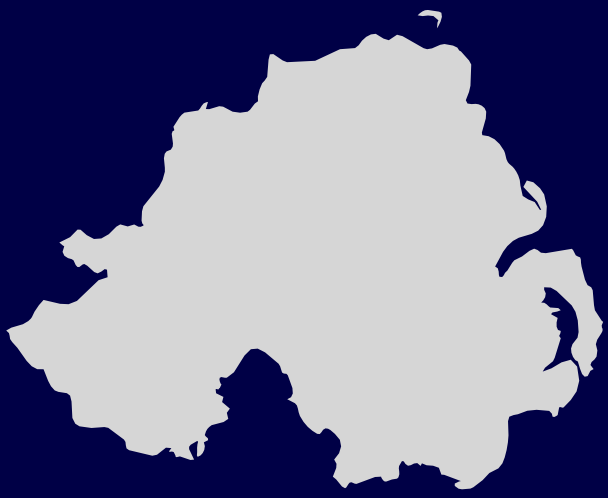
Connected Nations

Northern Ireland Report 2024



Published 5 December 2024

Contents

1. Overview

Ofcom's objective is to make communications work for everyone, including to promote reliable, widely available and high-quality networks. In this annual Connected Nations report for Northern Ireland, we measure progress on the availability of broadband and mobile services across Northern Ireland and the UK. This includes providing updates on the rollout of the full fibre, fixed wireless access (FWA)[1] and 5G mobile networks.

Alongside this Northern Ireland report, we are publishing separate reports on broadband and mobile availability for the UK as a whole and each of its other nations. Our interactive dashboard allows people to easily access the latest data for different areas of Northern Ireland and the UK and in relation to specific services.

What we have found

Broadband

- **Around 760,000 homes in Northern Ireland can now access full-fibre broadband**. Among the four UK nations, Northern Ireland (93%) has the highest availability of full-fibre networks. Northern Ireland's full fibre position reflects significant early commercial rollout and publicly funded schemes designed to improve broadband in rural areas.
- **Superfast broadband from fixed-lines is available to 98% of residential premises in Northern Ireland**, unchanged from 2023. In urban areas, this figure rises to 99%+.
- **Where full fibre is available, 53% of premises are connected**, compared to 39% last year. Around 430,000 residential premises are now connected to services on full-fibre networks.
- **There has been a reduction in the number of premises unable to access decent broadband**. Around 2,000 premises are unable to access connections with over 10 Mbit/s download speeds, compared to 3,000 last year.
- **Average monthly broadband data use in Northern Ireland is now 510 GB per month.** This rises to 589 GB per month over full-fibre connections.

Mobile

- **There has been a further increase in 5G availability.** Mobile network operators (MNOs) continue to increase the footprint of these services, and outside premises coverage from at least one MNO now stands at 92% at the High Confidence level and 86% at Very High Confidence, up from 80% and 70% respectively in 2023.[2]
- **4G coverage continues to provide the backbone of mobile experience for consumers.** Individual MNOs provide good 4G coverage across Northern Ireland, with geographic mobile coverage ranging from 89-95%, depending on the operator. Outside premises coverage from all four MNOs is available across 97% of Northern Ireland, unchanged from last year.
- **Voice calls are available across 98-99%+ of Northern Ireland, depending on the operator**. However, coverage is slightly lower in rural areas (94-99%+) than in urban (99%+).

[1] FWA services can be delivered by MNOs or Wireless Internet Service Providers. See page 17 of the UK Report.
[2] Please refer to our *Background to mobile technologies* box in this report where these levels are defined.

2. Fixed broadband and voice

Full-fibre fixed networks are continuing to expand across Northern Ireland, delivering faster and more reliable broadband and voice services to homes and businesses. In this section, we provide an update on the rollout and consumer take-up of services on these networks over the past year. We also report the latest data on the small remaining numbers of premises that still do not have access to decent broadband.

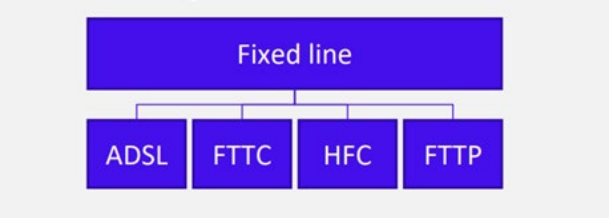
Growing connectivity across Northern Ireland and the rest of the UK is taking place in the context of broader changes to the fixed telecoms sector, including the migration to digital voice technology from the legacy public switched telephone network (PSTN). For more information on these developments, please refer to our Connected Nations: UK Report 2024 as whole, or our update on Planned Network Deployments for Very High Capacity networks in the UK for the next three years, published in September 2024.

Figure 2.1: Summary of broadband coverage at a fixed location across the UK and nations

	Gigabit-capable (residential)	Full fibre (residential)	Superfast (residential)	Unable to get decent (all properties)
UK	83%	69%	98%	0.2%
Scotland	77%	62%	96%	0.5%
Northern Ireland	94%	93%	98%	0.2%
Wales	74%	68%	96%	0.5%
England	84%	69%	98%	0.1%

Source: Ofcom analysis of operator data (July 2024).

Background: fixed-line broadband services



Fixed connections provide broadband access at specific locations, such as residential or business premises. Fixed-line broadband technologies can be broken down into different technology types.

There are **four** primary types of fixed-line connections for fixed broadband access:

- **ADSL**[3] – Copper (telephone) cables are used to connect the exchange to each premises. Maximum download speed is up to 24 Mbit/s. Actual speeds delivered diminish with length of cable from exchange to the premises.
- **Fibre to the cabinet (FTTC)** – FTTC involves fibre to the street cabinet, with copper cables connecting the cabinet to the premises. FTTC uses 'very high-speed digital subscriber line' (VDSL) technology.[4] As with ADSL, speeds diminish with length of cable, but as cabinets are generally located close to premises, maximum download speed is normally up to 80 Mbit/s.
- **Hybrid fibre coaxial (HFC) cable** – With HFC, there is fibre to a street cabinet and coaxial cable from the cabinet to the premises. Because coaxial has less signal loss compared to telephone copper wires, HFC can deliver higher speeds over longer distances. Cable broadband in the UK is provided by Virgin Media O2, and its cable network can deliver gigabit speeds.[5]
- **Full fibre or 'fibre to the premises' (FTTP)** – The connection from the exchange to the premises is provided entirely over fibre. Generally, distance to the premises does not affect the speed delivered. Full fibre can deliver gigabit speeds.[6]

We categorise fixed broadband connections based on the download speed they can provide:

- **Decent** – can provide at least 10 Mbit/s download and 1 Mbit/s upload speeds.[7] It can be delivered by ADSL, FTTC, HFC cable or full fibre. Decent broadband provides sufficient speeds for making a high-definition video call. Over minimum decent broadband, downloading a one-hour HD TV episode (1 GB) would take almost 15 minutes.
- **Superfast** – can provide download speeds of at least 30 Mbit/s and can be delivered by FTTC, HFC cable or full fibre. Superfast broadband provides sufficient speed for one-person streaming

[3] ADSL: Asymmetric Digital Subscriber Line.
[4] Another technology known as G.fast is also sometimes deployed at, or near, a limited number of cabinets offering higher speeds than VDSL.
[5] Cable broadband HFC access networks are shared between a large number (usually hundreds) of premises.
[6] Most full-fibre access networks utilise Passive Optical Network (PON) approaches where capacity in the downstream and upstream direction is shared between around 30 to 60 users.
[7] The UK Government defines the characteristics of 'decent broadband'. This is the level of connection currently deemed necessary for consumers to participate in a digital society.

4K/UHD video. Downloading a one-hour HD TV episode would take under four and a half minutes and several devices can work simultaneously.

• **Gigabit-capable** – can offer download speeds of 1 Gbit/s and above. It can be delivered by HFC cable or full fibre. With gigabit-capable broadband, it is feasible to download a full 4K film (100 GB) in under 15 mins, or a one-hour HD TV episode in eight seconds.

Northern Ireland full fibre availability increases further

The availability of high-speed broadband services in Northern Ireland was already at very high levels last year, but it has extended further in 2024. Full-fibre broadband coverage increased from 91% in September 2023 to 93% in July 2024.

These high coverage levels reflect continued commercial and publicly funded investment in fibre networks. This year saw significant announcements from commercial operators in Northern Ireland. In April 2024, Openreach confirmed an investment of £100m to expand its full-fibre network over the coming years – including coverage in hard-to-reach areas.[8] In addition, alternative network (altnet) provider Fibrus announced that it has secured funding to complete its rollout plans in Northern Ireland.[9]

The Northern Ireland Executive's broadband scheme - Project Stratum - is nearing completion and, as of September 2024, it has brought full-fibre broadband to over 78,000 predominantly rural premises. These are premises that were previously unable to access a superfast service of at least 30 Mbit/s.[10]

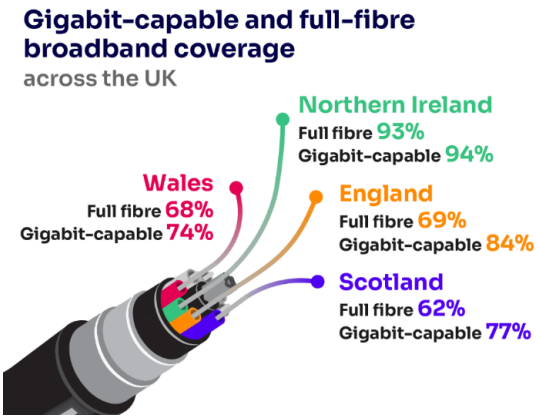
The Department for the Economy (DfE) is now preparing for the implementation of Project Gigabit in Northern Ireland, which will look to serve premises not within the scope of Project Stratum and which are outside of indicated commercial deployment plans.[11] Following an Open Market Review and public review, and taking account of information provided during BDUK's National Rolling Open Market Reviews, DfE is preparing to launch a procurement to address an initial scope of 11,000 premises. DfE hopes to appoint a contractor for Project Gigabit by the end of March 2025.[12]

Public investment projects, coupled with further planned commercial deployments, mean that Northern Ireland is on course for near-ubiquitous full fibre coverage by 2027. Ofcom's Planned Network Deployment Report 2024 estimates that, by May 2027, 99% of NI premises could have access to full-fibre services (99%+ in urban areas and 96% in rural).[13]

[8] Openreach to invest £100m to expand Northern Ireland Full Fibre network, 8 April 2024.
[9] Fibrus secures £100m of new funding to reach half a million homes, 26 August 2024.
[10] Department for the Economy, Project Stratum.
[11] Department for the Economy, Project Gigabit.
[12] https://aims.niassembly.gov.uk/questions/printquestionsummary.aspx?docid=413075
[13] Ofcom, Planned Network Deployments 2024.

Full fibre availability in Northern Ireland remains the highest in the UK

Northern Ireland's improving broadband infrastructure is illustrated by the fact that 93% of residential premises are now able to access full-fibre networks. The total number of residential premises with access to full-fibre networks is now 760,000. Availability is rural areas has increased by four percentage points and now stands at 86%. Among the four UK nations, Northern Ireland has the highest availability of full-fibre networks (93%), compared to England (69%), Wales (68%) and Scotland (62%).



Source: Ofcom analysis of operator data (July 2024).

Table 2.1: Coverage of full-fibre networks (including rurality)

Nation	% of premises (residential)	Percentage point change since 2023
UK	69%	+12pp
England	69%	+13pp
Scotland	62%	+9pp
Wales	68%	+13pp
Northern Ireland	93%	+2pp
Urban	96%	+1pp
Rural	86%	+4pp

Source: Ofcom analysis of operator data (July 2024).

Gigabit-capable networks are accessible by more than nine in ten residential premises

Gigabit-capable networks were available to 94% of residential premises in Northern Ireland in July 2024. This is the highest of the UK nations and two percentage points higher than a year ago.

Table 2.2: Coverage of gigabit-capable networks (including rurality)

Nation	% of premises (residential)	Percentage point change since 2023
UK	83%	5pp
England	84%	6pp
Scotland	77%	5pp
Wales	74%	10pp
Northern Ireland	94%	2pp
Urban	97%	Unchanged
Rural	86%	4pp

Source: Ofcom analysis of operator data (July 2024).

Superfast broadband from fixed lines is available to 98% of residential premises and has expanded in rural areas

Superfast broadband services (>=30 Mbit/s) are available to 98% of premises in Northern Ireland – unchanged from 2023. While rural availability of superfast services is slightly lower than in urban areas, it has grown by two percentage points to 95% since last year. As with other metrics, this increase reflects the continuing publicly funded and commercial investment.

Table 2.3: Coverage of superfast broadband (>=30 Mbit/s) by nation and rurality

Nation	% of premises (residential)	Percentage point change since 2023
UK	98%	+1pp
England	98%	Unchanged
Scotland	96%	+1pp
Wales	96%	Unchanged
Northern Ireland	98%	Unchanged
Urban	99%+	Unchanged
Rural	95%	+2pp

Source: Ofcom analysis of operator data (July 2024).

More than half of those with access to full fibre have taken it up

The increased availability of full-fibre networks is mirrored in the growing take-up of these services. We estimate that the take-up of services on full-fibre networks is around 53% of premises where it is available in Northern Ireland, following a significant increase of 14 percentage points over the last year. This is the highest increase across the UK nations.

Table 2.4: Estimated take-up of services on full-fibre networks as a percentage of premises where full-fibre networks are available: 2023 and 2024

Nation	2023	2024	Percentage point change since 2023
England	27%	33%	+6pp
Scotland	28%	35%	+7pp
Wales	31%	39%	+8pp
Northern Ireland	39%	53%	+14pp
UK average	28%	35%	+7pp

Source: Ofcom analysis of operator data (July 2024).

Local authority coverage data

This sub-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 and Northern Ireland Assembly constituency-level data, is available via the interactive portal on our website.

There has been significant improvement in the availability of faster broadband services right across Northern Ireland in recent years and especially in rural areas. The rise in full-fibre coverage is

especially notable in mainly rural local authority areas. The biggest rises in full-fibre availability came from Antrim and Newtownabbey and Mid and East Antrim, both of which increased by four percentage points relative to September 2023. As discussed above, DfE's Project Stratum and Project Gigabit initiatives, alongside significant private sector investment, are aiming to push Northern Ireland towards 100% full-fibre availability in the next three years.[14]

Table 2.5: Coverage of superfast and full-fibre broadband by local authority (% of premises)

Local authority	Superfast (>=30Mbit/s)	Change since 2023	Full Fibre	Change since 2023
Antrim and Newtownabbey	99%	+3pp	97%	+4pp
Ards and North Down	99%	Unchanged	95%	+1pp
Armagh City, Banbridge and Craigavon	98%	-1pp[15]	93%	+1pp
Belfast	c100%	Unchanged	93%	Unchanged
Causeway Coast and Glens	96%	+1pp	89%	+2pp
Derry City and Strabane	98%	Unchanged	93%	Unchanged
Fermanagh and Omagh	94%	Unchanged	87%	+2pp
Lisburn and Castlereagh	99%	+1pp	95%	+2pp
Mid And East Antrim	98%	+2pp	95%	+4pp
Mid Ulster	97%	Unchanged	90%	+2pp
Newry, Mourne and Down	98%	Unchanged	93%	+1pp

Source: Ofcom analysis of operator data (July 2024).

Average download speeds are highest in Northern Ireland

Of the four UK nations, Northern Ireland has the highest average maximum download speed of 259 Mbit/s, compared to the UK average of 223 Mbit/s.[16] This higher average is likely to reflect the greater availability and take-up of full-fibre services in Northern Ireland.

[14] Department for the Economy, Project Gigabit.
[15] The sample size in this local authority area increased by more than superfast coverage between 2023 and 2024, meaning our measurement shows a very small percentage decline in overall availability. The difference is a fraction of a percentage point but appears higher due to rounding.
[16] For each technology, we ask providers to submit the maximum download speed recorded on a line (for FTTP) and the maximum and average download speed recorded on a line (for xDSL and/or G.Fast technology). The methodology for 2024 uses maximum download speeds, rather than average speeds in previous years, to ensure a comparison across service providers and technologies, so is not comparable with previous reports

Meanwhile, the average monthly data usage in Northern Ireland stands at 510 GB per month or 589 GB per month over full-fibre connections.[17]

Table 2.6: Average maximum download speeds in Northern Ireland

	Average maximum download speed Mbit/s
England	225
Northern Ireland	260
Scotland	215
Wales	182
UK	**223**

Source: Ofcom analysis of operator data (July 2024).

The number of premises unable to access decent broadband has dropped substantially

Even though Northern Ireland's full-fibre availability is the highest in the UK, there remains a small number of premises that are unable to access decent broadband over fixed-lines.[18] Of those premises that do not have decent broadband via fixed-lines, some will be able to access decent broadband via fixed wireless access (FWA) services offered by MNOs or wireless internet service providers (WISPs). More detailed description of these technologies is provided in the Connected Nations: UK Report 2024.

We estimate that just over 2,000 of all premises, residential and commercial, in Northern Ireland do not have access to decent broadband from either a fixed-line or FWA network. This is a significant reduction of around 1,000 premises from 2023.

Source: Ofcom analysis of operator data (July 2024).

which relied on average speeds. To enable a year-on-year comparison, the 2023 data has been re-analysed using the 2024 methodology and which is described in more detail in the methodology annex.

[17] For 2024, we are collecting data usage measurements aggregated at the Optical Line Terminal (OLT) or headend, rather than on a 'per line' data usage basis as used previously.

[18] This is defined by the UK Government as a connection capable of delivering a download speed of at least 10 Mbit/s and an upload speed of 1 Mbit/s.

The broadband universal service obligation (USO)

The broadband USO provides all premises with the right to request a broadband connection with a download speed of at least 10 Mbit/s and an upload speed of 1 Mbit/s (as well as several other specific technical characteristics).[19]

Where an affordable service with these characteristics is not available or is due to become available in the next 12 months under a publicly funded scheme, the customer is eligible for the USO if the costs of providing the connection are below £3,400.[20] Where the costs are above £3,400, the customer has the option to pay the excess costs to get a USO connection. BT is the universal service provider 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.[21]

As of September 2024, BT had received 89 orders in Northern Ireland. Each order may require network build that can serve multiple premises, and therefore, these orders have / will lead to full-fibre connections being built that can serve 726 premises in Northern Ireland.

To ensure the broadband USO remains relevant, a review provision was included in the legislation and the process to review is likely to be triggered when superfast broadband is taken up by at least 75% of all premises. As of July 2024, 75% of all premises have taken up superfast broadband.

In October 2023, the UK Government consulted on a review of the broadband USO and we will continue to engage with the UK Government on the future approach to the USO.

The migration from legacy voice services to digital voice continues

The UK's traditional landline voice services are undergoing a substantial transition as network operators retire their legacy systems (referred to as the Public Switched Telephone Network, or 'PSTN') and replace them with modern systems.

BT and Openreach are now looking to retire BT's PSTN network and the Openreach wholesale services that deliver PSTN by January 2027 and we understand that other providers are following a broadly similar timescale.

To make sure landline services continue to be available to their customers, providers of legacy telephony networks have started delivering landline calls over a broadband connection, using a digital technology called Voice over Internet Protocol (VoIP). This is commonly known as a digital landline. BT has also developed an interim solution, called "pre-digital phone line", for certain complex or difficult to migrate customers such as landline-only or critical national infrastructure customers. This will allow those customers to move off the PSTN without the need to install a broadband connection or change legacy equipment.[22]

---

[19] In particular, these characteristics are: (i) a contention ratio of no more than 50:1; (ii) latency which is capable of allowing the end user to make and receive voice calls effectively; and (iii) the capability to allow data usage of at least 100 GB a month.

[20] In March 2020, we specified in the USO conditions that an affordable service was one that costs £45 per month, rising annually by CPI. This has now risen to £56.20 per month in line with CPI.

[21] BT, USO Reports. KCOM, USO Reports. To date, we understand that KCOM has not received any eligible USO orders.

[22] BT, *BT Group refines its digital switchover programme for the UK's full fibre future, 20* May 2024.

We continue to monitor the migration closely and engage with providers to ensure that disruption is minimised and vulnerable customers are protected from harm.[23]

For more information on this, please refer to our Connected Nations: UK Report 2024.

[23] Ofcom, *Protecting customers during the migration to digital landlines*, 18 December 2023.

3. Mobile, data and voice

Introduction

Mobile coverage is continuing to expand across the UK, ensuring that more people can access the benefits of reliable mobile services.

In this section, we provide an update on the progress MNOs are making with their 5G rollout plans in Northern Ireland. We also report on the availability of 4G mobile coverage across Northern Ireland – which continues to underpin the mobile experience for consumers – both outside and inside premises and across its landmass.

We recommend that this section is read in conjunction with the mobile, data and voice section in the Connected Nations: UK Report 2024.

Figure 3.1: Summary of mobile coverage across the UK and nations

	5G outside premises (MNO range)	4G outside premises (MNO range)	4G geographic (MNO range)	4G total not spots	Voice and text total not spots
UK	61-79%	99-99+%	88-89%	5%	3%
Scotland	54-76%	99-99+%	77-80%	11%	7%
Northern Ireland	36-90%	98-99%	89-95%	2%	<1%
Wales	16-80%	98-99%	83-89%	5%	3%
England	65-81%	99-99+%	94-96%	1%	1%

Source: Ofcom analysis of operator data (September 2024).

Background to mobile technologies

Mobile services described in this section include:

- **5G, the current generation of wireless technology**, is faster than previous generations of wireless technology, as it offers greater capacity, allowing an increased number of devices to be connected at the same time in a small area**.** It is also more responsive by reducing latency which is the time between instructing a wireless device to perform an action and that action being completed.
    - **5G non-standalone (5G NSA)** involves deploying 5G radio equipment alongside existing 4G and is supported by the 4G core network. This delivers an increase in

capacity and allows MNOs to support demand as it continues to grow, without the congestion and degradation of service quality that would otherwise result.

• **5G standalone (5G SA)** involves the deployment of a new 5G core network. This could enable new use cases such as Augmented Reality (AR) /Virtual Reality (VR) and robotics, supported by the broader capabilities of 5G including ultra-low latency, advanced virtual network (slicing) functions,[24] and potentially improved coverage.[25] 5G SA referred to in this chapter is specifically in relation to mobile standalone deployment.

When reporting on 5G mobile availability predictions, we refer to confidence ranges[26] reflecting the likelihood of on the ground coverage for consumers as:

• **High Confidence** associated with a signal strength (-110 dBm), to equate to at least an 80% confidence level.

• **Very High Confidence** associated with a higher signal strength (-100 dBm), to equate to a circa 95% confidence level.

• **4G, 3G and 2G** are older generations of mobile standards with specified features. In particular, 3G supported the use of data applications such as web browsing, while 4G has supported more data intensive activities such as streaming and gaming.

5G availability

MNOs are continuing to roll out 5G services across the UK and this year has seen further increases in the availability of 5G in Northern Ireland.

Outside premises coverage from at least one provider now stands at 92% (High Confidence) and 86% (Very High Confidence), up from 80% and 70%, respectively, in 2023.[27] The 'All' MNO footprint, representing the places where all four MNOs provide coverage, remains at a significantly lower level,

[24] Network slicing is a feature of 5G SA networks that allows an MNO to create multiple virtual networks (slices) on top of its common shared physical infrastructure. The virtual networks are then customised to operate with specific quality of service and meet the specific needs of applications, services, devices, customers or operators.

[25] Augmented Reality (AR): an enhanced version of the real physical world that is achieved through the use of digital visual elements, sound, or other sensory stimuli delivered via technology. It overlays digital content, which could include a combination of sound, video, text, and graphics, onto a real-world environment using a headset or a device with a camera, such as a mobile phone.
Virtual Reality (VR): use of a headset to access a virtual experience, which could be digitally created or a captured 360° photo or video.

[26] Signal strength measured *on the 4G common reference signal and 5G secondary synchronisation block* – for further detail see our Methodology annex.

[27] 5G coverage figures reported in this chapter are slightly lower than the actual 5G coverage due to data inconsistencies affecting 5G standalone reported by one of the MNOs during the later stages of our publication process. We are looking into the effect of this at both the UK and nations level to determine if an update is needed.

reaching outside 20% of premises at High Confidence (up from 18% last year) and 8% at Very High Confidence (unchanged from 2023).

Geographic coverage has expanded significantly, and this year we found that coverage from at least one MNO was available to 71% of NI's landmass at the High Confidence level and 59% at Very High Confidence. This is up from 59% and 46%, respectively, from September 2023. Coverage from all MNOs, however, remains at low levels, with 5G only available to around 2% of NI's landmass at High Confidence.

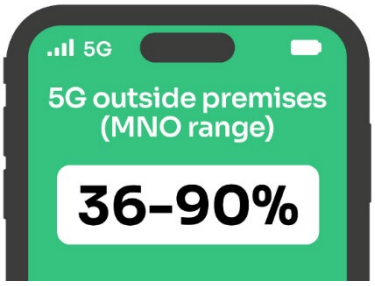
Table 3.1: Geographic 5G coverage across the UK

	High Confidence		Very High Confidence	
Nation	At least one MNO	All MNOs	At least one MNO	All MNOs
England	76%	7%	62%	3%
Scotland	33%	1%	24%	<1%
Wales	52%	1%	42%	<1%
Northern Ireland	71%	2%	59%	<1%

Source: Ofcom analysis of operator data (September 2024).

Coverage varies across MNOs

Virgin Media O2 (VMO2) has by far the most extensive 5G coverage in Northern Ireland at the Very High Confidence level, reaching around 55% of Northern Ireland geographically (a substantial increase of 29 percentage points on the same coverage measure last year) and extending to at least 80% outside premises coverage



At the High Confidence level, geographic coverage across the four MNOs ranges from 5% to 68%. Outside premises coverage ranges from 36% to 90%.

Table 3.2: MNO 5G coverage outside of premises, at Very High and High Confidence levels

	Very High Confidence	High Confidence
BT/EE	34%	37%
Three	19%	39%[28]
VMO2	80%	90%
Vodafone	26%	36%

Source: Ofcom analysis of operator data (September 2024).

[28] The data we have received from Three shows a drop in its 5G coverage compared to our reporting in last year's Connected Nations report from September 2023. Three has stated that this is mainly due to a configuration changes in their network and some minor adjustments in their prediction model for a handful of sites, but that these changes do not have an adverse impact on the overall 5G experience for their customers.

Local authority 5G coverage

Across Northern Ireland's 11 local councils, outside premises coverage for 5G from at least one operator varies from 60-99%+ at High Confidence and 51-99% at Very High Confidence. Coverage is lower in more rural and sparsely populated local authority areas.

Table 3.3: Local authority 5G outside premises coverage from at least one MNO

Local authority	High Confidence	Very High Confidence
Antrim And Newtownabbey	99%	94%
Ards And North Down	92%	84%
Armagh City, Banbridge And Craigavon	97%	88%
Belfast	99%+	99%
Causeway Coast And Glens	90%	80%
Derry City And Strabane	88%	84%
Fermanagh And Omagh	60%	51%
Lisburn And Castlereagh	97%	91%
Mid And East Antrim	96%	89%
Mid Ulster	90%	79%
Newry, Mourne And Down	86%	77%

Source: Ofcom analysis of operator data (September 2024).

4G and voice coverage

Whilst 5G coverage becomes more widely available, voice and data services continue to be most available (and accessed) through older and more established technologies – particularly 4G. The 4G services offered by MNOs continue to provide the backbone of most consumers' experience.

In this sub-section, we detail the latest 4G coverage information across individual MNOs, alongside an update on 2G and 3G switch-off plans.

Outside premises coverage remains high in Northern Ireland

4G coverage is available outside almost all premises in Northern Ireland, with 99%+ of premises able to connect via at least one operator. Furthermore, 97% of premises have outside 4G coverage from all four MNOs (a slight increase on 96% in 2023).

However, while coverage is high, it is slightly lower in rural areas compared to urban. Individual operators' 4G coverage outside rural premises ranges from 94-98%, while in urban areas, each operator provides near total coverage (99%+).

Coverage for voice and text services is also very high: MNOs each provide coverage for outside voice calls in the vicinity of 98-99%+ of premises. Again, coverage is slightly lower in rural areas (94-99%+) than in urban (99%+).

Indoor mobile coverage is widely available, but is highest in urban areas

A number of factors can affect the coverage people receive indoors, including the thickness of walls, building materials, and where in a building people are using their phone. As a result, some premises

may see differences between operators' predicted indoor coverage data and the actual coverage experience.

For indoor 4G coverage[29], the percentage of premises served ranges from 87-93% across individual MNOs, a slight increase on 2023 (86-91%).

The availability of indoor voice calls ranges from 87-99% across individual MNOs. This data shows a two-percentage point drop at the bottom of the range compared to last year (89-99% across individual MNOs in 2023).

There continues to be a notable difference between indoor coverage in rural and urban areas. Individual MNOs provide indoor 4G coverage to 69-80% of premises in rural areas, whereas this figure is 91-99% for urban premises. Voice coverage also varies indoors, ranging from 70-97% across individual MNOs for rural premises, compared to 94-99%+ for urban premises.

Where indoor coverage is poor or unreliable, other solutions can improve the user's experience. These can sometimes include broadband-based voice or video calls on services such as WiFi calling, online communications services such as instant messaging and calling applications, or femtocell.[30] All MNOs offer WiFi calling, although not all phones are configured to support this. The percentage of voice over WiFi calls reported by three of the MNOs range between 9% and 17% across individual MNOs.[31]

4G geographic coverage levels remain high

Overall, 4G geographic coverage across Northern Ireland is widely available (see also the discussion about the Shared Rural Network below). Landmass covered by individual MNOs ranges from 89-95%. Around 85% of Northern Ireland's landmass is covered by all four MNOs. Among the UK nations, 4G geographic coverage is highest in England (94-96%), followed by Northern Ireland (89-95%), Wales (83-89%) and Scotland (77-80%).

Table 3.4: Urban and rural coverage in Northern Ireland by individual operator range

	MNO coverage range	
	Urban	**Rural**
Geographic – 4G	97-99%	89-95%
Geographic – voice	97-99+%	89-99%
Indoor premises – 4G	91-99%	69-80%
Indoor premises – voice	94-99+%	70-97%

[29] Ofcom determines indoor coverage by applying an average building entry loss of 10dB across buildings. We acknowledge this approach provides only a simplified view of indoor coverage and that the real experience depends heavily on the types of building material and insulation in a specific building.
[30] WiFi calling is the ability to make and receive a call and text/SMS over a WiFi network. A femtocell is a small low-power cellular base station connected to the phone network over the internet.
[31] One of the MNOs was unable to differentiate between overall voice calls that are made over Wi-Fi (voWiFi) and overall voice calls that are delivered via VoLTE (VoLTE) on its network.

	MNO coverage range	
Outside premises – 4G	99%+	94-98%
Outside premises - voice	99%+	94-99+%

Source: Ofcom analysis of operator data (September 2024).

Mobile coverage in Northern Ireland by operator

The table below shows a summary of coverage across Northern Ireland by operator.

Table 3.5: 4G and voice coverage by operator in Northern Ireland

	VMO2	Vodafone	BT/EE	Three
Geographic – 4G	93%	94%	89%	95%
Geographic – voice	99%	95%	89%	96%
Indoor premises – 4G	92%	93%	87%	88%
Indoor premises – voice	99%	93%	87%	92%
Outside premises – 4G	99%	99%	98%	99%
Outside premises - voice	99%+	99%	98%	99%+

Source: Ofcom analysis of operator data (September 2024).

The Shared Rural Network is likely to have improved geographic coverage in NI

On 9 March 2020, the UK Government announced that it had entered into an agreement with the four MNOs to grant funding for a Shared Rural Network (SRN).[32] Under the terms of this agreement, each of the four MNOs has committed to provide good quality 4G data and voice coverage to 88% of the country's landmass by 30 June 2024, and 90% by 31 January 2027.[33]

On 12 September 2024, Ofcom published an update on the compliance of UK's MNOs with their SRN coverage obligations and confirmed that BT/EE, Vodafone and VMO2 had met the 88% UK-wide threshold and their individual thresholds for each UK nation.[34] We reported that, as of 30 June 2024, their UK-wide 4G coverage levels were 88.9%, 88.7 % and 88.1%, respectively. Obligations were set at both UK and individual nation level and our assessment showed that each of the four MNOs had

[32] The SRN programme is detailed on our Mobile Coverage Obligations website: Mobile coverage obligations - Ofcom

[33] Good quality coverage is defined as the ability to sustain a 90 second voice call and access data speeds of at least 2 Mbps, with a methodology to assess this based on a 4G signal of at least -105 dBm

[34] https://www.ofcom.org.uk/siteassets/resources/documents/spectrum/spectrum-information/mobile-coverage-obligation/shared-rural-network-coverage-obligations.pdf?v=379965

met their obligations for Northern Ireland, providing geographic 4G coverage to 89-95% of Northern Ireland's landmass.

3G switch-off is underway

All MNOs made a commitment to the UK Government to switch off their 2G and 3G networks by 2033 at the latest. This will result in improved network efficiency and enable more spectrum to be used for faster 4G and 5G services.[35]

In February 2023, we set out a number of expectations on mobile providers on 3G and 2G switch off, which are designed to ensure that customers are treated fairly and any disruption to customers is minimised.[36]

The MNOs are responsible for their own switch-off timetables for these legacy technologies, with 3G being switched off first, and this year saw Vodafone[37] and EE[38] both complete their respective 3G switch-offs. Ofcom has received very few complaints from customers about the impact of 3G switch off, and MNOs have not reported any significant disruption related to the switch to Ofcom. Three[39] is in the process of switching off 3G, and Virgin Media O2[40] plans to switch off its 3G services in 2025. We will continue to closely monitor these switch-off processes through to completion.

[35] https://www.gov.uk/government/news/a-joint-statement-on-the-sunsetting-of-2g-and-3g-networks-and-public-ambition-for-open-ran-rollout-as-part-of-the-telecoms-supply-chain-diversificatio
[36] https://www.ofcom.org.uk/phones-and-broadband/coverage-and-speeds/ofcoms-expectations-of-mobile-providers-for-2g-and-3g-switch-off/
[37] https://www.vodafone.co.uk/help-and-information/3g-switch-off
[38] https://ee.co.uk/3g-switch-off
[39] https://www.three.co.uk/support/network-and-coverage/our-plans-to-switch-off-3g
[40] https://www.o2.co.uk/help/network-coverage-and-international/3g-switch-off