a reference offer, provide notifications for changes to existing terms and conditions and for new forms of network access, and notify technical information. There is also a requirement for financial reporting.

**Table 2.4: Summary of our remedies in the LL Access High Network Reach (HNR) Area**

Leased lines Specific Access Remedy - HNR	Network access <sup>36</sup>	Trans- parency <sup>37</sup>	Charge Control	Quality of Service	EOI / Non- discrimination	No geographic discounts
CI Leased lines (all bandwidths)	✓	✓	✗ Fair and reasonable prices	✗ KPIs only	EOI	✗
Dark fibre	✗	✗	✗	✗	✗	✗

**Further remedies relating to the WLA Area 2 and Area 3 Markets: Copper retirement**

- 2.49 We want our regulation to support a smooth transition from BT’s legacy copper network to its new full-fibre network while protecting consumers and ensuring that, where possible, there are not households left behind without an ultrafast service.
- 2.50 We have decided to move regulation from copper to full fibre on an exchange area by exchange area basis using a staged approach. The regulation in place will change as ultrafast coverage increases in the area as set out in Table 2.5 below.

**Table 2.5: Summary of our copper retirement requirements in the WLA Area 2 and Area 3 markets**

	Conditions to be met	Deregulation	Example of first 117 exchanges <sup>38</sup>
<b>First Threshold</b>	75% of exchange has ultrafast coverage <sup>39</sup>  12-month notification required prior to implementation <sup>40</sup>	“stop sell” of new provides of WLA services where FTTP is available.  No change to WLA copper services regulation where FTTP is not available.  Parallel running of charge controls on FTTC 40/10 and FTTP 40/10	Stop sell could apply from June 2021

<sup>34</sup> We have decided to apply different WLA QoS standards for Year 1 and Years 2-5 of the review period to account for the ongoing impacts of Covid-19 on Openreach’s ability to meet WLA QoS standards. We set this out in more detail in Volume 5.

<sup>35</sup> There is also a SLU network access requirement. See Section 4 of Volume 3 for further detail on SLU.

<sup>36</sup> Network access includes a requirement for Openreach to have a Statement of Requirements (SoR) process under which access seekers can request new forms of access.

<sup>37</sup> Transparency includes requirements to publish a reference offer, provide notifications for changes to existing terms and conditions and for new forms of network access, and notify technical information. There is also a requirement for financial reporting.

<sup>38</sup> This refers to the first tranche of exchanges (minus the trial exchange at Salisbury) notified of stop sell by Openreach in June 2020. Openreach, 2020. [GEN042/20 Notification of product stop sells in an additional 117 FTTP upgrade exchanges](#) and ISPreview, 2020. [Openreach to Stop Selling Copper Phone in 118 Areas – Go FTTP](#).

<sup>39</sup> By ‘ultrafast’ we mean broadband services capable of delivering a minimum of 300Mbit/s services, be this by full fibre or G.fast.

<sup>40</sup> The complete list of required notifications is available in Section 2, Volume 3.

<b>Second Threshold</b>	Exchange ultrafast complete + minimum of two years after stop-sell  12-month notification required prior to implementation	In addition to stop sell, charge control on FTTC 40/10 removed at premises where FTTP is available.  No change to WLA copper services where FTTP is not available.	Copper charge control could be removed from June 2023.
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### Further remedies relating to the WLA Area 2 and Area 3 Markets: fibre premium

2.51 We have decided the charge control for full fibre 40/10 services should be above the copper 40/10 charge and we have set an uplift of £1.70 per month (see Annex 19), to reflect the additional value that full fibre offers both to consumers and to providers through costs savings they can realise. This control will apply nationwide wherever full fibre is the only service available at a premises, and in exchanges where Openreach has deployed ultrafast services to 75% or more of premises (in parallel with the copper 40/10 charge control); and will be the sole charge control in an exchange area where copper controls have been removed.

### Inter-exchange connectivity (IEC)

2.52 Tables 2.6 and 2.7 set out our remedies for the IEC markets.

**Table 2.6: Summary of remedies for IEC at BT Only exchanges**

IEC Specific Access Remedy	Network access <sup>41</sup>	Trans- parency <sup>42</sup>	Charge control	Quality of Service	EOI / Non-discrimination	No geographic discounts
<b>BT Only</b>						
<b>CI Leased lines</b> (all bandwidths)	✓	✓	Flat prices in real terms	Repair, provision, and iCDD certainty standards. KPIs	EOI	✗
<b>Dark fibre*</b>	✓	✓	Cost based	As per CI Leased Lines	EOI External sales only	✗

*\*The requirement to provide dark fibre inter-exchange applies at BT Only exchanges where the nearest rival Principal Core Operator network<sup>43</sup> is more than 100m away.*

<sup>41</sup> Network access includes a requirement for Openreach to have a Statement of Requirements (SoR) process under which access seekers can request new forms of access.

<sup>42</sup> Transparency includes requirements to publish a reference offer, provide notifications for changes to existing terms and conditions and for new forms of network access, and notify technical information. There is also a requirement for financial reporting.

<sup>43</sup> Principal Core Operator is telecoms provider with its own network infrastructure, has a substantial footprint, and offers a wholesale inter-exchange connectivity service to other telecoms providers.

Table 2.7: Summary of remedies for IEC at BT+1 or more exchanges

IEC – BT + 1 Specific Access Remedy	Network access <sup>44</sup>	Trans- parency <sup>45</sup>	Charge control	Quality of Service	EOI / Non- discrimination	No geographic discounts
CI Leased lines (all bandwidths)	✓	✓	Flat prices in real terms	Repair, provision, and iCDD certainty standards. KPIs	EOI	✗
Dark fibre	✗	✗	✗	✗	✗	✗

<sup>44</sup> Network access includes a requirement for Openreach to have a Statement of Requirements (SoR) process under which access seekers can request new forms of access.

<sup>45</sup> Transparency includes requirements to publish a reference offer, provide notifications for changes to existing terms and conditions and for new forms of network access, and notify technical information. A separate upcoming consultation will set out proposed requirements for cost accounting and accounting separation.

## 3. Structure of this statement

3.1 In this section we set out the structure for the rest of the document, the consultations we have conducted to inform our market review, and our approach to impact assessments.

### Structure of the statement

3.2 Our decisions are set out in seven volumes and 26 Annexes, which together set out our analysis of fixed telecoms access markets in the UK and the remedies we are imposing on BT:

- **Volume 1** provides an overview and summary of our decisions;
- **Volume 2** sets out our market analysis for physical infrastructure, wholesale local access, leased lines access and inter-exchange connectivity services. It also includes our decisions on the deregulation of the WFAEL, ISDN and WBA markets;
- **Volume 3** sets out our approach to remedies and our decisions on non-pricing remedies for all the markets;
- **Volume 4** sets out details of our pricing remedies including for the charge controls for PIA, metallic path facility (MPF), and the virtual unbundled local access (VULA) 40/10 Mbit/s service, wholesale leased lines and dark fibre together with a range of ancillary services supporting use of these access services;
- **Volume 5** sets out details of our quality of service remedies;
- **Volume 6** sets out details of our financial reporting requirements; and
- **Volume 7** sets out the details of the SMP conditions.
- **Annexes** containing details which are referred to in each of the volumes. These Annexes support the analysis in Volumes 1 to 6 and are an integral part of our reasoning. A full list of annexes is available below:
  - A1. Regulatory framework
  - A2. Overview of telecoms networks
  - A3. Network build and the use of PIA
  - A4. Methodology for geographic assessment of Virgin Media and CityFibre network coverage and WLA market shares
  - A5. Leased lines geographic analysis
  - A6. Inter-exchange connectivity
  - A7. Potential adverse effects of the physical infrastructure access remedy
  - A8. Guidance on PIA network adjustments and no undue discrimination compliance
  - A9. Benefits and risks of dark fibre
  - A10. Quality of service key performance indicators
  - A11. Processes for granting consent for geographic discounts and considering whether to intervene in relation to other commercial terms
  - A12. Stakeholders comments on the approach to price regulation in Area 2
  - A13. Stakeholders comments on the approach to price regulation in Area 3
  - A14. Cost modelling for active legacy services

- A15. Fibre network cost modelling
- A16. Our modelling and assessment of the BT Commitment
- A17. Dark fibre cost modelling
- A18. The calculation of PIA maximum charges
- A19. Estimating the 40/10 fibre premium
- A20. Cost of capital for BT Group
- A21. Cost of capital for relevant services
- A22. Brattle report: Cost of capital – Beta and gearing for WFTMR 2021
- A23. Equality impact assessment
- A24. Sources of evidence
- A25. Glossary
- A26. Cartesian report – Full fibre cost modelling, model report

## Consultations

3.3 We have consulted extensively in reaching the decisions set out in this statement. The below table summarises the previous consultations we have published.

**Table 3.1: Summary of previous consultations**

Date	Consultation
24 July 2018	Regulatory certainty to support investment in full-fibre broadband. Ofcom’s approach to future regulation <sup>46</sup> (July 2018 Statement)
11 December 2018	Promoting investment and competition in fibre networks: Approach to geographic markets <sup>47</sup> (December 2018 Consultation)
29 March 2019	Promoting investment and competition in fibre networks: Initial proposal – Approach to remedies <sup>48</sup> (March 2019 Consultation)
21 June 2019	Consultation: Promoting competition and investment in fibre networks – Initial consultation on the approach to modelling the costs of a fibre network <sup>49</sup> (June 2019 Consultation)
8 January 2020	Promoting competition and investment in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26 <sup>50</sup> (January 2020 Consultation)

<sup>46</sup> Ofcom, July 2018. Regulatory certainty to support investment in full-fibre broadband Ofcom’s approach to future regulation [accessed 8 March 2021].

<sup>47</sup> Ofcom, March 2019. [Consultation: Promoting investment and competition in fibre networks](#) [accessed 17 December 2019].

<sup>48</sup> Ofcom, March 2019. [Consultation: Promoting competition and investment in fibre networks – Initial proposals – Approach to remedies](#) [accessed 17 December 2019].

<sup>49</sup> Ofcom, June 2019. [Consultation: Promoting competition and investment in fibre networks – Initial consultation on the approach to modelling the costs of a fibre network](#) [accessed 17 December 2019].

<sup>50</sup> Ofcom, January 2020, Consultation: Promoting investment and competition in fibre networks – Wholesale Fixed Telecoms Market Review 2021-26 [accessed 2 March 2021].

Date	Consultation
6 February 2020	Promoting competition and investment in fibre networks: BT Regulatory Financial Reporting. Reporting requirements covering wholesale fixed telecoms markets 2021-26 <sup>51</sup> (February 2020 Consultation)
25 June 2020	Copper retirement – process for determining when copper regulation can be removed – Supplementary consultation to the Wholesale Fixed Telecoms Market Review <sup>52</sup> (June 2020 Consultation)
29 July 2020	Promoting competition and investment in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26. Pricing wholesale local access services in Geographic Area 3 with a BT Commitment to deploy a fibre network <sup>53</sup> (July 2020 Consultation)
15 October 2020	Copper retirement – conditions under which copper regulation could be completely withdrawn in ultrafast exchanges <sup>54</sup> (October 2020 Copper Retirement Consultation)
23 October 2020	Openreach quality of service – changes to proposals made as part of the Wholesale Fixed Telecoms Market Review <sup>55</sup> (October 2020 QoS Consultation)
6 November 2020	Wholesale Fixed Telecoms Market Review 2021-26: further consultation on certain proposed remedies <sup>56</sup> (November 2020 Consultation)

3.4 In reaching our decisions as set out in this statement, we have considered all the responses to these earlier consultations. Our consideration is set out in the discussion of the issues in Volumes 2-6 and relevant annexes.

## Impact assessment and equality impact assessment

### Impact assessment

3.5 The January 2020 Consultation and subsequent consultations set out in Table 3.1 above taken together constitute our impact assessment for the purposes of section 7 of the Act.

<sup>51</sup> Ofcom, February 2020 Consultation: Promoting competition and investment in fibre networks – BT Regulatory Financial Reporting [accessed 2 March 2021].

<sup>52</sup> Ofcom, June 2020. Consultation: Copper retirement – process for determining when copper regulation can be removed [accessed 3 March 2021].

<sup>53</sup> Ofcom, July 2020. Promoting competition and investment in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26. Pricing wholesale local access services in Geographic Area 3 with a BT Commitment to deploy a fibre network [accessed 3 March 2021].

<sup>54</sup> Ofcom, October 2020. Copper retirement – conditions under which copper regulation could be completely withdrawn in ultrafast exchanges [accessed 3 March 2021].

<sup>55</sup> Ofcom, October 2020. Openreach quality of service – changes to proposals made as part of the Wholesale Fixed Telecoms Market Review [accessed 3 March 2021].

<sup>56</sup> Ofcom, November 2020. Wholesale Fixed Telecoms Market Review 2021-26: further consultation on certain proposed remedies [accessed 3 March 2021].

- 3.6 Impact assessments provide a valuable way of assessing the options for regulation and showing why the chosen option was preferred. They form part of best practice policymaking. This is reflected in section 7 of the Act, which means that, generally, we have to carry out impact assessments in cases where our conclusions would be likely to have a significant effect on businesses or the general public, or where there is a major change in Ofcom's activities. However, as a matter of policy, Ofcom is committed to carrying out impact assessments in relation to the great majority of our policy decisions.

### **Equality impact assessment (EIA)**

- 3.7 Annex 23 sets out our EIA for this market review. We are required by statute to assess the potential impact of all our functions, policies, projects, and practices on equality. We have a general duty under the Equality Act 2010 to have due regard to the need to eliminate discrimination, harassment, victimisation and other prohibited conduct related to the following protected characteristics: age; disability; gender reassignment; marriage and civil partnership; pregnancy and maternity; race; religion or belief; sex and sexual orientation. This legislation also requires Ofcom to have due regard to the need to advance equality of opportunity and foster good relations between persons who share specified protected characteristics and persons who do not.
- 3.8 The Northern Ireland Act 1998 also imposes a duty on Ofcom, when carrying out its functions relating to Northern Ireland, to have due regard to the need to promote equality of opportunity and regard to the desirability of promoting good relations across a range of categories outlined in that Act.
- 3.9 To help us comply with our equality duties, our EIA assesses the impact of our proposals on persons sharing protected characteristics and in particular whether they may discriminate against such persons or impact on equality of opportunity or good relations. EIAs also assist us in making sure that we are meeting our principal duty of furthering the interests of citizens and consumers regardless of their background or identity.
- 3.10 We do not consider that our decisions have equality implications under the Equality Act 2010 or the Northern Ireland Act 1998.