

# Connected Nations 2021

## Northern Ireland report



# Contents

Overview .....	1
Fixed broadband services in Northern Ireland.....	2
Mobile services in Northern Ireland .....	15

# Overview

This annual report measures progress in the availability and capability of broadband and mobile services in Northern Ireland and highlights the work Ofcom is doing, alongside UK and devolved governments and communications companies, to improve the UK's connectivity.

Alongside this Northern Ireland report, we publish separate reports on broadband and mobile availability for the [UK as a whole](#) and [each of its nations](#). Our [interactive dashboard](#) allows people to easily access data for different areas of the UK and specific types of services. This data is also available at Scottish local authority, Scottish Parliament and UK Parliament constituency level. We are also releasing the [International Broadband Scorecard 2021](#), which compares the UK's recent position on broadband availability with a number of other European nations.

## Key findings:

### Broadband

- More than half a million homes in Northern Ireland (539,000) now have access to full-fibre broadband connections; over 116,000 more than last year. These connections can deliver much higher download speeds and are also more reliable than older, copper-based broadband. Among the four UK nations, Northern Ireland (71%) has the highest availability of full-fibre services, compared to England (27%), Scotland (27%) and Wales (27%).
- Northern Ireland's full fibre position is a result of a combination of aggressive commercial rollout and publicly funded schemes designed to improve broadband in rural areas.
- Superfast broadband (at least 30 Mbit/s), is available to 91% of premises in Northern Ireland, 2pp (percentage points) higher than last year.
- The average download speed delivered to premises in Northern Ireland is 82 Mbit/s. This has increased from 64 Mbit/s in 2020 and reflects increasing availability and take-up of faster broadband services.
- Average monthly broadband data use in Northern Ireland has increased to 455 GB per connection in 2021.

### Mobile

- Individual operators provide good 4G coverage across Northern Ireland, with geographic mobile coverage ranging from 87-92%, depending on the operator. Coverage from all four operators is available across 79% of Northern Ireland.
- Voice calls are available across 89-98% of Northern Ireland, depending on the operator while coverage from all operators is available across 87% of Northern Ireland.



# Fixed broadband services in Northern Ireland

## Fixed broadband scorecard: 2021

Coverage of broadband (% of residential premises)	Northern Ireland	UK
<b>Full-fibre broadband</b>	71%	28%
<b>Urban</b>	85%	28%
<b>Rural</b>	36%	24%
<b>Gigabit-capable broadband</b>	76%	47%
<b>Urban</b>	92%	50%
<b>Rural</b>	36%	25%
<b>Superfast broadband (&gt;=30 Mbit/s)</b>	91%	96%
<b>Urban</b>	99%	98%
<b>Rural</b>	70%	83%
<b>Average download speed</b>	82 Mbit/s	87 Mbit/s
<b>Urban</b>	95 Mbit/s	90 Mbit/s
<b>Rural</b>	50 Mbit/s	63 Mbit/s
<b>Average monthly data usage (per residential connection)</b>	455 GB	453 GB

Source: Ofcom analysis of operator data.

## Introduction

The importance of everyone having access to fast and reliable voice and broadband services, wherever they live and work, has continued to grow in 2021. The Covid-19 pandemic has meant people have continued to rely on these services for work, education, healthcare and entertainment throughout the year.

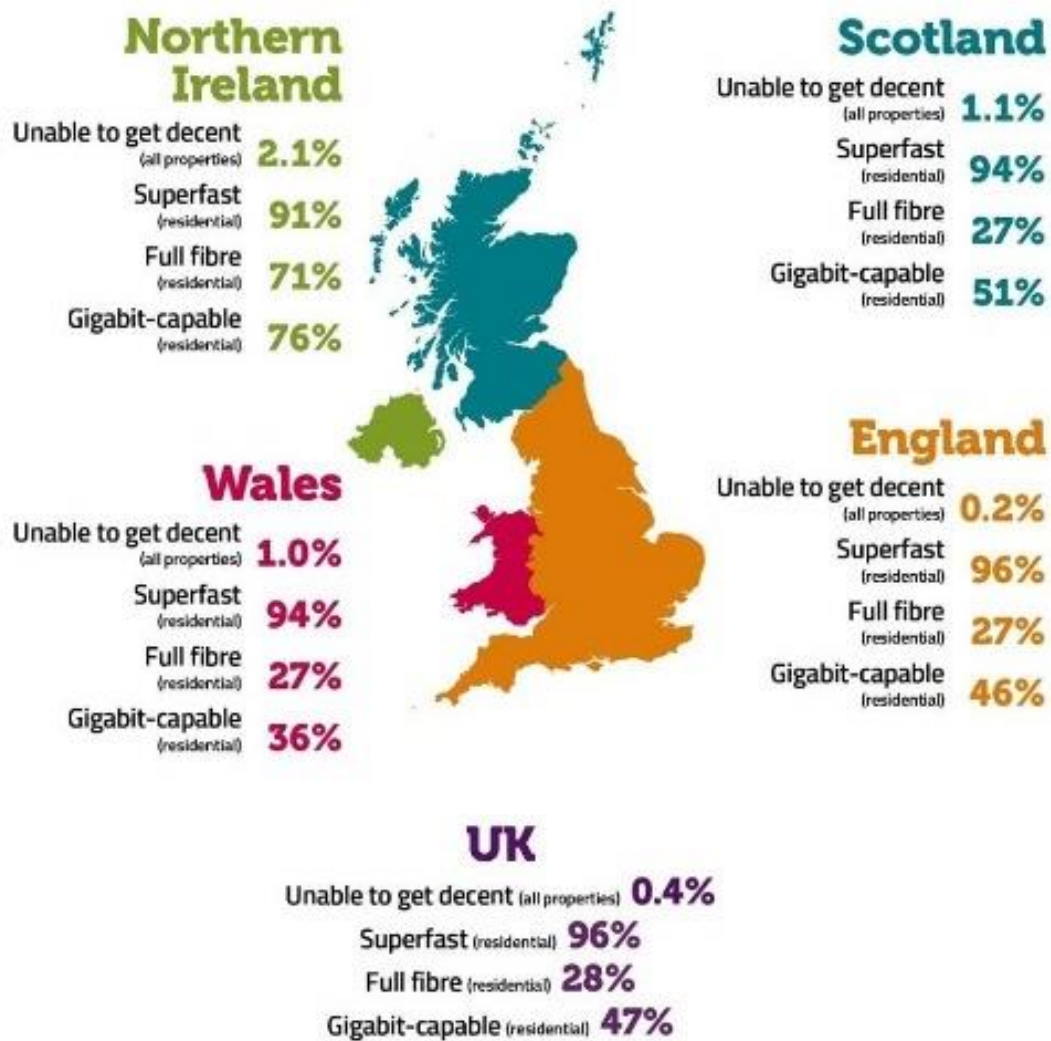
Connectivity in Northern Ireland continues to improve, as existing networks are being upgraded and new fixed infrastructure is being built. We support the investment in gigabit capable and full-fibre networks – as do the UK and devolved governments – which give people fast, reliable and future-proofed connections.

Our reporting on coverage is based on data for September 2021. Figures on data usage are from May 2021. For take-up data we used data provided in both May and September 2021. Throughout this section we generally report data for residential premises unless stated otherwise. However, for reporting of premises not able to get decent broadband which may be eligible for the USO, we report all premises (homes and businesses).

**Key highlights:**

- More than half a million homes (71%) in Northern Ireland now have access to a full-fibre broadband connection, up from 56% in 2020 and 31% in 2019.
- Superfast broadband ( $\geq 30$  Mbit/s) is available to 91% of residential premises in Northern Ireland, 2pp higher than in 2020.
- Average broadband download speeds in Northern Ireland have increased by 28% to 82 Mbit/s, up from 64 Mbit/s in 2020. Average download speeds are lower in rural areas but have increased to 50 Mbit/s in 2021, compared to 40 Mbit/s in 2020.
- Average monthly data use (upload and download) per broadband line in Northern Ireland has increased to 455 GB.

Figure 1: Summary of broadband coverage at a fixed location across the UK



## Availability of fixed broadband services

In Northern Ireland the key story over the last year has been the increased provision of high-speed fixed broadband services both in urban and rural areas on the back of significant private and publicly funded investment. Commercial build-out of full-fibre networks has continued apace with Openreach, Virgin Media and Fibrus aggressively expanding their coverage footprints.

The last year has also seen the start of the Northern Ireland Executive’s Project Stratum broadband programme, which is targeting premises with poor broadband, mainly in rural areas.

As a consequence, Northern Ireland continues to have the highest full fibre coverage of any UK nation. Some 71% of residential premises (539,000) are now able to get a full-fibre connection – 116,000 more than a year ago.

And that number will continue to increase with the main network providers planning further investment. Openreach says it expects its full-fibre network to reach 75% of premises in Northern Ireland by March 2022<sup>1</sup> while Fibrus<sup>2</sup> and Virgin Media<sup>3</sup> are continuing to expand their full fibre footprints.

Away from these commercial rollouts, the start of Project Stratum in Q1 2021 is a key moment in improving broadband infrastructure in areas which still don't have good broadband and are unlikely to benefit from commercially led investment.

Project Stratum is targeting premises that can't get a service capable of delivering a download speed of 30 Mbit/s (Superfast). The contract to deliver the project, which was allocated £165m of public funding, was awarded to Fibrus Networks in 2020. Fibrus is contributing more than £45m towards network build costs for the project.

Project Stratum aims to provide a full fibre solution, capable of delivering 1 Gbit/s download speeds, to over 76,000 premises. With the funding available, it is not possible to reach all premises identified as eligible for the intervention, and 2,500 premises remained out of scope.

In August 2021, the Department for Digital, Culture, Media and Sport announced it would allocate a further £25m towards bringing an additional 8,500 premises into Project Stratum. This will include premises omitted from the original contract due to lack of funding, as well as approximately 6,000 additional premises which have recently been identified as eligible. These additional premises will raise the total number of premises that will benefit from the project to around 84,500.<sup>4</sup>

The first premises were connected in Coalisland, Co Tyrone, in March 2021 with over 19,000 premises expected to be passed by the end of 2021.

Other schemes, though smaller, are also playing an important role in improving the region's broadband infrastructure.

In June 2021, Fibrus was also awarded the £23m Full Fibre Northern Ireland Consortium (FFNI) contract, which will see the operator install a new full-fibre network to connect some 969 public-sector sites (police, GPs, council offices etc.). The contract covers the 10 council areas outside Belfast and is expected to be complete by the end of 2021.<sup>5</sup>

Meanwhile, Openreach continues to work with local communities to identify areas that can benefit from its Community Fibre Partnership (CFP) programme. The programme works with communities to advise on and leverage grants from different public sources to bring better broadband to those communities. The scheme can often involve a degree of co-funding from those communities. In the

---

<sup>1</sup> [https://www.openreach.com/content/dam/openreach/openreach-dam-files/images/hidden-pages/northern-ireland/Openreach%20Annual\\_Report\\_NI\\_2021.pdf](https://www.openreach.com/content/dam/openreach/openreach-dam-files/images/hidden-pages/northern-ireland/Openreach%20Annual_Report_NI_2021.pdf)

<sup>2</sup> <https://www.ispreview.co.uk/index.php/2021/08/fibrus-ftp-broadband-build-in-n-ireland-tops-58000-premises.html>

<sup>3</sup> <https://www.ispreview.co.uk/index.php/2021/07/virgin-media-o2-deploy-ftp-to-4000-more-county-down-homes.html>

<sup>4</sup> <https://www.bbc.co.uk/news/uk-northern-ireland-58311086>

<sup>5</sup> <https://www.ispreview.co.uk/index.php/2021/06/isp-fibrus-secures-full-fibre-contract-for-10-n-ireland-councils.html>



2020/21 financial year, the programme delivered gigabit capable infrastructure to more than 1500 homes across Northern Ireland.

These schemes included business parks in Magherafelt and Castlereagh, more rural schemes in areas such as Loughgall, Castledearg, Randalstown and Aghalee, and larger proactive schemes in places like Carnlough and Maghaberry.<sup>6</sup>

### NI has the highest coverage of full-fibre services in the UK

Northern Ireland’s improving broadband infrastructure is underlined by the fact that more than two-thirds of residential premises (71%) are able to access full-fibre services.

Full-fibre services are delivered by fibre only networks whereas gigabit capable services can be delivered through a mixture of fibre and upgraded hybrid fibre-coaxial infrastructure such as that employed in parts of Virgin Media’s network.

They can deliver speeds far in excess of 1 Gbit/s and, as such, are capable of delivering more high demand services as these are developed.

The total number of residential premises with access to these services is now 539,000; over 116,000 more than last year.

Among the four UK nations, Northern Ireland (71%) has the highest availability of full fibre services, compared to England (27%), Scotland (27%) and Wales (27%).

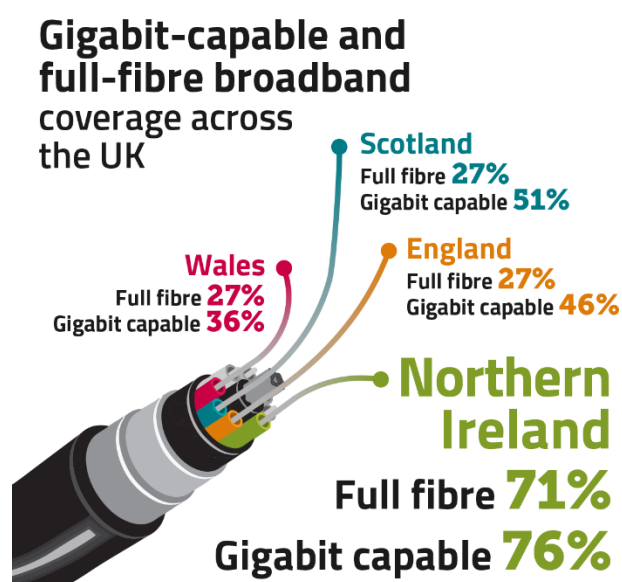


Figure 2: Premises served by full fibre

Nation	% of premises (residential)	Change since 2020
UK	28%	+10pp
England	27%	+11pp
Scotland	27%	+10pp
Wales	27%	+8pp
Northern Ireland	71%	+15pp
Urban	85%	+14pp
Rural	36%	+19pp

Source: Ofcom analysis of operator data.

<sup>6</sup> [https://www.openreach.com/content/dam/openreach/openreach-dam-files/images/hidden-pages/northern-ireland/Openreach%20Annual\\_Report\\_NI\\_2021.pdf](https://www.openreach.com/content/dam/openreach/openreach-dam-files/images/hidden-pages/northern-ireland/Openreach%20Annual_Report_NI_2021.pdf)



### Three quarters of homes have access to gigabit capable services

Gigabit capable services were available to 76% of premises in Northern Ireland in September 2021. This is the highest of the UK nations and some 20 pp higher than a year ago. The leap in gigabit capable coverage has been helped by new network build over the last year as well as the Virgin Media’s upgrade of its existing network in Q4 2020 to be gigabit capable.<sup>7</sup>

Figure 3: Coverage of gigabit-capable broadband (>=1Gbit/s)

Nation	% of premises (residential)	Change since 2020
UK	47%	+20pp
England	46%	+21pp
Scotland	51%	+9pp
Wales	36%	+17pp
Northern Ireland	76%	+20pp
Urban	92%	+21pp
Rural	36%	+19pp

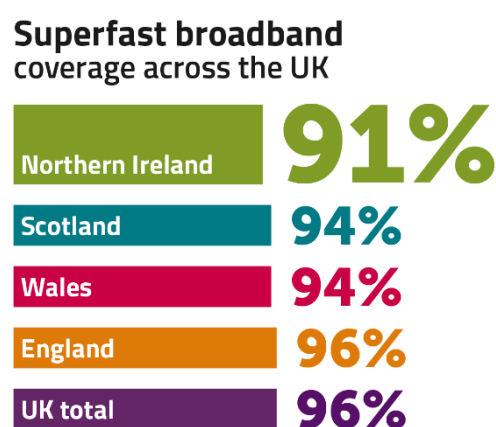
Source: Ofcom analysis of operator data.

### Superfast broadband is available to 91% of residential premises in Northern Ireland, including to more than two thirds of premises in rural areas

Superfast broadband services (>=30 Mbit/s) are available to 91% of premises in Northern Ireland. This is lowest of the four UK nations but is increasing due to the various programmes outlined above and is 2pp higher than a year ago.

Broadband speeds and superfast broadband availability are lower in rural areas. While services that deliver superfast speeds are available to 91% of residential premises across Northern Ireland, these services are available to just 70% of premises in rural areas, though this is 4pp higher than a year ago.

These figures highlight the impact Project Stratum, which is aimed at premises that can’t get superfast speeds, will have on rural areas especially.



<sup>7</sup> <https://www.virginmedia.com/corporate/media-centre/press-releases/virgin-media-brings-gigabit-broadband-to-its-entire-northern-ireland-network>

Figure 4: Coverage of superfast broadband (>=30 Mbit/s)

Nation	% of premises (residential)	Change since 2020
UK	96%	-
England	96%	-
Scotland	94%	-
Wales	94%	-
Northern Ireland	91%	+2pp
Urban	99%	-
Rural	70%	+4pp

Source: Ofcom analysis of operator data.

### There is considerable competition between networks

Around 47% / 353,000 residential premises in Northern Ireland have access to a broadband service from two (or more) gigabit-capable networks.

Figure 5: Access to gigabit capable and full-fibre networks from two or more operators

Country	Premises	% Premises
England	2.0 million	8%
Northern Ireland	353,000	47%
Scotland	233,000	9%
Wales	101,000	7%
UK	2.7 million	9%

Source: Ofcom analysis of operator data.

### Some premises still cannot access decent broadband

Despite the current and planned investment in broadband networks in Northern Ireland, some hard-to-reach premises may still not get a broadband service capable of delivering at least superfast speeds.

These premises could be served with a decent broadband connection (One able to deliver a download speed of at least 10 Mbit/s and an upload speed of 1 Mbit/s) through a fixed connection or through technologies more suited to remote locations such as fixed wireless access (FWA) delivered over 4G and 5G networks, Wireless Internet Service Providers (WISP) or satellite broadband. More detailed analysis of these technologies is provided in the main [UK Connected Nations 2021 report](#).

We estimate that around 45,000 premises in Northern Ireland can't get a decent broadband from a fixed line.

**Figure 6: Premises (business and residential) unable to receive decent broadband from a fixed line**

Nation	Total	Rural	Urban
UK	2% (651,000)	9% (403,000)	1% (248,000)
England	2% (451,000)	7% (234,000)	1% (217,000)
Scotland	4% (100,000)	17% (87,000)	1% (13,000)
Wales	4% (55,000)	12% (43,000)	1% (11,000)
Northern Ireland	6% (45,000)	17% (39,000)	1% (6,000)

Source: Ofcom analysis of operator data.

Of the 45,000 premises in Northern Ireland unable to get decent broadband from a fixed network, around 28,000 could be connected using FWA, meaning some 17,000 premises (2.1%) do not have access to decent broadband from either a fixed or FWA network. These may be eligible for the broadband USO.

### The broadband Universal Service Obligation (USO)

The broadband USO provides everybody with the right to request a broadband connection with the following technical characteristics:

- a download sync speed of at least 10 Mbit/s;
- an upload sync speed of at least 1 Mbit/s;
- a contention ratio of no more than 50:1;
- latency which is capable of allowing the end user to make and receive voice calls effectively; and
- the capability to allow data usage of at least 100GB per month.

Where an affordable service with the above characteristics is not available, or due to become available in twelve months under a publicly funded scheme, the customer is eligible for the USO if the costs of providing the connection are below £3,400 or, where the costs are above £3,400, the customer agrees to pay the excess.<sup>8</sup> In calculating whether the costs are below or above £3,400, the Universal Service Provider (USP) must take into account where costs could be shared by several USO eligible premises. BT is the USP for the UK (excluding Hull), and KCOM for the Hull Area. They are required to provide the USO and to report at six monthly intervals on delivery.

### BT's delivery of the broadband USO

So far, BT has received 57 USO orders in Northern Ireland. Each order may require network build that can serve multiple premises, and therefore these orders will lead to full-fibre connections being built that can service just under 450 premises that do not currently have access to decent broadband. Further information is available at [bt.com/broadband/USO](http://bt.com/broadband/USO).

<sup>8</sup> In [our statement of 6 June 2019](#) (para 5.1), we decided that an affordable service was one that cost £45 per month, rising annually by CPI. When the USO launched, this figure was £46.10.

## Local Authority coverage data

This section provides an overview of some of the data available at local authority level in Northern Ireland. More detailed information on this as well as Westminster constituency level data is available via the [interactive report](#) on the Ofcom website.

### Coverage of faster broadband in rural areas is improving

Broadband services and speeds vary across Northern Ireland between urban and rural areas. This is because properties in rural areas tend to be more dispersed and are more expensive to provide new, faster, fixed line broadband services to.

Consequently, local authority areas with greater numbers of rural premises have lower availability of superfast ( $\geq 30$  Mbit/s) and full-fibre services. Conversely, those local authority areas such as Belfast, which are more densely populated, have much greater availability of higher speed broadband services.

However, there has been significant improvement in the availability of faster broadband services right across Northern Ireland over the last year.

A rise in full fibre coverage is especially evident in several, mainly rural council areas where coverage had previously been very low. So, in Newry Mourne and Down full fibre coverage now extends to some 71% of residential premises, up from just 35% a year ago. Full fibre coverage in Causeway Coast and Glens is now 66%, up from 42% a year ago.

More urban areas too, such as Belfast, Ards and North Down, and Lisburn and Castlereagh have also seen impressive increases in full fibre coverage over the last year.

We expect full fibre coverage in all council areas to continue this upward trend on the back of Project Stratum and ongoing commercially led investments.

Figure 7: Coverage of superfast and full-fibre broadband by local authority (% of premises)

Local authority	>=30Mbit/s (Superfast)	Change since 2020	Full fibre	Change since 2020
Belfast	99%	-	83%	+10pp
Ards and North Down	95%	-	82%	+12pp
Lisburn and Castlereagh	94%	+1pp	71%	+13pp
Antrim and Newtownabbey	93%	+1pp	75%	+9pp
Derry City and Strabane	91%	-	73%	+18pp
Mid and East Antrim	90%	-	74%	+13pp
Armagh City, Banbridge and Craigavon	89%	+1pp	70%	+11pp
Causeway Coast and Glens	87%	+1pp	66%	+24pp
Newry, Mourne and Down	88%	+5pp	71%	+36pp
Mid Ulster	80%	+3pp	53%	+20pp
Fermanagh and Omagh	68%	-	36%	+11pp
NI	91%	+2pp	71%	+15pp

Source: Ofcom analysis of operator data.

### Small and medium sized enterprises have good access to full-fibre, gigabit-capable and superfast broadband, but availability lags behind residential premises

Our reporting above on the availability of full-fibre, gigabit-capable and superfast broadband reflects the coverage of residential premises. But access to these services is also vital to businesses across the UK, and so this year we are also reporting coverage for businesses.<sup>9</sup>

We note that availability of full-fibre, gigabit-capable and superfast broadband networks is lower for small and medium enterprise business locations than for residential premises.

While coverage is lower for larger business sites, our network coverage data does not include networks deployed specifically to connect businesses (in particular, we do not gather data on leased lines specific networks), and so these sites may be able to get good connectivity, albeit via leased lines rather than broadband products.

By nation, Northern Ireland has the most coverage of full-fibre and gigabit-capable broadband. As for residential premises, coverage of superfast, full-fibre and gigabit capable broadband is generally better in urban areas than in rural areas.

<sup>9</sup> We have used a database of business premises, matched to our premises database, for this analysis. Our [methodology](#) explains the approach in further detail.

Figure 8: Business broadband coverage by nation

Nation	Superfast broadband			Full fibre			Gigabit capable		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
England	94%	95%	79%	25%	24%	26%	45%	48%	27%
Northern Ireland	84%	95%	62%	55%	69%	28%	60%	78%	28%
Scotland	89%	95%	64%	23%	24%	14%	44%	50%	15%
Wales	89%	96%	70%	27%	27%	26%	34%	37%	26%

Source: Ofcom analysis of provider and business data.

## More consumers upgrading to higher speeds

Having discussed coverage, and the investment in improving the availability of network above, we now report on take-up. The benefits of increased coverage of broadband networks able to support higher speed services cannot be realised if consumers do not take advantage of these services when they are available. So alongside reporting on the extent of coverage of broadband networks we also examine the take-up of services over them.

This report collects and reports on the performance of active lines and not the products that consumers are signed up to and, as such, is only indicative of take-up. Our analysis suggests that in September 2021, 73% of premises in Northern Ireland where superfast service ( $\geq 30$  Mbit/s) is available, had a superfast service.

When looking only at areas where full fibre is available, some 19% of premises were taking a full fibre service, compared to 11% in 2020.

Figure 9: Take-up of broadband service by speed (as a percentage of premises where those services are available)

Nation	Superfast and above	Full fibre
UK	69%	24%
England	69%	25%
Scotland	68%	22%
Wales	66%	24%
Northern Ireland	73%	19%

Source: Ofcom analysis of operator data.

## Helping customers choose the right broadband service

Consumers will be best placed to decide which service most suits their needs if they understand the range of options available to them. Ofcom has work underway to help consumers understand their broadband choices, and to see the potential benefits that faster connections may give them. Ofcom seeks to help consumers understand the broadband choices available to them, and to understand

the additional benefits of a faster connection.<sup>10</sup> Our coverage checker also shows the network providers that are available at a particular location.<sup>11</sup>

We have also worked to help consumers know when their contract period is coming to an end, and what their options are when it does. Since February 2020, providers have been required to issue End of Contract Notifications (ECNs), which tell people when their contract is coming to an end, what they will pay when it does, the best deals their provider can offer them (as well as any prices only available to new customers), and that they have the choice to switch providers at the end of their minimum contract period if they wish.<sup>12</sup> Additionally, providers are required to issue Annual Best Tariff Notifications (ABTNs) to their out of contract customers, telling them that they are out of contract and the best tariffs they can offer.<sup>13</sup>

Consumers can find it difficult to choose their broadband service among the different offerings and we believe that it is important they have the right information to make informed decisions about their broadband. In June 2021, the taskforce convened by the UK Government to drive consumer take-up of gigabit speed internet connections ('GigaTAG') published its final report.<sup>14</sup>

The report included the recommendation that Ofcom and industry should develop common terminology to describe broadband services and a core set of use cases and benefits to be used by providers. We have already started to engage with providers and consumer groups to develop a set of common standards for consumer information on broadband services.

## **The UK's traditional telephone network is also being replaced**

It is not only the UK's fixed broadband networks that are changing – traditional landline services are also undergoing a substantial transition. Network providers such as BT, Virgin Media O2 and KCOM, that offer traditional telephony services, are in the process of retiring their legacy systems (referred to as the Public Switched Telephone Network, or 'PSTN') and replacing them with modern systems.<sup>15</sup>

In particular, BT and Openreach plan to retire BT's PSTN network and the Openreach wholesale services that deliver that capability by the end of 2025. To make sure that landline services continue in future, providers which currently use the legacy telephony networks will deliver landline calls over a digital technology called Voice over Broadband (VoBB), which uses Voice over Internet Protocol (VoIP) over a broadband connection.

Analysis of provider data shows that around 15% of UK landline services are now delivered over broadband, up from 8% last year. Increasingly, customers have their landline service moved to VoBB when they change provider or upgrade their phone and broadband package. In addition, BT and Virgin Media O2 have started to migrate existing customers. We are monitoring the migration and

---

<sup>10</sup> [How to get more from your broadband](#)

<sup>11</sup> [View broadband availability](#)

<sup>12</sup> Ofcom, [Companies must tell customers about their best deals](#), 14 February 2020. Providers were required to send ECNs from February 2020, and ABTNs within 12 months from then for contracts that were already in force at that date – in effect this means that most providers began sending ABTNs from February 2021.

<sup>13</sup> [https://www.ofcom.org.uk/data/assets/pdf\\_file/0025/228742/helping-customers-get-better-deals-2021.pdf](https://www.ofcom.org.uk/data/assets/pdf_file/0025/228742/helping-customers-get-better-deals-2021.pdf)

<sup>14</sup> GigaTAG, [Gigabit Take-up Advisory Group: Final Report](#), 2021

<sup>15</sup> In the case of BT, PSTN services are provided by Openreach in terms of access connectivity and BT for calls services. [Openreach's WLR withdrawal site](#) gives more information.



continue to engage with providers to help ensure consumers are protected and disruption is minimised.

At the same time, broadband customers can choose a ‘broadband-only’ package, where they are no longer required to take a phone service. Broadband-only packages – with or without the option to add a landline service – are offered by most full fibre providers, and are increasingly being offered for copper-based broadband as well. With landline usage falling, we anticipate that adoption of these packages will grow significantly in the coming years, with a corresponding decrease in the number of landlines.<sup>16</sup> We also note consumers are using mobile phones to replace or complement fixed connections.

The migration from the legacy telephone network also brings certain challenges. We discuss these challenges in more detail in the Security and Resilience chapter of the main UK report.

### **Average download speeds in Northern Ireland have increased by 28%**

The average download speed delivered to premises in Northern Ireland is 82 Mbit/s. This has increased from 64 Mbit/s last year and reflects increasing availability and take-up of faster broadband services.

Average download speeds are lower in rural areas (50 Mbit/s) though this too has increased from 40 Mbit/s in 2020.

Average monthly data usage in Northern Ireland has increased from 444GB to 455GB.

**Figure 10: Average download/upload speeds and monthly data usage**

	<b>Average download speed (Mbit/s)</b>	<b>Average monthly data usage (GB)</b>
<b>Northern Ireland</b>	82 Mbit/s	455GB
<b>Urban</b>	95 Mbit/s	477GB
<b>Rural</b>	50 Mbit/s	403GB

*Source: Ofcom analysis of operator data.*

<sup>16</sup> Ofcom [Communications Market Report 2021](#)



# Mobile services in Northern Ireland

## Introduction

Mobile services are an important part of people's daily lives and business. People expect to have access to decent mobile connections wherever they live, work and travel. The experience of the coronavirus pandemic over the course of this year has further emphasised the reliance society places on access to good mobile services, and the value such services bring to helping communicate and stay in touch in a variety of ways.

In this chapter we provide an update on coverage both outside and inside premises, across Northern Ireland's landmass and on roads.

### Key highlights:

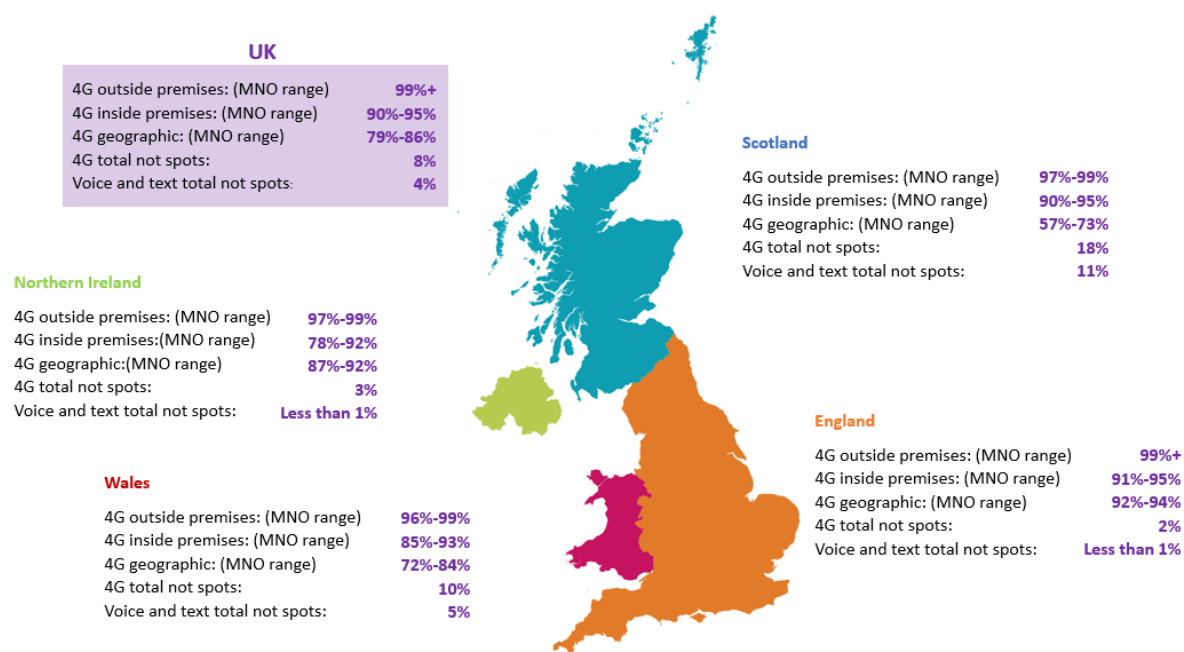
#### 4G coverage

- Individual operators provide good 4G coverage across Northern Ireland, with geographic mobile coverage ranging from 87-92% of the landmass, depending on the operator. Coverage from all four operators is available across 79% of Northern Ireland.

#### Voice coverage

- Voice calls are available across 89-98% of Northern Ireland's landmass, depending on the operator while coverage from all operators is available across 87% of Northern Ireland.

Figure 11: Summary of mobile coverage across the UK and Nations



Source: Ofcom.

## 5G rollout and adoption is evolving

5G deployment has continued at pace in 2021, and now stands at more than c6,500 5G mobile sites across the UK, up from c3,000 in 2020. 87% of these sites are in England, 8% in Scotland, 3% in Wales and 2% Northern Ireland.

Some rollout is now extending into busy suburban areas and transport corridors, though most 5G sites continue to be added in busy urban areas and are providing additional capacity to existing mobile data services.

In Northern Ireland, 5G is estimated to be available from at least one operator outside 22-31% of premises, with that range covering high to very high confidence.<sup>17</sup> We are not yet in a position to break down by operator, as we discuss further in the UK report.

Consumer take up remains relatively modest, but has increased substantially, with around 800,000 active 5G devices across all mobile operator networks in the UK in 2020 rising to more than 6 million handsets in September 2021. This represents c10% of all active devices.

## Availability of mobile calls and data services

In this section, we continue to report on the availability of voice calls and data services across a range of metrics, as we have done in the past. This year, we are also placing a particular focus on the range of 4G coverage available from individual MNOs, as this most closely matches the experience of

<sup>17</sup> Please see our [methodology](#) for more information on how we have associated a predicted signal strength with a level of confidence in coverage being available.

consumers. We continue to report on other metrics, including where all operators, or any one operator have coverage, both here but also in our [interactive report](#).

The mobile coverage figures provided are based on predictions which the MNOs supply to Ofcom, with Ofcom undertaking regular testing to ensure the predictions provided are suitable for national and regional reporting.

We take the accuracy of the data supplied to us seriously and we continue to monitor, through drive testing, the accuracy of all operators’ coverage predictions. We note that operators continue to update and improve their prediction models and we continue to work with them to ensure appropriate validation is undertaken.

Individual operators provide good 4G geographic coverage across Northern Ireland, with mobile coverage ranging from 87-92%, depending on the operator. Coverage from all four operators is available across 79% of Northern Ireland.

Voice calls are available across 89-98% of Northern Ireland, depending on the operator while coverage from all operators is available across 87% of Northern Ireland.

Coverage is set to improve over the coming years as the implementation of the Shared Rural Network gathers pace – we describe ongoing progress with this work in more detail below.

## Mobile coverage in Northern Ireland by operator

Below, we compare coverage of voice and 4G services in Northern Ireland from the four main operators – O2, Vodafone, EE and Three. In recent years, there has been increased consolidation and sharing of masts between O2 and Vodafone, and between EE and Three, which has seen coverage between sharing network providers converge.

There are also more than 30 virtual network operators. These operators, such as Sky, Virgin Mobile, iD Mobile, Tesco Mobile, giffgaff and others, are each carried on one of the main networks and will have similar coverage to its host network.

**Figure 12: Mobile coverage by operator in Northern Ireland**

	O2	Vodafone	EE	Three
<b>Geographic – 4G</b>	89%	92%	87%	92%
<b>Geographic – voice</b>	98%	98%	89%	94%
<b>Indoor premises - 4G</b>	91%	92%	78%	83%
<b>Indoor premises – voice</b>	98%	98%	86%	90%
<b>Outdoor premises – 4G</b>	98%	99%	97%	98%
<b>Outdoor premises – voice</b>	99%+	99%+	98%	99%

Source: Ofcom analysis of operator data.

## Geographic coverage

### Voice services are available to around 87% of Northern Ireland landmass from all operators

Eighty-seven per cent of Northern Ireland's geographic area is covered by all four operators for voice calls.<sup>18</sup> Outdoor access to good data services through 4G covers 79% of the Northern Ireland landmass. As shown above in Figure 12, coverage levels from individual operators exceed these levels.

However, there are differences in the level of choice available to customers in urban and rural areas. Ninety-three per cent of urban areas can get 4G coverage from all four operators, compared to 78% of rural areas.

Figure 13: Geographic mobile coverage in Northern Ireland

	% of landmass covered by all operators	Change since 2020	No coverage from any operator
4G	79%	-	3%
Voice	87%	-	1%

Source: Ofcom analysis of operator data.

## Indoor coverage

### Eight in ten premises have indoor coverage from all operators

The coverage people receive indoors depends on a range of factors including: the thickness of walls, building materials used in construction and where in the building they are. Due to these factors, in some premises there may be differences between our predicted indoor coverage data and the actual coverage available.

Our online coverage checker provides additional information on the likelihood of there being indoor coverage in buildings in different locations, which takes into account some of the factors that can affect a mobile signal.

Based on an average building loss model (i.e. the model we use to estimate the amount of signal loss from outside to inside the building), indoor mobile voice calls are predicted to be available from all operators in 82% of premises across Northern Ireland.<sup>19</sup>

Sixty-six per cent of Northern Ireland homes and businesses are now covered by a 4G signal from all operators.

<sup>18</sup> These figures include voice calls over 4G LTE services.

<sup>19</sup> We determine indoor coverage by applying an average building entry loss of 10dB across all buildings.

Figure 14: Indoor coverage, premises covered in Northern Ireland

	% of premises with indoor coverage from all operators	Change since 2020	No coverage from any operator
<b>4G</b>	66%	+1pp	2%
<b>Voice</b>	82%	+1pp	1%

Source: Ofcom analysis of operator data.

MNOs continue to provide a number of alternative options to improve indoor mobile coverage at locations without reliable coverage. All MNOs in the UK make Wi-Fi calling services (the ability to make and receive a call over a Wi-Fi network) available to consumers (although not all mobile handsets support this feature). We note that the percentage of calls across the UK made using voice over Wi-Fi<sup>20</sup> by MNOs has remained relatively stable overall, between 2% and 16% per MNO compared to 2% and 18% last year. Other examples of available tools include broadband-based calls on services such as Skype and WhatsApp.

In addition, this year Ofcom has decided to expand the range of static indoor mobile repeaters that people can install themselves, without a licence. Such devices can boost the signals between a network operator’s base station and a mobile phone, and so improve access to mobile services indoors. The new regulations will now allow ‘provider specific’ and ‘multi-operator’ repeaters to boost the signals of more than one MNO at a time, as long as they meet technical requirements.<sup>21</sup>

## Differences across the Nations

Mobile data coverage remains significantly better in England and Northern Ireland than it is in Scotland and Wales. Furthermore, 4G data coverage varies considerably among mobile operators and remains poor in many places.

Today, 79% of geographic areas in Northern Ireland and 84% in England can receive 4G data services from all operators. This compares with only 61% of Wales and 45% of Scotland.

Figure 16: 4G geographic coverage in the Nations

	% of landmass served by all operators	Change since 2020
<b>Wales</b>	61%	+1pp
<b>Scotland</b>	45%	+1pp
<b>Northern Ireland</b>	79%	-
<b>England</b>	84%	-
<b>UK</b>	69%	-

Source: Ofcom analysis of operator data.

<sup>20</sup> There are two types of Wi-Fi calling solutions: “cellular preferred”, where the devices use Wi-Fi calling only if there is poor cellular coverage, and “Wi-Fi preferred” where all the calls are made via Wi-Fi, when Wi-Fi is available. All UK MNOs use the Cellular-preferred solution.

<sup>21</sup> [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0032/227579/statement-mobile-phone-repeaters.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0032/227579/statement-mobile-phone-repeaters.pdf)

## Initiatives to improve mobile communications

### The Shared Rural Network (SRN)

The Shared Rural Network ([SRN](#)) project was agreed between the UK Government and the UK mobile operators in March 2020, as a key plank in improving UK mobile coverage and to support the Government’s ambition of achieving 95% coverage of the UK landmass by 2025.

Under the agreement, each MNO is committed to reaching 88% 4G coverage of UK landmass by 2024, and 90% of landmass by 2026, with an expectation that this will see the footprint of least one MNO reach 95% of UK landmass by 2025. The building of the masts will depend on finding land and the granting of planning permission.

For Northern Ireland it means 4G mobile coverage is expected, by 2026, to reach 98% from at least one operator, and 85% from all four operators.

The improvements will be felt more in rural areas where mobile coverage is lower presently. See below recently released figures for a breakdown of coverage predictions post SRN outside Belfast.<sup>22</sup>

**Figure 17: Forecast for 4G coverage pre and post-SRN by local authority (excl Belfast)**

Local authority	4G coverage from all MNOs		4G coverage from at least one MNO	
	Pre-SRN	Forecast post-SRN	Pre-SRN	Forecast post-SRN
Antrim and Newtownabbey	86%	94%	99%	99%
Ards and North Down	85%	99%	99%	99%
Armagh City, Banbridge and Craigavon	82%	93%	99%	99%
Causeway Coast and Glens	77%	87%	96%	99%
Derry City and Strabane	61%	76%	92%	97%
Fermanagh and Omagh	71%	79%	96%	98%
Lisburn and Castlereagh	88%	96%	99%	99%
Mid Ulster	73%	87%	99%	99%
Mid and East Antrim	81%	88%	98%	98%
Newry, Mourne and Down	67%	80%	94%	98%

Source: Shared Rural Network.

<sup>22</sup> <https://srn.org.uk/forecast-coverage-improvements/>



## **Mobile Action Plan for Northern Ireland**

The Department for the Economy is developing a Mobile Action Plan (MAP) to ensure the benefits of the mobile coverage are maximised for Northern Ireland.

While industry has signed up to the improved coverage commitments, mobile operators have highlighted that there are a number of policy changes that could help deliver these commitments more quickly.

The Mobile Action Plan, which is still being formed, will identify the barriers to mobile infrastructure investment and suggest potential solutions. Ofcom sits on the working group in an advisory role.

The MAP forms part of a Digital Infrastructure Action Plan/Strategy pledged in the draft Industrial Strategy for Northern Ireland and outlined in the Department for the Economy's *Covid-19 Response Business Plan 2020-2021*.<sup>23</sup>

## **Changes to make mobile mast upgrades and extensions easier**

The Department for Infrastructure has introduced legislation to make the upgrade and extension of mobile phone masts in Northern Ireland easier.<sup>24</sup>

The new planning rules allow masts to be made taller and wider, beyond present limits, without the need to apply for planning permission, which mobile operators have argued can impede investment and related service and coverage improvements. Higher masts allow additional apparatus, including more and larger antennas to be deployed on existing infrastructure, making upgrades simpler and encouraging the sharing of masts between operators.

The installation of a new mast in Northern Ireland still requires planning approval.

---

<sup>23</sup> <https://www.economy-ni.gov.uk/sites/default/files/publications/economy/DfE-Covid-19-response-business-plan-2020-21.pdf>

<sup>24</sup> <https://www.legislation.gov.uk/nisr/2020/292/made>