
Connected Nations

Supplementary report on Planned Network Deployments 2022

[Welsh translation available](#)

REPORT:

Publication date: November 2022

Contents

Section

1. Overview	1
2. Introduction	2
3. Summary of findings	4
4. Methodology	10

1. Overview

This is our first forward-looking report about planned network deployments supporting very high speed broadband services in the United Kingdom, which, for all fixed networks we have examined, are now all based on full fibre technology. This analysis also includes the plans of operators to extend or upgrade fixed wireless access networks so as to provide very high speed broadband, with download speed of at least 100 megabits per second.

The report is based on the stated deployment plans of network operators as of March 2022 up to three years in advance. These plans include those that are privately funded as well as any plans that are supported through public funds/intervention. However, the report only focuses on Communications Providers planned deployments and does not take account of any aspirations or plans by public authorities, whether national or local, to roll out networks in their geographical areas.

We have prepared and published this report to supplement our Connected Nations report, which is a statement of current network coverage.

Key findings

Total number of properties to have full fibre availability in 2025 could be as high as 24.8m (84% of all properties). If all network deployments are realised as planned, the number of properties covered by full fibre will increase from 11.0m (as of September 2022) to 24.8 million by March 2025. Gigabit-capable coverage could be in excess of 90%.

Networks are planned in all areas across the UK, although some regions can expect to see greater growth than others. While the amount of planned build varies between local authorities, over 90% of these should see gigabit-capable coverage exceeding 60% of residential premises.

Both rural and urban areas are being targeted by network operators. Although much of the planned network build is focussed in urban or suburban areas, rural areas can also expect substantial network deployment usually from smaller operators, sometimes supported by public incentive schemes.

Almost all local authority regions in the UK have more than 3 network operators planning to deploy networks in the future, many regions having more than 10 operators planning to build. Some of this build is complementary whereas others may result in direct competition at individual premises. We estimate that up to 66% of properties will be able to take VHCN (gigabit capable) services from two or more providers.

We also anticipate Fixed Wireless Access (FWA) networks offering high speed broadband (>100Mbit/s) to expand. Our data reports that nearly 7,000 further FWA masts are being planned across the UK that may be capable of offering high speed broadband. However, it is not straightforward to extrapolate from this information the number of premises that could receive these high-speed FWA broadband services.

2. Introduction

Purpose of this forward-looking report

One of the electronic communications networks matters that Ofcom must now deal with in our infrastructure reports (known as our Connected Nations reports) prepared under section 134A of the Communications Act 2003 (the 2003 Act) is any future build proposals of Communications Providers (CPs).

Specifically, this means that Ofcom needs to report on the proposals that providers of electronic communications network in the United Kingdom may at any time have within the next 3 years to bring into operation a new very high capacity network (VHCN), other than a mobile network, or to extend or upgrade any part of a fixed line network or its equivalent, such as a fixed wireless access network, so as to provide a download speed of at least 100 megabits per second (Mbit/s).¹

By their very nature such proposals containing detailed build plans for identifiable network operators are confidential and extremely commercially sensitive and, as such, Ofcom will exclude such particular information from our published Connected Nations reports.

However, pursuant to section 134AC(1) of the 2003 Act, the Secretary of State must have regard to our infrastructure reports received from Ofcom under section 134A for three purposes, namely the allocation of public funds for the bringing into operation of electronic communications networks; the design of national broadband plans; and verifying the availability of services to which universal service conditions apply.

For those reasons, the approach we have taken to the preparation and publication of this Connected Nations report is to include within its main body for publication only aggregated and anonymised overall planned build proposals for each of the local and regional authorities in the United Kingdom, together with our high-level findings. The data presented represents providers' own forecast of coverage which depend on the builds currently in progress. Operators' deployment plans, no matter how far advanced and committed, can be subject to change.² We have also prepared a confidential annex to this report containing full details of specific operator and property coverage data that has been sent to the Secretary of State, but which annex will not be published.

Meaning of VHCNs and what this report covers

Section 4(12A) of the 2003 Act defines the meaning of a VHCN as an electronic communications network which: (a) consists wholly of optical fibre elements at least up to the distribution point at the serving location; or (b) is capable of delivering, under usual peak-time conditions, network

¹ Section 134B(1)(j) of the 2003 Act.

² We are also not intending to update our broadband coverage checker to include future build information. Not only would this information be confidential and extremely commercially sensitive for the same reasons, but it could also provide an unreasonable expectation for an individual householder. We anticipate that individual properties are likely to be informed by broadband providers when VHCNs are, or are expected to be, made available at a specific location as part of sales and marketing initiatives. If so, and when retail providers have informed us that the properties are covered or "Ready for Service", we intend to update our broadband coverage checker with the relevant information.

performance that, in Ofcom’s opinion, is similar, in terms of available downlink and uplink bandwidth, resilience, error-related parameters and latency and its variation, to the network performance³ of a network falling within paragraph (a).

For the purposes of preparing this report, we therefore issued formal information requests to all communications providers (CPs) from whom we collect existing network coverage information. In particular, we requested information from each CP to provide, as of March 2022, the properties for which they had plans to address with VHCN (within the full definition set out above) for the next three years. The information we received from them only dealt with their plans for the deployment of full fibre technology.

In other words, our high-level findings (together with the associated data) set out in this report mainly relate to VHCNs within the meaning of section 4(12A)(a) of the 2003 Act (as above). However, we also include in this report, where relevant, the existing gigabit-capable networks that use alternative technologies (for example, cable broadband networks). We also report on plans to extend or upgrade fixed wireless access (FWA) networks so as to provide a download speed of at least 100 megabits per second that we received from FWA providers, something which also falls within our specific reporting duty in this context.

We consider that this report may represent an underestimate of the total network build over the next three years. While we have collected, and report upon, the specific plans for network build of CPs we are also aware that public authorities such as devolved administrations may have their own aspirations and plans to support network build which we not required to cover and are therefore not included in this report. We expect that where such public authorities’ aspirations or plans result in planned network deployment plans by CPs going forward, these will be captured in future reports.

There are some other aspects to be noted concerning the data covered by this first report on planned network deployments of VHCNs in the United Kingdom:

- In total, we received data for over 25 million properties in the United Kingdom.
- In some cases, particularly for areas of new housing development, individual property information was not available, so wider postcode-level information has been provided on which we have based this report.
- In other cases, individual properties may be targeted for coverage by different CPs, but over different timescales or with different levels of certainty (confidence). As a result, in some of the data tables set out in next Section 3, some duplication of properties exists, and we highlight this where it occurs.
- Some CPs also provided us with their plans beyond our requested 3-year timeframe. To avoid inconsistencies with data from CPs who did not provide such additional information, our high-level findings in this report do not take account of any of the responses going beyond our requested 3-year timeframe.

³ Section 4(12B) of the 2003 Act clarifies that network performance can be considered similar regardless of whether the end-user experience varies due to the inherently different characteristics of the medium by which the network ultimately connects with the network termination point.

3. Summary of findings

In this section we provide a summary of the findings of our analysis of provider data. We examine the overall extent of network build across the UK, along with breakdowns at the individual Nation level. Among other things, we report on the build plans in both urban and rural areas as well as where networks may be building to the same properties ('overbuild').

The properties that form the basis for our analysis are the same as those used for our Connected Nations Autumn Update (October 2022), and to remain consistent with the general Connected Nations reports, our results refer to residential properties only.

Although the plans provided to us related to the deployment of full fibre technology, our report relates to the provision of Very High Capacity Networks (VHCN), so we include, where relevant, the existing gigabit-capable networks that use alternative technologies (for example, cable broadband networks).

The future network build intentions of operators may be at different stages of planning; some plans may already be in the course of deployment, whereas others may not yet have had financial approval to proceed. For this report we asked CPs to provide their level of confidence of their planned network deployments and as a result in this report we consider build plans divided into the following categories:

- i) Those for which detailed planning and/or deployment were in progress (Category 1);
- ii) Those for which financial approval had been obtained (Category 2); and
- iii) Those for which financial approval had not yet been obtained (Category 3)

Overview of Full-fibre and Gigabit-capable coverage

We set out below four tables that set out the planned deployment coverage over the next three years in the UK and each of the nations. The figures in Table 1 below include coverage for plans across all planning stages (Category 1, 2 & 3) and funding types whereas Table 1a provides the figures for full fibre coverage for Categories 1 and 2 only.⁴

Table 2 and 2a summarise the coverage of the planned deployment of VHCN (gigabit-capable) network over the next three years for the UK and each of the nations. With table 2 providing a summary of the VHCN coverage for all the categories and table 2b summarising the VHCN coverage for just categories 1 and 2.

Access to full fibre	Current (May 2022)	March 2023	March 2024	March 2025
UK	37%	55%	74%	84%
England	36%	54%	73%	83%
Northern Ireland	83%	94%	96%	96%
Scotland	36%	52%	70%	83%
Wales	36%	59%	79%	92%

Table 1. Summary of planned deployment of full fibre coverage over the next three years for all planning categories

The figures in the table below, in contrast, only include those plans in Category 1 and 2.

Access to full fibre	Current (May 2022)	March 2023	March 2024	March 2025
UK	37%	51%	70%	76%
England	36%	50%	69%	75%
Northern Ireland	83%	94%	95%	95%
Scotland	36%	50%	68%	73%
Wales	36%	47%	70%	77%

Table 1a. Summary of planned deployment of full fibre coverage over the next three years for planning Categories 1 & 2.

⁴ Unless otherwise stated all dates are for the end of the month quoted (for example, 31 March 2023).

Access to Gigabit capable networks	Current (May 2022)	March 2023	March 2024	March 2025
UK	68%	77%	86%	92%
England	69%	78%	87%	92%
Northern Ireland	85%	95%	96%	96%
Scotland	63%	71%	81%	87%
Wales	49%	66%	82%	93%

Table 2. Summary of planned deployment of VHCN (Gigabit-capable) coverage over the next three years for all planning Categories

Access to Gigabit capable networks	Current (May 2022)	March 2023	March 2024	March 2025
UK	68%	75%	85%	88%
England	69%	76%	86%	89%
Northern Ireland	85%	95%	96%	96%
Scotland	63%	70%	81%	85%
Wales	49%	57%	73%	81%

Table 2a. Summary of planned deployment of VHCN (Gigabit-capable) coverage over the next three years for planning Categories 1 & 2.

Planned deployment of Fixed-Wireless Access (FWA) networks

We also anticipate that FWA networks will deploy nearly 7,000 additional masts across the UK over the next 3 years, for which we anticipate that the respective operators may be able to offer broadband services with download speeds of ≥ 100 Mbit/s. However, only a fraction of all the properties covered by a FWA network may be able to take a broadband service at such speeds due to practical installation challenges (such as getting line of sight to the property) and capacity constraints (e.g. spectrum), so we report on the potential extent of these networks differently to that of full fibre networks.

Despite the separate reporting approach, we do recognise the importance of FWA (and increasingly satellite) technology to serve households across the UK, particularly in more challenging areas.

New FWA masts	Current (Sept 2022)	Additional masts as of March 2023	Additional masts as of March 2024	Additional masts as of March 2025 ⁵
UK	27000	2274	4752	6945
England	23000	1947	3990	5848
Northern Ireland	300	24	65	127
Scotland	2300	221	474	664
Wales	1400	82	223	306

Table 3. Projected (cumulative) Fixed Wireless Access (FWA) mast deployments (UK and Nations)

Relationship between planning stages and timescales

Network plans, particularly those projected many months in advance, have different levels of confidence, either due to the certainty of funding available to cover the capital and other project costs, or due to the level of planning detail that has been completed. As a result, for more immediate plans there are higher number of properties for which there is definitive planning in progress, whereas for longer-term plans there is more of a mix of detailed and high-level plans.

Planning stage	Total number of new lines: By 31 March 2023	Total number of new lines: By 31 March 2024	Total number of new lines: By 31 March 2025
Detailed planning in progress (including initial civils works underway) (Cat 1)	5.0m	10.6m	12.5m
High-level plans agreed and funding approved (Cat 2)	0.6m	4.8m	6.4m
Plans yet to receive funding (Cat 3)	2.3m	4.1m	10.6m

Table 4. Level of planning with respect to anticipated delivery date (cumulative figures over time). Note that individual properties may be identified by more than one operator (with different delivery dates and at a different stage of planning), hence the count of ‘lines’ rather than properties in this table.

⁵ Our data collection of FWA network information was conducted separately to that of the fixed networks. Consequently, some FWA data reflects planned deployment until June 2025 rather than March 2025 but is still included in our analysis.

Coexistence of network deployments

In addition to the further expansion of existing networks in the UK, a large number of new network infrastructure operators has also emerged. Here we examine where these networks are being deployed with respect to each other.

In many cases build plans have been complementary in that different operators operate in the same geographic area yet each targeting different premises within that area. This helps to maximise take-up and hence revenues. However, in other areas multiple networks may build to the same properties (referred to as ‘overbuild’). Our analysis shows that overbuild is likely to continue for the foreseeable future with some properties having gigabit-capable broadband services available from 3 or more providers.

Competitive Gigabit-capable build by March 2025	Number of fixed operators in Nation	% properties covered by 5 or more operators	% properties covered by 4 or more operators	% properties covered by 3 or more operators	% properties covered by 2 or more operators
UK	57	0.4%	3%	27%	66%
England	52	0.4%	3%	27%	65%
Northern Ireland	5	0%	0%	19%	76%
Scotland	11	0%	0.5%	27%	64%
Wales	17	2%	9%	45%	77%

Table 5. Coincident network coverage anticipated by March 2025. Note that this includes existing gigabit-capable networks (which includes both full fibre and cable broadband).

We have also examined how build plans of operators may evolve in the Market areas defined in our most recent Wholesale Fixed Telecoms Market Review (WFTMR),⁶. This highlights that in both ‘Area 2’ (areas with the potential for material competition) and ‘Area 3’ (where Openreach is the only operator providing a large-scale network) gigabit capable services are anticipated to become widely available by March 2025, with more operators actively deploying networks in these areas.

Competitive build by March 2025	Number of fixed operators	% properties gigabit capable today (May 2022)	% properties gigabit capable March 2025
Area 2	45 (42 today)	82%	96%
Area 3	51 (45 today)	36%	80%

Table 6. Anticipated network build in ‘Area 2’ and ‘Area 3’ (as defined in Ofcom’s most recent market review).

⁶ [Statement: Promoting investment and competition in fibre networks – Wholesale Fixed Telecoms Market Review 2021-26 - Ofcom](#)

Funding sources for future network deployment

While public funded schemes continue to support many high-capacity network deployments, the majority of funding for network deployments currently comes from private investments. It is likely that there will be more publicly funded schemes announced by national and local administrations in the future; as the relevant contracts are let to operators, we should see the effect of these schemes, in terms of premises targeted, in further updates to this report.

Private/public investment (March 2025)	Number of properties covered by private funds (million)	Number of properties covered by public funds
UK	29.2	308,000
England	23.9	146,000
Northern Ireland	0.4	45,000
Scotland	2.6	53,000
Wales	2.3	64,000

Table 7. Comparison of public and private funding for network deployments for UK and by Nation. Note that individual properties may be identified by more than one operator, leading to some duplication.

Future build in urban and rural areas

Network investment is not just focussed on urban areas. While the economics are more favourable in terms of properties passed per unit cost, many rural areas can be attractive due to the current levels of broadband service and hence the likely uptake of new services were they to be available.

Urban/rural deployments (March 2025)	Number of urban properties covered	Number of rural properties covered	% Urban properties covered	% Rural properties covered
UK	24.4m	2.7m	96%	66%
England	20.6m	2.0m	96%	65%
Northern Ireland	0.6m	0.2m	99%	89%
Scotland	2.1m	0.2m	95%	52%
Wales	1.1m	0.2m	99%	69%

Table 8. Urban and rural split (both absolute and percentage) of coverage plans to March 2025.

Broadband Universal Service Obligation: change of coverage of ‘decent’ broadband

The build plans of operators will affect the number of properties that may be eligible for Broadband USO provision. We shall discuss this in more detail in our Connected Nations Annual Report where we discuss the Broadband USO more broadly.

4. Methodology

In this section we summarise the methodology that underpins the results in this report.

Calculating the ‘premise base’

- 4.1 This section explains how we identify, include, and categorise properties. In summary:
- We use property information from the Ordnance Survey’s AddressBase database including both Royal Mail postal addresses and additional property details from Local Authority sources. This ensures our ‘premises base’ is current and comprehensive.
 - We consider the sub-properties within a building regardless of the number of postal delivery points serving them. This ensures our overall report, as well as our published maps and apps, better reflect coverage at individual premises across the UK and are consistent with information provided by operators.
 - In the report we will normally focus on coverage figures for residential properties. We will also highlight distinctions between residential and commercial premises where appropriate.
- 4.2 The addressing products used in the annual Connected Nations include:
- Ordnance Survey AddressBase Premium [Epoch 92](#).
 - Ordnance Survey AddressBase Islands [Epoch 92](#).
- 4.3 Both products were released in April 2022.
- 4.4 Ofcom uses the Ordnance Survey AddressBase® Premium product to provide the base dataset used to assess broadband coverage for residential and commercial premises.
- 4.5 AddressBase includes information about 44 million addresses, properties, and land areas where services are provided, by combining 3 datasets:
- Local Government National Land and Property Gazetteer (NLPG).
 - Ordnance Survey MasterMap address layer.
 - Royal Mail Postal Address File (PAF).
- 4.6 Each record in AddressBase refers to a Basic Land and Property Unit (BLPU) and is defined in the British Standard for Addressing (BS7666) as an:
- Area of land in uniform property rights or, in the absence of such ownership evidence or where required for administration purposes, inferred from physical features, occupation or use.
- 4.7 Each BLPU has a Unique Property Reference Number (UPRN), a spatial reference and one or more Land and Property Identifiers (LPI).
- 4.8 Our approach to identifying the ‘premise base’ includes three stages:
- Identifying ‘Service delivery addresses’; the address locations that are indicative of where a service would be provided.

- Data cleansing: for use in reporting, the premise list is linked to other attributes to identify statistical or administrative geographic units, or rurality categories. Timing of data may impact on how many records may be linked.
- Reporting definition: the inclusion of all records based on property classification or status may change dependent on the specific focus of a report.

4.9 A Service delivery address can be defined as a premise that is:

- able to receive mail either directly or indirectly (via a parent, sibling or holding address).
- is not a “parent-shell” address.
- does not have a parent address OR parent address is classified as a “parent-shell”.

4.10 For the identification of all UPRNs that are considered valid for analysis the following source tables are used:

- [AB BLPU Table] AddressBase® Basic Land and Parcel Unit (BLPU) Table.
- [AB Classification Table] AddressBase® Classification Table.
- [NSPL Postcode Table] [National Statistics Postcode Lookup](#) Table.

For further information on our approach to address matching for Connected Nations reports, please see the [Methodology Annex](#) to our 2021 report.

Fixed Networks

4.11 Our data on coverage of fixed broadband services is collected from multiple operators (see below). In March 2022 operators were asked to provide data for each address where a VHCN service was planned to be provided in the following 3 years. This was provided with a reference date of 1 March 2022.

4.12 For the overall coverage of fixed broadband, we have identified the number of UK properties, our ‘premise base’. For May 2022 we have used a premise base of 31.6 million.

4.13 We use premises data from Ordnance Survey AddressBase Premium [Epoch 92](#) and the Ordnance Survey AddressBase Islands [Epoch 92](#). This is combined with additional geographic classifications from the ONS [National Statistics Postcode Lookup](#) table for May 2022 and Urban and Rural categories derived from the [Locale classification](#).

Urban and rural classifications

4.14 We have used the [Locale classification](#) to identify premises as being in an urban or rural area. Locale is a third-party data source based on the analysis of 2011 census output areas (OAs). Each OA is assigned to one of seven Locale Groups using a combination of Government conurbation definitions, population density at the OA- and postcode sector-levels, urban sprawl boundaries, OS roadmaps and additional visual inspection.

4.15 We assign the Locale classifications to either Urban or Rural based on the following:

- Urban: Codes A to C relate to settlements with populations over 10,000 and codes D to E relate to settlements with populations over 2,000
- Rural: F to G relate to settlements with populations under 2,000

4.16 For fixed broadband analysis each premise is assigned to a census output area via its postcode. The Locale urban and rural classification is then matched to these records via the census output area.

4.17 Information regarding plans for fixed network deployment was obtained from the following organisations:

ASK4	Netomnia
Axione	OFNL OpenFibre
B4RN	Openreach
Box Broadband	Orbital Net
CityFibre	Ogi (Spectrum Fibre)
Community Fibre	Swish Fibre
County Broadband	Technological Services
Electronic Communities	Telcom Infrastructure
F&W Networks	Toob
Fibre Nest (Persimmon Homes)	Trooli
Fibus	Truespeed
Full Fibre	Velocity1
G.Network	Virgin Media O2
Gigaclear	The 4 th Utility (Vision Fibre)
Glide	Voneus
Hyperoptic	VX Fiber
ITS	Wessex Internet
Jurassic Fibre	Wight Fibre
KCOM	Zzoomm
Lightning Fibre	

Fixed Wireless Access

A1.1 Fixed Wireless Access services can be provided on a mobile network by Mobile Network Operators (MNOs) or on a dedicated wireless network by Wireless Internet Service Providers (WISPs).

Fixed Wireless Access coverage from WISPs and MNOs

4.18 Our analysis of Fixed Wireless Access coverage uses planned deployment data from 3 MNO providers and 2 WISPs.

4.19 Where FWA services are available on mobile networks, the capacity is shared with mobile users.

- 4.20 From both types of FWA operator, we collected the build plans over the next three years (as of March 2022) to extend or upgrade any part their network, so as to provide a download speed of at least 100Mbit/s.
- 4.21 For wireless transmission and operation, it can be very difficult to predict whether a service will achieve 100Mbit/s to a particular property. Early discussions revealed that no operators were planning to deploy services which would guarantee such a service. Consequently, we collected information on future planned masts that would be supported by 1 Gbit/s or greater backhaul service (either fibre or radio). We deemed these masts to be VHCN-Ready, in that only the final antenna supporting any 100 Mbit/s service would be needed to attain that level of service.
- 4.22 We asked for the site identity and location of each new planned mast supporting such a high level of backhaul along with the anticipated timescales for deployment.
- 4.23 For the reasons above, individual property address matching was not undertaken, and we report solely on the location of the relevant masts for the purposes of future FWA network deployment.