



Connected Nations

UK Report 2025

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Overview

Consumers and businesses rely on good connectivity – whether at home, at work or on the move. We want to ensure that UK consumers have access to high quality networks, to enable a wide range of digital services which drive economic growth. The Connected Nations report, prepared and published under the Communications Act 2003,¹ helps us monitor the availability of these networks and provides data to help stakeholders understand the networks which are available in their area.

This year's report provides an update on the continued rollout of gigabit-capable fixed networks and 5G mobile networks where both coverage and take-up continue to increase. For the first time, it also includes 5G standalone coverage. The report also includes an update on the take-up of full fibre and gigabit-capable broadband services and low Earth orbit (LEO) satellite broadband services.

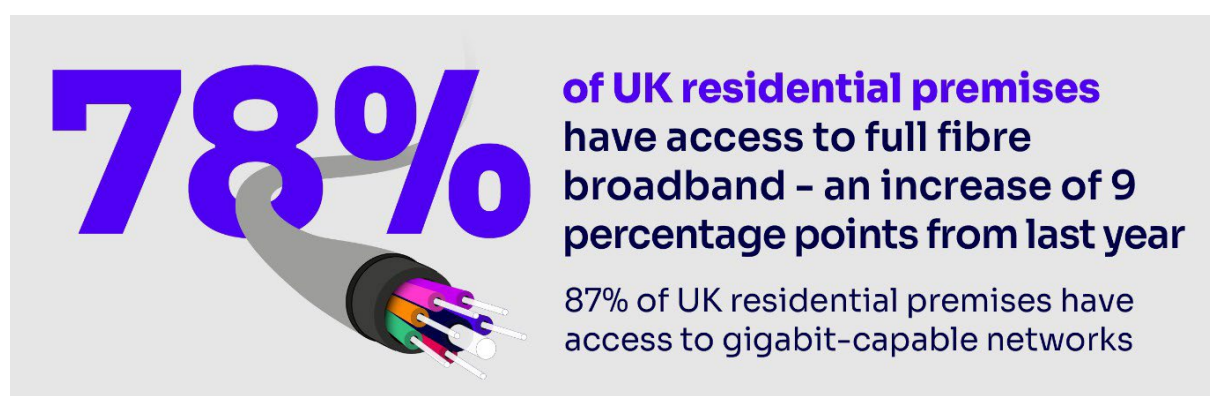
To ensure that people and businesses can derive maximum benefit from an increasingly digital society, connectivity must also be secure and reliable. In this report, we provide an update on our telecoms security and resilience monitoring programmes, including a summary of the significant security compromises that have been reported to Ofcom.

Alongside this report, we are publishing separate reports for each of the UK's four nations. More granular data is available through our interactive dashboards, allowing readers to explore coverage in their area and compare trends over time. In addition, coverage and take-up data are available for download as open data files.

Full-fibre and gigabit-capable coverage has increased

The coverage of full-fibre and gigabit-capable services continues to increase, with gigabit-capable networks now available to 87% of UK residential premises, up from 83% last year. Full fibre is available to 78% of those premises, an increase of nine percentage points from last year. Full fibre is also available to 78% of SMEs in the UK.

Figure 1.1: UK residential full-fibre and gigabit-capable coverage



Source: Ofcom analysis of provider data (July 2025)

Take-up of both gigabit-capable and full-fibre services continues to increase, up by seven percentage points from last year. Over half (56%) of premises that have access to a gigabit-capable network

¹ Sections 134A to 134B.

have adopted this service. Meanwhile, 42% of premises that have access to a full fibre network have taken it up. We continue to find that adoption of full fibre increases the longer full fibre has been available in a particular area.

As a result of the increasing take-up of gigabit-capable networks, the average UK maximum download speed has increased by almost 30% in the last year, to 285 Mbit/s. Download speeds are increasing at a faster pace than consumers' demand for data. Average data usage has only increased by 10% in the same period, with an average of 583 GB for the month of July 2025. The average data usage for full-fibre lines only was 738 GB.

We estimate that there are around 44,000 premises that do not have access to a decent broadband connection, factoring in coverage from fixed and Fixed Wireless Access (FWA) networks. A decent broadband connection is one with a download speed of at least 10 Mbit/s and upload speed of at least 1 Mbit/s.

Some consumers are taking up broadband services delivered over wireless networks and satellite. Take-up of Starlink's satellite broadband services has increased to over 110,000 from around 87,000 last year, with over 12,600 of these connections in locations without access to decent broadband from a fixed or FWA network.

Fewer than one fifth of residential landline connections continue to use legacy Public Switched Telephone Network (PSTN) systems. In addition, just over a million households have ceased their landline in favour of a broadband-only service. We will continue to closely monitor the migration from legacy voice services to digital voice services and engage with providers to ensure that disruption is minimised, and vulnerable customers are protected from harm.

This year's report includes an international comparison of UK's fixed network coverage and take-up. The UK ranked sixth among our 11 comparator countries for full-fibre coverage, ahead of Ireland, Italy, Australia, the USA and Germany, but behind Singapore, Japan, Spain, South Korea and France.

5G coverage and 5G data use continue to grow

Figure 1.2: MNO range for 5G coverage outside of premises at High Confidence level



Source: Ofcom analysis of operator predictions (July 2025).

Mobile coverage continues to increase, with UK 5G coverage outside of premises from at least one operator now ranging between 94% and 97%, based on our Very High and High Confidence levels.

Individual mobile network operators (MNOs) report 5G coverage outside of premises of between 64% and 89% based on our High Confidence level. For the first time, we are reporting separately on 5G Standalone coverage (5G SA), which is now available across 83% of areas outside of premises in the UK from at least one MNO at High Confidence level. 4G coverage from at least one MNO now reaches 96% of the UK landmass.

Earlier this year, we launched our Map Your Mobile tool to provide a clearer, technology-neutral view of local combined 4G and 5G coverage. Using this approach, we estimate that 88% of the UK landmass has good outdoor coverage from at least one MNO. Meanwhile, 96% of the UK landmass has variable outdoor coverage from at least one MNO.

Mobile data use continues to rise, increasing by 18% over the past year to a total of 1,257 petabytes (PB)² for the month of July 2025, a growth rate broadly consistent with the previous year.

5G traffic saw the largest growth, rising to 348 PB this year from 227 PB last year, an increase of 53%. 5G SA now accounts for nearly a third of total 5G traffic, reflecting a transition from earlier 5G non-standalone deployments. 4G remains the dominant mobile technology, accounting for 72% (902 PB) of total monthly data traffic.

The transition away from older mobile network technologies continues. We estimate that there are still around two million direct customer devices reliant on 2G/3G networks. Two MNOs have completed their 3G switch-off and all operators have committed to retiring their 2G networks by 2033 at the latest.

We report on developments in industry to improve the security and resilience of their networks

We also report on network security and resilience, including an update on our telecommunications security monitoring programme. Our analysis has found that communications providers are making good progress on some security measures, but there are areas for improvement.

The number of reported resilience incidents dropped year on year. This is driven by a number of factors, including a change to some operators' incident prioritisation categories.³ Operators have told us that the progress of the migration to digital voice services means that when there are incidents on the PSTN the number of customers affected is lower and these incidents fall below our reporting thresholds. Operators also point to ongoing improvements across the industry that have further reduced report volumes. We expect to consult on our procedural guidance early next year, to clarify our expectations of the thresholds for reporting incidents.

It is important that consumers and businesses trust the networks that they use and rely upon. We also provide an update on our work to further improve the security and resilience of these networks, including reviewing the power resilience of mobile radio access networks and our work on Global Titles.

² 1 PB (petabyte) is equivalent to 1,000,000 GB (gigabyte).

³ Priority categories are used by providers primarily for their own internal incident management purposes, but providers also often use them as the basis for filtering incidents which need to be considered for reporting to Ofcom. These categories define the severity of an incident including the level of impact.

Fixed broadband and voice

Introduction

This section presents our latest findings on the rollout of full fibre and other fixed-line networks, and reports on the take-up of services over these networks. We also provide an update on the deployment of Fixed Wireless Access networks and take-up of satellite broadband services. While most premises now have access to a high-speed network, we provide the latest data on the small number of properties that do not yet have access to a decent broadband service. Additionally, we provide data on average speeds for broadband services and report on the continuing migration of residential customers from the traditional voice network to digital voice services. We also provide an international comparison for the UK's fixed broadband coverage and take-up.

Highlights

- **Full fibre is now available to 78% or 23.7 million UK residential premises.** This is an increase of nine percentage points or 3 million premises from 2024, when full fibre was available to 69% or 20.7 million residential premises. Full fibre is now also available to 78% of SMEs in the UK.
- **Gigabit-capable broadband network availability has grown to 87% of UK residential premises,** up from 83% in 2024.
- **Take-up of full fibre networks at all UK premises has reached 42% or 10.6 million premises.** This is an increase of 7 percentage points from 2024 when it was 35% or 7.5 million premises. Rural take-up of full fibre is at 56% of premises; with urban take-up at 40%.
- **Broadband download speeds and data usage continue to rise,** with average download speeds increasing by 28%. Data usage has increased at a slower rate, up by 10% since 2024.
- **More customers are beginning to unlock the high-speed potential of full fibre,** with 21% now choosing packages that offer near gigabit speeds, up from 17% in 2024.
- **Some consumers are taking up broadband services delivered over wireless networks and satellite.** Take-up of satellite broadband services offered by Starlink has increased to over 110,000.
- **There remain 44,000 premises without access to decent broadband** through fixed or fixed wireless access technology.
- **Consumers with landlines are increasingly using Voice over Internet Protocol (VoIP).** PSTN (public switched telephone network) connections now account for only a fifth of all residential landline connections and, in the year to July 2025, a million households ceased their landline in favour of a broadband only service.
- **The UK ranks sixth among our 11 comparator countries for full-fibre coverage,** ahead of Ireland, Italy, Australia, the USA and Germany, but behind Singapore, Japan, Spain, South Korea and France.

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.

Asymmetric Digital Subscriber Line (ADSL) – 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 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 networks deliver gigabit speeds.⁵

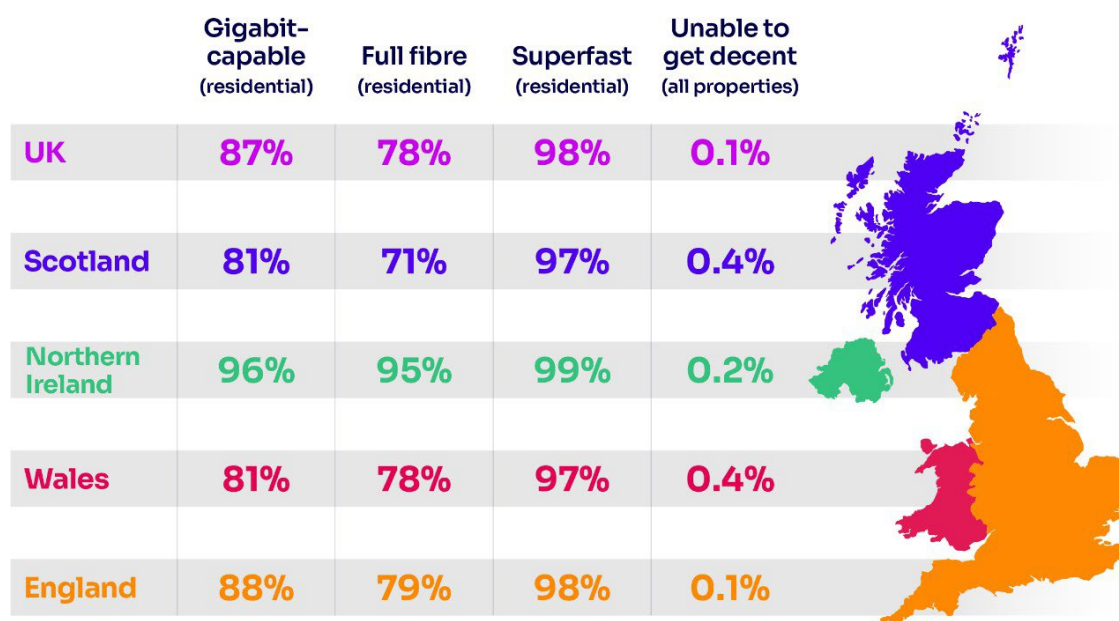
Full fibre or ‘fibre to the premises’ (FTTP) – The connection from the exchange to the premises is provided entirely over fibre. Generally, distance to the premises does not affect the speed delivered. Full fibre can offer gigabit speeds.⁶

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 30 to 60 users.

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



Source: Ofcom analysis of provider data (July 2025).

Residential full-fibre and gigabit-capable coverage

Full fibre is now available to over 78% of residential premises

There has been a significant expansion in the availability of full-fibre networks. As of July 2025, 78% or 23.7 million residential premises across the UK had access to a full-fibre broadband network. This is an increase of nine percentage points, or 3 million premises, compared to July 2024 (Table 2.1).

Gigabit-capable broadband coverage has increased to over 87% of residential premises

Gigabit-capable broadband, connections that can offer download speeds of 1 Gbit/s and above, can be delivered over both full-fibre and HFC technologies. The increase in full-fibre coverage has also resulted in an increase in the number of premises able to access gigabit-capable broadband. By July 2025, 87% or 26.4 million residential premises across the UK had access to a gigabit-capable broadband network. This is an increase of four percentage points, or an additional 1.4 million residential premises compared to July 2024.

Table 2.1: Residential full-fibre and gigabit-capable network coverage

	Full fibre			Gigabit capable		
	Total	Urban	Rural	Total	Urban	Rural
England	79% (19.9m)	81% (18.0m)	60% (1.9m)	88% (22.2m)	92% (20.3m)	61% (1.9m)
Northern Ireland	95% (0.8m)	97% (0.6m)	91% (0.2m)	96% (0.8m)	98% (0.6m)	91% (0.2m)
Scotland	71% (1.9m)	76% (1.7m)	50% (0.3m)	81% (2.2m)	89% (2.0m)	51% (0.3m)
Wales	78% (1.1m)	83% (0.9m)	59% (0.2m)	81% (1.2m)	87% (1.0m)	59% (0.2m)
UK	78% (23.7M)	81% (21.1m)	61% (2.6m)	87% (26.4m)	91% (23.8m)	62% (2.6m)

Source: Ofcom analysis of provider data (July 2025).

More premises have access to more than one gigabit-capable network

More than half (57%) of residential premises now have access to more than one gigabit-capable network, as shown in Table 2.2.

Table 2.2: Residential premises with access to multiple fixed networks

	Access to more than one gigabit-capable network		Access to more than one network (including non-gigabit-capable networks)		Access to more than two networks (including non-gigabit-capable networks)	
	July 2024	July 2025	July 2024	July 2025	July 2024	July 2025
England	47%	58%	74%	77%	25%	31%
Northern Ireland	74%	77%	82%	85%	13%	16%
Scotland	41%	49%	65%	68%	19%	22%
Wales	28%	37%	42%	46%	7%	12%
UK	47%	57%	72%	75%	23%	29%

Source: Ofcom analysis of provider data (July 2024, July 2025). Note that the July 2024 figures are slightly higher than the ones published in the Telecoms Access Review consultation (Volume 1, paragraph 1.6) as the latter were for all premises, i.e. both residential and commercial, and did not include the Hull area.⁷

As of July 2025, the proportion of residential premises that have access to more than one gigabit-capable network has increased by 10 percentage points. The percentage of all residential premises that have access to at least two networks (including non-gigabit capable networks) has increased by three percentage points. Meanwhile, there has been an increase of six percentage points for all residential premises that have access to at least three networks (including non-gigabit capable networks).

⁷ Ofcom, [Telecoms Access Review Consultation](#), March 2025.

SME full-fibre and gigabit-capable coverage

More SMEs now have access to full fibre networks

Access to high-speed broadband is important for many small and medium-sized enterprises (SMEs). Over the last year, the availability of both full-fibre and gigabit-capable broadband for SMEs has increased.

As of July 2025, 78% of SMEs in the UK had access to a full-fibre network (Table 2.3), which represents an increase of 15 percentage points from July 2024.⁸ Eighty-four per cent of SMEs in the UK had access to a gigabit-capable network, an increase of five percentage points from July 2024.

Table 2.3: SME full-fibre and gigabit-capable network coverage, by nation

	Full fibre			Gigabit capable		
	Total	Urban	Rural	Total	Urban	Rural
England	79%	82%	58%	85%	89%	59%
Northern Ireland	89%	88%	89%	90%	90%	89%
Scotland	69%	75%	48%	73%	80%	48%
Wales	71%	78%	56%	73%	81%	56%
UK	78%	81%	58%	84%	88%	59%

Source: Ofcom analysis of operator data (July 2025).

Coverage remains highest for micro businesses, which are often based in residential areas and can make use of residential services. Our coverage data does not include point-to-point business leased lines, so coverage may be higher than indicated in Tables 2.3 and 2.4, particularly for medium-sized businesses

Table 2.4: SME full-fibre and gigabit-capable network coverage in the UK by size of business

	Full fibre		Gigabit capable	
	July 2024	July 2025	July 2024	July 2025
Micro (1-9 employees on site)	63%	78%	80%	85%
Small (10-49 employees on site)	56%	74%	71%	77%
Medium (50-249 employees on site)	52%	73%	67%	75%

Source: Ofcom analysis of operator data (July 2024, July 2025).

⁸ This is due to a provider submitting better quality coverage data this year.

Take-up of full fibre and gigabit-capable services

Take-up of full-fibre services is higher in rural areas

An increasing number of customers are using broadband services on full-fibre networks as full-fibre coverage continues to expand. In July 2025, take-up of full-fibre services had reached 10.6 million premises (residential and commercial), or 42% of the premises that had access to full fibre networks (Table 2.5). This is an increase of seven percentage points since July 2024.

Take-up of full fibre remains notably higher in rural areas than in urban areas (Table 2.5), although full fibre coverage is higher in urban areas than rural areas (Table 2.1). Of premises with full-fibre access, 56% of premises in rural areas have taken a full-fibre service, compared to 40% in urban areas. We have published data on take-up rates at the local authority level in our Connected Nations performance open data files.

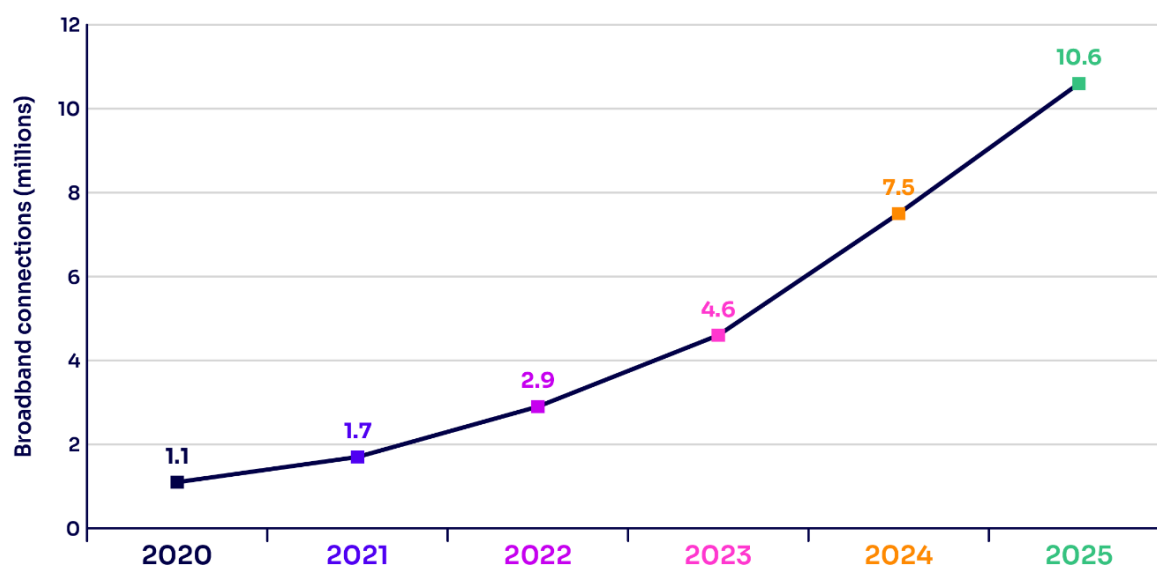
Table 2.5: Estimated full-fibre broadband take-up as a percentage of premises where full-fibre networks are available, by nation

	Total	Urban	Rural
England	41%	39%	54%
Northern Ireland	62%	60%	65%
Scotland	43%	40%	60%
Wales	49%	47%	58%
UK	42%	40%	56%

Source: Ofcom analysis of provider data (July 2025)

Full-fibre take-up has continued at a steady rate from 2024, with an increase of 3.1 million new full-fibre connections in the period since July 2024.

Figure 2.2: Estimated number of full-fibre broadband connections, 2020-2025



Source: Ofcom analysis of provider data (June 2020, May 2021, May 2022, May 2023, July 2024, July 2025).

As a proportion of all premises in the UK (including those that do not yet have access to full-fibre networks), full-fibre take-up is now 33%. This is up from 23% in 2024, an increase of 10 percentage points.

Take-up of gigabit-capable broadband has also increased

Take-up of services on gigabit-capable networks, where they are available, is now at 56%. This is an increase of seven percentage points in take-up from 49% reported last year.

Time elapsed since build impacts on take-up rates

We continue to find that take-up increases the longer full fibre has been available. For example, 55% of properties which have had access to full fibre for at least three years have taken a full-fibre service. In contrast, the take-up rate for properties where full fibre has been available for one year or less is only 14%.

Table 2.6: Full-fibre take-up with respect to length of time it has been available

Length of time full fibre has been available at the property	Percentage of properties that have taken full fibre
One year or less	14%
Greater than one year, up to two years	30%
Greater than two years, up to three years	41%
Greater than three years, up to four years	55%
Greater than four years	55%

Source: Ofcom analysis of provider data (July 2025).

Background: fixed broadband connections

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.⁹ Decent broadband can be delivered by ADSL, FTTC, HFC cable or full fibre. It provides sufficient speeds for making a high-definition video call. Over broadband with 10 Mbit/s download, 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 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.

Most people have access to superfast broadband

Most residential premises in the UK have access to superfast broadband, a connection that can provide download speeds of at least 30 Mbit/s. Our 2025 data shows that the proportion of residential premises that have access to superfast broadband on a fixed-line connection has remained stable at 98% of (or roughly 29.7 million) UK residential premises (Table 2.7). This includes the 26.4 million premises that have access to faster, gigabit-capable networks as discussed above.

Table 2.7: Residential superfast coverage by nation

	Total	Urban	Rural
England	98%	99%	92%
Northern Ireland	99%	99%+	96%
Scotland	97%	99%	87%
Wales	97%	99%	89%
UK	98%	99%	91%

Source: Ofcom analysis of operator data (July 2025).

⁹ These speeds reflect the broadband universal service obligation set by the UK Government. This provides the right to request a broadband connection to a home or business with these minimum download and upload speeds (as well as other specific technical characteristics), subject to eligibility and affordability requirements.

Broadband performance

This subsection provides insights on broadband performance experienced by consumers and builds on the coverage and take-up of services described above. It includes information on download speeds across different technologies, data usage, and the range of different speed packages taken by consumers.¹⁰

Broadband download speeds continue to rise

Take-up of full fibre is now 10.6 million or 33% of UK premises, up from 23% in 2024 (Figure 2.2). This has helped to underpin an almost 30% increase in UK average maximum download speeds,¹¹ up from 223 Mbit/s in 2024 to 285 Mbit/s in 2025. A similar increase in average maximum download speeds can be seen across all the nations (Table 2.8).

Out of the four nations, Northern Ireland continues to have the highest average maximum download speed of 325 Mbit/s (Table 2.8 below). This higher average is likely to reflect the greater availability (Table 2.1) and take-up (Table 2.5) of full-fibre broadband in Northern Ireland compared to the rest of the UK.

Table 2.8: Average maximum download speed for the UK and by nation (Mbit/s)

	2023	2024	2025
England	173	225	288
Northern Ireland	191	259	325
Scotland	155	215	273
Wales	136	181	243
UK	170	223	285

Source: Ofcom analysis of provider data (May 2023, July 2024, July 2025).

Average data use is higher on full-fibre connections

Average data usage across all connections now stands at 583 GB per connection for the month of July 2025, an increase of 10% on July 2024 (531 GB) (see Table 2.9). Average data usage at 738 GB per month continues to be significantly higher on full-fibre connections (almost 30% more) when compared to the average across all connections.

¹⁰ We are no longer reporting time of day performance information due to the low level of variation across the day as [reported in 2024](#) (which meant this would be of limited use to consumers when comparing services). However, we will continue to review the usefulness of this and other broadband speed information as a part of our ongoing research.

¹¹ This is the average (i.e. mean) of the maximum download speeds delivered to the residential consumer’s premises (e.g. the router) as reported by the providers’ systems. Information on how speeds are analysed is set out in more detail in the methodology annex.

Table 2.9: Average monthly data use per connection for the UK and by nation (GB)

	2024	2025
England	539	591
Northern Ireland	510	551
Scotland	480	530
Wales	508	560
UK	531	583

Source: Ofcom analysis of provider data (July 2024, July 2025).

Notes: Data usage is the total data downloaded and uploaded over the broadband connection during July 2025. Due to a change in methodology, this usage data is not directly comparable with usage data reported before 2024.¹²

However, data usage is growing more slowly than growth in the download speeds that networks can deliver - 10% growth for data usage (Table 2.9) compared to a 28% year-on-year increase for download speeds (Table 2.8). This may reflect a slowdown in the growth of consumption of data hungry services such as video streaming as viewing habits mature, rather than the lack of the ability to access higher speed gigabit-capable networks, which now cover more than 87% of the UK's premises (see Table 2.1).

More customers are beginning to unlock the high speed potential of full fibre

While increasing numbers of customers continue to move from legacy broadband technologies to full-fibre, only 21% of them are taking advantage of the higher speed packages that are available (see Table 2.10, ≥ 900 Mbit/s).^{13, 14} This proportion is slowly increasing, up from 17% in 2024 and 14% in 2023. For comparison, 55% of customers are subscribed to broadband packages with advertised download speeds of 300 Mbit/s or less (56 % in 2024).

Table 2.10: Take-up of services on full-fibre networks by advertised download speed

	2023	2024	2025
<100 Mbit/s	29%	17%	17%
≥ 100 & <300 Mbit/s	39%	39%	38%
≥ 300 & <900 Mbit/s	18%	27%	24%
≥ 900 Mbit/s	14%	17%	21%

Source: Ofcom analysis of provider data (May 2023, July 2024, July 2025).

¹² For 2025 and 2024, we collected data usage measurements aggregated at the Optical Line Terminal (OLT) or headend, rather than on a 'per line' data usage basis as reported before 2024.

¹³ Highest speed packages refer to speeds ≥ 900 Mbit/s i.e. 'near' gigabit speeds.

¹⁴ Our broadband coverage checker shows the estimated fastest speeds and operators that are available at a particular address, whereas the data in Table 2.10 shows the speeds available to consumers as configured by the network operator and that reflect the speed of the package bought by the customer.

Wireless and Satellite networks

In addition to fixed-line connection technologies, it is also possible to receive fixed broadband via wireless networks, such as fixed wireless access and satellite technologies. These networks provide consumers with an alternative where they do not have access to a fixed access network or even where fixed networks are available.

Background: Fixed Wireless Access

Fixed Wireless Access (FWA)¹⁵ can be delivered by:

Mobile network operators (MNOs) – FWA on mobile networks is offered on licensed 4G and 5G networks, usually to an indoor router. Some MNOs provide external antennas in areas where premises suffer from poor signal quality indoors, to improve the quality of the broadband service. These services share the network capacity with mobile users, meaning that the capacity of the network must be carefully managed between the demands of existing mobile users and FWA customers. There may be areas of high mobile demand where a reliable FWA service cannot be offered.

Wireless internet service providers (WISPs) – The majority of these services are delivered over wireless networks that communicate via a wireless line-of-sight link between a provider's mast site and an external antenna fixed to a customer's premise. These networks mostly use spectrum under licence exemption or light authorisation. Some WISPs use 5G technology specifically for Fixed Wireless Access services, enabling them to provide superfast speeds and above much more widely. The performance of services may be impacted by line-of-sight issues, which can become more significant at higher frequencies (WISPs have a range of frequency options, with choice informed by capacity and performance requirements, as well as technology and kit available in a given band).¹⁶

Fixed wireless coverage remains steady, but take-up has increased

MNO FWA coverage is unchanged as providers continue to upgrade their network to meet demand

Several MNOs provide FWA services on their nationwide network and these services are available at 96% of UK premises, up one percentage point from the coverage reported last year.¹⁷ Although the majority of these services continue to be delivered over 4G technologies, we are seeing a FWA

¹⁵ FWA (both that provided by MNOs and by WISPs) can provide decent and superfast speeds and, under certain conditions, may be gigabit capable, but this will be dependent on the specific deployment, available capacity at the site, and the number and location of users.

¹⁶ Ofcom introduced its Shared Access framework in 2019 to support local spectrum access for local networks. The framework includes the 3.8-4.2 GHz band and part of the 26 GHz band that are suitable for the provision of high-speed networks based on 5G technology.

¹⁷ EE, Three and Vodafone are the MNOs offering Fixed Wireless broadband services in the UK. Only two MNOs have shared coverage data with us for this report. A full list of the providers we report on is in our [methodology](#).

transition to 5G as 5G coverage improves with time. The data provided by the operators that provide FWA services indicate an increase in the numbers of sites that have deployed 5G. We report on improvements to 5G coverage in the next chapter.

FWA users can often be high bandwidth users compared to the average mobile phone user. To manage any potential congestion concerns on the network, MNOs offering FWA services consider a number of factors when deciding where to make services available including, but not limited to, demand, available capacity and utilisation. MNOs use different technologies to provide backhaul, but we are seeing an increased deployment of fibre to base stations and access points to meet the rising demand of data throughput. The majority of the backhaul to UK mobile networks is fibre and this continues to increase for the MNOs that deliver FWA for their customers. We are also seeing an increased reliance on satellite backhaul with more than one MNO providing backhaul to their sites using satellite technology.

Wireless broadband services are also available from Wireless Internet Service Providers

We estimate that 8% of premises have access to a decent broadband service from a WISP. The number of providers reporting to us this year has reduced to 16 (compared to 20 in 2024), as we have stopped collecting data from a number of smaller providers and two networks have merged.

Table 2.11: Coverage of MNO and WISP FWA networks with at least decent broadband (all premises)

	MNO FWA	WISP FWA
England	96%	8%
Northern Ireland	85%	3%
Scotland	95%	1%
Wales	94%	24%
UK	96%	8%

Source: Ofcom analysis of provider data (July 2025).

Developments in satellite broadband

Background: satellite services

There are two types of satellite broadband services:¹⁸

Geostationary Orbit (GSO) satellites – These orbit the earth at about 36,000 km and have traditionally been the primary way of delivering satellite communications services. GSO providers can provide satellite broadband to most premises across the UK, including some in the most remote areas, but the connection’s performance can be limited by its higher latency.

¹⁸ Satellite fixed broadband connections can also provide decent and superfast speeds and, under certain conditions, may be gigabit-capable, but this will be dependent on the specific deployment, available capacity and the number and location of users.

Low Earth Orbit (LEO) satellites – These satellites can deliver lower latency services due to their lower orbit (below 2,000 km), enabling a more seamless use of applications such as two-way video calling and gaming. These satellite constellations are now also available offering residential and business broadband to UK customers.

Satellite broadband provides an alternative way to access broadband services, particularly in locations which do not have coverage from fixed or FWA networks. However, our data shows that consumers are also buying these services where other network technologies are available.

At present Starlink is the only LEO operator offering satellite broadband coverage across the UK including in harder-to-reach areas. Business-to-business (B2B) broadband services are available from other satellite operators such as OneWeb. Ofcom have authorised 9 NGSO licences to date, 7 of which are LEO.¹⁹

We note that Amazon also has plans to offer direct to consumer broadband from 2026.²⁰

Take-up of LEO satellite broadband continues to increase

Take-up of LEO satellite broadband offered by Starlink in the UK continues to increase, with over 110,000 active connections in 2025, up from around 87,000 reported last year. The majority of these connections are in rural areas. Over 12,600 of these connections are in locations without access to decent broadband from a fixed line or FWA.

However, there is also take-up in areas where other broadband networks may be available, with 27% of these connections in locations which have access to full fibre, up from 24% last year.

Although satellite services do not always guarantee any minimum speeds on their packages, in the data submitted to Ofcom, Starlink indicate average download speeds of around 210 Mbit/s, up from 160 Mbit/s in 2024. Starlink reported average upload speeds on their connections to be around 20 Mbit/s. Starlink's increased capacity in the UK this year could be attributable to a combination of factors, including the deployment of additional satellites and improvements to ground infrastructure such as expanding its gateway antennas.²¹

Access to decent broadband

The number of premises unable to access decent broadband has fallen and is expected to reduce further

We estimate that 1% of all UK residential and commercial premises cannot access decent broadband, a connection which provides at least 10 Mbit/s download speed and 1 Mbit/s upload speed, via a fixed line. This is around 340,000 premises in July 2025, a drop of 45,000 since July 2024, when we reported that around 385,000 premises did not have decent broadband via a fixed line.

Of those premises that do not have access to decent broadband via a fixed line, a large proportion can access decent broadband via FWA services offered by MNOs or WISPs. Taking account of the

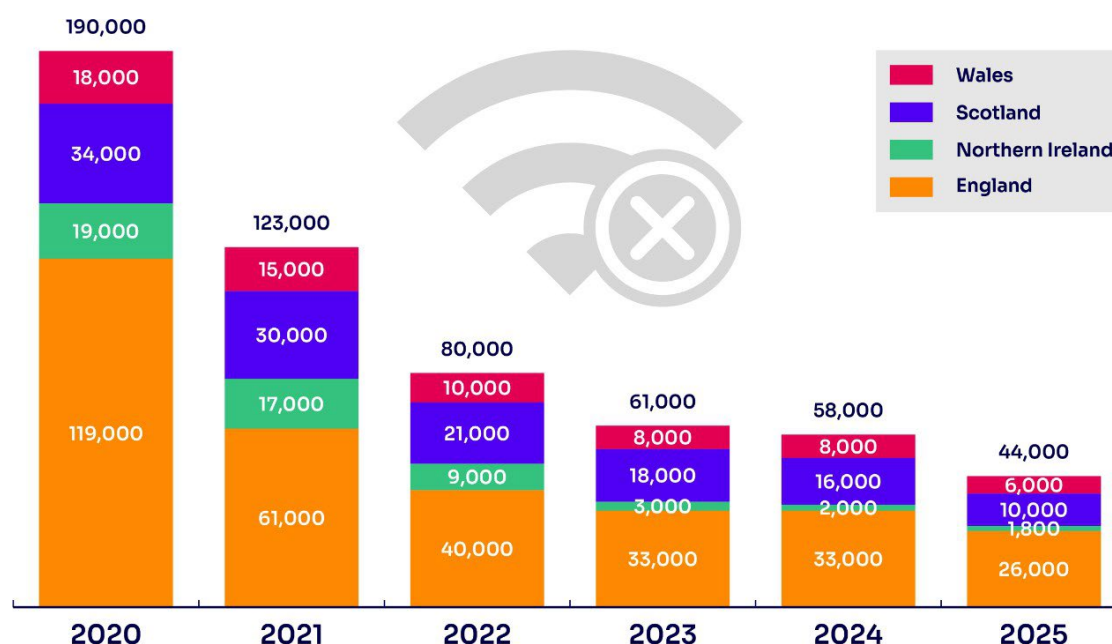
¹⁹ NGSO refer to broadband satellites systems, which use many satellites in a non-geostationary satellite orbit (NGSO) closer to the Earth than earlier satellites.

²⁰ Amazon, [Everything you need to know about Amazon Leo, Amazon's satellite broadband network](#), 14 November 2025.

²¹ Ofcom, [Statement: Starlink Internet Services Limited \(SpaceX\) - application for a variation of gateway licence](#), 1 August 2024.

coverage available from FWA services, we estimate that there are around 44,000 or 0.1% of premises in the UK without a decent broadband service from either fixed line or FWA (Figure 2.3). The remaining number of premises without access to a decent broadband service has therefore fallen by around 14,000 to 44,000, from the approximately 58,000 premises we reported last year. These figures have dropped significantly in the past five years, from 190,000 in 2020 to 44,000 in 2025.

Figure 2.3: Approximate number of premises without access to a decent broadband service from either a fixed or Fixed Wireless Access network, 2020-2025²²



Source: Ofcom analysis (June 2020, May 2021, May 2022, September 2023, July 2024, July 2025)

We estimate that around 8,000 of these premises will be connected via publicly funded schemes by January 2027, meaning that the number of premises remaining without a decent broadband connection from a fixed line or FWA could be around 36,000 by the end of 2026.

The broadband universal service obligation offers decent broadband to some premises currently without access

The broadband universal service obligation (USO) provides 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) to a home or business, subject to eligibility and affordability requirements.²³

Where an affordable service with these characteristics is not available, or due to become available in the next 12 months under a publicly funded scheme, the home or business is eligible for a

²² All figures have been rounded to the nearest 1,000, except for Northern Ireland in 2025 to indicate the small decrease in premises.

²³ 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.

connection under the USO if the costs of providing the connection are below £3,400.²⁴ Where the costs are above £3,400, the end-user 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.²⁵

As of September 2025, BT had received nearly 2,200 USO orders since the launch of the USO in March 2020. Each order requires network build that can serve multiple premises, and therefore these orders have led to full-fibre connections being built that can serve over 11,000 premises.

Table 2.12: USO orders and number of premises built, by nation

	Number of USO Orders	Total premises passed by resulting build
England	1,702	8,418
Northern Ireland	94	736
Scotland	123	582
Wales	252	1,438
UK	2,171	11,174

Source: Ofcom analysis of BT data (September 2025).

The increase in the number of USO orders since last year's Connected Nations report was small (around 160 new orders up to September 2025). As noted in last year's report, data analysis by BT has indicated that the cost of connecting more than nine out of ten of the remaining premises without access to decent broadband is likely to exceed the £3,400 threshold. In these cases, prospective end-users will receive excess cost quotes that may be quite high and, in most cases, unaffordable. The current broadband USO is therefore expected to play only a limited role in connecting the remaining premises without access to decent broadband, and the premises that are the most expensive to connect are likely to need alternative solutions. We will continue to engage with the UK Government on the future approach to the USO.

Investment in networks

Estimated expenditure on telecoms infrastructure totalled £9.2bn in 2024

We collect network investment information to better understand how UK's largest fixed and mobile network providers are investing in network infrastructure.²⁶ The information collected relates to

²⁴ In March 2020, we specified in the USO conditions that an affordable service was one that costs no more than £46.10 per month, rising annually by CPI. This has now risen to £57.60 per month in line with CPI.

²⁵ BT, [USO Reports](#). KCOM, [USO Reports](#). To date, we understand that KCOM has not received any eligible USO orders.

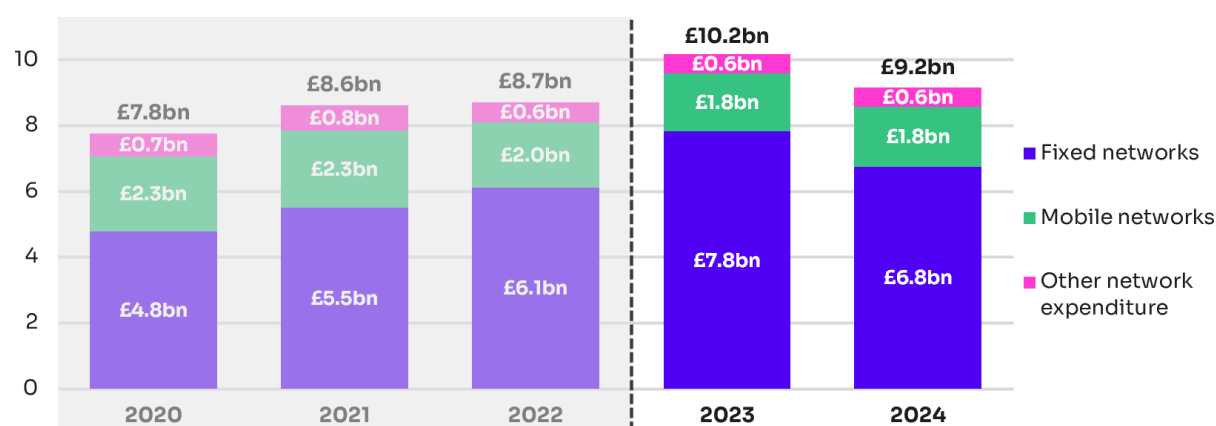
²⁶ Only capital expenditure required to provide and operate network infrastructure in the UK is included; figures exclude VAT and expenditure on retail activities (e.g. retail billing or marketing systems). Figures include capital expenditure on tangible and intangible assets, including capitalised staffing and labour expenditure, and expenditure on assets in the course of construction (AICC). Figures exclude expenditure on assets that have been added to a balance sheet through adoption of the IFRS16 accounting standard, or assets

providers' annual financial reporting periods, and the information received is pro-rated to estimate calendar year figures.

The figures include public funding provided to support the rollout of better fixed and mobile connectivity, such as UK Government funding, funding provided via the governments of the devolved nations, and local authority funding. Last year, we received data from around 20 additional full-fibre network operators. While this means our analysis better represents telecoms network investment, a consequence is that data relating to fixed and total network investment from 2023 onwards are not directly comparable to those for previous years.

We estimate that UK operators invested a total of £9.2bn in network infrastructure in 2024, a £1.0bn (10%) real-term fall (i.e. when adjusted for inflation) compared to 2023. Fixed network investment totalled £6.8bn (74% of the total) during the year, while mobile network investment accounted for a further £1.8bn (20% of the total). An additional £0.6bn related to 'other network expenditure', i.e. investment in infrastructure used to provide both fixed and mobile services.

Figure 2.4: Estimated telecoms network capital expenditure: 2020 to 2024



Source: Ofcom analysis of provider data.

Notes: Adjusted for CPI (2024 prices); fixed network and total investment figures from 2023 onwards are not directly comparable to previous years' data.

Fixed telecoms network infrastructure investment is estimated to have fallen

We estimate that UK operators invested £6.8bn in fixed telecoms network infrastructure in 2024. This was a £1.1bn (14%) year-on-year decline in real terms, largely due to falling full-fibre access network investment as many alternative network operators slowed or halted network deployment in response to funding pressures.

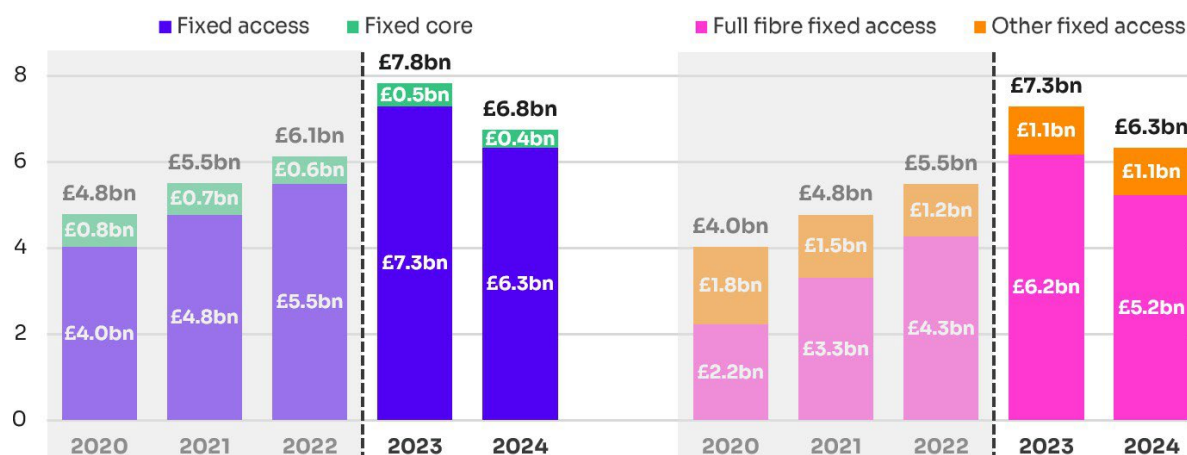
Most investment in fixed network infrastructure during the year related to access networks (£6.3bn, or 94% of the total) with the remaining £0.4bn (6% of the total) being investment in fixed core and backhaul networks. Full-fibre access network investment was estimated at £5.2bn in 2024, a £0.9bn (15%) real-term fall compared to 2023. Despite this decline, full-fibre access network investment

held for sale, and the costs of maintenance contracts purchased alongside hardware. Expenditure associated with asset transfers and leasing follows the same guidelines the Office for National Statistics provides when requesting information in its quarterly acquisitions and disposals of capital assets survey. While the figures shown have been rounded, any percentage changes shown are calculated using the unrounded data.

continued to represent the majority of telecoms network investment during the year, accounting for 77% of all fixed network investment and 57% of total telecoms network investment.

Additionally, some of the £1.1bn that was invested in other fixed access infrastructure may be used to support the rollout of future full-fibre networks where it relates to physical infrastructure upgrades.

Figure 2.6: Estimated fixed telecoms network capital expenditure: 2020 to 2024



Source: Ofcom analysis of provider data. Notes: Adjusted for CPI (2024 prices); Figures from 2023 onwards are not directly comparable to previous years' data.

Physical infrastructure access

Physical infrastructure access continues to play an important role in the deployment of new networks

Significant investment and engineering resources are required to deploy new networks. Many providers reduce the costs and timeframes for deployment if they roll out parts of their network using Openreach's network, which is made up of approximately 508,000 km of duct and 4.1 million poles. Since 2019, our rules have allowed easier access to Openreach's physical infrastructure (PIA). As of 6 October 2025, 178 providers had registered with Openreach as customers of PIA, and 163 of these had already built using PIA or had placed orders to do so. Providers have ordered around 204,000 km of duct routes (137,000 km of which has been delivered) and approximately 1.3 million attachments to poles (around 1 million of which have been delivered) to deploy networks.²⁷

Migration from legacy voice services to digital voice services

The retirement of the legacy public switched telephone networks is progressing

The UK's traditional landline voice services continue to undergo a substantial transition as network operators retire their legacy systems (each referred to as a public switched telephone network, or

²⁷ The same piece of Openreach infrastructure may be built on by multiple communications provider customers.

‘PSTN’) and replace them with modern systems. This change is necessary as the existing copper-based PSTNs are beyond their intended lifespans and are becoming increasingly unreliable.

BT and Openreach are now looking to retire BT’s PSTN and the Openreach wholesale services that deliver PSTN by January 2027, and we understand that other providers are following a broadly similar timescale.²⁸

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 a ‘pre-digital phone line’ (PDPL), 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 BT’s PSTN without the need to install a broadband connection or change legacy equipment.²⁹

The industry has made steady progress over the last few years in migrating customers from the PSTNs, mainly through a combination of customers choosing to move to IP (customer-led migrations) and providers actively moving them onto IP (provider-led migrations). The latter has mainly been used by BT, VMO2 and to a lesser extent Zen, KCOM and Vodafone.

While progress has been steady, migration numbers slowed significantly in 2024 due to an agreement between the UK Government and all the main providers to temporarily pause provider-led migration of customers until additional steps are taken to protect vulnerable consumers through the transition.³⁰

Since then, industry have taken steps to improve their processes when migrating customers, particularly vulnerable customers. For example, in September 2025 Openreach announced the official launch of Prove Telecare, its telecare migration service.³¹ Prove Telecare is designed to help consumers with medical telecare systems to safely migrate to digital landlines. Given these improved processes, the Government agreed over Summer 2025 to several providers restarting provider-led migrations.

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

Customers with landlines are increasingly using VoIP

We collected data from seven of the largest providers of retail voice services to residential customers. We found PSTN connections now account for less than one fifth of residential landline connections (19%). Around 3.2 million residential landline customers still use the PSTN, down from 5.2 million a year earlier (in July 2024).

The remainder of customers with a landline have either switched to VoIP (9.8 million landline connections) or use emulated PSTN, which has similar features to the PSTN but does not rely on PSTN technology.

²⁸ BT, [BT Group refines its digital switchover programme for the UK’s full fibre future](#), 20 May 2024.

²⁹ BT, [BT Group refines its digital switchover programme for the UK’s full fibre future](#), 20 May 2024; BT, [Pre-Digital Phone Line](#).

³⁰ UK Government, [Public Switched Telephone Network charter](#), 18 December 2023. Network operators such as Openreach also signed a [similar voluntary charter](#) in early 2024.

³¹ Openreach, [GEN083/25 Product launch of Prove Telecare](#), 17 September 2024.

Table 2.13: Number and share of residential landline customers by technology

	Approximate number of customers	Share of all residential landlines
PSTN	3.2 million	19%
VoIP	9.8 million	57%
Emulated PSTN	4.2 million	24%
UK	17.2 million	

Source: Ofcom analysis of provider data (July 2025).

In the year to July 2025, 1.9 million residential customers who previously had a PSTN line migrated to a VoIP service with their existing ISP. Thirty-three per cent (0.6 million lines) of these were as a result of a provider-led migration, while the remaining 67% (1.3 million lines) were as a result of customer-led migrations.

Switching to broadband-only lines

We also found that just over a million households ceased their landline in favour of a broadband-only service with their existing Internet Service Provider (ISP) in the year to July 2025. This was a slightly higher change than reported in last year's Connected Nations. These consumers may be making use of personal online communication services, such as Skype or WhatsApp, to make voice and video calls and/or relying on their mobile phones for voice calls.

Path to completing PSTN switch-off

The volume of customer migrations to digital landlines is likely to increase over the coming months, as the PSTN retirement date of January 2027 comes closer. Alongside this, it is also likely that more complex customers will make up a larger proportion of the remaining PSTN customers than has been the case to date. This is because providers have largely focused on migrating the easier to migrate customers first. The expected increasing use of Prove Telecare and PDPL should help providers manage some risks for customers. We continue to expect that all providers and network operators take all possible steps to protect customers, particularly telecare users, through the migration process and we will continue to closely monitor the retirement of the PSTNs.

International broadband availability and take-up comparisons

This subsection compares the UK's fixed broadband coverage and take-up with 10 other countries – Australia, France, Germany, Italy, Japan, the Republic of Ireland, Singapore, South Korea, Spain, and the United States – using data provided to Ofcom by Analysys Mason across two years.

The data covers both business and residential lines and premises and, unlike the data presented in the rest of this report (which generally refers to July 2025), relates to the end of March 2025 (Q1 2025) and March 2024 (Q1 2024) for comparison. As a result, the UK figures in this subsection may differ from those elsewhere in the report.

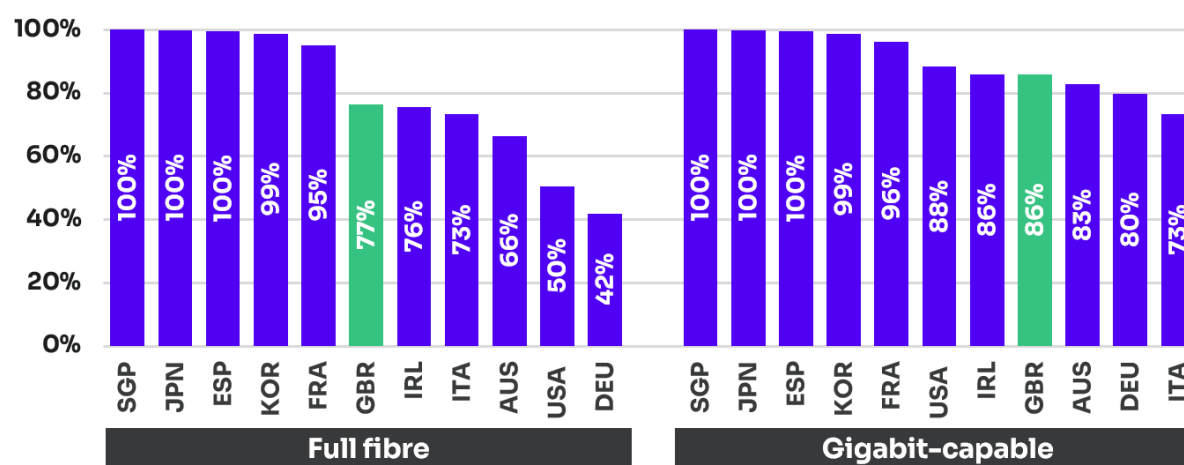
UK ranked sixth for full-fibre coverage and eighth for gigabit-capable network availability in Q1 2025

In our comparisons the definition of full fibre includes both fibre to individual premises and fibre to multi-dwelling units (MDUs) with non-fibre in-building distribution. Countries in the Asia-Pacific region often perform well on this measure due to widespread fibre-to-the-building (FTTB) deployment in high-density MDUs.

Our analysis shows that as of Q1 2025, 77% of UK premises were covered by full-fibre networks, up from 64% a year previously. This placed the UK in sixth place ahead of Ireland, Italy, Australia, the USA and Germany – up from seventh in Q1 2024. Singapore, Japan and Spain lead with 100% full fibre coverage closely followed by South Korea (99%) and France (95%).

For gigabit-capable networks – which combine full fibre availability with that of DOCSIS³² technologies capable of delivering 1 Gbit/s connectivity (i.e. DOCSIS3.1+) – the UK achieved 86% coverage by the end of Q1 2025, ranking eighth ahead of Australia, Germany and Italy. While UK gigabit-capable broadband availability increased by six percentage points year-on-year, the UK's rank dropped one place with the Republic of Ireland just overtaking it.

Figure 2.6: Full-fibre and gigabit-capable fixed broadband network coverage: Q1 2025 (proportion of premises)



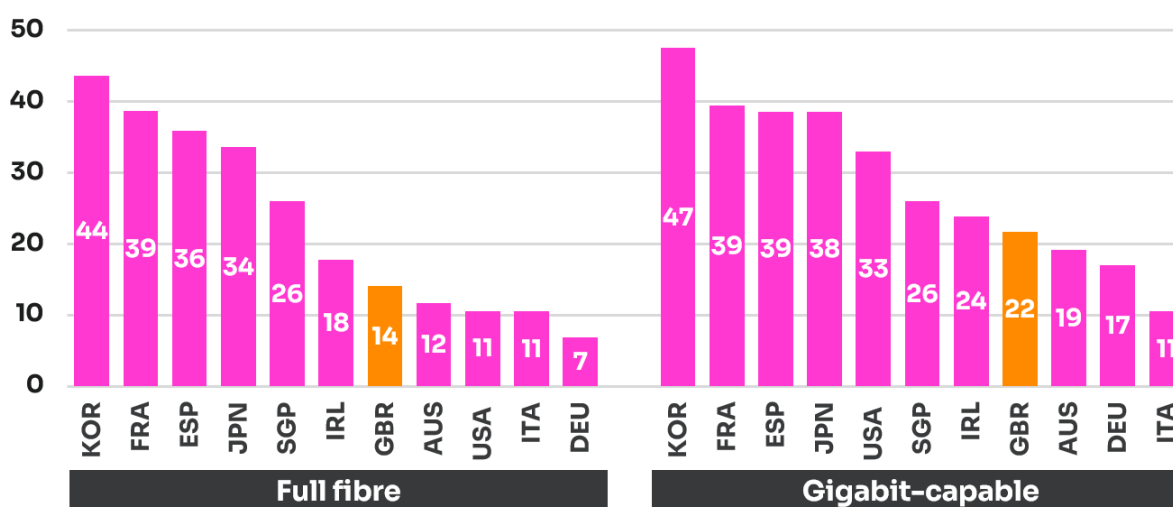
Source: Ofcom, using data provided by Analysys Mason.

UK ranked seventh for take-up of full fibre and eighth for take-up of gigabit-capable broadband services by population

There were 14 full fibre broadband connections per 100 people in the UK at the end of Q1 2025 (up from 10 per 100 people in Q1 2024), with the UK ranking seventh among our 11 comparator countries in 2025, unchanged from the previous year. This was ahead of Australia (12 per 100), the USA and Italy (both 11 per 100), and Germany (7 per 100) but significantly behind South Korea (44 per 100 people) where take-up was highest. For gigabit-capable services, there were 22 connections per 100 people in the UK at the end of Q1 2025; again, the UK's rank being unchanged year-on-year at eighth, despite an increase from 18 per 100 people in Q1 2024.

³² DOCSIS technology is used over HFC networks to provide broadband services.

Figure 2.7: Full-fibre and gigabit-capable fixed broadband lines per 100 population: Q1 2025



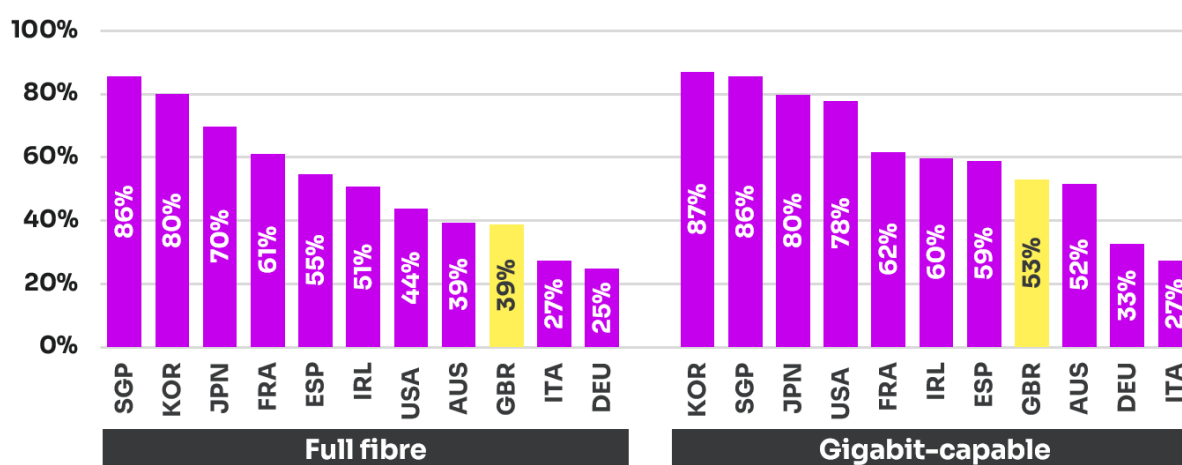
Source: Ofcom, using data provided by Analysys Mason.

UK ranked ninth for full fibre take-up and eighth for gigabit-capable take-up in coverage areas

We have also used Analysys Mason's data to calculate broadband take-up rates within coverage areas, i.e. full fibre and gigabit-capable broadband lines as a proportion of premises covered.

Full fibre broadband take-up increased to 39% of premises in coverage areas in the UK in Q1 2025, placing the country in ninth position ahead of Italy and Germany. This rank was unchanged year on year, despite take-up having increased from 34% in Q1 2024. For gigabit-capable services, take-up in coverage areas reached 53% in Q1 2025 (up from 48% a year previously), improving the UK's ranking by one place to eighth as it overtook Australia. The leading countries for each connection type were Singapore with 86% full fibre penetration and South Korea with 87% gigabit-capable penetration.

Figure 2.8: Full fibre and gigabit-capable fixed broadband take-up in coverage areas: Q1 2025



Source: Ofcom, using data provided by Analysys Mason.

Mobile, data and voice

Introduction

Mobile connectivity plays a vital role in how people across the UK access services, communicate and stay connected. This section provides an update on the availability of mobile services, based on data submitted by mobile network operators (MNOs) and neutral host providers.

We report on the rollout of 5G services, including for the first time, an overview of 5G standalone coverage. We continue to report on 2G, 3G and 4G coverage, both outdoors and indoors, across the UK's landmass and road network. We also highlight the growing role of neutral hosts in supporting mobile connectivity and include selected statistics from our new consumer-facing web-based coverage checker tool, Map Your Mobile, which provides local coverage information.

We continue to monitor traffic growth and investment trends in mobile services, which provide important context for understanding how mobile networks are evolving.

Our reporting on mobile coverage in this report uses the same methodology as in previous Connected Nations reports. However, we continue to consider how to evolve our approach to mobile coverage reporting and we will explore this further with MNOs over the coming year, in relation to both coverage and performance reporting.

Highlights

- **5G Standalone (5G SA)** is now available across 83% of areas outside of premises in the UK, based on our High Confidence levels.³³ This newer form of 5G is being rolled out alongside existing 5G non-standalone (5G NSA) services.
- **Overall 5G coverage, which includes both 5G SA and 5G NSA, continues to expand.** 5G coverage outside of premises from at least one MNO now ranges between 94% and 97%, based on our Very High and High Confidence levels.³⁴ Individual MNOs report 5G coverage outside of premises of between 64% and 89%, at our High Confidence level.³⁵
- **4G coverage from at least one MNO now reaches 96% of the UK geographic landmass and extends beyond 99% of UK premises.** 4G continues to carry the largest share of mobile data traffic, accounting for 72% of the total monthly mobile data traffic. While it remains the most used mobile technology, its share is gradually declining, down by 6 percentage points from 2024, indicating a shift towards 5G.
- **Monthly mobile data traffic increased by 18% over the past year to 1,257 petabytes (PB)**³⁶, a growth rate broadly consistent with the previous year.
- **5G traffic saw the largest growth, rising from 227 PB to 348 PB, an increase of 53%.** Notably, 5G SA now accounts for approximately 31% of total 5G traffic, representing around 9% of

³³ Please refer to the 'Our approach to reporting mobile coverage' section in this chapter where these levels are defined.

³⁴ By 'At least one MNO', we mean the combined coverage that would be available if the total coverage of each MNO was included in an aggregated coverage footprint.

³⁵ The coverage ranges here refer to the span between the MNO with the least coverage, and that with the most coverage at our High Confidence level.

³⁶ 1 PB (petabyte) is equivalent to 1,000,000 GB (gigabyte).

overall mobile data traffic. This reflects a widespread transition by MNOs from NSA to SA networks.

- **The transition away from older mobile technologies continues.** We expect all MNOs will have completed their 3G switch-off by the end of the year. All MNOs have committed to retiring their 2G networks by 2033 at the latest.
- **The number of direct customers relying on 2G or 3G-only devices is approximately 2 million,** broadly similar to the 2.1 million reported in 2024.

Figure 3.1: Overview of voice and data coverage across the UK and UK nations ³⁷

	5G outside premises (MNO range)	5G SA outside premises (MNO range)	4G outside premises (MNO range)	4G geographic (MNO range)	4G total not spots	Voice and text total not spots
UK	64-89%	47-65%	99-99%+	89-90%	4%	3%
Scotland	59-84%	40-64%	99-99%+	79-81%	10%	6%
Northern Ireland	38-95%	20-91%	98-99%	90-96%	2%	1%
Wales	23-89%	12-57%	99%	84-90%	3%	2%
England	67-91%	47-67%	99%+	95-96%	1%	1%



Source: Ofcom analysis of MNO data (July 2025)

Background to mobile technologies

Mobile technologies described in this section include:

- **5G, the latest generation of wireless technology**, is faster than previous generations of wireless technology, offers greater capacity, and allows more 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 equipment with services delivered over the 4G core

³⁷ The MNO ranges in this figure refer to the span between the MNO with the least coverage and that with the most coverage on a given measure. For 5G and 5G SA outside premises the MNO range is based on our 'High Confidence' measure, rather than the 'Very High Confidence' measure which we also use in this report. Note that only three MNOs have deployed 5G SA services. References to 5G SA in this report therefore reflect the coverage and traffic reported by these operators only. Three does not currently deploy 5G SA services.

network. This approach delivers an immediate increase in capacity and allows MNOs to support demand as it continues to grow, without having to upgrade their core networks.

- **5G standalone (5G SA)** uses a new 5G core network. This approach better enables new use cases such as Augmented Reality/Virtual Reality and robotics,³⁸ supported by the broader capabilities of 5G including ultra-low latency and advanced virtual network (slicing) functions.³⁹ 5G SA referred to in this section is specifically in relation to mobile standalone deployment.
- **4G, 3G and 2G** are older generations of mobile technology. In particular, 3G enabled the use of less data intensive applications such as web browsing, while 4G saw the introduction of more data intensive activities such as streaming and gaming.

Mobile coverage

Our approach to reporting mobile coverage

In Connected Nations, we report on mobile coverage using signal strength predictions provided by the four MNOs. These predictions help us understand the extent to which mobile services are available across the UK, both nationally and regionally. This year, we are reporting on 5G SA coverage for the first time, using the same approach we apply to overall 5G. We plan to work with MNOs to explore how our current coverage reporting approach could evolve as part of enhancements to our Connected Nations reporting.

We also plan to consider how we report in future publications on the VodafoneThree network, following the merger between Vodafone and Three UK. This year we report on the two networks separately.⁴⁰

Our analysis is based on the prediction of signal strength at pixel level⁴¹, which is aggregated to estimate the geographic or premise coverage covered by each mobile technology. In determining coverage we have defined a threshold for the minimum signal strength for each technology, based on testing and analysis work we have conducted.

³⁸ Augmented Reality: 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: use of a headset to access a virtual experience, which could be digitally created or a captured 360° photo or video.

³⁹ 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 characteristics to meet the specific needs of applications, services, devices, customers or operators.

⁴⁰ We note that, at the time the Formal Notice was issued, the merger between Vodafone and Three UK had only recently been completed. Consequently, the two operators submitted separate datasets for coverage prediction and all other inputs required for the 2025 reporting period.

⁴¹ A pixel is a 100m x 100m grid cell, referenced against the [OSGB](#) national grid system.

- For 2G, 3G, and 4G networks, coverage is defined as having at least a 98% probability of successfully completing a 90-second voice call. For 4G specifically, we also expect a 95% chance of achieving a download speed of at least 2 Mbit/s.
- For 5G networks we take a different approach to determine whether a device can reliably connect. We present 5G and 5G SA coverage using two confidence levels:
 - **High Confidence:** signal strength of -110 dBm or better, associated with at least an 80% probability of coverage
 - **Very High Confidence:** signal strength of -100 dBm or better, associated with around a 95% probability of coverage

For further details on our approach please see our methodology.⁴²

While reporting based on signal strength predictions provides useful coverage estimates over a wide area, it can be less helpful for understanding service availability in specific locations (particularly at lower signal strengths). We have updated our mobile coverage checker, Map Your Mobile, to help users better understand mobile service availability in specific locations. The coverage checker uses higher signal strength thresholds and more granular mapping to reflect more data heavy use on mobile devices than is used for Connected Nations reporting.⁴³ Map Your Mobile also presents localised crowdsourced performance data. While this approach differs from the methodology used in Connected Nations, it supports local-level predictions and complements the broader national and regional reporting in Connected Nations. Later in this section we report some data based on the Map Your Mobile approach.

5G coverage

MNOs are picking up pace in transitioning to 5G SA, as overall 5G availability continues to grow steadily

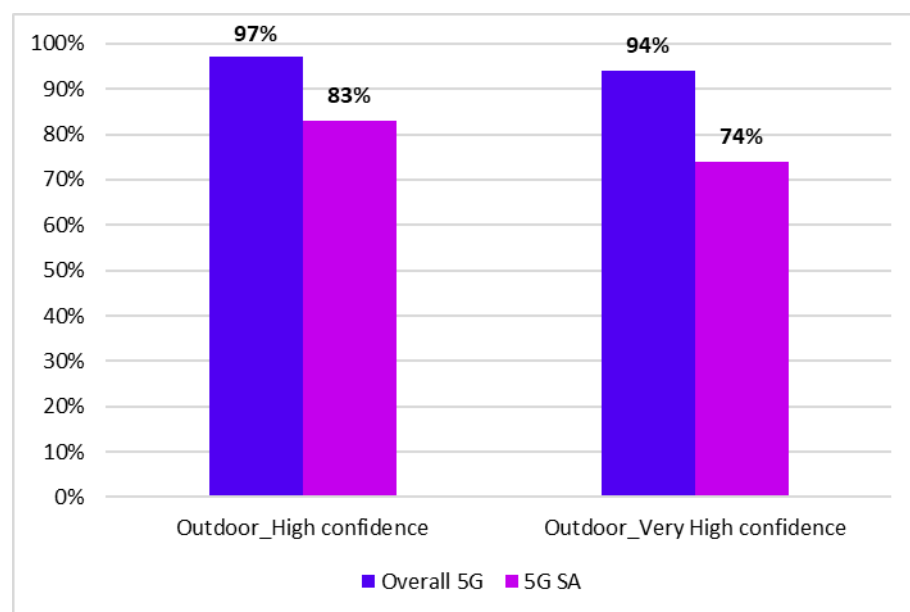
The transition to 5G SA is now well underway, with 5G SA coverage from at least one MNO reaching 83% at the High Confidence level and 74% at the Very High Confidence level in areas outside of premises, and reported 5G SA deployments accounting for approximately 41% of all 5G sites.⁴⁴

⁴² [Connected Nations Methodology](#)

⁴³ [Map Your Mobile coverage checker methodology - August 2025](#)

⁴⁴ We note that 5G SA and 5G NSA site counts are not mutually exclusive; some physical sites may support both 5G SA and 5G NSA.

Figure 3.2: 5G SA vs Overall 5G coverage outside UK premises where it is available from 'At least one MNO' (2025)

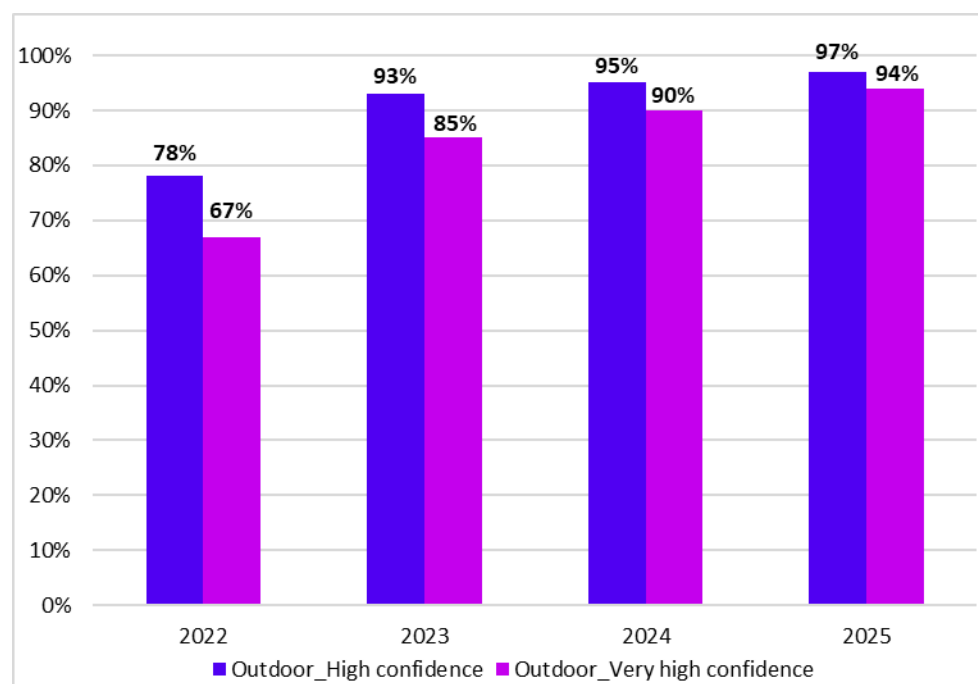


Source: Ofcom analysis of MNO data (July 2025)

Overall 5G coverage continues to grow, with coverage in areas outside of premises where service is available from at least one MNO reaching 94% at a Very High Confidence level and 97% at a High Confidence level in 2025, up from 90% and 95% respectively in the previous year (see Figure 3.3).⁴⁵ Additionally, consumers are also increasingly able to make use of 5G, with around 66% of mobile handsets now 5G capable (63% of the 5G handsets are now 5G SA capable).

⁴⁵ By 'coverage outside premises', we mean coverage that is predicted in a 100x100m area in which a dwelling is located, which can be considered as a proxy for outdoor coverage of populated areas in the UK.

Figure 3.3: 5G coverage outside UK premises where it is available from 'At least one MNO' (2022 - 2025)



Source: Ofcom analysis of MNO data (July 2025)

5G coverage, where it is available from all MNOs, remains considerably lower though it is steadily growing as indicated in Table 3.1 below.

Table 3.1: 5G coverage outside UK premises where it is available from 'All MNOs' (2023-2025)

	2023	2024	2025	Change 24-25
High Confidence	25%	38%	47%	▲ +9 pp
Very High Confidence	16%	19%	24%	▲ +5 pp

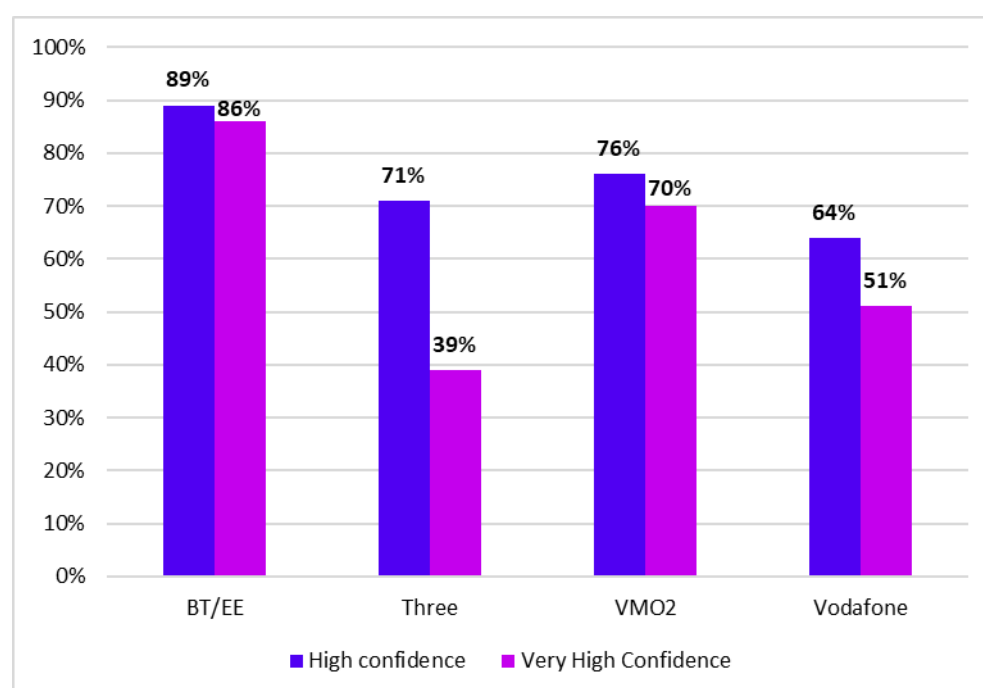
Source: Ofcom analysis of MNO data (September 2023, September 2024, July 2025)

Progress in 5G geographic coverage also continues, albeit at a more modest pace. As of 2025, overall 5G coverage across the UK geography stands at 65% at the High Confidence level and 54% at the Very High Confidence level - up from 60% and 48%, respectively, in the previous year.

5G coverage varies by MNO and geography. BT/EE leads in 5G coverage outside premises at both our Very High Confidence and High Confidence levels, at 86% and more than 89% respectively.⁴⁶

⁴⁶ Please refer to our [interactive report](#) for a detailed breakdown of coverage across MNOs and the various geographies included in our reporting

Figure 3.4: MNO 5G coverage outside UK premises, at Very High and High Confidence levels



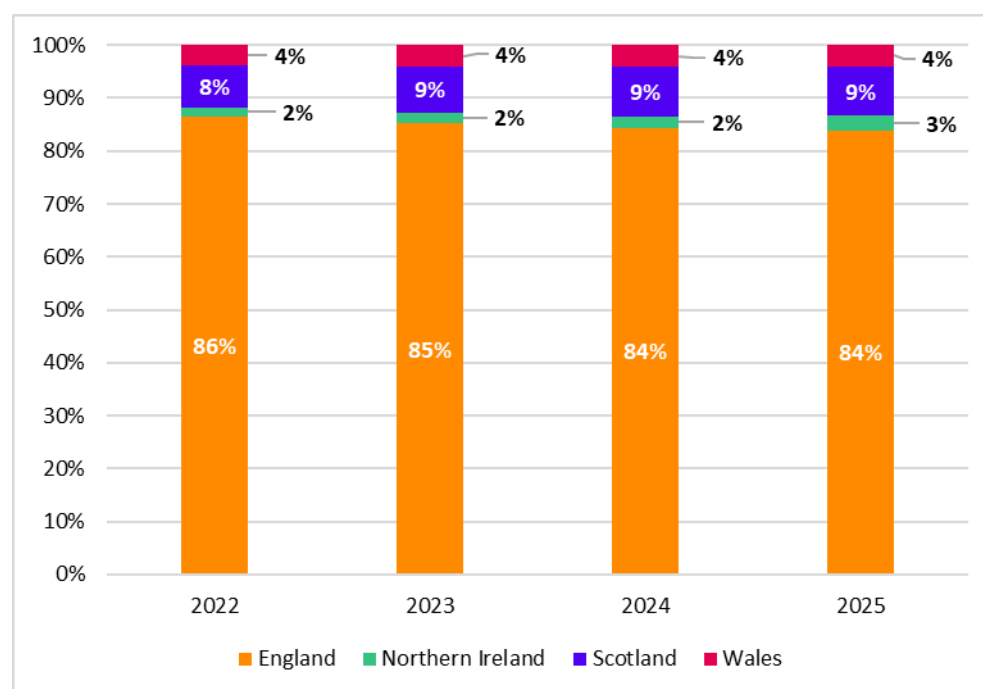
Source: Ofcom analysis of MNO data (July 2025)

The number of 5G sites, including 5G SA, has also increased

These increases in coverage have been driven by additional 5G deployments, with over 29,100 5G sites now operational out of roughly 83,500 sites across all MNOs in the UK.⁴⁷ This represents a significant rise of 26% from the over 23,100 sites reported in 2024 with distribution across the UK nations remaining consistent with previous years and broadly aligned with national distribution of mobile traffic (see Figure 3.5 below).

⁴⁷ These deployments do not necessarily equate to the total number of unique physical sites across UK. This is because multiple MNOs may be offering coverage from the same site. As such, the reported site count reflects the aggregate number of deployments across all MNOs, rather than distinct physical site infrastructure. Also, this encompasses the various 5G mobile deployment types i.e. 5G NSA, 5G SA and Dynamic Spectrum Sharing (DSS).

Figure 3.5: Share of 5G sites by UK nation⁴⁸



Source: Ofcom analysis of MNO data (May 2022, May 2023, July 2024, July 2025)

The number of 5G SA sites has also grown substantially, now exceeding 12,000 up from over 3,300 last year. This growth reflects both the upgrade of existing 5G NSA sites and the deployment of new SA sites by MNOs. However, in more than half of these 5G SA sites, some of the deployed frequencies operate using Dynamic Spectrum Sharing (DSS), which means the same radio frequencies are shared with older technologies like 4G. This can limit the full performance benefits that 5G SA is designed to deliver.

Urban areas continue to see higher levels of overall 5G and 5G SA site deployment. However, suburban and rural areas are also showing steady progress. The table below illustrates 5G site deployment across urban, suburban and rural areas from 2024 to 2025.

Table 3.2: 5G site deployment across urban, suburban and rural areas

Area type	% of Sites with 5G (2024)	% of Sites with 5G (2025)	% of Sites with 5G SA (2025)
Urban	42%	48%	27%
Suburban	29%	38%	13%
Rural	16%	20%	5%

Source: Ofcom analysis of MNO data (July 2024, July 2025)

⁴⁸ The aggregated number of sites, represented by the percentages in urban, suburban and rural classifications as well as the nations' split, is slightly less than the total sites. This is because not all sites could be spatially mapped onto the UK due to limitations in the ONS 2021 Census [National Statistics Postcode Lookup](#) (May 2025) and [Locale classification](#) files, which we used to generate the classifications and geographical boundaries. However, this should not have a significant impact on figures reported as the number of sites affected is minimal.

4G and Voice coverage

While 5G coverage is expanding, most people still use voice and data services over 4G. Below we outline trends in 4G coverage across the UK.

Outdoor premises coverage remains high

Outdoor 4G and voice service coverage across UK premises remains high across all regions, with levels broadly unchanged from last year.⁴⁹ Coverage in rural areas continues to be slightly lower than in urban areas. Table 3.3 below shows coverage trends across 2024 and 2025, comparing UK-wide averages with rural and urban areas.

Table 3.3: 4G and voice outdoor premises coverage across MNOs in rural and urban areas⁵⁰

	UK-Wide		Urban		Rural	
	2024	2025	2024	2025	2024	2025
Outdoor 4G (All MNO)	99%	99%	99%+	99%+	93%	94%
Outdoor 4G (MNO range)	99-99%+	99-99%+	99%+	99%+	97-98%	97-98%
Voice (All MNO)	99%	99%	99%+	99%+	95%	96%
Voice (MNO range)	99%+	99%+	99%+	99%+	98-99%+	98-99%+

Source: Ofcom analysis of MNO data (September 2024, July 2025)

Indoor coverage continues to be widely available

Indoor mobile coverage can vary depending on factors such as wall thickness, building materials used in construction and where in a building people are using their phone. Consequently, there may be differences between MNOs' predicted indoor coverage data and the actual indoor experience.⁵¹ Overall, indoor 4G and voice call coverage remains broadly consistent with last year. Indoor coverage continues to be notably lower in rural areas than in urban areas, as shown in Table 3.4.

⁴⁹ Mobile voice services through 2G, 3G and 4G

⁵⁰ Coverage is rounded to the nearest percentage point.

⁵¹ For Connected Nations reporting indoor coverage is determined by applying an average building entry loss of 10dB across buildings. This approach provides only a simplified view of indoor coverage and the real experience depends heavily on the types of building material and insulation in a specific building.

Table 3.4: Indoor 4G and indoor voice coverage across MNOs in rural and urban areas

	UK-Wide		Urban		Rural	
	2024	2025	2024	2025	2024	2025
Indoor 4G	94-96%	94-97%	97-99%	97-99%	78-84%	78-84%
Indoor Voice	96-99%+	96-99%+	98 ⁵² -99%+	98-99%+	82-98%	83-98%

Source: Ofcom analysis of MNO data (September 2024, July 2025)

Where indoor mobile coverage is poor or unreliable, alternative solutions such as broadband-based voice or video calls (e.g. Wi-Fi calling), online communications services including instant messaging and calling applications, mobile repeaters or femtocells can improve the user experience.^{53, 54} All MNOs offer Wi-Fi calling to their customers, although not all mobile phones are configured to support this feature. The percentage of voice over Wi-Fi calls reported by MNOs ranges from 10% to 18%.⁵⁵

4G geographic coverage

Overall, 4G geographic coverage remains stable compared to last year, with a one percentage point improvement reported by each individual MNO. A similar change is also observed in areas with coverage from all MNOs, as well as in areas covered by at least one MNO. These figures follow the significant step-change in coverage between 2023 and 2024, which was largely attributable to the Shared Rural Network (SRN) programme. As the majority of the UK landmass is rural, rural coverage levels broadly align with overall UK levels. Urban areas, however, have moderately higher 4G geographic coverage, with coverage from all MNOs reaching 98%, and coverage from at least one MNO exceeding 99%.

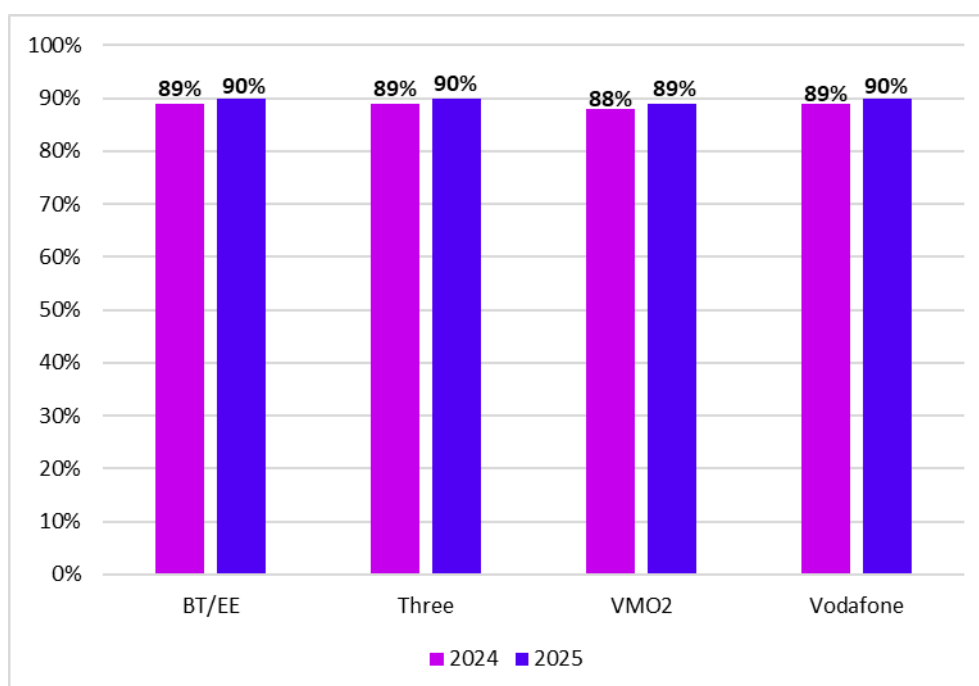
⁵² This figure was previously reported as 99% in last year's report. The correct value is 98%, which was accurately reflected in the interactive version at the time. We have updated this year's publication to reflect the correct figure.

⁵³ Wi-Fi calling is the ability to make and receive a call and text/SMS over a Wi-Fi network. This does not include general 'VoIP' calls made independently of MNO's voice services.

⁵⁴ A femtocell is a small low-power cellular base station connected to the mobile network over the internet.

⁵⁵ One of the MNOs was unable to differentiate between overall voice calls that are made over Wi-Fi and overall voice calls that are delivered via VoLTE on its network.

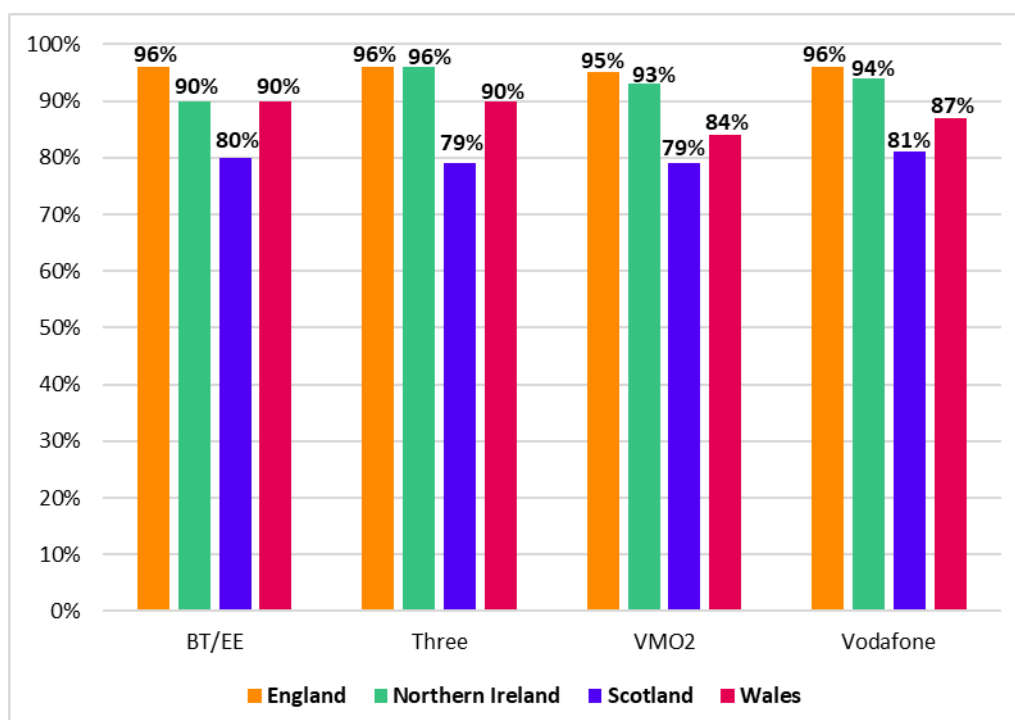
Figure 3.6: UK-wide 4G geographic coverage across MNOs (2024-2025)



Source: Ofcom analysis of MNO data (September 2024, July 2025)

Individual MNO's geographic coverage across the UK nations broadly aligns with last year's figures, with small changes ranging between one and three percentage points, most commonly around one percentage point. Notably, Scotland and Wales each recorded a two-percentage point increase in all MNO geographic coverage. However, significant differences remain in 4G geographic coverage across the UK's nations as shown in Figure 3.7 below.

Figure 3.7: 4G geographic coverage across MNOs, by nation



Source: Ofcom analysis of MNO data (July 2025)

4G coverage on roads

4G coverage and mobile voice services on motorways and A roads,⁵⁶ as well as B roads⁵⁷ both inside and outside vehicles, remain broadly consistent with last year's figures across individual MNOs, with small incremental changes of around 1%, as shown in Table 3.5.

Table 3.5: Roads coverage across MNOs (2024-2025)

	Inside vehicles		Outside vehicles	
	2024	2025	2024	2025
4G coverage (Motorways and A roads)	89-92%	90%-93%	98-99%	98-99%
4G coverage (B roads)	80-83%	81-83%	95-96%	95-97%
Voice coverage (Motorways and A roads)	90-98%	91%-98%	99-99%+	99-99%+
Voice coverage (B roads)	80-95%	82-95%	96-99%	96-99%

Source: Ofcom analysis of MNO data (September 2024, July 2025)

Update on the Shared Rural Network

In 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). Under the terms of this agreement, each of the four MNOs committed to provide good quality 4G data and voice coverage to 88% of the UK landmass by 30 June 2024, and 89.2 % by 31 January 2027.^{58, 59}

The MNOs met their 2024 obligations to deliver good geographic coverage to 88% of the UK landmass and have continued to maintain coverage at around this level over the past year. In doing so, the MNOs also delivered early on a UK Government aspiration for coverage from at least one MNO to be available across 95% of the UK.

The 2027 obligation requires MNOs to roll out additional sites in “Total Not Spot” areas, and also to deploy on “Extended Area Service” (EAS) sites that are made available to them.^{60, 61} As of July 2025,

⁵⁶ Motorways and A roads are collectively referred to as ‘major roads’ in our interactive report.

⁵⁷ For Connected Nations reporting, Ofcom determines inside vehicle coverage by applying a 10 dB attenuation of outdoor signals.

⁵⁸ After delivering on the first phase of SRN objectives, the MNOs approached the UK Government with a request to reconfigure the 2027 phase of the programme. This resulted in a revised agreement between the MNOs and Government, and in July 2025 the obligation for MNOs to each achieve 90% coverage by 31 January 2027 was revised to 89.2%. See [Shared Rural Network compliance methodology](#) for details of the updated obligations.

⁵⁹ Good quality coverage is defined as the ability to sustain a 90 second voice call and access data speeds of at least 2 Mbit/s, with a methodology to assess this based on a 4G signal of at least -105 dBm — consistent with the Connected Nations methodology for reporting 4G coverage.

⁶⁰ “Total Not Spot” means geographical areas within the UK falling outside all the MNOs’ 2020 Baseline Coverage Footprints.

⁶¹ “EAS site” means: (i) any of the 292 extended area service sites that the Home Office is intending to build to improve coverage in remote areas and (ii) any alternative or additional extended area service site which is publicly funded in the same way whose location was specified by Government by 31 March 2024, excluding

MNOs reported EAS deployments ranging from 55 to 210 sites per MNO.⁶² These sites are contributing additional coverage of roughly 0.25% to 1% of the UK landmass across MNOs.^{63, 64}

We will continue to monitor and report on MNO progress on EAS site deployments as the 2027 deadline approaches.

Rail coverage

Due to the unique challenges of modelling mobile service in train carriages, we do not use MNO predictions to report on rail coverage. The Department for Transport is currently conducting coverage measurements from the rooftop of trains. Separately, in 2026 we plan to measure mobile coverage and performance from inside train carriages across a number of key train lines.

Map Your Mobile coverage checker

As mentioned earlier in this section, we have made changes to our web-based coverage checker with the introduction of Map Your Mobile (MYM). These changes included using higher signal strength thresholds, incorporating crowdsourced performance data and providing clearer explanations of the tool’s purpose. The MYM aim is to give consumers better insight into the availability of services at a local level, helping them make informed choices about providers.

In determining coverage MYM applies outdoor thresholds of -95dBm and -105dBm, offering a technology-neutral approach to local predictions and using coverage data at a finer granularity of 50m x 50m pixels.⁶⁵ These thresholds were not intended to replace those used in Connected Nations, but rather to address known uncertainties in local-level predictions and reflect the requirements of the more demanding services used today.⁶⁶

Table 3.6 gives a UK-wide overview of coverage using the MYM thresholds, with more detailed data available at constituency, local authority, and devolved nation level through our interactive report.

Table 3.6: UK-wide coverage using MYM thresholds

MYM threshold (dBm)	From at least one MNO	From all four MNOs
UK geographic coverage (-105dBm)	96%	82%

any such site the deployment of which would materially duplicate the coverage from any site in Total Not Spots for which land has already been acquired by the MNO.

⁶² This range reflects the fact that initial EAS works envisaged deployments led by the MNO holding the Emergency Service Network contract (BT/EE) and the Shared Rural Network programme is funding works to make more EAS sites available to all MNOs over the coming year.

⁶³ Landmass coverage is calculated based on Epoch 70, as referenced in the SRN methodology.

⁶⁴ The TNS element of the SRN programme is primarily focused in Scotland. For a detailed overview of TNS site locations and ongoing progress on both EAS and TNS site deployment, please refer to [Shared Rural Network website](#).

⁶⁵ The technology-neutral approach currently reports coverage using the combined footprint of 4G and 5G networks, simplifying the presentation of information and focusing on user experience rather than technology.

⁶⁶ MYM uses a performance level defined as: ≥5 Mbit/s download, ≥1.5 Mbit/s upload, and ≤50 ms latency. There is no signal strength within a reasonable range above which performance is guaranteed or below which performance is zero. This highlights the need for exercising judgement in setting thresholds for our coverage reporting, including judgement about how consumers will interpret what is being portrayed.

MYM threshold (dBm)	From at least one MNO	From all four MNOs
UK geographic coverage (-95dBm)	88%	51%
UK premises (outdoor) coverage (-105dBm)	99%+	99%
UK premises (outdoor) coverage (-95dBm)	99%+	89%

Source: Ofcom analysis of MNO data (July 2025)

Switch-off of 3G and 2G networks

3G switch-off is on course to complete by end of 2025

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 4G and 5G services.⁶⁷

In February 2023, we set out our expectations of mobile providers in relation to 2G and 3G switch-off, which are designed to ensure that customers are treated fairly and any disruption to customers is minimised.⁶⁸

The MNOs are responsible for their own switch-off timetables for these legacy technologies, with 3G being switched off first. In 2024, Vodafone and BT/EE both completed their respective 3G switch-offs.⁶⁹ Three has switched-off 3G across most of the UK with it aiming to switch off remaining areas by November 2025⁷⁰, and Virgin Media O2 plans to complete its 3G switch-off by the end of 2025.⁷¹

The 3G switch-off appears to have gone relatively smoothly to date. MNOs have not reported any significant disruption related to the switch-off to Ofcom. In addition, we have received very few complaints from customers about the 3G switch-off. In 2025, consumer complaints have tended to relate to issues with an individual's coverage or raising concerns about the potential impact of the 3G switch-off on their device. We will continue to closely monitor these switch-off processes through to completion.

Around 2 million devices remain reliant on 2G/3G networks

Our latest estimates from MNOs' data on their direct customers suggest there are around 2 million active devices reliant on 2G/3G networks, broadly similar to the 2.1 million reported in 2024.⁷² Of the 2 million devices, around 1.6 million have been identified by MNOs as residential devices (for example mobile handsets). In 2024, the equivalent figure was around 1 million. The increase on last

⁶⁷ Department for Digital, Culture, Media & Sport, [A joint statement on the sunseting of 2G and 3G networks and public ambition for Open RAN rollout as part of the Telecoms Supply Chain Diversification Strategy](#), 8 December 2021.

⁶⁸ Ofcom, [Ofcom's expectations of mobile providers for 2G and 3G switch-off](#), 2 February 2023.

⁶⁹ Vodafone, [Vodafone UK successfully switches off 3G across the UK - boosting 4G and 5G](#), 27 February 2024. BT/EE, [Closing the curtain on 3G](#), 26 February 2024.

⁷⁰ Three, [Our 3G switch off - Everything you need to know](#), n.d.

⁷¹ Virgin Media O2, [Virgin Media O2 to begin 3G switch off in Durham in April](#), 13 January 2025.

⁷² These figures only include direct customers of MNOs and MVNOs and do not include third-party devices such as smart meters or devices using roaming SIMs.

year's reported number of residential devices is largely a result of MNOs' increased monitoring of the switch-off including work to identify 2G/3G reliant devices that need upgrading.⁷³

2G switch-off

The switch-off of the 2G network is still a few years away. However, given 3G devices can still use the 2G network, it is important for mobile providers to continue their efforts to contact customers ahead of 2G switch-off to ensure that they upgrade to 4G/5G VoLTE devices.⁷⁴

BT/EE announced in January that it was beginning the process of contacting its business customers who use 2G to encourage and support migration.⁷⁵ BT/EE has announced it will begin its 2G switch-off from May 2029.⁷⁶ VodafoneThree announced in September that it will switch off Vodafone's 2G network during 2030.⁷⁷ Virgin Media O2 announced withdrawal of inbound roaming on its 2G network, starting from October 2025. Virgin Media O2 has yet to announce a date for overall 2G switch-off, but it expects it will not be for several years.⁷⁸

Third-party devices that operate on 2G, including some telecare, fire and security alarms, will also require upgrading ahead of changes to 2G networks. The supply chain for these services can be complex, but we expect MNOs to make a sustained commitment to raising awareness so that suppliers of these third-party devices have sufficient time to update them. For example, Virgin Media O2 has worked with the telecare industry, together with Government and Ofcom, ahead of its withdrawal of inbound roaming on its 2G network and we expect other providers to do so as necessary.⁷⁹ There are additional services relying on 2G, such as smart meters and eCall, that will require efforts led by the UK Government to ensure a smooth transition, and Ofcom will continue to offer support on this.

The amount of 2G traffic recorded was approximately 0.4 PB over the reporting period, primarily supporting low-bandwidth data services. See 'Mobile traffic' section.

Emergency calling via 4G VoLTE, and the ability to roam onto another network using VoLTE, are becoming increasingly important as MNOs continue phasing out their legacy networks. As of July 2025, all UK MNOs support emergency calling via VoLTE.

Mobile traffic

This subsection reports on mobile traffic based on data collected from MNOs in July 2025, which included information on the data volumes uploaded and downloaded in each mobile cell in the MNOs' networks for the mobile technologies reported. The geography of data traffic is defined by the location of the associated mobile cell base station.

⁷³ Similarly, it is possible that the number of devices reliant on the 2G/3G network may fluctuate or indeed increase if currently inactive 2G/3G devices are switched on.

⁷⁴ Separately, there are also 4G or 5G mobile devices that may need their settings or software updated to ensure that any calls these make are using the 4G network (using a standard known as VoLTE), should the customer wish to make calls on the device once 2G is switched off. Particularly for less common handset models, there may also be some cases of incompatibility in the implementation of the VoLTE standard between the handset and the network.

⁷⁵ BT/EE, [Giving UK businesses the future-fit mobile networks they need](#), 13 January 2025.

⁷⁶ BT/EE, [We're switching off 2G](#), n.d.

⁷⁷ Vodafone, [Vodafone to boost network performance for customers by phasing out 2G](#), 22 September 2025.

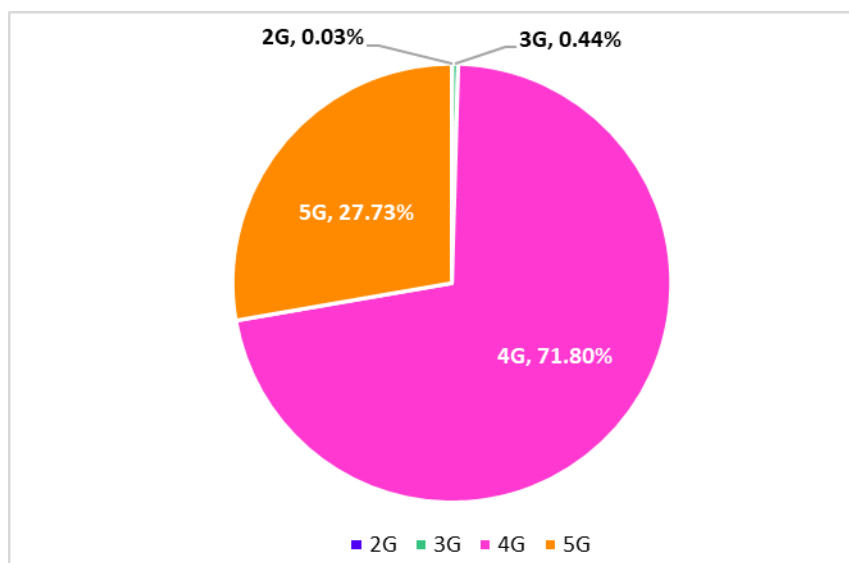
⁷⁸ Virgin Media O2, [Mobile network evolution: meeting customer needs now and for future](#), 23 July 2024.

⁷⁹ Virgin Media O2, [Getting Your Business Ready for 2G and 3G Inbound Roaming Changes](#), 11 August 2025.

Monthly mobile traffic continues to grow steadily, with 5G traffic growing fastest

Monthly mobile data traffic has continued to grow at a rate of approximately 18% year-on-year, broadly consistent with last year, with total monthly traffic rising from 1069 PB to 1257 PB.^{80, 81} Notably, much of the overall growth can be attributed to increased 5G usage, with 5G traffic now accounting for approximately 28% of total reported monthly mobile data, up from 21% in the previous year.⁸²

Figure 3.8: Total monthly traffic share by technology (2025)



Source: Ofcom analysis of MNO data (July 2025)

5G traffic has shown the highest growth, increasing by approximately 53% to reach 348 PB in 2025. In contrast, 4G traffic grew by 9% over the same period, highlighting the shift towards 5G usage. Within this, 5G SA now accounts for approximately 31% of total 5G traffic. This growth has been driven by a device pool that now includes at least 66% 5G-capable handsets (with 63% of those 5G handsets now supporting 5G SA), a modest increase from at least 50% in 2024.⁸³

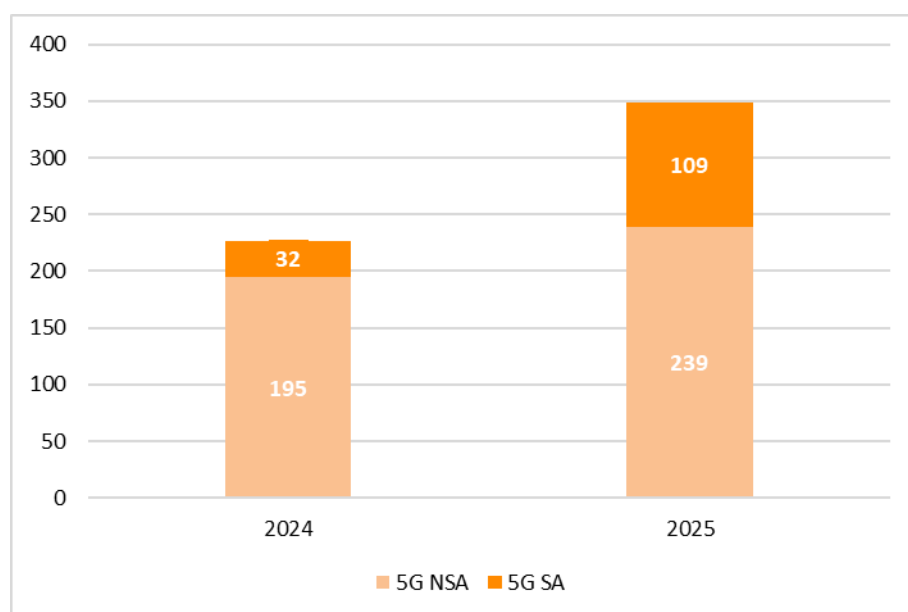
⁸⁰ Traffic data rounded up to the nearest whole PB.

⁸¹ One of the MNOs has reported a decline in data traffic compared to last year. It informed us that this apparent drop primarily reflects data gaps from system interruptions during the collection period, as well as ongoing challenges with 5G SA KPI maturity, rather than an actual reduction in usage. Consequently, the total data traffic and 5G SA traffic figures reported this year are likely to be lower than the actual usage across the UK.

⁸² The reported total monthly traffic includes all traffic across mobile networks, and therefore includes traffic generated by Fixed Wireless Access, where operators are offering domestic fixed broadband services over their wireless networks. Three MNOs offer FWA services with varying traffic splits, ranging from approximately 2% to 40%.

⁸³ Methodologies for calculating total number of devices varies across MNOs making this figure an approximation rather than an exact figure. Additionally, not all 5G-capable devices may be enabled with a 5G subscription.

Figure 3.9: 5G traffic split: 5G NSA and 5G SA (PB)

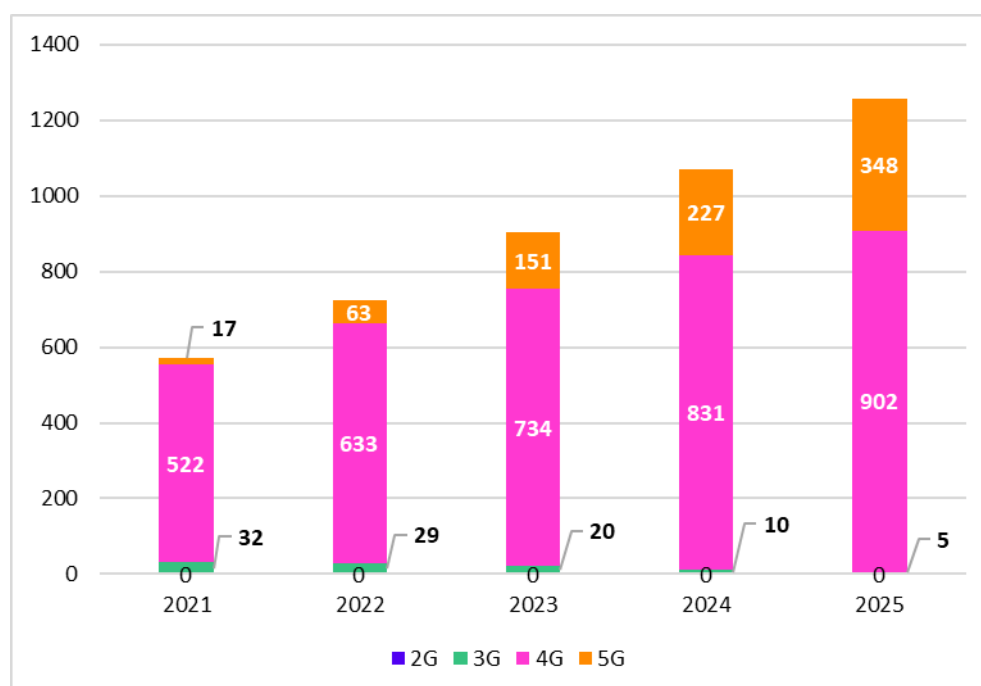


Source: Ofcom analysis of MNO data (July 2024, July 2025)

While 5G traffic has increased rapidly, 4G continues to carry the majority of mobile data, though its share is gradually declining. In 2025, 4G accounted for approximately 72% of total monthly mobile data traffic, down 6 percentage points from the previous year. (See Figure 3.10 for traffic share trends over time.)⁸⁴

⁸⁴ In comparison, less than 0.5% of data is now carried on 3G networks reflecting a long-term downward trend, with most voice traffic shifting to 4G/5G VoLTE and some to 2G networks.

Figure 3.10: Total monthly traffic by technology, 2021–2025 (PB)⁸⁵



Source: Ofcom analysis of MNO data (May 2021, May 2022, May 2023, July 2024, July 2025)

Distribution of mobile traffic

Mobile data consumption across urban, suburban and rural areas, as well as across the UK's nations, continues to reflect population distribution, rather than indicating significant differences in the typical user's data usage across geographies.^{86, 87} As illustrated in Figure 3.11, approximately 82% of monthly mobile data traffic is generated in urban and suburban areas, consistent with last year's trend.⁸⁸

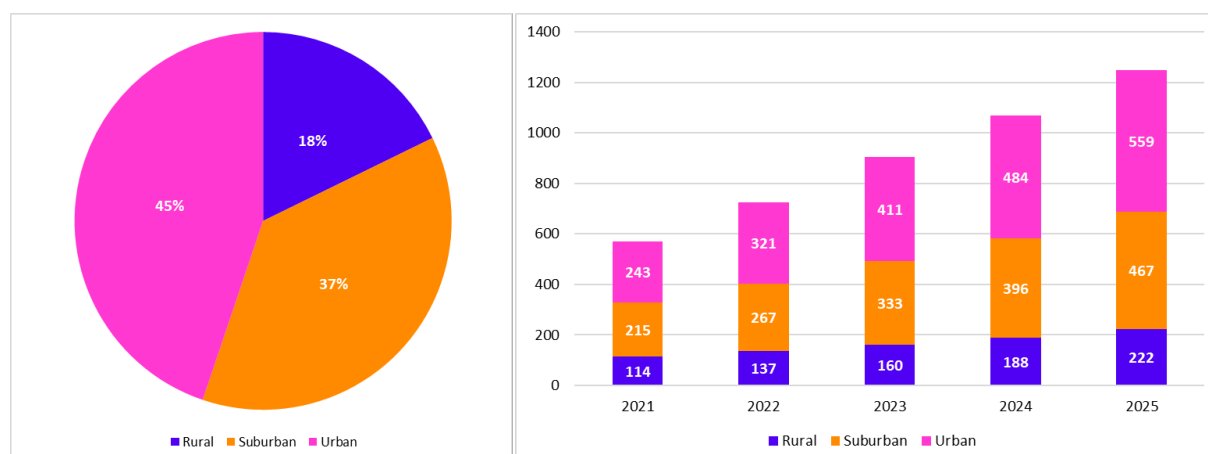
⁸⁵ 2G traffic is not visible on the chart due to its relatively small volume compared to other technologies. In 2025, reported 2G traffic accounted for approximately 0.4 PB.

⁸⁶ We use the ONS 2021 Census National Statistics Postcode Lookup and [Locale classifications](#) to map traffic and coverage data to geographic areas. For mobile traffic analysis, we define Urban (Codes A–B), Suburban (C–E), and Rural (F–G) categories based on settlement size, derived from the underlying Locale classifications. These derived categories differ from those used in coverage analysis; see the Methodology section for further details.

⁸⁷ The rural population of England and Scotland is estimated to be approximately 17%, with the rural population in Wales and Northern Ireland somewhat higher. UK Government, [Statistical Digest of Rural England: 1 – Population](#), 05 May 2025. Scottish Government, [Rural Scotland Key Facts 2021](#), 24 February 2021. UK Government, [2011 Census Analysis - Comparing Rural and Urban Areas of England and Wales](#), 2013. Northern Ireland Executive, [Key Rural Issues, Northern Ireland 2024](#).

⁸⁸ The total mobile traffic, represented by the percentages in both urban, suburban and rural classifications as well as the nations' split, is slightly less than the total mobile traffic reported by MNOs. This is because not all sites could be spatially mapped onto the UK due to limitations in the ONS 2021 Census [National Statistics Postcode Lookup](#) (May 2025) and [Locale classification](#) files, which we used to generate the classifications and geographical boundaries. However, this should not have a significant impact on figures reported as the number of sites affected is minimal.

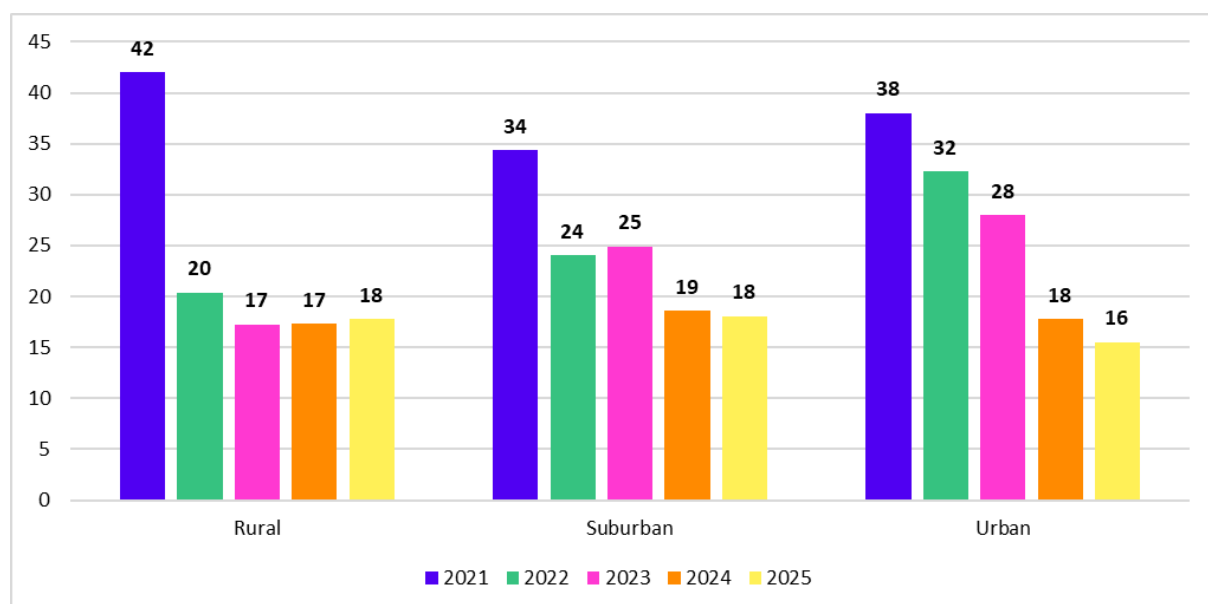
Figure 3.11: Total monthly traffic across urban, suburban and rural areas: 2025 overview and five-year trend ⁸⁹



Source: Ofcom analysis of MNO data (May 2021, May 2022, May 2023, July 2024, July 2025)

Monthly mobile data traffic growth across urban, suburban and rural areas broadly aligns with the UK average, as illustrated in Figure 3.12 below.

Figure 3.12: Monthly mobile traffic growth (%) across rural, suburban and urban areas (2021-2025)

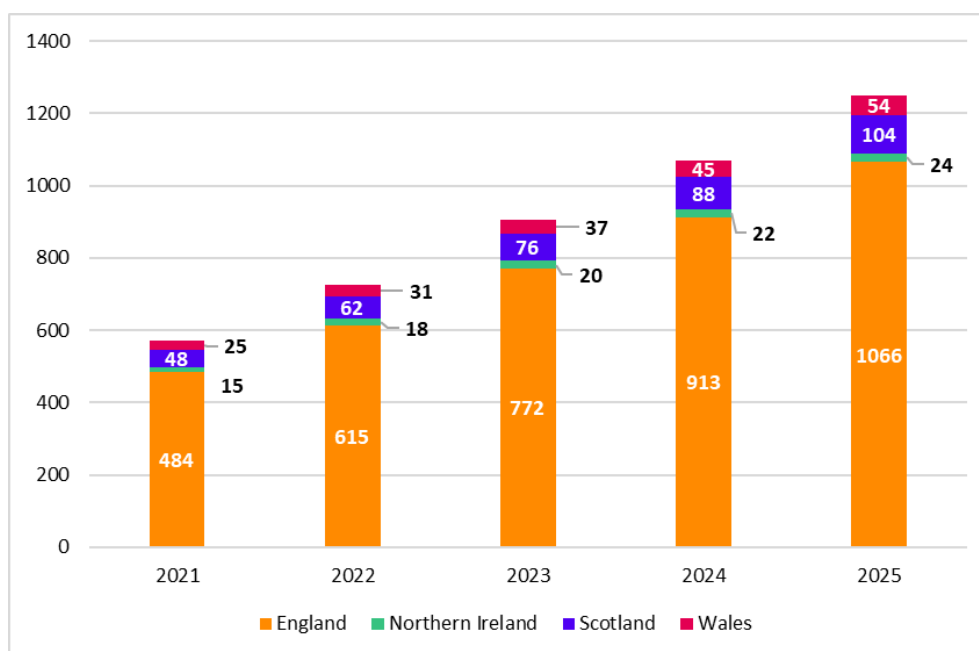


Source: Ofcom analysis of operator data (May 2021, May 2022, May 2023, July 2024, July 2025)

Across the UK nations, mobile data consumption continues to broadly reflect population distribution.

⁸⁹ Figures have been rounded to whole numbers or percentage points, which may slightly obscure finer details. Additionally, one provider was unable to supply traffic data at the required cell-level granularity. As this data was submitted in aggregate form, it could not be accurately attributed to specific geographies and has therefore been excluded. The volume of excluded traffic is minimal and does not materially affect the overall trends presented.

Figure 3.13: Monthly mobile traffic by UK nation, 2021-2025 (PB)⁹⁰

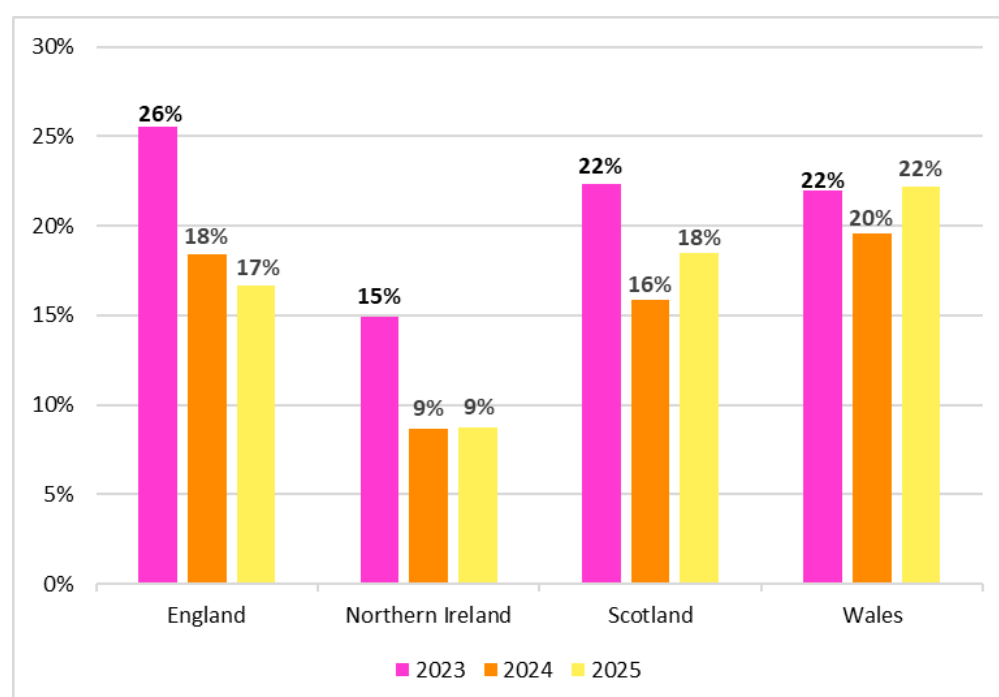


Source: Ofcom analysis of MNO data (May 2021, May 2022, May 2023, July 2024, July 2025)

Traffic growth remains relatively stable, with only minor year-on-year variations across the UK nations. Wales recorded the highest growth among the UK nations, while Northern Ireland recorded the lowest (see Figure 3.14).

⁹⁰ Figures have been rounded to whole numbers or percentage points, which may slightly obscure finer details. Additionally, one provider was unable to supply traffic data at the required cell-level granularity. As this data was submitted in aggregate form, it could not be accurately attributed to specific geographies and has therefore been excluded. The volume of excluded traffic is minimal and does not materially affect the overall trends presented.

Figure 3.14: Monthly mobile traffic growth by UK nation (2023-2025)



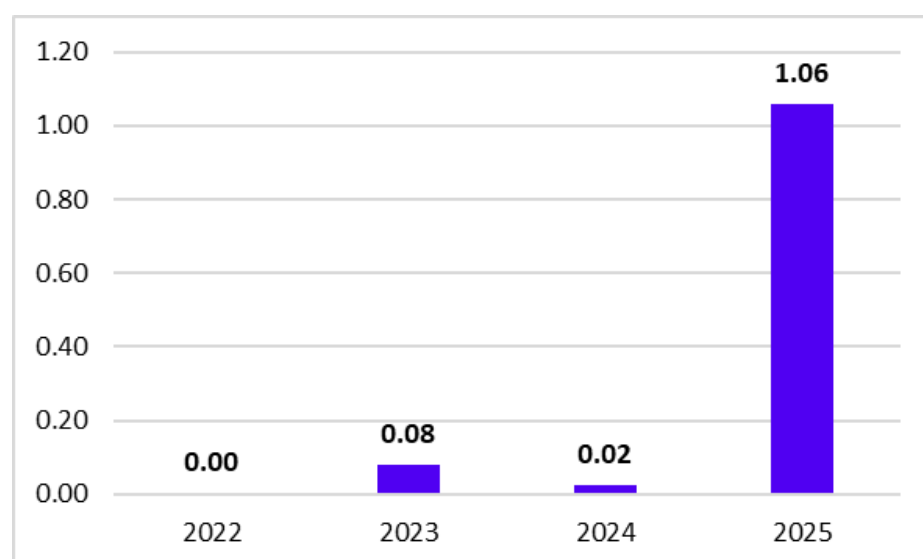
Source: Ofcom analysis of MNO data (May 2023, July 2024, July 2025)

Open RAN adoption

Open RAN deployment in the UK remains limited, accounting for a small proportion of current mobile network landscape. We note that not all MNOs have reported Open RAN deployments. However, there has been notable progress this year, with monthly mobile traffic carried over Open RAN now reaching one petabyte for the first time, rising from 24,600 GB (0.025 PB) in 2024 to approximately 1.06 PB.

Despite this growth, Open RAN still accounts for less than 0.1% of total mobile traffic. The number of active Open RAN sites has also increased to over 130, compared to just below 50 reported last year.

Figure 3.15: Open RAN monthly traffic trend, 2022-2025 (PB)



Source: Ofcom analysis of MNO data (May 2022, May 2023, July 2024, July 2025)

Neutral Hosts and Private Networks

Network infrastructure is provided by an evolving set of players

While MNO infrastructure continues to underpin much of the coverage we report on, more third-parties are playing a role in provision of infrastructure which supports connectivity for both public and private networks.⁹¹ Some of these providers use tower structures originally acquired from MNOs, enabling MNOs to shift capital expenditure to operating cost models. These providers could subsequently lease access to the infrastructure to numerous tenants. Others focus on deploying new infrastructure solutions that support both public and private networks, offering a range of services, from passive infrastructure⁹² to comprehensive active infrastructure⁹³ tailored for specific environments like office buildings, stadiums or underground public transport. A hybrid approach also exists, combining the use of existing towers with the deployment of new infrastructure solutions. Where these shared models are used, they are typically referred to as Neutral Hosts (NHs).⁹⁴

We paused our reporting on neutral host offerings from the perspective of NH providers last year, while we worked with stakeholders to ensure our reporting better reflected the range of third-parties involved and the diversity of infrastructure models in operation. As a result, we have expanded the number of providers included in our analysis. We will continue to work with stakeholders to further improve our future reports to ensure they give more representative and detailed information on neutral host infrastructure and the role it plays in supporting mobile connectivity.

Current scale and geographic distribution

We estimate around 31,500 physical sites are currently provided by NH providers, supporting a range of services. These include:

- Hosting of MNOs
- Support for private mobile networks
- Support for a range of other services, including emergency services, broadcast services, Internet of Things (IoT) applications, and other fixed network operators.

This total is higher than the figure reported in 2023. The increase is largely due to the inclusion of more providers and sites that support services beyond just hosting the MNOs.⁹⁵ The distribution of sites across UK nations has remained largely consistent:

⁹¹ This includes but is not limited to remote rural lattice masts, urban rooftop sites, satellite constellations, street furniture with small cells, and indoor coverage solutions and indicates a potential for this diversity of provision to grow in the future.

⁹² This refers to where neutral host providers offer only the physical infrastructure required for network deployment, such as towers, antennas and cables, but do not manage the active components like radio equipment or the spectrum.

⁹³ This refers to where neutral host providers offer both the physical elements (passive infrastructure like towers, antennas, etc.), as well as the electronic components or elements of the network necessary for signal transmission and reception (i.e. the active layer, for example radio equipment).

⁹⁴ Providers of a neutral host network - defined as a shared network infrastructure that hosts multiple providers (such as providers of public electronic communications networks or of Private Networks).

⁹⁵ This figure is based on data from the following organisations: Boldyn, Britannia Towers, Cellnex, Cornerstone, Freshwave, Wireless Infrastructure group, IONX, Ontix and Shared Access. It includes macros bought from MNOs.

Table 3.7: NH site comparison by UK nation – 2023 vs 2025

Nation	2023	2025
England	83%	81%
Northern Ireland	1%	2%
Scotland	11%	12%
Wales	5%	5%

Source: Ofcom analysis of NH providers data (between July and September 2023, July 2025)

Based on monthly mobile traffic data provided by MNOs for sites where they are hosted by NH providers, we estimate that over 276 PB of traffic was carried over NH infrastructure, representing approximately 22% of total mobile traffic in the UK.⁹⁶

Service offerings

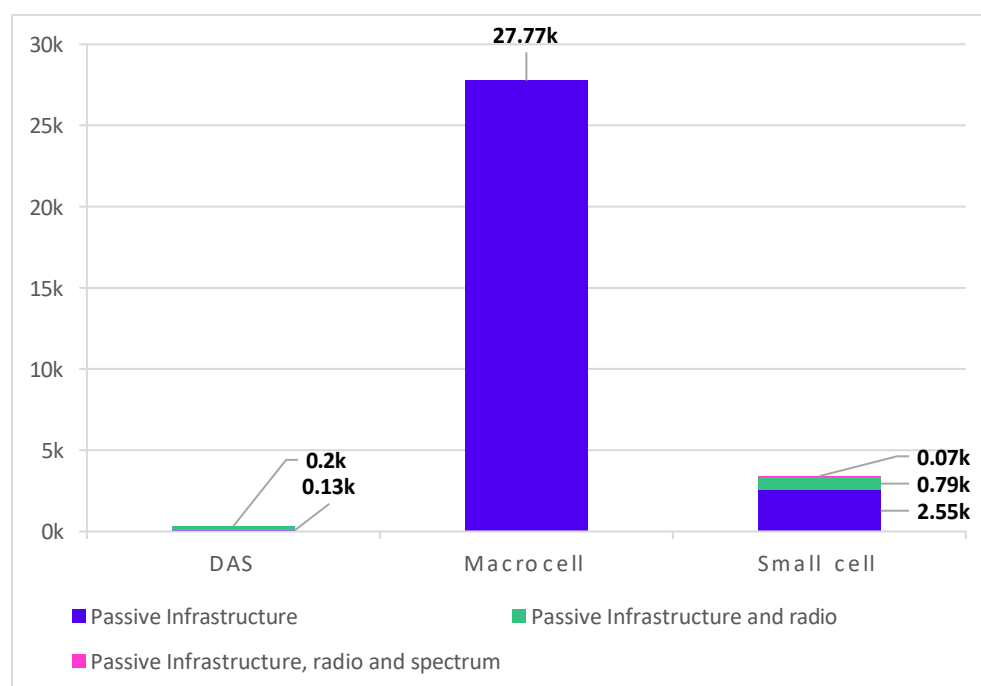
Most NH offerings primarily consist of passive infrastructure, with the majority comprising outdoor Macrocells. These sites predominantly support traditional mobile network deployments and represent the bulk of NH-reported sites this year. However, we are beginning to observe a shift, with new services being deployed across a subset of these sites.⁹⁷

Less than 1% of reported NH sites this year included passive infrastructure, radio and spectrum offerings as shown in Figure 3.16. These sites primarily supported private networks. While limited in number, these deployments reflect the growing role of NH providers in enabling diverse connectivity solutions across the UK.

⁹⁶ This figure is based on data provided by MNOs and includes only traffic from neutral host sites where MNOs are hosted. It may also include Macrocells delivered through MNO infrastructure-sharing. Macrocells are higher power base stations that provide a greater coverage area. They are usually located in outdoor masts or towers. Notably, Macrocells account for approximately 98% of the total traffic carried via neutral host infrastructure.

⁹⁷ NH providers were unable to report on the technologies deployed across most sites due to limited visibility, which stems from the passive nature of their infrastructure offerings.

Figure 3.16: Site count by deployment type and service offerings (2025) ⁹⁸



Source: Ofcom analysis of NH providers data (July 2025)

Approximately 65% of the reported NH sites host more than one public electronic communications network (PECN)⁹⁹ with MNOs as the primary tenants. As noted earlier, beyond public mobile networks, NH providers also support a range of non-MNO services, including:

- Private networks, with around 500 reported sites hosting at least one private network
- Emergency services, broadcast and media, and IoT applications, with approximately 2,700 sites supporting one or more of these service types

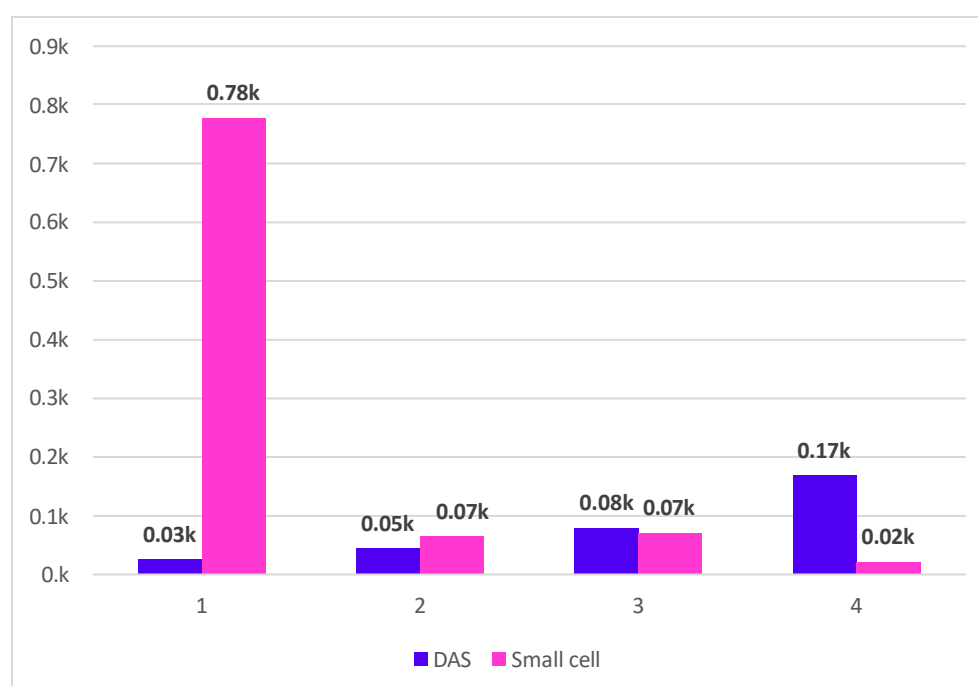
Indoor deployments

Indoor deployments continue to represent a relatively small share of overall reported NH infrastructure, at approximately 4%. These deployments are primarily delivered through small cells and DAS sites, with most DAS sites hosting multiple MNOs. Some of these indoor sites provide coverage within Transport for London’s underground tunnels and stations with modest expansion observed since our last report in 2023.

⁹⁸ A Distributed Antenna System (DAS) is a network architecture that provides remote connectivity to small antennas, typically mounted on street furniture or within buildings. These antennas are connected via optical fibre to a central hub, enabling MNOs to deliver mobile coverage and capacity in areas with high demand or challenging deployment conditions.

⁹⁹ “Public electronic communications network” is defined in the Communications Act 2003 as “...an electronic communications network provided wholly or mainly for the purpose of making electronic communications services available to members of the public”.

Figure 3.17: Indoor infrastructure sharing: site count by number of PECNs hosted (2025)



Source: Ofcom analysis of NH providers data (July 2025)

NH providers could play an increasing role in enabling infrastructure sharing between MNOs and other service providers, with potential to address coverage and capacity challenges. We will continue to report on developments in this sector.

Private Networks

Private mobile networks, supported by 5G capabilities (including the potential for ultra-low latency connection), are increasingly being used by organisations seeking secure, high-capacity connectivity solutions, tailored to specific industry needs. 5G is not the only technology supporting private networks, for example Wi-Fi, previous generations of mobile and other proprietary technologies are also able to meet specific industry needs. These networks are playing an important role in the digital transformation of many sectors, spanning operations at ports and logistics hubs to enhanced user experiences in sports, media and events. This remains an active and developing area, with a diverse range of providers, including but not limited to traditional MNOs and mobile equipment vendors.

Whilst MNOs remain engaged in this space, the number of fully operational commercial private mobile networks they operate continues to be limited. This year, around 20 MNO-operated private networks were reported, with activity fluctuating over the past three years but consistently involving fewer than 30 locations. Most deployments reported this year are 5G SA networks operating in the 3GHz band. The 2600 MHz band is also deployed across around 38% of these networks.

A range of other parties - including NH providers, network equipment vendors, systems integrators, and specialist providers - are also playing a part in delivering private mobile networks across the UK. Some of these are accessing spectrum using our Shared Access framework (which offers access to

spectrum with a mobile equipment ecosystem, on a localised basis shared with other users).^{100, 101} In some cases, they also operate using spectrum made available through agreements with MNOs.

Currently, there are around 900 Shared Access licences live, with approximately 63% in the 3.8–4.2 GHz band - highlighting the growing role of 5G-based solutions in the private network space.

Among non-MNOs, NH providers have reported approximately 600 private mobile networks operating across the UK this year. Most of the providers were unable to specify the technologies or frequencies in use.

IoT connectivity available from MNOs

IoT refers to a network of connected devices and sensors that can collect, exchange, and act on data - either with other devices or with people. These devices range from personal wearables to industrial sensors and are used across a wide range of sectors, including healthcare, energy, manufacturing, and transport. In the UK, IoT connectivity is provided by both MNOs and non-MNO entities.¹⁰²

UK MNOs continue to deliver IoT connectivity through their existing 2G, 3G, 4G, and 5G networks, as well as Low-Power Wide-Area Networks (LPWANs)¹⁰³, including NB-IoT¹⁰⁴ and LTE-M.¹⁰⁵ This supports a wide range of applications - including asset tracking, transport and mobility, smart metering, building management, and security - using MNO-authorised spectrum.

The number of active IoT connections on MNO networks reached approximately 27.7 million in 2025, a year-on-year increase of 4%. MNO IoT monthly traffic volumes rose by just 2% to 2 PB, compared to 11% growth reported in 2024.¹⁰⁶ Overall, MNO IoT traffic still accounts for less than 1% of the reported total monthly mobile data traffic.

¹⁰⁰ The Shared Access framework supports a range of users, from local mobile networks to Fixed Wireless Access. Authorisations are provided either for single base stations at a medium power level, or multiple lower power base stations authorised within a 50m radius. Over the last year, Ofcom has taken a range of measures to enhance this framework and improve the application experience for users. See our [Statement and further consultation: Supporting increased use of shared spectrum](#).

¹⁰¹ Licence exempt spectrum can also play a part for organisations deploying private networks based on technologies like Wi-Fi

¹⁰² In previous years, we reported estimations of IoT connections and data traffic based on inputs from a limited number of IoT providers and MNOs. Last year, we paused reporting on non-MNO IoT providers, as the data did not sufficiently reflect the full range of available IoT connectivity offerings. We continue to engage with the IoT stakeholder community to explore how our information-gathering approach might support a more representative view in future reporting cycles. This work remains ongoing, and while we recognise its importance, we are not in a position to reintroduce this element into this year's report.

¹⁰³ Low-power wide-area networks (LPWANs) are designed for IoT applications and services which have low data rates, long battery lives and, if required, can operate in remote and hard-to-reach locations. Furthermore, their extended range makes them better suited for in-building applications such as smart meters and smart car parks which may be located underground or in basements.

¹⁰⁴ Narrowband IoT (NB IoT) is a wide-area solution that supports massive deployment of IoT devices and is also optimised for a very long battery life. NB-IoT networks can be deployed in mobile bands and integrated on existing mobile base stations.

¹⁰⁵ Long Term Evolution for Machines (LTE-M) is a complementary technology to NB-IoT with the added capability of supporting IoT applications with higher data rates and lower latency requirements. It can also be deployed in mobile bands and integrated on existing mobile base stations.

¹⁰⁶ IoT connections typically generate much lower data volumes than consumer handsets.

Table 3.8: Active IoT devices and traffic trends

	2023	2024	2025
Number of active IoT devices (million)	24.9	26.5	27.7
MNO IoT data traffic (PB)	1.77	1.96	2.0

Source: Ofcom analysis of MNO data (May 2023, July 2024, July 2025)

The ongoing phase-out of legacy 2G, 3G, and PSTN networks has implications for domestic and business users across multiple sectors. IoT is increasingly positioned to fill this gap, offering scalable, low-power alternatives for essential services such as telecare, security systems, and utility monitoring. Its versatility supports future innovation, making it a key enabler in the evolution of digital infrastructure.

Investment in networks

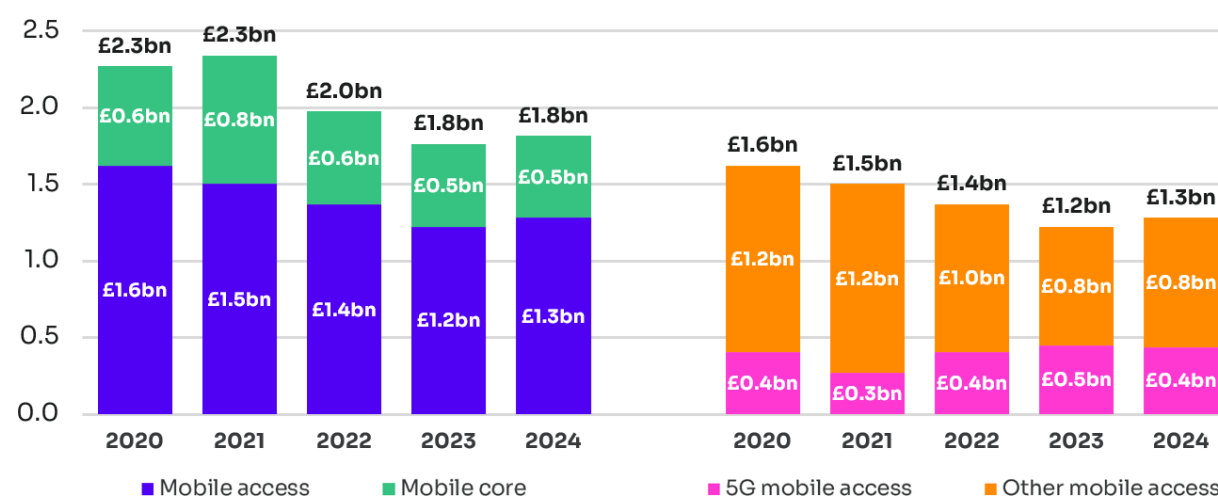
Mobile telecoms network infrastructure investment is estimated to have increased slightly

We estimate that MNOs invested £1.8bn in UK mobile network infrastructure in 2024, a year-on-year increase of over £0.1bn (3%) in real terms. In addition to this investment, £0.6bn was invested in infrastructure used to provide both fixed and mobile telecoms services.

Of the estimated mobile investment total, £1.3bn (71%) related to investment in mobile access network infrastructure (including site acquisition, equipment, and electronics). This represents a real-terms increase of £0.1bn (5%) year-on-year. The remaining £0.5bn was spent on mobile core and backhaul networks.

All four UK MNOs continued to deploy 5G network infrastructure in 2024, with investment in 5G access networks totalling around £440m. However, overall 5G access network investment fell by £12m (3%) year-on-year in real terms. Investment in 5G core and backhaul networks – used to support 5G SA services – totalled around £80m during the year.

Figure 3.18: Estimated mobile telecoms network capital expenditure: 2020 to 2024



Source: Ofcom analysis of operator data.

Note: Adjusted for CPI (2024 prices)

Network security and resilience

Introduction

The cyber threat landscape continues to evolve rapidly, driven by geopolitical tensions, technological advancement, and society's increasing reliance on digital infrastructure. There is a marked increase in the number of attacks, both exploiting known vulnerabilities and deploying new technology, including AI, to enhance existing cyber tactics, making attacks faster, more scalable, and significantly harder to detect.

In this section, we provide an update on our telecoms security monitoring programme, reported cyber security incidents, and our latest work on Global Titles leasing.

We also report on our work on network resilience. We provide the latest summary of trends from the resilience incidents we have received from providers. In addition, we provide an update on our work on power back-up for mobile radio access networks.

Highlights

- **We continue to monitor industry compliance with the telecoms security framework.** From our ongoing engagement with industry, our analysis suggests providers are making good progress on security measures relating to incident management, multi-factor authentication (MFA) and SIM security. We have identified three areas providers are finding challenging. We will be exploring these further over the coming year.
- **Providers have ongoing obligations to report significant security compromises to us, which includes reporting those impacting the confidentiality, integrity or availability of the network or service.** In October, we [reminded providers of the importance to report incidents](#) and early next year, we expect to consult on revisions to our [procedural guidance](#), which will focus on incident reporting expectations including updating thresholds for mobile providers and giving further clarity on the risks of, and the need to report, pre-positioning attacks.
- **The total number of significant resilience incidents reported to us has significantly decreased.** We received 616 submissions this reporting year, compared to 1,523 last year. This downward trend is due to a number of factors including a change to some operators' incident prioritisation categories and a decrease in the number of customers using the PSTN (bringing many incidents below our reporting thresholds). However, hardware failure remains the most prevalent primary cause. We will be clarifying our expectations of the thresholds for reporting in a consultation on our procedural guidance next year.
- **In February 2025, we published a [report on mobile radio access network \(RAN\) power resilience](#), summarising international approaches and our analysis of mobile network operator (MNO) data.** We continue our work to determine whether additional resilience measures are needed for the mobile RAN.
- **In April 2025, we published our [statement](#) which sets out our decision to, among other things, ban leasing of Global Titles.** These decisions make the UK a world leader in both defending our networks and people, and preventing others from misusing Global Titles to negative effect in the UK or abroad by enhancing the transparency and accountability of their actions.

An update on our telecommunications security Code monitoring programme

In 2022, a new security framework came into force placing security duties on public telecoms providers and giving Ofcom powers to monitor and enforce compliance.¹⁰⁷ The Secretary of State has issued a statutory code of practice under this framework, which sets out guidance for large and medium-sized providers as to the measures to be taken. The Code places providers into three “tiers” depending on their turnover, and sets out recommended timeframes for the measures to be implemented by those providers.

- **Tier 1** comprises the largest public telecoms providers and currently consists of seven providers.
- **Tier 2** consists of medium-sized public telecoms providers and currently consists of 31 providers.¹⁰⁸

We have completed two rounds of information requests, covering the first 67 Code measures and providers are making progress in implementing the measures.

The UK Government has recently [consulted on revising the Code](#), and we continue to work with the National Cyber Security Centre (NCSC), the National Protective Security Authority (NPSA), and DSIT, drawing on our regulatory experience to help inform the Government’s approach to updating this guidance. The proposed changes to the Code include both updating existing measures and introducing new measures, which would in turn require adjustments to, our monitoring programme. The themes discussed in the remainder of this section are from our analysis of providers’ implementation of the current Code measures.

In general, our analysis of the responses from our latest round of information requests suggests providers are making good progress on measures relating to incident management, multi-factor authentication (MFA) and SIM security.

- Incident management refers to a set of processes followed by providers in the event a security compromise occurs. Providers appear to have established processes in place to manage an incident including assigning severity. The majority of the largest providers have relationships with intelligence-sharing groups such as GSMA’s Telecommunication Information Sharing and Analysis Center (T-ISAC) or the NCSC’s Share and Defend platform to share lessons learned from incidents.
- MFA is an authentication method that requires the user to provide two or more verification factors to gain access to a resource, for example, both a password and token. This is sometimes described as ‘something you know’ and ‘something you have’. Several providers appear to have strong MFA implementations across their critical functions through a combination of hardware and software-based tokens such as Microsoft Authenticator.
- SIM security covers the lifecycle of SIMs, from procurement to decommissioning. The MNOs require their SIM manufacturers to meet the GSMA’s Security Accreditation Scheme and have regular discussions with them to ensure they are kept abreast of any security issues.

¹⁰⁷ This framework was created by the Telecommunications (Security) Act 2021 (the ‘Security Act’) which amended the Communications Act 2003. The relevant provisions inserted into the Communications Act by the Security Act, and the associated regulations (the Electronic Communications (Security Measures) Regulations 2022) (the ‘Regulations’) were fully in force on 1 October 2022.

¹⁰⁸ Seven providers were added to Tier 2 in 2023 and 3 added in 2025, due to an increase in their relevant turnover for the preceding two years (see paragraph 0.15 of the Code).

Some providers are facing challenges with implementing some of the Code measures. Over the next year, we expect to further understand:

- the application of contractual clauses and the level of oversight between providers where one is a supplier of the other.
- the extent to which security testing is occurring prior to contract award.
- the implementation progress of “strategic” security solutions for identity and access management including the reasoning behind any delays in implementation.

Security compromise reporting

Providers are required to report significant security compromises to Ofcom. This could be where an incident impacts the availability, performance or functionality of the network or service (referred to as a resilience incident) or where there is an impact on the confidentiality and/or integrity of the network or service (referred to as a cyber security incident).

Our [procedural guidance](#) sets out our view of which security compromises are likely to be significant and should therefore be reported to Ofcom, by reference to reporting thresholds for both resilience and cyber security incidents. Our incident reporting process includes initial triage where we decide if the incident requires further engagement with the provider for example through follow up questions, discussions and, if necessary, enforcement action.

We expect to consult on updates to our guidance early next year which will focus on incident reporting expectations including updating thresholds for mobile providers.

We also expect to propose updates which would provide additional clarity on the risks of, and need to report, pre-positioning attacks in our consultation.¹⁰⁹ This in part reflects the malicious cyber activities linked with Chinese state-sponsored hackers which have targeted organisations in critical sectors including telecommunications, and were previously reported on in part under the name Salt Typhoon.

Cyber security incidents

A reportable cyber security incident can take one of two forms:

1. An attacker has taken some action which significantly affects the operation of the network or service.
2. An attacker has gained access which provides a future opening for them to commit a further cyber security incident that would have a significant effect (also known as a pre-positioning attack).

Since our 2024 report, we have carried out further analysis of the cyber security incidents reported to us.¹¹⁰ In most cases, providers appeared to respond quickly to any anomalous activity once they detected it.¹¹¹ However, we saw evidence that some providers were not promptly applying patches, which consequently led to the exploitation of vulnerabilities. At least one provider also inadvertently blocked legitimate traffic when responding to a cyber security incident and activating their defences.

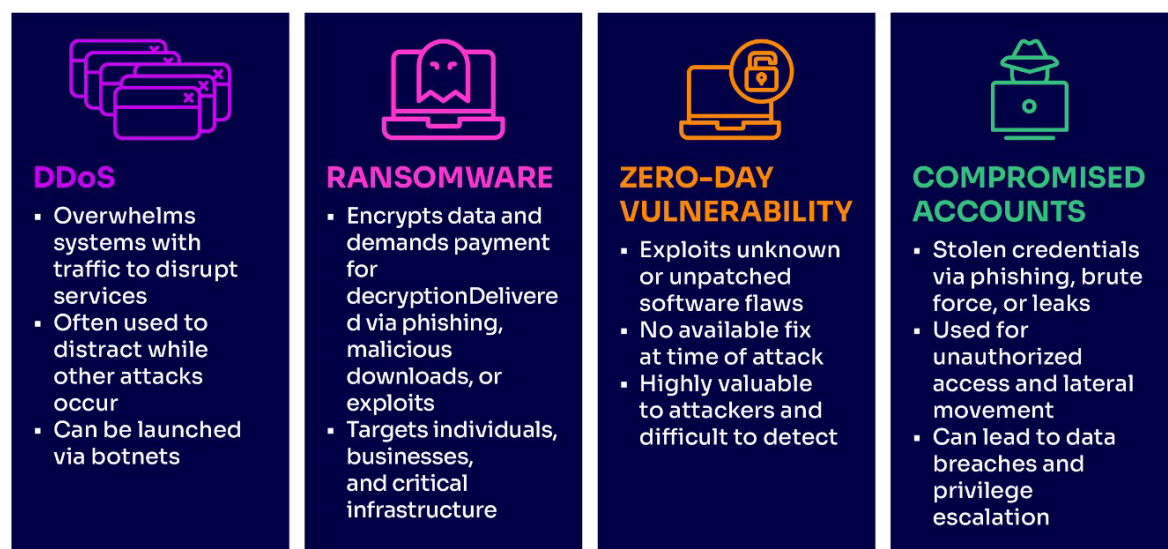
¹⁰⁹ A pre-positioning attack refers to where an attacker has gained access which provides a future opening for them to commit a further cyber security incident that would have a significant effect.

¹¹⁰ This refers to cyber security incidents reported between 1 October 2022 and 1 October 2024.

¹¹¹ This relates to measure 16.21 in the Code.

Between 1 October 2024 and 1 October 2025, nine cyber security incidents were reported to us (six by Tier 1 providers, and three by Tier 2 providers).¹¹²

Figure 4.1: Root causes of cybersecurity incidents



Source: Ofcom analysis of provider data (October 2024 – October 2025)

The causes of these incidents included Distributed Denial of Service (DDoS) attacks, ransomware, zero-day vulnerabilities, and compromised accounts.

On the whole, providers appear to have good mechanisms in place manage cyber security incidents in a timely manner.

Resilience incidents

As in previous years, we continue to receive reports from communications providers throughout the year about resilience incidents that created a significant impact on their networks and services. As mentioned at the beginning of this section, our procedural guidance explains the types and sizes of incident we expect them to report to us in order for them to comply with their regulatory obligations.

The total number of reported incidents has reduced compared to last year

During this reporting year (September 2024-August 2025) we received a total of 616 reports of relevant incidents from providers, as shown in Table 4.1. This is lower than the 1,523 reports received in 2024.

¹¹² Of these, four were likely to have fallen outside the reporting thresholds set out in our guidance.

Table 4.1: Resilience incidents comparison

	2024	2025
Fixed	910*	475*
Mobile	609*	147*
Overall	1523*	616*

Source: Ofcom analysis of provider data (September 2024 - August 2025). *Note: Some incidents affected both fixed and mobile networks

Figure 4.2 shows a breakdown of the number of incidents reported to us by month. The monthly average was around 50 incidents, but the general trend over the 12-month period has been downward.

Figure 4.2: Volume of incidents reported to Ofcom each month



Source: Ofcom analysis of provider data (September 2024 - August 2025).

The number of reported resilience incidents dropped year on year. This is driven by a number of factors, including a change to some operators' incident prioritisation categories.¹¹³ Operators have told us that the progress of the VoIP transition means that when there are incidents on the PSTN network the number of customers affected is lower and these incidents fall below our reporting thresholds. Operators also point to ongoing improvements across the industry that have further reduced report volumes.

The decline in PSTN-related issues can be attributed to several key developments. A large number of customers have transitioned to IP voice services. Network contraction has played a role by freeing up spare equipment that can be used when faults arise, and by removing the most problematic hardware from the network. Furthermore, a renewed focus on repair has emerged in response to increased government attention, prompting additional efforts to extend the longevity of existing services.

¹¹³ Priority categories are used by providers primarily for their own internal incident management purposes, but providers also often use them as the basis for filtering incidents which need to be considered for reporting to Ofcom. These categories define the severity of an incident including the level of impact.

Similarly, the reduction in mobile-related reports is in part due to the redefined reporting priority categories, 3G retirement and industry programmes bringing operational improvements.

Failing equipment still generates the highest volumes of reported incidents

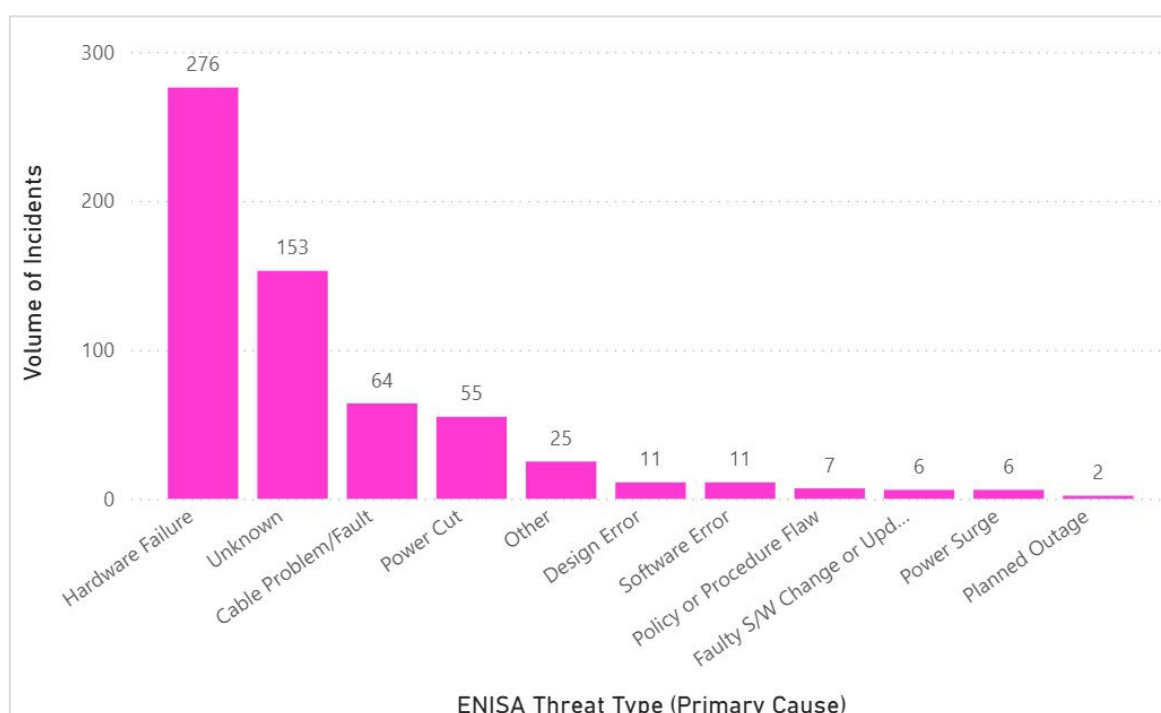
From the incidents that were reported to us over the period, we have seen that outages above the reporting thresholds impacted a total of 12.7 million customers, and there were approximately 192 million customer hours of service lost. Again, this follows the downward trend we are seeing this year.

Once again, the most prevalent root cause for the majority of reported incidents was system failures, covering elements such as hardware failures, design errors, software failures and faulty changes.

Third party failures, which cover items such as street works causing cable breakages or failed backhaul circuits from wholesale providers, constitute around 14% of all reported incidents.

The volume of incidents related to natural phenomena has increased slightly this year. Among the nine incidents attributed to natural phenomena, four were related to named storms.

Figure 4.3: Volumes of incidents reported by primary cause of incident



Source: Ofcom analysis of provider data (September 2024 - August 2025).

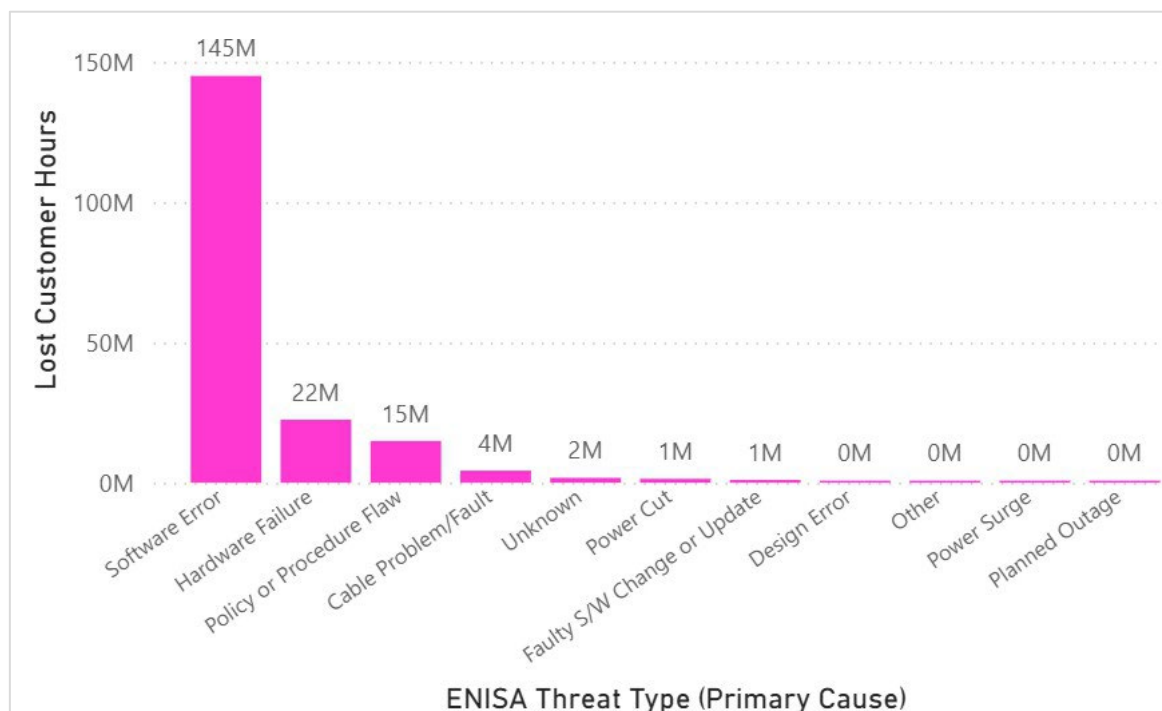
The root causes used to categorise incidents are quite broad. By looking deeper into the primary causes, we have a better insight into the specific factors that are driving customers to lose service. Figure 4.3 shows this year's primary causes by volume.

As in previous years, hardware failures are the largest volume (276) of reported incidents when categorised by primary cause, almost half of the reports received, but generated only 11% of the total lost customer hours reported to us this year.

This year we received 55 reports related to power cuts, leading to 1.4 million user hours being lost. There were a further six power surges reported, resulting in 0.3 million user hours being lost. This means that power incidents reported to us generated 10% of the total volume of incidents reported, but only a small proportion of the reported total user hours lost (<1%).

Many of the smaller incidents reported to us this year were restored to service either automatically or via remote resets. We have recorded these under the category unknown as limited information was provided in the reports.

Figure 4.4: Volume of lost customer hours by primary cause



Source: Ofcom analysis of provider data (September 2024 - August 2025).

This year, while the number of software related incidents reported was relatively low, the impact of some of those has been high and generated large amounts of customer downtime.

Across the year, 11 incidents were reported to us with impacts exceeding 1 million user hours of lost service. The majority of these (84%) were due to software failure.

999 emergency call handling service enforcement action and investigations

In our 2024 report, we set out how we had exercised our enforcement powers and found BT to have contravened section 105A(1)(c) of the Communications Act 2003 and Regulation 9 of the Regulations by failing to take appropriate and proportionate measures for the purposes of preparing for the occurrence of ‘security compromises’ in its provision of Emergency Call Handling Services.

Last year, we also noted the opening of a [compliance investigation into Vonage](#) – also relating to emergency calling – after a security compromise was reported to us under section 105K notification duties. The case was opened to investigate Vonage’s compliance with sections 105A, 105C and 105K of the Act as well as General Condition A3.2(b). As a matter of administrative priority, our investigation prioritised the most serious concerns relating to emergency calling under General

Condition A3.2(b). We concluded the case during this reporting period, finding that Vonage failed to take all necessary measures to ensure uninterrupted access to emergency organisations and that this was a serious breach of its obligations under General Condition A3.2(b). We issued a penalty of £700,000.

Within this reporting period, we also [opened and concluded a case against Gigaclear](#) relating to emergency calling, specifically the provision of accurate and reliable caller location information to emergency services. We found Gigaclear to be in breach of its obligations under the General Conditions and issued a penalty of £122,500. While this investigation was not conducted under the powers inserted into the Communications Act by the Security Act, it is aligned with our wider security work to ensure the resilience of services, especially emergency calling which are of vital importance to citizens.

Building on these enforcement outcomes, we are [conducting a compliance programme](#) across the industry to ensure other providers are meeting their obligations relating to the availability of emergency calls.

Policy updates

Update on power backup for mobile Radio Access Networks

In February 2025, we published a [report on Mobile RAN power resilience](#) that reviewed the responses to our Call for Input, summarised comparisons of approaches adopted in other countries and presented the findings from our own analysis based on information provided by MNOs.

A confidential version of this report was shared with DSIT, highlighting the complexity of mobile resilience and the associated interdependencies. Some of these are cross-sectoral, making comprehensive analysis challenging.

Following the publication of our report, we are carrying out further work, including to better understand where mobile masts with resilience measures are located, and what mobile coverage they provide. This will inform our review of our resilience guidelines to ensure they remain fit for purpose.

We have published our statement on Global Titles and Mobile network security

Following our consultation in July 2024 and further collaboration with the NCSC and our industry stakeholders to understand the threat posed and the options to mitigate that threat, we published our [statement](#) in April 2025 which set out our decisions to:

- ban leasing of Global Titles to third parties by operators that hold UK mobile numbers.
- ban third parties from creating or using Global Titles from sub-allocated numbers.
- publish new guidance for number range holders on their responsibilities to prevent misuse of their Global Titles and to strengthen our rules to prohibit the misuse of Global Titles by any operator that holds UK mobile numbers.
- strengthen our rules to prohibit the creation and use of Global Titles from numbers not allocated for use.

These decisions make the UK a world leader in both defending our networks and people, and preventing others from misusing Global Titles to negative effect in the UK or abroad by enhancing the transparency and accountability of their actions. We note that the Crown Dependencies are considering aligning with our position.