
Hull Area Wholesale Fixed Telecoms Market Review 2021-26

Volume 2: Market analysis

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1. Introduction

- 1.1 In this volume we set out our reasoning and decisions on identifying product and geographic markets and our significant market power (SMP) determinations for the following markets in the Hull Area:
 - a) wholesale local access (WLA);
 - b) leased lines access (LL Access);
 - c) wholesale broadband access (WBA); and
 - d) fixed voice services (WFAEL, ISDN2/30 and WCO).
- 1.2 We consulted on our proposals for the regulation of wholesale fixed telecoms markets in the Hull Area in July 2020 (the ‘2020 Hull Area WFTMR Consultation’).¹ Taking responses to our consultation into account, our final decisions regarding market definition and SMP are the same as those we set out in our provisional assessment.
- 1.3 We set out our market definition and SMP determinations on WLA and LL Access in Sections 3 and 4 of this volume respectively. In summary, we define a single market for the supply of WLA at a fixed location in the Hull Area and a single market for the supply of LL Access in the Hull Area. We determine that KCOM has SMP in both markets.
- 1.4 We set out the remedies we have decided to impose in the WLA and LL Access markets in Volume 3.
- 1.5 We also set out in Sections 5 and 6 our decision to remove all SMP regulation from KCOM in the legacy markets for wholesale fixed analogue exchange lines (WFAEL), wholesale ISDN2 and ISDN30, wholesale call origination (WCO) and wholesale broadband access (WBA). We consider that the three criteria test set out in section 79(2B) of the Communications Act 2003 (the Act) is not met and it follows that we must, therefore, deregulate them. For the WFAEL, ISDN2, ISDN30 and WCO markets we are partially maintaining the existing regulation for a transitional period of 12-months. See Section 5 of Volume 3.

¹ Ofcom, 2020. [Consultation: Promoting competition in fibre networks – Hull Area Wholesale Fixed Telecoms Market Review 2021-26 - Ofcom](#).

2. Market context

- 2.1 In this section we set out background information on network operators in the Hull Area, alongside information on the retail and wholesale markets for the provision of broadband, leased lines and fixed voice services.
- 2.2 KCOM has a ubiquitous network in the Hull Area and faces minimal competition from alternative networks.
- 2.3 KCOM has regulatory obligations to provide access to its network to other telecoms providers and it therefore offers various wholesale access products.² While these are actively used to provide competing leased line services, to date take-up of wholesale broadband products has been very small. Accordingly, KCOM has been able to retain over 90% of retail supply of broadband services. Providers with a fairly large market share in the rest of the UK, such as BT, Sky, TalkTalk, Virgin Media and Vodafone do not provide broadband services in the Hull Area.
- 2.4 Similarly, KCOM supplies the vast majority of retail fixed voice services in the Hull Area. There is very limited use of fixed voice access products by retail competitors to provide voice services over analogue lines or ISDN lines.

Network operators in the Hull Area

- 2.5 KCOM is the incumbent telecoms provider in the Hull Area and operates both an existing copper network, and a newly completed fibre to the premises (FTTP) network.³
- 2.6 Two other telecoms providers have invested in fibre networks in the Hull Area, serving a small number of business customers:
 - a) CityFibre passes less than 1% of all premises⁴, and is within 50m of 10-20% [X] of large business and mobile sites.⁵ It currently has no expansion plans within the Hull Area.⁶ It has approximately 150-250 [X] leased lines customer connections, the majority of which are dark fibre.⁷ CityFibre's network in the Hull Area was built as part of a long-term deal to supply dark fibre to mobile base stations operated by Mobile Broadband Network Limited (MBNL).⁸

² KCOM, 2021. [Products and Services](#) [accessed 12 October 2021].

³ KCOM Group Limited was acquired by Macquarie Infrastructure and Real Assets (MEIF 6 Fibre Limited) in August 2019. Macquarie, 2019. [Macquarie Infrastructure and Real Assets finalises acquisition of KCOM Group](#) [accessed 12 October 2021].

⁴ We calculated network coverage for CityFibre using information on the number of premises it passes in the Hull Area gathered for [Connected Nations update: Summer 2019](#) and information on the total number of premises in the Hull Area from [Connected Nations update: Spring 2021](#).

⁵ Ofcom analysis of Market Location's 2018 Business Connectivity Report, CityFibre's response to the 1st BCMR s.135 notice, February 2018 and stakeholder responses to the 5th BCMR s.135 notice, February 2018.

⁶ CityFibre response dated 24 February 2020 to the s.135 notice dated 31 January 2020, explanatory note.

⁷ CityFibre response dated 24 February 2020 to the s.135 notice dated 31 January 2020, question 3.

⁸ MBNL is a network co-owned by EE and Three which is used to deliver mobile services. See CityFibre, 2014. [CityFibre signs deals with EE and Three to enhance mobile networks](#) [accessed 12 October 2021].

- b) MS3 passes 2% of all premises⁹, and is within 50m of 8% of large business and mobile sites.¹⁰ It has plans to cover a further 21,000 premises in the Hull Area during the current review period, extending its network to reach around 13% of premises. It currently serves around 50-150 [§<] customers with broadband or leased line services.¹¹
- 2.7 Alongside these fibre networks, there are four fixed wireless access (FWA) network operators in the Hull Area providing broadband services¹²: Connexin, Purebroadband¹³, Quickline¹⁴ and Wisper. These providers offer speeds between 10Mbit/s and 60Mbit/s, focusing primarily on providing broadband to residential consumers.¹⁵ Mobile network operators (MNOs) also provide fixed broadband services for homes and businesses using 4G and, more recently, 5G.¹⁶
- 2.8 Connexin, one of the existing FWA providers in the Hull Area, has recently announced that it plans invest £80m to build a full-fibre network.¹⁷

Retail broadband

Providers in the Hull Area

- 2.9 There is very little competition for retail broadband in the Hull Area.
- 2.10 KCOM supplies the vast majority (over 90%) [§<] of the fixed line retail broadband connections in the Hull Area. The remaining fixed line retail broadband services are offered by local telecoms providers – such as Excel Telecom, River and The One Point – which resell KCOM’s retail services under a white label arrangement, predominantly to business customers. Although these providers may innovate in relation to, for example, billing and customer service, the underlying broadband service is technically the same as KCOM’s retail product. These resellers offer broadband products at slightly lower prices than KCOM, but take-up is very low.¹⁸

⁹ Ofcom analysis of MS3 response dated 20 February 2020 to the s.135 notice dated 31 January 2020, question 1a and [Connected Nations update: Spring 2021](#).

¹⁰ Ofcom analysis of Market Location’s 2018 Business Connectivity Report, MS3 response to the 1st BCMR s.135 notice, February 2018 and stakeholder responses to the 5th BCMR s.135 notice, February 2018.

¹¹ MS3 response dated 20 February 2020 to the s.135 notice dated 31 January 2020, question 3.

¹² We describe FWA technology in more detail in Annex 2.

¹³ Purebroadband also offers fixed broadband retail services through reselling KCOM products.

¹⁴ Quickline told us that [§<]. Quickline response dated 26 February 2020 to the s.135 notice dated 5 February 2020, question 1.

¹⁵ Connexin response dated 19 February 2020 to the s.135 notice dated 29 January 2020, question 1; Wisper response dated 24 February 2020 to the s.135 notice dated 11 February 2020, question 1; Purebroadband response dated 14 February 2020 to the s.135 notice dated 29 January 2020, question 1; and Quickline response dated 26 February 2020 to the s.135 notice dated 5 February 2020, question 1.

¹⁶ We describe 4G/5G FWA in more detail in Annex 2.

¹⁷ Connexin, 2021. [We’re ending the broadband monopoly](#) [accessed 12 October 2021].

¹⁸ Daisy response dated 20 March 2020 to the s.135 notice dated 28 February 2020, question 2; Excel response dated 24 January 2020 to the s.135 notice dated 24 January 2020, question 1; Purebroadband response dated 14 February 2020 to the s.135 notice dated 29 January 2020, question 1; and The One Point response dated 18 February 2020 to the s.135 notice dated 29 January 2020, question 1.

2.11 The share of supply by FWA services, supplied by local telecoms providers, also remains low.¹⁹ Overall, KCOM accounts for the vast majority (over 90%) [X] of retail broadband supply in the Hull Area including FWA.²⁰

Figure 2.1 Retail broadband shares of supply in the Hull Area

Provider	Retail share (incl. FWA)	Retail share (excl. FWA)
KCOM	>90% [X]	>90% [X]
FWA	<10% [X]	n/a
Resellers	<10% [X]	<10% [X]
Alternative networks (MS3 and CityFibre)	<10% [X]	<10% [X]

Fixed broadband product characteristics

2.12 KCOM offers a range of broadband services over its FTTP network. In general, these products have comparable characteristics to products offered in the rest of the UK, as outlined in Figure 2.2 below.

Figure 2.2 Fixed retail broadband product characteristics in the Hull Area compared to the rest of the UK

	KCOM	BT	Virgin Media	Sky	TalkTalk	Plusnet	EE
Headline speeds (Mbit/s)	30, 100, 300, 500, 900	36, 50, 74, 150, 300, 900	54, 108, 213, 362, 516, 630	59, 145, 500	38, 67, 145, 900	10, 36, 66	10, 36, 67, 145, 300, 900
Contract length (months)	18	24	18	18	18	12/18	24
Usage limit	50Gb, Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited

¹⁹ Around [X] customers take these FWA services in the Hull Area. Connexin response dated 19 February 2020 to the s.135 notice dated 29 January 2020, question 1; Wisper response dated 24 February 2020 to the s.135 notice dated 11 February 2020, question 1; Purebroadband response dated 14 February 2020 to the s.135 notice dated 29 January 2020, question 1; and Quickline response dated 26 February 2020 to the s.135 notice dated 5 February 2020, question 1.

²⁰ This is reflected in all providers' responses during our evidence gathering. We note that our data on FWA take-up in the Hull Area excludes fixed broadband supplied by MNOs over 4G/5G. However, our finding that there is low take-up of fixed wireless over 4G/5G in the rest of the UK (excluding the Hull Area) suggests that take up of 4G/5G broadband is likely to be low in the Hull Area.

Primary technology ²¹	Copper; FTTP	Copper; FTTC	Cable	Copper; FTTC	Copper; FTTC	Copper; FTTC	Copper; FTTC
Inclusive calls	Available as add-on						
TV	No	Available as add-on	Available as add-on	Available as add-on	Available as add-on	No	No

Source: Provider websites [accessed 2 August 2021]. Products available for new supply only.

2.13 There are two key differences between the retail broadband services consumers are purchasing in the Hull Area compared to the rest of the UK:

- a) **Data caps:** To date many KCOM customers purchase data-capped products, whereas almost all consumers in the rest of the UK take products with unlimited data usage.²² Currently, some [<]% of KCOM customers take a data-capped product, with [<]% of customers taking a data cap of 150GB or less per month.²³ Given that data usage in the UK has increased significantly in recent years, the data constraints faced by customers in the Hull Area are significant.²⁴ However, we note that [<].²⁵
- b) **FTTP connections:** 85-95% ([<]) of KCOM's fixed broadband consumers in the Hull Area take an FTTP broadband product²⁶, whereas in the rest of the UK most fixed broadband services are currently delivered over FTTC, copper or cable.²⁷ All of KCOM's FTTP customers receive download speeds of at least 30Mbit/s.

Fixed broadband retail pricing

- 2.14 At the time of the 2020 Hull Area WFTMR Consultation we noted that consumers in the Hull Area paid higher prices for broadband services than consumers in the rest of the UK, with the difference greatest for lower speed entry products.
- 2.15 In our consultation we noted that KCOM was intending to implement a new portfolio of retail prices, which we anticipated would bring prices more into line with the rest of the

²¹ We note that network operators in the rest of the UK have plans to deploy FTTP over the review period. This includes Openreach, which sells wholesale access services to various retail broadband providers, and Virgin Media, which is a vertically integrated supplier.

²² We note that KCOM temporarily removed data caps for all online activities during the COVID-19 pandemic. See KCOM, 2021. [Price lists and notices](#) [accessed 12 October 2021]. Also see Ofcom, 2020. [How broadband and mobile firms are serving customers during the coronavirus pandemic](#) [accessed 12 October 2021].

²³ KCOM response dated 14 October 2021 to the s.135 notice dated 7 October 2021, question 2a. For comparison, around 3% of broadband consumers in the rest of the UK take data-capped products. See Ofcom, 2019. [Helping consumers get better deals](#), Annex 4 – Analysis of provider data, paragraph A4.11.

²⁴ Average usage in 2020 was 429GB per month, increasing from 315GB in 2019 and 240GB in 2018. See Ofcom, 2020.

[Connected Nations: Main report](#), page 26. We note that the figures for 2020 were recorded during the Covid-19 pandemic.

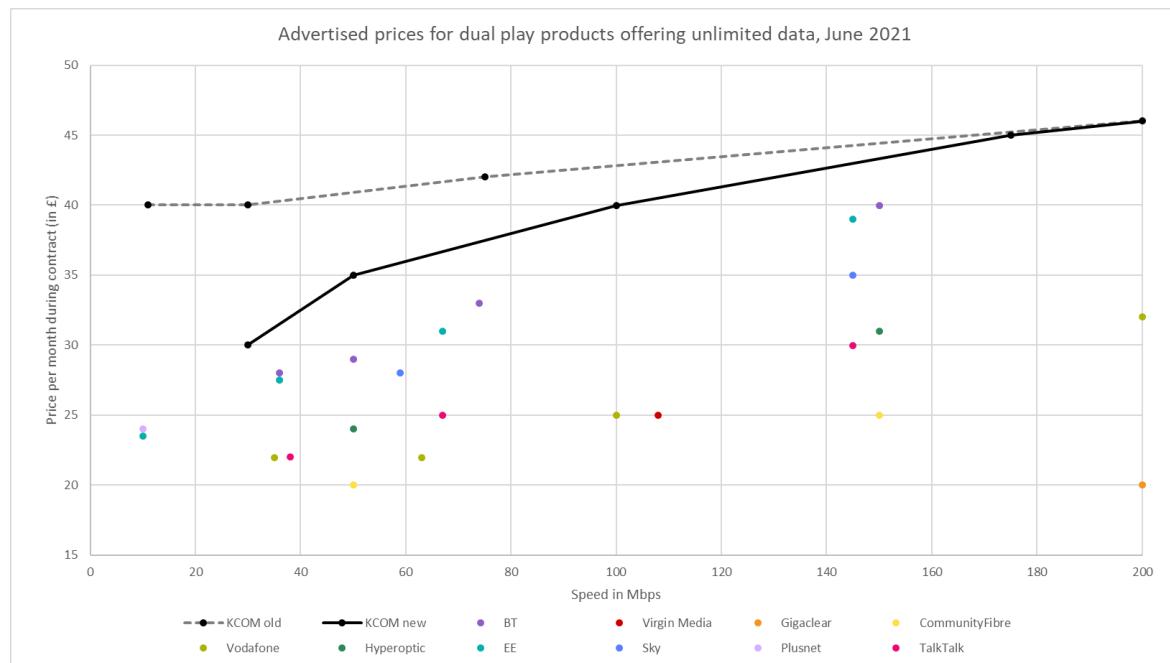
²⁵ KCOM response dated 14 October 2021 to the s.135 notice dated 7 October 2021, question 2a.

²⁶ KCOM response dated 14 October 2021 to the s.135 notice dated 7 October 2021, question 2a.

²⁷ Gigabit capable networks such as FTTP offer many advantages in comparison to copper, for example higher speeds and reliability (2021 WFTMR Statement, Volume 1, paragraphs 2.15-2.19). Coverage of gigabit capable networks including FTTP is growing rapidly (see [Connected Nations Update: Summer 2021 \(ofcom.org.uk\)](#)).

UK.²⁸ KCOM has recently implemented these new retail prices, [REDACTED].²⁹ As shown in Figure 2.3 below, KCOM's new list prices for its unlimited dual play (landline and broadband) products are closer to those prevailing in the rest of the UK, though will remain the highest.³⁰

Figure 2.3 Advertised prices for dual play (landline and broadband) products offering unlimited data, June 2021³¹



Source: Provider websites accessed June 2021. All prices shown are for products with unlimited data; prices for national providers are new-contract prices.

2.16 KCOM's cheapest unlimited broadband product costs £30 per month.³² In the rest of the UK, consumers benefit from a range of providers offering broadband products (including some superfast broadband products) with unlimited data usage at or around £20-£30 per month for new-contract customers.³³

²⁸ 2020 Hull Area WFTMR Consultation, Volume 2, paragraph 1.17.

²⁹ KCOM response dated 14 October 2021 to the s.135 notice dated 7 October 2021, question 2b.

³⁰ As detailed above, fixed broadband customers in the Hull Area are more likely to purchase products subject to a data cap, whereas in the rest of the UK almost all customers purchase products with unlimited data. As we expect data consumption to increase during the review period, we have compared the price of taking an unlimited data product in the Hull Area with the rest of the UK.

³¹ While not plotted in this graph, we have also found that KCOM's retail prices for its 400Mbit/s product (£54.99/month), 500Mbit/s product (£59.99/month), 750Mbit/s product (£64.99/month) and 900Mbit/s product (£69.99/month) are the highest, or nearly highest, in the UK for those speeds.

³² This price does not take account of any time-limited offers.

³³ We note that the actual prices paid by customers may differ from advertised prices for a number of reasons. Existing customers may have contracts for prices offered in the past. Prices for out-of-contract and re-contracting customers may differ from in-contract prices (see Ofcom, 2020. [Helping consumers get better deals](#) for more information).

FWA operators

- 2.17 Broadly, there are two types of FWA networks offering broadband services to homes and businesses in the Hull Area:³⁴
- Wireless internet service providers (WISPs) using licence-exempt or lightly-licensed spectrum; and
 - MNOs using their 4G and, more recently, 5G mobile networks to deliver FWA services (4G/5G FWA).

WISPs

- 2.18 WISPs use licence-exempt or lightly-licensed spectrum to deliver a wireless broadband connection to a fixed location.³⁵
- 2.19 Figure 2.4 shows the prices and product characteristics for two WISPs offering services in the Hull Area.

Figure 2.4 WISP product characteristics in the Hull Area³⁶

	Connexin ³⁷	Wisper
Monthly price	£18-25	£20-35
Set-up cost	£25	Free
Headline speeds (Mbit/s)³⁸	10, 20	30, 60
Contract length	18 months	No minimum
Usage limit	100GB-Unlimited	100GB–Unlimited

Source: home.connexin.co.uk [accessed 13 October 2021] and <https://wisperbroadband.com/prices.php?postcode=undefined&type=domestic> [accessed 13 October 2021].

- 2.20 WISPs tend to offer products with characteristics equivalent to those of KCOM's standard broadband services, often with unlimited data, with comparable (or in some cases cheaper) prices. These packages may offer other benefits, such as flexible contracts with no minimum length. However, take-up remains low as shown in Figure 2.1 above.

³⁴ We provide a description of FWA technologies in Annex 2.

³⁵ As this service operates on licence-exempt or lightly-licensed frequencies, it can suffer from interference from nearby services' frequencies.

³⁶ Another WISP, Purebroadband, has been removed from this table since our 2020 Hull Area WFTMR Consultation due to a lack of current information about its FWA products available in the Hull Area. At the time of consultation, Purebroadband offered FWA for £15-25 a month with no set-up costs and headline speeds of 20 Mbit/s. Its customers could purchase 30 day rolling contracts with usage limits from 50GB to unlimited usage.

³⁷ Connexin offers some higher speed FWA services for businesses.

³⁸ We note that actual average speeds tend to be lower than headline.

4G/5G FWA

- 2.21 EE, Three and Vodafone offer home broadband services using their mobile networks, using 4G and, more recently, 5G (as outlined in Figure 2.5 below). These services share many of the characteristics of mobile broadband but are optimised for home usage by, for example, locating customer modems in optimal locations in customer premises.
- 2.22 Depending on traffic and capacity in the network, speeds can vary and are around 20Mbit/s for 4G and 150Mbit/s for 5G for an average user experience. However, these products tend to have higher prices and higher set-up costs than WISP products, especially 5G FWA products.

Figure 2.5 4G/5G home broadband packages provided by EE, Three and Vodafone, September 2021

MNO	Data	Price /month	Contract length	Upfront fee
EE 4GEE Router	100GB	£35	18 months or 1 month	£50 or £100
	200GB	£40		
	300GB	£45		
	500GB	£50		
	Unlimited	£55		
EE 5GEE Router	40GB	£20	24 months	£100
	100GB	£40	or	or
	Unlimited	£50	1 month	£275
Three 5G Hub	Unlimited	£27	12 months	£0
		£22	24 months	£0
Vodafone 5G Gigacube	100GB	£30	24 months or 30 days with £325 upfront fee	£100
	200GB	£40		£50
	Unlimited	£60		£50

Sources: <http://shop.ee.co.uk/>, <http://www.three.co.uk/store/broadband/home-broadband>, <https://www.vodafone.co.uk/gigacube/>, [accessed 7 September 2021].

Leased lines

Volumes by speed

- 2.23 In recent years demand for higher bandwidth leased line connections has increased across the UK.³⁹ There has been a similar trend in the Hull Area, as shown in Figure 2.6. The proportion of circuits at 1Gbit/s or above has increased from [X] to [X] between 2019 and 2021, with take-up of circuits at 10Gbit/s and above circuits increasing by [X]. However, we expect that the majority of active products will continue to be at speeds of up to and including 1Gbit/s in the Hull Area for the duration of the review period.⁴⁰

Figure 2.6 KCOM Wholesale leased line connections by speed, 2019-21 (index, 2019=100)⁴¹

[X]

Source: KCOM pricing transparency reports submitted to Ofcom in 2019, 2020 and 2021.

Retail fixed voice services

Fixed voice volumes

- 2.24 There continues to be widespread take-up of fixed analogue telephone lines in the Hull Area, which can be purchased standalone or as part of a dual-play bundle.⁴² However, take-up of fixed telephone lines is slightly declining, falling by 2% between 2014/15 and 2019/20. In the same period, the number of call minutes originating on the fixed network reduced by 37%.⁴³
- 2.25 All fixed analogue telephone lines in the Hull Area are provided using KCOM's copper network.⁴⁴ Of these, the vast majority (c.95%) are used by KCOM to supply its own retail customers.⁴⁵ Some other Hull-based telecoms providers buy white label services from KCOM to supply fixed voice services to end-users.⁴⁶ A small number of consumers⁴⁷ are

³⁹ 2021 WFTMR Statement, Volume 2, paragraph 2.107.

⁴⁰ 2021 WFTMR Statement, Volume 2, paragraphs 2.108-2.110 and Figure 2.16.

⁴¹ Based on KCOM pricing transparency reports submitted to Ofcom. Wholesale contemporary interface (CI) circuits only. In the 2016 BCMR we imposed an obligation requiring KCOM to supply us with annual pricing transparency reports (PTRs) on its retail and wholesale leased line circuits. In the 2019 BCMR we also imposed an obligation for KCOM to provide an annual PTR, though only on its wholesale CI circuits.

⁴² According to KCOM's Regulatory Financial Statement, there were approximately 169,000 WFAEL services in the Hull Area in 2019/20, a decrease of 0.1% from 2018/19. KCOM, 2021. [Regulatory Financial Statements for the year ended 31 March 2020](#), page 22 [accessed 13 October 2021].

⁴³ According to KCOM's Regulatory Financial Statement, there was a 37% decline in WCO volumes from 2014/15 (0.52bn minutes) to 2019/20 (0.33bn minutes). However, there has only been a 2% decline in WFAEL volumes from 2014/15 (171,994) to 2019/20 (168,663). KCOM, 2021. [Regulatory Financial Statements for the year ended 31 March 2020](#), pages 22 and 31 [accessed 13 October 2021].

⁴⁴ Fixed analogue telephone lines support the provision of telephony services connected over KCOM's PSTN.

⁴⁵ KCOM response dated 5 February 2020 to the s.135 notice dated 8 January 2020, question 5.

⁴⁶ Unlike line rental products such as KLR, white label services are fully functional voice or ISDN services provided in full by KCOM to end-users and resold by wholesale customers. In these cases, KCOM is responsible for providing any interconnection as part of the rental.

⁴⁷ Less than 0.5% of fixed analogue voice services are provided by external suppliers using KLR. KCOM response dated 5 February 2020 to the s.135 notice dated 8 January 2020, question 5.

supplied fixed analogue telephone lines by telecoms providers using KCOM Line Rental (KLR).⁴⁸

- 2.26 We note that KCOM intends to start moving customers away from PSTN to IP-switched services from Q1 2022.⁴⁹ In line with BT, it has said it will no longer be able to maintain PSTN services after 2025. If the PSTN network is withdrawn, it will no longer be possible to purchase or make use of fixed analogue telephone lines. Users who wish to continue to use voice services after PSTN switch-off will need to migrate to an IP-based voice service.

KCOM's retail prices for residential standalone phone services

- 2.27 Retail prices for KCOM's standalone telephone services appear to be broadly comparable to products from other providers in the rest of the UK (see Figure 2.7).⁵⁰
- 2.28 Since April 2018, the prices many UK customers pay for their voice-only telephone service have been protected by BT's voluntary commitments. Earlier this year we accepted a new offer from BT of further voluntary commitments to ensure continued protections for its voice-only customers until March 2026.⁵¹ Provided KCOM's prices for these services continue to remain broadly comparable to BT's prices, we are unlikely to have cause for concern. We will monitor this over the review period.

Figure 2.7 KCOM's retail voice-only products versus comparable BT call plans

	KCOM	BT
PAYG	£11.99	£11.73
Unlimited UK Landline calls	£15.99	£21.99
Unlimited UK Landline and mobile calls	£19.99	£27.40

Source: Retail prices listed on websites of BT⁵² and KCOM⁵³.

⁴⁸ KLR products for voice and ISDN involve the rental of the physical line between the network terminating equipment (NTE) at the end user site and a line card situated at the KCOM exchange. It differs from white label products in that wholesale customers in this case would have to provide suitable interconnection or purchase additional services from KCOM in order to provide a functioning ISDN or voice service to the end user.

⁴⁹ KCOM response dated 14 October 2021 to the s.135 notice dated 7 October 2021, question 3.

⁵⁰ Although it should be noted that each package differs slightly in terms of the services offered.

⁵¹ Ofcom, 2021. [Statement: Protecting voice-only landline customers \(ofcom.org.uk\)](#).

⁵² In line with BT's commitment with Ofcom on voice only customers, BT applies a [£9.37 discount to phone packages](#) for customers that do not have broadband. This discount has been applied to BT's PAYG and Unlimited UK Landline and mobile calls offerings as priced in BT, 2021. [Landline deals](#) [accessed on 13 October 2021]. This discount does not apply to BT's Home Phone Saver product (priced at £21.99) which is comparable to KCOM's 'Unlimited UK Landline calls' product, although BT's product also includes 1000 minutes to BT mobile numbers. BT, 2021. [BT Consumer Price Guide](#) [accessed 13 October 2021].

⁵³ KCOM, 2021. [Call packages](#) [accessed 14 October 2021].

ISDN products

- 2.29 ISDN services continue to be purchased. However, as illustrated in Figure 2.8, volumes are low and, for ISDN2 services, have been declining.⁵⁴ In its consultation response, KCOM presented evidence that there were only 46 new ISDN2 connections and 232 new ISDN30 connections in the year to March 2020.⁵⁵
- 2.30 Although ISDN30 volumes have remained stable over the past few years, we expect the number of ISDN2 and ISDN30 lines to decline over the forthcoming review period, as end users migrate to more modern IP-based services. This reflects the fact that ISDN is a legacy technology. The speed of this migration is affected by the fact that existing ISDN users face switching costs when moving to newer alternatives. As with the PSTN discussed above, KCOM will no longer be able to support ISDN services after 2025. This means that, post-2025, users who currently take ISDN services will have to migrate to IP-based services. As ISDN users become aware of this plan, migration from ISDN to IP-based services may accelerate.

Figure 2.8 ISDN volumes from 2016/17 to 2019/20

	2016/17	2017/18	2018/19	2019/20
ISDN2 Lines	4,253	3,289	2,875	1,750
ISDN2 Lines % change		-23%	-13%	-39%
ISDN30 Channels	9,379	10,555	9,381	10,376
ISDN30 Channels % change		13%	-11%	11%

Source: KCOM's Regulatory Financial Statements 2019/20.

- 2.31 The majority of ISDN2/30 lines in the Hull Area are used by KCOM to offer its own retail products.⁵⁶ Of the remaining lines, most are sold as white label services bought by Hull-based telecoms providers. There is very limited use by telecoms providers of KLR to provide ISDN2 and ISDN 30 services.⁵⁷

⁵⁴ From 2016/17 onwards, KCOM has only recorded ISDN30 volumes as channels in its accounts, as opposed to the number of physical lines. Each ISDN30 line carries a minimum of 6 channels and a maximum of 30 channels. Therefore c. 9,000 ISDN30 channels is equivalent to a minimum of 300 ISDN30 lines and a maximum of c.1,500 ISDN30 lines. It is therefore unclear whether the overall number of ISDN30 lines has increased or decreased over the period, as there may have been a change in the number of lines per channel.

⁵⁵ [KCOM](#) first response to the 2020 Hull Area WFTMR Consultation, paragraph 6.2.

⁵⁶ KCOM retail products account for c.70% of ISDN2 lines and c.85% of ISDN30 channels of its wholesale volumes. KCOM response dated 5 February 2020 to the s.135 notice dated 8 January 2020, questions 3 and 4.

⁵⁷ In Q3 2019/20, less than 1% of KCOM's ISDN2 lines ([<]) and ISDN30 channels ([<]) were provided to customers by other telecoms providers using KCOM's KLR service over ISDN exchange lines. KCOM response dated 5 February 2020 to the s.135 notice dated 8 January 2020, question 5.

3. Wholesale local access market definition and significant market power

- 3.1 In this section, we set out our decisions on the product market definition and geographic market definition for the WLA market in the Hull Area and consider whether the three criteria set out in subsection 79(2B) of the Act are met in relation to that market.⁵⁸ This section also presents our SMP assessment.
- 3.2 We are satisfied that the market for WLA in the Hull Area meets the three criteria test.
- 3.3 We have decided to define a single market for the supply of WLA at a fixed location in the Hull Area which includes all bandwidths, all fixed technologies and both residential and business services, and excludes leased lines and wireless services.
- 3.4 We conclude that KCOM holds SMP in the relevant market over the review period.

Market definition

Product market definition

Our proposal

- 3.5 In the 2020 Hull Area WFTMR Consultation we proposed to define a single product market for WLA services at a fixed location which:
 - a) includes all fixed network technologies (copper, fibre, cable), all bandwidths and services provided to both residential and business customers; and
 - b) excludes leased lines and wireless services.
- 3.6 Purebroadband⁵⁹ and Vodafone⁶⁰ agreed with our proposed market definition for the WLA market. No stakeholders disagreed with our proposals.

Our reasoning

- 3.7 To set our product market definition for WLA services in the Hull Area, we have taken the following approach:⁶¹
 - a) **Setting a frame of reference:** we expect that the same product market for WLA services exists in the Hull Area as in the rest of the UK, because voice and broadband

⁵⁸ Since the publication of the 2020 Hull Area WFTMR Consultation, the UK has left the EU and the subsequent transition period ended on 31 December 2020. Although as a result of this Ofcom is no longer required to take utmost account of the 2020 EC Recommendation (which supersedes the 2014 EC Recommendation), including the three criteria test, it is nonetheless required to consider whether the three criteria set out in subsection 79(2B) of the Act are met. Where Ofcom does not consider that the three criteria are met, it may not identify a market for the purposes of making a market power determination.

⁵⁹ [Purebroadband](#) response to the 2020 Hull Area WFTMR Consultation, page 2.

⁶⁰ [Vodafone](#) response to the 2020 Hull Area WFTMR Consultation, paragraph 2.13.

⁶¹ This is the same approach as outlined in the 2020 Hull Area WFTMR Consultation.

services can be used to perform the same functions regardless of where they are delivered geographically.

- b) **Focusing our analysis on any differences that might affect the product market:** we note that a relevant difference between the Hull Area and other areas of the UK is that WISPs have been present in the Hull Area for many years, and there is proportionately greater coverage of FWA services from WISPs in the Hull Area. We therefore consider below in more detail whether fixed wireless broadband provided by WISPs offered a sufficient constraint on WLA.
- 3.8 We have recently published the 2021 WFTMR Statement, in which we decided our product market decision for WLA services in the rest of the UK (excluding the Hull Area).⁶² Given that voice and broadband services can be used to perform the same functions regardless of where they are delivered geographically, we make the following key findings in this review, based on the same evidence, in relation to the Hull Area. We outline these findings below:
- a) We find that supply-side considerations point to a single product market undifferentiated by speeds. Networks exhibit economies of scope as they have the capacity and incentive to supply a range of broadband speeds from a single access connection. Demand-side considerations (including consumer behaviour and preferences) provided further support for defining a single product market.
 - b) We find that all fixed access networks should be included in the same product market, as different networks support a range of retail services with similar features.
 - c) We have included residential and business customers in the same product market as the differentiated features of business grade broadband services are generally not a feature of the WLA market and are instead a result of downstream activities.
 - d) We consider that leased line services should not be included in the WLA product market. We consider it unlikely that many businesses would view leased lines and broadband services to be close substitutes. On the supply-side, a leased line only network operator would not have the network architecture or operational capacity required to provide broadband services.
 - e) We consider that mobile and satellite services should not be included in the WLA product market. We find that the retail services provided by these technologies are likely to be less attractive to customers than those provided using WLA services, due to lower supported speeds, constrained capacity, and limited coverage in the case of 5G. We consider FWA services below.

FWA services provided by WISPs

- 3.9 In our consultation we provisionally concluded that fixed wireless broadband is not part of the WLA product market.
- 3.10 No stakeholders challenged our finding.

⁶² 2021 WFTMR Statement, Volume 2, paragraphs 6.7-6.69.

- 3.11 In line with increased availability, there has been a continued trend of increased take-up of KCOM's unlimited data products from customers in the Hull Area in recent years. Given that some FWA products are subject to significant data-caps (see Figure 2.4), that the majority of KCOM's new set of retail products offer unlimited data⁶³, and [§], this suggests that FWA is unlikely to be a suitable substitute to retail packages delivered over fixed broadband connections for most customers in the current review period.
- 3.12 Therefore, despite the relatively high coverage in the Hull Area, we consider that fixed wireless broadband is unlikely to act as a material constraint on a hypothetical monopolist of fixed broadband during this market review, and so should not be included as part of the relevant product market.
- 3.13 More generally, we note that in the Hull Area the precise product market definition will not in our view affect our market power assessment. Even if FWA was included in the market, KCOM's share of connections would be over 90% (see Figure 2.1 above).

Our decision

- 3.14 For the reasons set out above, we have decided to define a single market for WLA services which:
- includes services at all bandwidths;
 - includes broadband access services provided over all fixed network technologies (copper, fibre, cable);
 - includes services supporting both residential and business broadband connections;
 - excludes leased line services; and
 - excludes retail provision of broadband services delivered over networks deploying wireless technologies.

Geographic market definition

- 3.15 In the 2020 Hull Area WFTMR Consultation we proposed to define the relevant geographic market as the Hull Area. Purebroadband⁶⁴ and Vodafone⁶⁵ agreed with our proposed geographic market definition.
- 3.16 We note that competitive conditions are not homogenous between the Hull Area and the rest of the UK. We also consider there to be no material variations in competitive conditions within the Hull Area.⁶⁶

⁶³ The new portfolio KCOM offers only includes one FTTP product which has a data cap.

⁶⁴ Purebroadband response to the 2020 Hull Area WFTMR Consultation, page 12.

⁶⁵ Vodafone response to the 2020 Hull Area WFTMR Consultation, paragraph 2.13.

⁶⁶ While MS3 and CityFibre have invested in fibre infrastructure, they are at present very small covering less than [§] of premises in combination, and we consider that this is unlikely to change materially over the review period. We discuss Connexin's plans in paragraph 3.26 below.

- 3.17 As such, we have decided that the relevant geographic market is the Hull Area. We have decided to retain the boundaries of the Hull Area as delineated in our other market reviews.⁶⁷

Three criteria test

- 3.18 As set out in Annex 1, in determining whether to identify a market for the purpose of making a market power determination, we must consider whether the three criteria set out in subsection 79(2B) of the Act are met. Where we do not consider that the three criteria are met, we may not identify a market for this purpose.
- 3.19 In identifying a market, we may have regard to various recommendations or guidelines published by the European Commission, and guidelines published by BEREC, including the 2020 EC Recommendation. The WLA market is listed in the 2020 EC Recommendation as a market in which *ex ante* regulation may be warranted.⁶⁸
- 3.20 The 2020 Hull Area WFTMR Consultation pre-dated the entry into force of section 79(2B) of the Act. However, we proposed *ex ante* regulation of the WLA market in the Hull Area, as we concurred with the view set out in the (then applicable) 2014 EC Recommendation⁶⁹ that the three criteria would in general be met in relation to WLA markets. As part of this review, we have assessed whether this continues to be the case for the criteria set out in subsection 79(2B) of the Act.
- 3.21 We consider that the three criteria test set out in section 79(2B) of the Act is met in relation to the WLA market in the Hull Area because:
- a) **High and non-transitory barriers to entry** – Barriers to entry can arise from the cost of constructing a significant scale local access network and from the existence of high sunk costs. Because KCOM has a ubiquitous FTTP network in the Hull Area, it has already incurred the high sunk cost of investment and can therefore make use of the significant economies of scale that exist. As such, we consider that high and non-transitory barriers to entry are likely to persist in the WLA market in the Hull Area.
 - b) **A market which does not tend towards effective competition** – As outlined below, KCOM has a near 100% share of the WLA market in the Hull Area. The evidence we have from alternative network operators suggests that there is unlikely to be significant investment in rival networks in the review period.⁷⁰ Accordingly, we do not consider the market will tend towards effective competition.
 - c) **Insufficiency of competition law** – Competition law, in particular the rules prohibiting the abuse of a dominant position, is an important part of the legal framework with which KCOM needs to comply. Given its position of SMP, KCOM has a special

⁶⁷ These boundaries follow the definition of 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).

⁶⁸ It corresponds to market 1 – wholesale local access provided at a fixed location.

⁶⁹ At the time, we were required to take utmost account of the 2014 EC Recommendation.

⁷⁰ See Section 2, subsection on network operators in the Hull Area.

responsibility not to allow its actions on the market to distort or impair competition. However, we consider that competition law remedies would be insufficient to address the identified competition concerns on their own in this context.

- First, competition law would focus on tackling the abuse of a dominant position and would not be as effective as *ex ante* regulation in promoting and protecting competition from rival networks in the WLA market and in downstream retail markets.
- Second, regulation must remain effective for the review period, and *ex ante* regulation better enables us to do this as it can be tailored to the particular circumstances in the markets and services provided.
- Third, competition law does not provide enough regulatory certainty, which itself can undermine downstream competition where there is upstream SMP – and regulatory certainty is important in encouraging long-term investment in competing networks. In contrast, a benefit of *ex ante* regulation is that all industry stakeholders are clear in advance on the regulation that will apply.
- Finally, *ex ante* regulation can facilitate more timely enforcement due to the greater certainty and specificity provided. Although significant fines can be levied for breaches of competition law, which do have some reputational and commercial implications, cases often take considerable time, by which point the damage to competition may be irreversible.

Decision on market definition

3.22 We therefore define the relevant market as WLA services provided at a fixed location in the Hull Area for the purpose of making a market power determination.

Market power assessment

Our proposals

- 3.23 In the 2020 Hull Area WFTMR Consultation we provisionally concluded that KCOM will have market power in the WLA market in the Hull Area for the duration of the review period.
- 3.24 Vodafone⁷¹ agreed with our proposed SMP finding based on the evidence presented on market shares and pricing. Connexin⁷² and Purebroadband⁷³ also agreed with our proposed market power assessment. No stakeholder disagreed with our proposals.

⁷¹ Vodafone response to the 2020 Hull Area WFTMR Consultation, paragraph 2.14.

⁷² Connexin response to the 2020 Hull Area WFTMR Consultation, page 2.

⁷³ Purebroadband response to the 2020 Hull Area WFTMR Consultation, page 1.

Our reasoning and decisions

- 3.25 KCOM has a near 100% share of the WLA market, as shown in Figure 3.1. This reflects the fact that KCOM has a ubiquitous network in the Hull Area, and existing alternative networks are very small.⁷⁴

Figure 3.1 WLA market shares in the Hull Area⁷⁵

Market share	
KCOM	~100%
MS3	[<]%
CityFibre	[<]%

- 3.26 We do not expect this to be significantly altered by alternative network expansion in the review period. CityFibre currently has no expansion plans within the Hull Area.⁷⁶ MS3 plans to increase the number of retail and wholesale customers it serves over the review period, but we consider that this expansion by itself would be too small to have any significant effect on competition in this market.⁷⁷ Connexin, an existing FWA provider in the Hull Area, has announced plans to build a full-fibre network, with a confirmed investment of £80m. However, [<].
- 3.27 This very high market share, and the lack of expected network build, provides strong evidence that KCOM holds a position of SMP in the Hull Area. A number of other factors support this finding:
- a) Scale entry requires significant sunk investment and takes significant time. The asymmetry between KCOM, which has already incurred sunk costs in creating a ubiquitous FTTP network in the Hull Area, and potential entrants which have not, gives rise to barriers to entry and expansion.
 - b) KCOM's retail prices are, in general, higher than those in the rest of the UK.
 - c) Given the lack of alternative WLA suppliers and high barriers to entry, countervailing buyer power is likely to be weak given potential purchasers cannot pose a credible threat to switch sufficiently large volumes of consumers to alternative suppliers.
- 3.28 We consider that the external constraints on KCOM arising from out-of-market products (which nevertheless some customers might regard as substitutes to in-the-market

⁷⁴ As noted in the market definition section above, even if FWA was included in the relevant market, KCOM's share of connections would still be over 90%.

⁷⁵ Analysis based on providers' responses to the s.135 notices which we issued to gather evidence for the 2020 Hull Area WFTMR Consultation. See Annex 4.

⁷⁶ CityFibre's response dated 24 February 2020 to the s.135 notice dated 31 January 2020, explanatory note.

⁷⁷ MS3 forecasts to supply between 300 and 500 (<) customers with FTTP broadband services by 31 December 2025. [<]. MS3 response dated 20 February 2020 to the s.135 notice dated 31 January 2020, question 3.

products), such as FWA services and mobile broadband services, are weak and likely to remain so for this review period.

Decision on SMP assessment

- 3.29 For the reasons set out above we conclude that KCOM will have market power in the WLA market in the Hull Area for the duration of the review period.

4. Wholesale leased lines access services market definition and significant market power

- 4.1 In this section, we set out our market assessment for wholesale leased lines access (LL Access) services in the Hull Area.
- 4.2 We have decided to define a single market for the supply of LL Access at all bandwidths in the Hull Area which includes dark fibre and mobile backhaul in the product market and excludes other access services.
- 4.3 We are satisfied that the market for LL Access in the Hull Area meets the three criteria test and is therefore susceptible to *ex ante* regulation.
- 4.4 We conclude that KCOM holds SMP in the relevant market over the review period.
- 4.5 In line with our approach in the 2019 Business Connectivity Market Review (2019 BCMR), we do not identify a separate market for contemporary interface (CI) inter-exchange connectivity in the Hull Area.⁷⁸ Our view is that the small size of the Hull Area means that demand for connectivity between KCOM exchanges is likely to be low.

Market definition

Product market definition

Our proposals

- 4.6 In the 2020 Hull Area WFTMR Consultation we proposed to define a single market for LL Access at all bandwidths and including dark fibre. Our proposed findings on the key issues in defining the relevant product market were:
 - a) Different bandwidths of LL Access services are in the same product market because conditions are similar. Dark fibre is also a substitute.
 - b) There is a single market for all customers. In particular, we considered that mobile backhaul services form part of the same LL Access market as enterprise customers.
 - c) Other access services, such as broadband or Ethernet in the first mile (EFM), should not be considered in the same product market as LL Access services.
- 4.7 Purebroadband⁷⁹ and Vodafone⁸⁰ agreed with our proposed market definition for the leased lines access market. Vodafone additionally endorsed our proposal to include dark

⁷⁸ KCOM's LL Access product covers the entire connection from the user site to any KCOM exchange in Hull (even if the traffic travels through more than one KCOM exchange).

⁷⁹ Purebroadband response to the 2020 Hull Area WFTMR Consultation, page 1.

⁸⁰ Vodafone response to the 2020 Hull Area WFTMR Consultation, paragraphs 3.7-3.8.

fibre in the relevant product market and said that it considered the key input to be the underlying fibre, which can be provided as fibre or can be turned into an active service by the vendor (KCOM) or the purchaser.

- 4.8 No stakeholders disagreed with our proposed market definition for LL Access.

Our reasoning

- 4.9 In our consultation we relied on the supply-side reasoning outlined for the Hull Area in the 2019 BCMR Statement to set out our proposed product market definition.⁸¹ We considered that the same previously outlined market characteristics continued to apply for the Hull Area and had not seen any evidence to suggest a different product market would be appropriate for the current review period.⁸²
- 4.10 Since the 2020 Hull Area WFTMR Consultation we have set out our decision on product market definition for LL Access services in the rest of the UK (excluding the Hull Area) in the 2021 WFTMR Statement, based on an updated understanding of market conditions and participants.⁸³ Given that leased lines can be used to perform the same functions regardless of where they are delivered geographically, we make the following key findings in this review, based on the same evidence, in relation to the Hull Area. We outline these findings below:
- a) We consider that different bandwidths are in the same product market because they are supply side substitutes. Where a provider has an existing connection to a customer site, it can easily switch between supplying bandwidths at low cost. Where a connection does not exist and a network extension is required, the evidence indicates that the ability to supply a customer does not differ by bandwidth, therefore indicating similar competitive conditions across all speeds.
 - b) We have included dark fibre in the same product market as active LL Access because they are close supply substitutes, with the key input being the underlying fibre. Once a fibre connection is in place, a provider can switch between supplying dark fibre and LL Access services sufficiently quickly and at minimal cost. Where providers are not already connected, dark fibre providers are equally able to supply LL Access services as any other supplier of LL Access services.
 - c) We consider there to be a single product market for the provision of LL Access services to all customers, including MNOs purchasing leased lines for mobile backhaul. Although there are differences between MNOs and business customers in their demand for LL Access services, both groups of customers are likely equally dependent on KCOM as the only network with significant coverage in the Hull Area.⁸⁴

⁸¹ 2019 BCMR Statement, Volume 2, Section 4.

⁸² This was in line with the approach taken in the January 2020 WFTMR Consultation.

⁸³ 2021 WFTMR Statement, Volume 2, paragraphs 6.80-6.121

⁸⁴ Buyer power relies on a customer being able to credibly threaten to move large volumes to an alternative supplier. Although MNOs are individually among the largest purchasers of leased lines in the UK, the low presence of rival infrastructure in the Hull Area means that MNOs lack credible alternatives to KCOM.

- d) We consider that the indirect competitive constraints posed by EFM and business grade broadband services are not sufficient to be included in the product market. On the demand-side, differences in the features and prices of these services means that users are unlikely to consider these services to be close substitute to LL Access.

Our decision

- 4.11 For the reasons set out above, we have decided to define a single product market for LL Access which:
- a) includes services at all bandwidths;
 - b) includes dark fibre used to supply or self-supply leased line services;
 - c) includes mobile backhaul in the same market as enterprise customers; and
 - d) excludes business-grade connectivity services provided over EFM and broadband.

Geographic market definition

- 4.12 In the 2020 Hull Area WFTMR Consultation we proposed to define the relevant geographic market as the Hull Area. Purebroadband⁸⁵ and Vodafone⁸⁶ agreed with our proposed geographic market definition.
- 4.13 We note that competitive conditions are not homogenous between the Hull Area and the rest of the UK and consider there to be no material variations in competitive conditions within the Hull Area.⁸⁷
- 4.14 Therefore, we confirm that the relevant geographic market is the Hull Area. We have decided to retain the boundaries of the Hull Area as delineated in our other market reviews.⁸⁸

Three criteria test

- 4.15 In determining whether to identify a market for the purpose of making a market power determination, we must consider whether the three criteria set out in subsection 79(2B) of the Act are met. Where we do not consider that the three criteria are met, we may not identify a market for this purpose.
- 4.16 In identifying a market, we may have regard to various recommendations or guidelines published by the European Commission, and guidelines published by BEREC, including the

⁸⁵ Purebroadband response to the 2020 Hull Area WFTMR Consultation, page 1.

⁸⁶ Vodafone response to the 2020 Hull Area WFTMR Consultation, paragraph 3.9.

⁸⁷ While MS3 and CityFibre have invested in fibre infrastructure, they are at present very small and are in proximity to 8% and [X] of business sites respectively, and we consider that this is unlikely to change materially over the review period. See Section 2, subsection on network operators in the Hull Area.

⁸⁸ These boundaries follow the definition of 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).

2020 EC Recommendation. The LL Access market is listed in the 2020 EC Recommendation as a market in which *ex ante* regulation may be warranted.⁸⁹

- 4.17 The 2020 Hull Area WFTMR Consultation pre-dated the entry into force of section 79(2B) of the Act. However, we proposed *ex ante* regulation of the LL Access market in the Hull Area, as we concurred with the view set out in the (then applicable) 2014 EC Recommendation⁹⁰ that the three criteria would in general be met in relation to LL Access market. As part of this review, we have assessed whether this continues to be the case for the criteria set out in subsection 79(2B) of the Act.
- 4.18 We consider that the three criteria test set out in section 79(2B) of the Act is met in relation to the LL Access market in the Hull Area because:
- High and non-transitory barriers to entry** – Barriers to entry and expansion can exist in the LL Access markets where operators do not have networks in a given area or are not close to demand sites. There are significant economies of scale because once the high fixed cost of investment in network build has been sunk, the marginal cost of connecting an individual site is relatively low. Accordingly, given KCOM's ubiquitous full fibre network in the Hull Area, high and non-transitory barriers to entry are likely to persist in the LL Access market over the course of the review period.
 - A market which does not tend towards effective competition** – As outlined below, KCOM retains a high share of supply in the Hull Area. The evidence we have suggests that there will be minimal investment in rival networks in the review period.⁹¹ Accordingly, we do not consider the market will therefore tend towards effective competition in the Hull Area.
 - Insufficiency of competition law** – Competition law, in particular the rules prohibiting the abuse of a dominant position, is an important part of the legal framework that KCOM needs to comply with. Given its position of SMP KCOM has a special responsibility not to allow its actions on the market to distort or impair competition. However, we consider that competition law remedies would be insufficient to address the identified competition concerns on their own in this context.
 - First, competition law would focus on tackling the abuse of a dominant position and would not be as effective as *ex ante* regulation in promoting and protecting competition from rival networks in the LL Access market and in downstream retail markets.
 - Second, regulation must remain effective for the review period, and *ex ante* regulation better enables us to do this as it can be tailored to the particular circumstances in the markets and services provided.
 - Third, competition law does not provide enough regulatory certainty, which itself can undermine downstream competition where there is upstream SMP – and regulatory certainty is important in encouraging long-term investment in

⁸⁹ It corresponds to market 2 – wholesale dedicated capacity.

⁹⁰ At the time, we were required to take utmost account of the 2014 EC Recommendation.

⁹¹ See Section 2, subsection on network operators in the Hull Area.

- competing networks. In contrast, a benefit of *ex ante* regulation is that all industry stakeholders are clear in advance on the regulation that will apply.
- Finally, *ex ante* regulation can facilitate more timely enforcement due to the greater certainty and specificity provided. Although significant fines can be levied for breaches of competition law, which do have some reputational and commercial implications, cases often take considerable time, by which point the damage to competition may be irreversible.

Decision on market definition

- 4.19 We therefore define the relevant market as LL Access services at all bandwidths provided at a fixed location in the Hull Area for the purpose of making a market power determination.

Market power assessment

Our proposals

- 4.20 In the 2020 Hull Area WFTMR Consultation we provisionally concluded that KCOM has SMP in the market for LL Access at all bandwidths in the Hull Area, and we do not expect KCOM's position in this market to change over the course of the review period.
- 4.21 Connexin⁹², Purebroadband⁹³ and Vodafone⁹⁴ agreed with our proposed SMP finding for the LL Access market in the Hull Area. No stakeholder disagreed with our proposals.
- 4.22 [X] argued that we should consider additional information in our market assessment, including the manner in which retailers purchase services, the reasons behind their behaviours, and how these decisions trend over time. However, it noted that our conclusions would likely be the same even if we did consider this additional evidence.
- 4.23 We consider competition from existing infrastructure presence and potential competition from networks to be the best evidence for evaluating competitive conditions. However, in defining the product market for LL Access services, we have taken account of demand considerations in downstream retail markets.⁹⁵

Our reasoning

- 4.24 To inform our market power assessment, we consider evidence on market shares (including recent trend data), the presence of existing network infrastructure, and the presence of barriers to entry. We consider these criteria to be relevant as they reflect our

⁹² Connexin response to the 2020 Hull Area WFTMR Consultation, page 2.

⁹³ Purebroadband response to the 2020 Hull Area WFTMR Consultation, page 1.

⁹⁴ Vodafone response to the 2020 Hull Area WFTMR Consultation, paragraphs 3.10-3.17.

⁹⁵ See paragraph 4.10. For example, when considering the potential for indirect competitive constraints, we considered whether users might consider broadband-based and leased line services to be close substitutes. We concluded this was unlikely given differences in the features and prices of these services. Additionally, when considering whether to include mobile backhaul in the product market, we looked at similarity in patterns of demand.

understanding of the factors driving competitive conditions. These criteria are used by UK competition authorities in assessing market power and dominance, and we have also had regard to the criteria set out in the EC SMP Guidelines. We set out our findings on each of these criteria below.

Market share

- 4.25 Market shares provide a useful first indication of competitive conditions in the market as the greater the number of competing networks that have managed to attain a material share of supply, the stronger is the indication that the intensity of competition is greater.
- 4.26 In the 2020 Hull Area WFTMR Consultation we relied on inventory data from the 2019 BCMR Statement as our evidence of market shares and found that KCOM has a high share (60%-70%) [X] in the market for LL Access at all bandwidths.⁹⁶
- 4.27 As part of the information gathering process for the rest of the UK in the 2021 WFTMR Statement we also collected data on service shares in the Hull Area.⁹⁷ Therefore, we now have evidence on how KCOM's market shares have changed over time, based on 2017, 2018 and 2019 new connections.⁹⁸ We found that KCOM accounted for a high proportion of new connections [X] in the market for LL Access between 2017-2019, with KCOM's service share remaining high across the three years.⁹⁹

Competition from existing infrastructure and barriers to entry and expansion

- 4.28 KCOM has ubiquitous infrastructure across the Hull Area, which is not easily duplicated due to the high sunk costs involved. This gives KCOM a significant competitive advantage as it has the ability to supply LL Access to almost any site in the Hull Area relatively quickly and without incurring substantial costs.
- 4.29 Against this backdrop, our SMP assessment looks at:
- presence of competing network infrastructure; and
 - barriers to entry and expansion

Presence of competing network infrastructure

- 4.30 We consider that the most important factor affecting the strength of competition in an area is the coverage of competing network infrastructure. A greater number of competing networks present is likely to lead to a greater competitive constraint on KCOM.

⁹⁶ 2019 BCMR Statement, Volume 2, Table 9.1. The data used was from 2017.

⁹⁷ We have typically only considered inventory data as the primary measure of KCOM's market share in the LL Access market. However, in our consultation we found that the number of all wholesale leased line access services sold by KCOM had reduced by only 5-10% from Q4 2017/18 to Q2 2019/20, which we considered unlikely to have resulted in any significant change to the existence of KCOM's SMP (see the 2020 Hull Area WFTMR Consultation, Volume 2, paragraph 3.18). Therefore, we consider it disproportionate to impose additional information requirements on KCOM to collect additional inventory data.

⁹⁸ We note that new connections data also includes volumes linked to upgrades and bandwidth regrades.

⁹⁹ Based on leased lines analysis conducted for the 2021 WFTMR Statement (see 2021 WFTMR Statement, Annex 5). [X].

- 4.31 In our consultation we relied on data from the 2019 BCMR Statement to understand the extent of alternative network reach.¹⁰⁰ We found that most business sites have limited alternative options for LL Access. For example, the average number of alternative networks within 50m and 100m of businesses within the Hull Area is 0.22 and 0.49 respectively.¹⁰¹ We consider that this is too low for effective competition.
- 4.32 Additionally, some telecoms providers have noted that there can be limited alternative options to KCOM when purchasing LL Access. [X] indicated that it has found no alternative supplier to KCOM for its requirements and Connexin has suggested the companies that do use KCOM wholesale products would not use them if they had any other choice.¹⁰²
- 4.33 These findings imply that there would need to have been significant build by alternative networks in the Hull Area in order to undermine our provisional view that KCOM has SMP.
- 4.34 There has not been material build since the 2020 Hull Area WFTMR Consultation, and our discussions with stakeholders have revealed no plans by alternative providers that are expected to significantly change the level of competition for LL Access in the review period.¹⁰³ We consider our network reach analysis remains valid.

Barriers to entry and expansion

- 4.35 Where operators are not present, and there are barriers to entry or expansion, this makes it more difficult for alternative networks to compete with KCOM.
- 4.36 We do not consider that other telecoms providers have the ability or incentive to duplicate the scale of KCOM's network infrastructure in the Hull Area. The costs of developing such an extensive network infrastructure would be very significant and the small number of potential customers in this market is likely to make it unviable. KCOM's high market share in downstream markets in the Hull Area, for example its almost complete share of the retail fixed broadband market, also makes it more difficult for alternative networks to use an existing customer base to underpin investments in networks which may include provision of LL Access.

Decision on market assessment

- 4.37 As well as KCOM's high market share, we consider that there is limited competitive constraint on KCOM's market power from existing or potential competing network presence. We therefore determine that KCOM has SMP in the provision of LL Access services in the Hull Area for the duration of the review period.

¹⁰⁰ The data used was from 2017.

¹⁰¹ 2019 BCMR Statement, Volume 2, Table 9.2.

¹⁰² Meeting between Ofcom and [X], 27 February 2020; meeting between Ofcom and Connexin, 7 November 2020.

¹⁰³ As outlined above, CityFibre does not have plans to further expand its networks in the Hull Area. (CityFibre response dated 24 February 2020 to the s.135 notice dated 31 January 2020, explanatory note). MS3 told us it planned to expand its network to reach approximately 13% of premises across the Hull Area by June 2021. We do not consider this to be sufficient to materially affect competitive conditions in the Hull Area. (MS3 response dated 20 February 2020 to the s.135 notice dated 31 January 2020, question 1.)

5. Wholesale broadband access

- 5.1 Wholesale broadband access (WBA) sits between retail broadband services (i.e. the services that end-users buy), and the upstream WLA market (which relates to the physical connections to end-users' premises).
- 5.2 We had previously found that KCOM has SMP in this market and accordingly imposed several remedies.¹⁰⁴
- 5.3 However, to date no provider in the Hull Area has used KCOM's WBA product.

Our proposal

- 5.4 In the 2020 Hull Area WFTMR Consultation we considered that the 2018 WLA/WBA Statement remained an appropriate frame of reference, and proposed that the product market definition is wholesale broadband access services provided at a fixed location.¹⁰⁵ We proposed that the relevant geographic market is the Hull Area.
- 5.5 We provisionally concluded that the three criteria test set out in the (then applicable) 2014 EC Recommendation¹⁰⁶ was no longer met in relation to WBA and this market was therefore not suitable for *ex ante* regulation.
- 5.6 KCOM agreed with our proposal to deregulate the WBA market and said that it currently has no intention to withdraw its white label wholesale fibre broadband product.¹⁰⁷
- 5.7 Vodafone agreed with our proposal not to regulate the WBA market in the Hull Area as a standalone market, provided that upstream WLA product market remedies exist to enable broadband retailers to enter the Hull retail market.¹⁰⁸ We discuss our remedies for the WLA market in Volume 3 of this statement.
- 5.8 Purebroadband disagreed with our proposed deregulation of the WBA market. It argued that it still remains difficult for providers to order a WLA service from KCOM, and hence that barriers to enter the WBA market still exist. Purebroadband also said it was not confident that KCOM's wholesale division would operate in a way that provides fair, transparent and timely access to its network for all of its wholesale partners.
- 5.9 FCS said it was concerned that the need for interconnection with WLA services could restrict the number and type of providers who could operate at a retail level. Instead, it suggested a "Wholesale Access" arrangement like Openreach's WLR.¹⁰⁹

¹⁰⁴ 2018 WLA/WBA Statement, paragraph 3.131.

¹⁰⁵ Where WBA services comprise the provision of asymmetric broadband access and any backhaul as necessary to allow interconnection with other telecoms providers.

¹⁰⁶ The 2020 Hull Area WFTMR Consultation pre-dated the entry into force of section 79(2B) of the Act. At the time of the 2020 Hull Area WFTMR Consultation, we were required to take utmost account of the 2014 EC Recommendation.

¹⁰⁷ KCOM first response to the 2020 Hull Area WFTMR Consultation, paragraph 2.6.

¹⁰⁸ Vodafone response to the 2020 Hull Area WFTMR Consultation, paragraph 2.15

¹⁰⁹ FCS response to 2020 Hull Area WFTMR Consultation, page 1.

Our reasoning

- 5.10 We maintain that the market definition set out in the 2018 WLA/WBA Statement remains an appropriate frame of reference.¹¹⁰

Three criteria test for the WBA market in the Hull Area

- 5.11 In determining whether to identify a market for the purpose of making a market power determination, we must consider whether the three criteria set out in subsection 79(2B) of the Act are met.
- 5.12 Where we do not consider that the three criteria are met, we may not identify a market for the purposes of making a market power determination.
- 5.13 In identifying a market, we may have regard to various recommendations or guidelines published by the European Commission, and guidelines published by BEREC, including the 2020 EC Recommendation. Although WBA was listed as being susceptible to *ex ante* regulation (it corresponded to Market 3b) in the Commission's 2014 EC Recommendation, this market has been removed from the 2020 EC Recommendation.
- 5.14 Given the above, it is appropriate to consider whether the three criteria set out in subsection 79(2B) of the Act are met in relation to the WBA market in the Hull Area.
- 5.15 We note that the three criteria test is cumulative, and that all three criteria need to be satisfied for a market to be susceptible to regulation. Therefore, if any one of the criteria is not met, the market is no longer susceptible to regulation.

Presence of high and non-transitory barriers to entry

- 5.16 Purchasing a WLA product involves interconnecting with KCOM's network. Once this has been done, a broadband provider can offer a retail service to consumers, effectively self-supplying WBA services, and can also offer WBA services to other retailers. Therefore, if the barriers to take-up of WLA are reduced, the barriers to entry into the WBA market are reduced. Under a modified greenfield approach¹¹¹, the downstream market should only be subject to *ex ante* regulation if competition issues remain, despite the presence of regulation in the upstream market.
- 5.17 At the time of the 2018 WLA/WBA Statement, potential WLA entry based on using KCOM's copper network via local loop unbundling (LLU) required a significant investment in up to

¹¹⁰ We review the constraints which operate at the retail level (which are the relevant constraints for the definition of the product market for WBA) in paragraphs 3.7 to 3.14 above as part of our assessment of the relevant product market for WLA. As set out there, we have not found any material change in the constraints likely to operate at the retail level. Additionally, as set out in paragraphs 3.15 to 3.17 above, we consider the Hull Area is the appropriate geographic market in which to apply the three criteria test.

¹¹¹ The modified greenfield approach requires us to assess whether markets are effectively competitive from a forward-looking perspective in the absence of any regulation that would result from a finding of SMP. However, it remains appropriate to take into account *ex ante* regulation arising from SMP findings in markets either upstream from, or horizontally related to, the services of interest.

- 14 exchanges. Given this significant sunk cost, and absent WLA-based entry, there remained high barriers to entry into the WBA market.
- 5.18 However, since the 2018 WLA/WBA Statement, KCOM now offers a fibre local access product underpinned by WLA regulation. It has also now completed its FTTP network throughout the Hull Area. Further, we are making additional changes to the WLA remedy which will remove the need for access seekers to be located within KCOM exchanges (see Volume 3), removing a key constraint which had previously prevented access seekers from taking up WLA services. It is therefore possible for a potential entrant to supply downstream services throughout the Hull Area based on this. We consider that the reductions in barriers to take-up of WLA services will reduce the barriers to entry into the WBA market.
- 5.19 Further, there is some evidence of increased potential for entry based on purchasing WLA products, although no such entry has yet materialized.¹¹² We consider that KCOM's fibre network provides a realistic opportunity for small telecoms providers to compete effectively in retail broadband services using a WLA product, unlike services based on the legacy copper network, as the minimum scale for profitable entry based on using WLA is reduced compared to a copper network.
- 5.20 Accordingly, given the introduction of a fibre WLA product, the completion of KCOM's FTTP roll-out, the changes we have made to the WLA remedy (see Section 2 of Volume 3), and the discussions we have had with stakeholders, we consider that there are no longer high and non-transitory barriers to entry into the WBA market.¹¹³
- 5.21 We have also considered FCS' view that our focus on WLA may exclude some providers in requiring interconnection. However, as set out in Section 1 of Volume 3, we believe that long-term and sustainable retail broadband competition is best achieved by a focus on upstream WLA services. Notwithstanding our decision to deregulate the WBA market we note that KCOM has said that it currently has no intention to withdraw its aggregated fibre wholesale broadband access service or its white label wholesale fibre broadband product.¹¹⁴

Our decision

- 5.22 It follows from the above analysis that the WBA market in the Hull Area does not satisfy the first of the three criteria test set out in section 79(2B) of the Act, and, therefore, Ofcom may not identify it as a market for the purpose of considering whether to make or review a market power determination. Consequently, we have decided to remove all existing regulatory obligations from the WBA market in the Hull Area.

¹¹² See Volume 3, paragraph 1.21 to 1.22.

¹¹³ We outline the discussions we have had with stakeholders in Volume 3.

¹¹⁴ KCOM response to the 2020 Hull Area WFTMR Consultation, paragraph 2.6.

- 5.23 We do not consider that transitional arrangements are necessary. KCOM's WBA product is not currently purchased by any provider.¹¹⁵

¹¹⁵ Other telecoms providers use white label products to provide retail broadband services over KCOM's network.

6. Fixed voice services

- 6.1 This section describes the product and geographic markets in relation to wholesale fixed analogue exchange lines (WFAEL), wholesale ISDN2 and ISDN30, and wholesale call origination (WCO) in the Hull Area. We consider whether the three criteria test set out in subsection 79(2B) of the Act is met in relation to each of these markets respectively.

Market developments since consultation

- 6.2 Since the 2020 Hull Area WFTMR Consultation, we have been made aware of KCOM's plans regarding its public switched telephone network (PSTN). PSTN is the traditional circuit-switch telephone network which underpins legacy fixed voice services such as WFAEL and ISDN. When KCOM's PSTN network closes, end users who currently make use of WFAEL or ISDN services will no longer be able to do so and will have to migrate to IP-based voice services.
- 6.3 KCOM has said that it will no longer be able to maintain PSTN services after 2025, in line with BT. This means that post-2025, it is likely that all end-users will have to migrate to IP-based voice services. KCOM has also said that, like BT, from September 2023 it will no longer install or add lines to existing ISDN or PSTN services and that it expects telecoms providers to continue to migrate customers to IP services. We have taken account of this new information in our market assessments below.

WFAEL

- 6.4 WFAEL is a narrowband access connection between a customer's premises and a local exchange. Access connections included in the WFAEL market are used to provide voice calls.

Our proposals

- 6.5 In the 2020 Hull Area WFTMR Consultation we provisionally considered that an appropriate frame of reference was a product market that includes the main fixed access technologies (copper lines, cable lines and voice-enabled fibre lines), and excludes voice over internet protocol (VoIP) services provided over fixed broadband. We proposed that the relevant geographic market is the Hull Area.
- 6.6 We provisionally concluded that the WFAEL market in the Hull Area does not satisfy the three criteria test as set out in the (then applicable) 2014 EC Recommendation and is therefore not suitable for *ex ante* regulation. Consequently, we proposed to remove all existing regulatory obligations from the WFAEL market in the Hull Area. However, we also proposed to maintain aspects of the existing regulation for a transitional period of 12 months which we discuss, along with stakeholder comments, in Section 5 of Volume 3.

- 6.7 KCOM, Purebroadband and Connexin agreed with our proposed deregulation of the WFAEL market in the Hull Area. KCOM noted that the number of voice-only customers is declining and there is little opportunity to differentiate in the selling of voice only services.
- 6.8 FCS said that it still wanted a ‘Wholesale Access’ arrangement like Openreach’s WLR, based on that fact that there will still be a need for interconnection.

Our reasoning

Product market definition

- 6.9 In previous reviews (most recently the 2017 NMR Statement) we have found that end-users have not been willing to give up their voice landline and substitute to mobile only or other alternatives, in part because for many of them this would mean giving up their broadband service. Consequently, we have defined product markets that include all of the main fixed access technologies (copper lines, cable lines and voice-enabled fibre lines).¹¹⁶
- 6.10 The number of fixed analogue exchange lines (FAELs) is stable, at around 169,000 lines at the end 2019/20.¹¹⁷ However, telecoms providers can now use KCOM’s data-only WLA product to provide FTTP broadband services to all premises in the Hull Area without the need to purchase a FAEL.¹¹⁸ We are also imposing further changes to KCOM’s WLA reference offer (as set out in Section 2 of Volume 3) which we consider will reduce the barriers to take-up of this product.
- 6.11 The availability of KCOM’s data-only WLA service increases the likelihood of broadband-only packages being made available to customers from other telecoms providers. This may lead to a greater propensity for consumers to give up their analogue fixed line and rely on their mobiles for voice calls. However, it is difficult to predict in advance precisely how substitution patterns will be affected by these developments.
- 6.12 In addition, we now understand that KCOM will no longer be able to maintain PSTN services after 2025. Given FAEL rely on the traditional PSTN network, this change could lead to the withdrawal of these services within this market review period.¹¹⁹ Providers that currently use a FAEL to supply end-users with a fixed voice service may therefore need to migrate their customers to IP-based voice services. We expect that IP-based voice will provide an effective substitute for analogue voice services.
- 6.13 We have not repeated the detailed assessment of direct and indirect constraints that we undertook in the 2017 NMR Statement. Rather, we consider that a product market including those services as defined in the 2017 NMR Statement, as well as IP-based voice

¹¹⁶ The market definition assessment in the 2017 NMR Statement stated that the situation in the Hull Area was similar to the rest of the UK. 2017 NMR Statement, Section 4.

¹¹⁷ According to KCOM’s Regulatory Financial Statements 2019/20, there were 168,669 WFAEL lines/circuits in 2019/20, decreasing slightly by 0.1% since 2018/19. KCOM, 2021. [Regulatory Financial Statements for the year ended 31 March 2020](#), page 22 [accessed 13 October 2021].

¹¹⁸ KCOM’s Wholesale FibreLine Local Access Price List indicates that a ‘data only end user’ can purchase a WFLLA product without KLR, while a ‘transition end user’ would need to still purchase KLR in conjunction with WFLLA. KCOM, 2021. [Wholesale FibreLine Local Access Price List](#), page 2.

¹¹⁹ KCOM response dated 14 October 2021 to the s.135 notice dated 7 October 2021, slideset, page 20.

services, is an appropriate frame of reference to assess whether WFAEL in the Hull Area still meets the three criteria test and should be subject to *ex ante* regulation.¹²⁰

Geographic market definition

- 6.14 We consider that the Hull Area is a distinct geographic market from the rest of the UK. KCOM has a market share of nearly 100% for the supply of WFAEL in the Hull Area, in which BT is absent. We therefore consider that the competitive conditions are not homogenous between the Hull Area and the rest of the UK. Furthermore, we do not consider that there are any material differences in competitive conditions within the Hull Area.

Three criteria test for WFAEL

- 6.15 In determining whether to identify a market for the purposes of making a market power determination, we must consider whether the three criteria set out in subsection 79(2B) of the Act are met. Where we do not consider that the three criteria are met, we may not identify a market for this purpose.
- 6.16 In identifying a market, we may have regard to various recommendations or guidelines published by the European Commission, and guidelines published by BEREC, including the 2020 EC Recommendation. The WFAEL market is not listed in the Commission's 2014 EC Recommendation or in the 2020 EC Recommendation as a market in which *ex ante* regulation may be warranted.
- 6.17 Given the above, it is appropriate to consider whether the three criteria set out in subsection 79(2B) of the Act are met in relation to the WFAEL market.

Presence of high and non-transitory barriers to entry

- 6.18 As set out above in relation to the product market definition, telecoms providers can now use KCOM's data only WLA product to provide fibre broadband services to all premises in the Hull Area without the need to purchase a FAEL. Telecoms providers can use the WLA broadband connection to supply a voice service to consumers using managed VoIP, which means it will no longer be necessary to purchase a FAEL from KCOM in order to provide dual play services (and therefore fixed voice services) to all residential consumers in the Hull Area.
- 6.19 KCOM has said it will not be able to maintain PSTN services after 2025.¹²¹ WFAEL services rely on PSTN, so if KCOM were to entirely close this network it would no longer be able to provide some fixed voice services, such as KLR or other white-label services that are reliant on WFAEL. If this were the case, users of these services would need to transition to alternative methods of supply (i.e. IP-based voice) over the review period.

¹²⁰ We note that where a narrower product market does not pass the three criteria test, a wider product market definition that included alternative services (such as mobile) would also not pass the three criteria test.

¹²¹ KCOM response dated 14 October 2021 to the s.135 notice dated 7 October 2021, slideset, page 20.

- 6.20 As discussed in Section 2 of Volume 3, we are introducing measures relating to KCOM's reference offer that will improve the existing WLA access arrangements, which we consider will facilitate the use of KCOM's fibre network by access seekers. We consider that this will increase the likelihood that telecoms providers will be able to provide competing dual-play services in the Hull Area during the forthcoming review period. Consistent with the modified greenfield¹²² approach we adopt, a downstream market should only be subject to *ex ante* regulation if competition issues remain, despite the presence of regulation on the upstream market.
- 6.21 Should demand arise for a suitable WLA access product to support voice-only services, we would expect KCOM to consider that request as part of its obligation to provide fair and reasonable access in the WLA market as set out in our proposed SMP condition requiring WLA network access on reasonable request.¹²³
- 6.22 Given that we consider the WFAEL market will become contestable during the review period, our view is that there will no longer be high and non-transitory barriers to market entry.

Our decision

- 6.23 It follows from the above analysis that WFAEL in the Hull Area does not satisfy the first of the three criteria test set out in section 79(2B) of the Act, and, therefore, Ofcom may not identify it as a market for the purpose of considering whether to make or review a market power determination. As a result, we have decided to remove all existing regulatory obligations from the WFAEL market in the Hull Area. However, we will maintain aspects of the existing regulation for a transitional period of 12 months, as set out in Section 5 of Volume 3.

Wholesale ISDN2 and Wholesale ISDN30

- 6.24 ISDN2 and ISDN30 are narrowband access services, most commonly used by businesses to provide multiple lines for calls. ISDN2 services are appropriate for business sites requiring fewer than eight voice channels, whereas ISDN30 services are more appropriate when a larger number of channels is required.

Our proposals

- 6.25 In the 2020 Hull Area WFTMR Consultation we proposed that the wholesale ISDN2 and ISDN30 exchange line services markets in the Hull Area do not satisfy the three criteria test and therefore we proposed to remove all existing regulatory obligations from these markets. However, we also proposed to maintain aspects of the existing regulation for a

¹²² The modified greenfield approach requires us to assess whether markets are effectively competitive from a forward-looking perspective in the absence of any regulation that would result from a finding of SMP. However, it remains appropriate to take into account *ex ante* regulation arising from SMP findings in markets either upstream from, or horizontally related to, the services of interest.

¹²³ See Volume 3 paragraphs 2.4 to 2.16.

transitional period of 12 months which we discuss, along with stakeholder comments, in Section 5 of Volume 3.

- 6.26 KCOM, Purebroadband and Connexin agreed with our proposed deregulation of the markets for wholesale ISDN2 exchange line services and wholesale ISDN30 exchange line services in the Hull Area. No stakeholder disagreed with provisional finding that these wholesale markets do not satisfy the three criteria test.

Our reasoning

Product market definition

- 6.27 In our 2017 NMR Statement, we found that wholesale ISDN2 exchange line services and wholesale ISDN30 exchange line services were each in separate product markets. We also found that IP-based services were not in the same market, despite these IP-based services typically offering the same or better functionality. We found that the lack of substitution from ISDN to IP-based services in response to a small but significant and non-transitory increase in price (SSNIP) was in large part due to the high migration costs that many firms would face in moving from ISDN services to more modern alternatives.¹²⁴ Nevertheless, we considered that IP-based services were likely to increasingly provide some level of competitive constraint in the future, particularly for new ISDN line connections.
- 6.28 ISDN is an aging technology and is generally declining in use both in the Hull Area and in the rest of the UK.¹²⁵ Given that there is a wider shift away from the use of ISDN services by the industry at large, it is possible that ISDN customers' propensity to switch to IP-based alternatives in response to a SSNIP will increase. If KCOM cannot maintain its ISDN network beyond 2025, as it has said, business will no longer have the option to delay switching to IP-based services. However, it is difficult to say in advance if there will be a sufficient increase in substitutability to widen the relevant market to include IP services. Given this, we have not repeated the detailed assessment of competitive constraints that we undertook in the 2017 NMR Statement. Rather, we consider that the market definitions set out in the 2017 NMR Statement are an appropriate frame of reference to assess whether the separate markets for wholesale ISDN2 exchange line services and wholesale ISDN30 exchange line services in the Hull Area each continue to meet the three criteria test and should be subject to *ex ante* regulation.

Geographic market definition

- 6.29 We consider that the Hull Area is distinct from the rest of the UK. KCOM has a market share of nearly 100% for the supply of wholesale ISDN2 or ISDN30 exchange lines services in the Hull Area, and BT is not present in the Hull Area. We also do not consider that there are any material differences in competitive conditions within the Hull Area.

¹²⁴ 2017 NMR Statement, paragraphs 5.20 to 5.44 and 5.92 to 5.112.

¹²⁵ A comparison of [BT's Regulatory Financial Statements](#) indicate that volumes for ISDN2 and ISDN30 have been in steady decline since at least 2016/17. As outlined above in the Figure 1.6, ISDN2 line volumes have declined by 13% and ISDN30 channel volumes have declined by 11% [accessed 19 October 2021].

Three criteria test for wholesale ISDN2/30 exchange line services markets

- 6.30 In determining whether to identify a market for the purposes of making a market power determination, we must consider whether the three criteria set out in subsection 79(2B) of the Act are met. Where we do not consider that the three criteria are met, we may not identify a market for this purpose.
- 6.31 In identifying a market, we may have regard to various recommendations or guidelines published by the European Commission, and guidelines published by BEREC, including the 2020 EC Recommendation. The wholesale ISDN2 exchange line services and wholesale ISDN30 exchange line services markets are not listed in the Commission's 2014 EC Recommendation or in the 2020 EC Recommendation as a market in which *ex ante* regulation may be warranted.
- 6.32 Given the above, it is appropriate to consider whether the three criteria set out in subsection 79(2B) of the Act are met in relation to the wholesale ISDN2/30 exchange line markets.
- 6.33 We have also had regard to our statutory duties, which include an obligation to carry out our functions with a view to securing that regulation does not involve the imposition or maintenance of regulatory burdens that are unnecessary.¹²⁶

The insufficiency of competition law alone to adequately address the market failure(s) concerned

- 6.34 In the 2017 NMR Statement we recognised that competition concerns were limited to existing users of ISDN2 and ISDN30, as new users did not face migration costs and were able to substitute to more modern alternatives based on IP. Consequently, current regulation only applies to ISDN exchange lines which were purchased or ordered before December 2018.¹²⁷ We estimate that fewer than 15 ISDN lines¹²⁸ are protected by our existing *ex ante* regulation. The impact of the existing *ex ante* regulation on the market is therefore likely to be limited.
- 6.35 Further, given KCOM's inability to maintain its PSTN network beyond 2025¹²⁹, it is also possible that customers will need to migrate to more modern alternatives over the review period.
- 6.36 Taking the above into account, we consider that the need for frequent and timely intervention in these markets is no longer indispensable and we consider that in the specific circumstances of wholesale ISDN2 exchange line services and wholesale ISDN30

¹²⁶ [Communications Act 2003](#), Section 6(1).

¹²⁷ In the 2017 NMR Statement we observed that there was a growing and significant indirect constraint from IP-based alternatives, which would be likely to limit the extent of KCOM's market power in wholesale ISDN markets. As a result, we tailored our remedies to remove most regulation for new ISDN lines and instead focus *ex ante* regulation on existing ISDN lines only. 2017 NMR Statement, paragraphs 7.94 to 7.98.

¹²⁸ These are estimates based on the number of wholesale ISDN exchange lines sold by KCOM in Q2 2018/19. KCOM response dated 5 February 2020 to the s.135 notice dated 08 January 2020, question 5.

¹²⁹ KCOM response dated 14 October 2021 to the s.135 notice dated 7 October 2021, slideset, page 20.

exchange line services in the Hull Area, competition law will be sufficient as a means of addressing the market failures identified.

Our decision

- 6.37 It follows from the above analysis that the wholesale ISDN2 exchange line services and wholesale ISDN30 exchange line services markets in the Hull Area do not satisfy the three criteria test, and, therefore, are not suitable for *ex-ante* regulation. Consequently, we confirm our decision to remove all existing regulatory obligations from the wholesale ISDN2 exchange line services and wholesale ISDN30 exchange line services markets in the Hull Area. We will maintain aspects of the existing regulation for a transitional period of 12 months, as set out in Section 5 of Volume 3.

WCO

Our proposals

- 6.38 In the 2020 Hull Area WFTMR Consultation we proposed that the market definition that we set out in the 2017 NMR Statement is an appropriate frame of reference to consider whether the WCO market still meets the three criteria test and should be subject to *ex ante* regulation. We proposed that the relevant geographic market is the Hull Area.
- 6.39 We provisionally concluded that the WCO market in the Hull Area does not satisfy the three criteria test, and, therefore, is not suitable for *ex ante* regulation. Consequently, we proposed to remove all existing regulatory obligations from the WCO market in the Hull Area. However, we also proposed to maintain aspects of the existing regulation for a transitional period of 12 months which we discuss, along with stakeholder comments, in Section 5 of Volume 3.
- 6.40 KCOM, Purebroadband and Connexin agreed with our proposed deregulation of the WCO market in the Hull Area. No stakeholder disagreed with our provisional finding that this market does not satisfy the three criteria test.

Our reasoning

Product market definition

- 6.41 In the 2017 NMR Statement, we concluded that the WCO product market contained voice calls originated over WFAEL (which includes lines using WLR, MPF, cable and FTTP with an analogue telephone adaptor (ATA))¹³⁰, as well as calls originated over ISDN lines.
- 6.42 In previous reviews we found that in response to a small but significant change in the price of fixed calls, consumers were not willing to substitute in sufficient numbers to

¹³⁰ An ATA is a piece of equipment that allows standard analogue telephone equipment to be used with a VoIP network.

alternatives, such as mobile or VoIP services provided over fixed broadband. Consequently, we defined narrow product markets that exclude these alternatives.¹³¹

- 6.43 As noted above, WCO volumes in the Hull Area been in decline. There are signs that use of alternative methods of communication has continued to grow throughout the UK.¹³² The proportion of households that have a mobile, but no landline, increased from 18% in 2017 to 34% in 2021.¹³³ The use of over-the-top (OTT) voice services has also been increasing over the last few years, with the percentage of people that use OTT voice services growing from 55% in 2017 to 89% in 2021.¹³⁴
- 6.44 In the longer term, it remains possible that substitution between fixed and mobile calls or between fixed calls and OTT calls will increase. However, it is difficult to predict in advance precisely how substitution patterns will be affected. We have therefore decided not to expand the product market frame of reference to include these services.
- 6.45 As set out above we now understand that KCOM cannot maintain its PSTN beyond 2025, which may lead to the withdrawal of fixed analogue voice services within this market review period.¹³⁵ Providers which currently use FAEL to supply end users with a fixed voice service will need to replace that service with an IP-based voice service and migrate their customers to it. We expect that IP-based voice will provide an effective substitute for analogue voice services.
- 6.46 Given this, we consider that the product market definition that we set out in the 2017 NMR Statement (which includes lines using WLR, MPF, cable and voice-enabled fibre lines, as well as calls originated over ISDN lines), and IP-based voice services provided over broadband access lines, is an appropriate frame of reference to consider whether the WCO market still meets the three criteria test and should be subject to *ex ante* regulation.

Geographic market definition

- 6.47 We consider our assessment of geographic market definitions for WFAEL, ISDN2/IDSN30 are also relevant for the WCO market. We consider that the Hull Area is distinct from the rest of the UK due to KCOM facing little competition in the supply of WFAEL or ISDN2/30 services over which calls are originated by KCOM, and BT is not present in the Hull Area. We also do not consider that there are any material differences in competitive conditions within the Hull Area.

¹³¹ 2017 NMR Statement, paragraphs 4.143 to 4.148.

¹³² We look at trends in the UK generally to consider behaviours in the Hull Area. We expect that the behaviour of consumers in the Hull Area in regard to mobile and OTT use is broadly similar to those in the UK as a whole.

¹³³ ‘Mobile only’ responses to Tech Tracker Question QC1: “Is there a landline phone in your home that can be used to make and receive calls?”). Ofcom, 2017. [Ofcom Nations & Regions Technology Tracker – H1 2017](#), table 21 and Ofcom, 2021. Ofcom, 2021. [Ofcom Technology Tracker 2021](#), table 69.

¹³⁴ ‘Yes’ responses to Tech Tracker Question QE30: “Have you or anyone in your household ever used one of these services to make voice calls using the internet at home?” (“these services” being explained as services such as Skype Facetime, WhatsApp and Facebook Messenger). Ofcom, 2017. [Ofcom Nations & Regions Technology Tracker – H1 2017](#), table 103 and Ofcom, 2021. [Ofcom Technology Tracker 2021](#), table 69.

¹³⁵ KCOM response dated 14 October 2021 to the s.135 notice dated 7 October 2021, slideset, page 20.

Three criteria test for WCO

- 6.48 In determining whether to identify a market for the purposes of making a market power determination, we must consider whether the three criteria set out in subsection 79(2B) of the Act are met. Where we do not consider that the three criteria are met, we may not identify a market for this purpose.
- 6.49 In identifying a market, we may have regard to various recommendations or guidelines published by the European Commission, and guidelines published by BEREC, including the 2020 EC Recommendation. The WCO market is not listed in the 2020 EC Recommendation as a market in which *ex ante* regulation may be warranted.
- 6.50 Given the above, it is appropriate to consider whether the three criteria set out in subsection 79(2B) of the Act are met in relation to the WCO market.

Presence of high and non-transitory barriers to entry

- 6.51 As already noted above in relation to the application of the three criteria test in the WFAEL market, KCOM's provision of its data-only WFLLA service means it is no longer necessary to use a FAEL to provide a fixed voice service in the Hull Area. As other telecoms providers can provide a managed VoIP service over broadband, telecoms providers will be able to originate the calls themselves, instead of having to rely on KCOM to originate calls on its voice network.
- 6.52 Consistent with the modified greenfield approach¹³⁶, we consequently consider that alternative providers of fixed voice services are unlikely to face high and non-transitory barriers to entry in the supply of WCO in the Hull Area by the end of the period of this review.
- 6.53 Should demand arise for a suitable WLA access product to support voice-only services, we would expect KCOM to consider that request as part of its obligation to provide fair and reasonable access in the WLA market as set out in our proposed SMP condition requiring WLA network access on reasonable request.¹³⁷
- 6.54 Given that we consider the WCO market will become contestable during the review period, our view is that there will no longer be high and non-transitory barriers to market entry. It follows that there is no need to consider the other two criteria in the three criteria test.

Our decision

- 6.55 It follows from the above analysis that the WCO market in the Hull Area does not satisfy the three criteria test set out in section 79(2B) of the Act and therefore Ofcom may not identify it as a market for the purpose of considering whether to make or review a market

¹³⁶ The modified greenfield approach requires us to assess whether markets are effectively competitive from a forward-looking perspective in the absence of any regulation that would result from a finding of SMP. However, it remains appropriate to take into account *ex ante* regulation arising from SMP findings in markets either upstream from, or horizontally related to, the services of interest.

¹³⁷ See Volume 3 paragraphs 2.4 to 2.16.

power determination. Consequently, we have decided to remove all existing regulatory obligations from the WCO market in the Hull Area. We will maintain aspects of the existing regulation for a transitional period of 12 months as set out in Section 5 of Volume 3.