Connected Nations

England 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.

In this annual Connected Nations report for England, we measure progress on the availability of broadband and mobile services across England and the UK. This includes providing updates on the rollout of full fibre, fixed wireless access and 5G mobile networks.

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

Highlights

Broadband

- **Full fibre is available to 79% of residential premises in England, as of July 2025.** This is an increase of 10 percentage points from last year (July 2024). Gigabit-capable coverage has also increased to 88% of residential premises in England.
- **Take-up of full-fibre broadband by consumers in England continues to increase.** Take-up rates from all premises based in England rose from 22% in July 2024 to 32% in July 2025, a 10-percentage point increase. Where available, 41% of premises have taken up full fibre broadband.
- **The number of English premises unable to access decent broadband has reduced.** Only 26,000 (0.1%) premises in England cannot access decent broadband from fixed landlines or Fixed Wireless Access (FWA), a decrease of 7,000 premises over the last year.
- **Satellite broadband connections in England have increased**. The number of Starlink customer connections in England has increased from around 70,000 last year to over 90,000. This increase is especially seen in harder to reach areas, as over 55,000 of these connections are from premises based in rural areas.

Mobile

- **We are reporting on 5G standalone (5G SA) mobile coverage for the first time.** In England, 5G SA coverage outside premises from at least one mobile network operator (MNO) is 85% at the High Confidence level and 75% at the Very High Confidence level. This compares to 83% at the High Confidence level, and 74% at the Very High Confidence level across the UK.[2]
- **Overall 5G coverage has increased in England** as 81% of England's landmass has coverage from at least one MNO at the High Confidence level, up from 76% in 2024.

[1] Sections 134A to 134B.

[2] 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.

- **England has continued to maintain the highest levels of 4G coverage in the UK**, with all four MNOs providing 4G coverage to 90% of England's landmass.
- **Indoor 4G coverage continues to vary between urban and rural areas.** Indoor coverage in rural England ranges from 77% to 85% across operators, compared to 97% to 99% of urban areas in England.

Fixed broadband and voice

Introduction

Full-fibre fixed networks are continuing to expand across England, delivering faster and more reliable broadband and voice services to homes and businesses. In this section, we provide an update on the rollout and consumer take-up of services on these networks over the past year. We also provide updates on the deployment of fixed wireless and satellite networks that are delivering alternative forms of broadband connectivity, as well as providing the latest data on the small remaining numbers of premises that still do not have access to decent broadband.

Growing connectivity across England and the rest of the UK is taking place in the context of broader changes to the fixed telecoms sector, including the migration to digital voice technology from the legacy public switched telephone network (PSTN). For more information on these developments, please refer to our Connected Nations: UK Report 2025.

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

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

	Gigabit-capable (residential)	Full fibre (residential)	Superfast (residential)	Unable to get decent (all properties)
UK	87%	78%	98%	0.1%
Scotland	81%	71%	97%	0.4%
Northern Ireland	96%	95%	99%	0.2%
Wales	81%	78%	97%	0.4%
England	88%	79%	98%	0.1%

Source: Ofcom analysis of provider data (July 2025)

Full-fibre coverage is available to over three-quarters of residential premises in England

The number of residential premises in England that had access to full fibre in July 2025 was 19.9 million, representing 79% of premises across England. England saw a significant expansion in the availability of full-fibre networks this year, with coverage increasing by 10 percentage points from last year (July 2024).

Full-fibre coverage continues to vary between urban and rural areas, with 81% of urban residential premises having access to full fibre, compared to 60% of rural residential premises.

Levels of full-fibre coverage also significantly vary across England's 296 local authorities. Table 2.1 below shows that Kingston upon Hull has the highest level at 99+%, whereas Harlow has the lowest at 17%.

Table 2.1: Highest and lowest levels of residential full-fibre broadband coverage by selected English local authority

Rank	English Local Authority	% of premises with full-fibre coverage
1	Kingston upon Hull	99%+
2	Southend-on-Sea	98%
3	Cannock Chase	97%
315	Oxford	40%
316	South Tyneside	33%
317	Harlow	17%

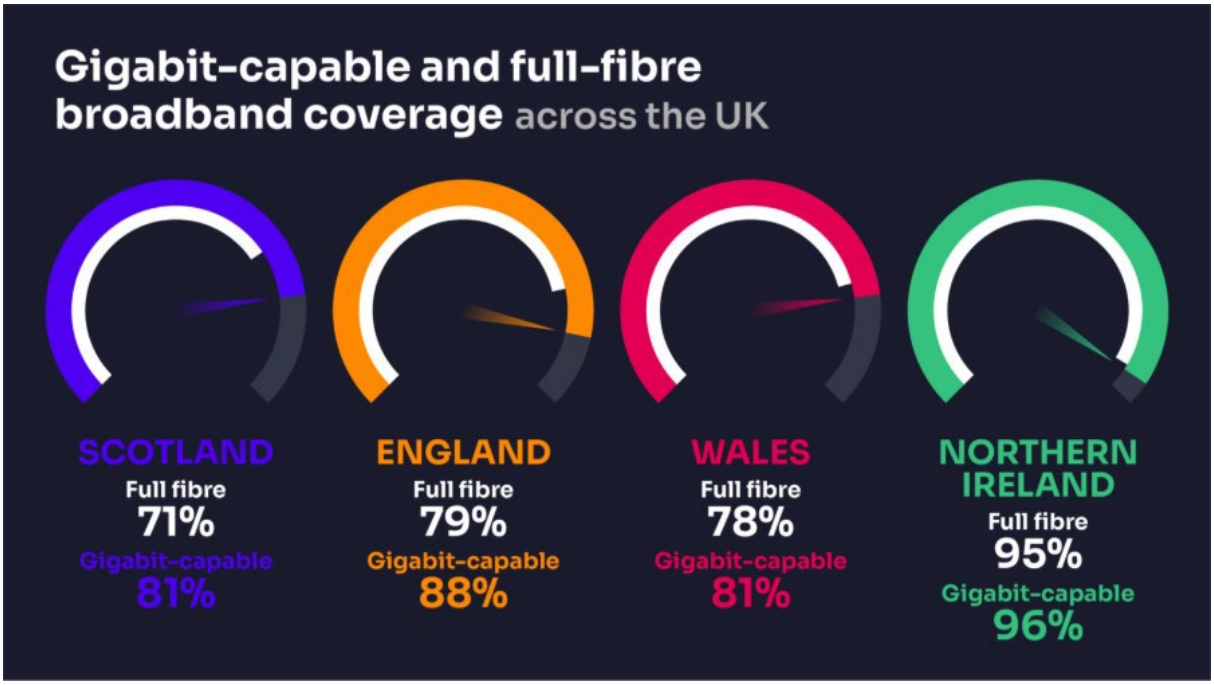
Source: Ofcom analysis of provider data (July 2025)

Gigabit-capable coverage has reached 88% of residential premises in England

This year England saw another significant increase in its gigabit-capable coverage, from 21.1 million residential premises in July 2024 to 22.2 million in July 2025. Gigabit-capable broadband connections are able to offer download speeds of 1 Gbit/s and above and can be delivered by HFC cable or full-fibre networks.

Figure 2.2 outlines both gigabit capable coverage and full fibre broadband coverage across the UK.

Figure 2.2: Residential gigabit-capable and full-fibre broadband coverage by UK nation



Source: Ofcom analysis of provider data (July 2025)

Gigabit-capable broadband is available to 92% of urban premises in England, compared to 61% of rural premises.

Table 2.2: Residential gigabit-capable and full-fibre coverage in England by rurality

	Gigabit-capable	Full-fibre
Urban	92%	81%
Rural	61%	60%

Source: Ofcom analysis of provider data (July 2025)

Take-up of services on full-fibre networks

Take-up of full-fibre broadband services in England continues to grow, rising from 33% of all premises in July 2024 to 41% in July 2025, an 8-percentage point increase. Table 2.3 compares this take-up rate with the other UK nations. Take-up is also consistently higher in rural over urban areas in all UK nations, with 54% take-up from rural premises in England against 39% of urban premises.

Table 2.3: Take-up of broadband services on full-fibre networks (as a percentage of all premises where those services are available)

Nation	Full fibre
England	41%
Northern Ireland	62%
Scotland	43%

Nation	Full fibre
Wales	49%
UK	**42%**

Source: Ofcom analysis of provider data (July 2025)

Almost all premises in England have access to a superfast broadband connection

Superfast broadband describes any service that can provide a download speed of at least 30 Mbit/s. Superfast coverage remains very high in England and was accessible to 98% of all residential premises in July 2025, including 99% of urban premises and 92% of rural premises (up two percentage points from July 2024). This year, approximately 2.9 million premises in rural areas have access to superfast broadband coverage, though this will include some new-build properties, in addition to some existing residential premises that have gained access to superfast broadband coverage for the first time.

Table 2.4: Superfast coverage by nation (as a percentage of residential premises)

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 provider data (July 2025)

Broadband services using fixed wireless networks in England have remained in line with last year

In addition to fixed-line connection technologies, it is also possible to receive fixed broadband via wireless networks, such as FWA 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.

The data we collected from MNOs indicate that 96% of premises in England have access to an MNO FWA service, and 8% have access to a wireless internet service provider (WISP) network. This has mostly remained in line with last year, as 96% of premises in England had access to an MNO FWA service, and 6% had access to a WISP network in 2024.

Table 2.5: Coverage of MNO and WISP FWA networks with at least decent broadband (all premises)

Nation	MNO FWA	WISP FWA
England	96% (25.9m)	8% (2.2m)
Northern Ireland	85% (0.8m)	3% (0.03m)
Scotland	95% (2.8m)	1% (0.02m)
Wales	94% (1.5m)	24% (0.4m)
UK	**96% (30.9m)**	**8% (2.7m)**

Source: Ofcom analysis of provider data (July 2025)

Data usage over fixed networks

Average monthly data usage (the total amount of data downloaded and uploaded over the broadband connection) per fixed connection in England is 591 GB. This is an increase from the 2024 average and is in line with UK-wide trends with both showing an increase of around 50 GB.

Take up of satellite services is increasing across England

Take-up of satellite broadband services is increasing rapidly across the UK. These services are helping to provide broadband coverage to harder-to-reach areas, including rural areas of England.

Starlink currently offers the only direct-to-consumer Low Earth Orbit (LEO) service in the UK, which includes rural areas. Take-up of Starlink in England shows that the number of customer connections in England has increased by approximately a third, with roughly 70,000 subscribers in 2024, and over 90,000 in 2025. We note that Amazon 'Leo' (previously known as 'Project Kuiper'), also has plans to offer direct to consumer broadband from the end of 2025.[3]

Access to decent broadband

Decent broadband is defined as a connection which provides at least 10 Mbit/s download speed and 1 Mbit/s upload speed. We estimate that 245,000 premises, residential and commercial, in England do not have access to a decent broadband service via a fixed-line network, in 2025. This figure represents 1% of all premises across England. This has decreased by 30,000 premises since last year, when 275,000 premises did not have access to decent broadband.

Of those premises, a large proportion can access decent broadband via FWA services. Taking into account the coverage available from FWA, we estimate that this leaves around 26,000 or 0.1% of premises in England without access to decent broadband from a fixed-line or FWA service.

[3] Amazon, Project Kuiper receives approval to offer satellite internet in the UK - About Amazon UK, 03 February 2025.

Figure 2.3: Number of premises without a decent broadband connection in England

Source: Ofcom analysis of provider data (July 2025)

We estimate that this number could drop to 23,000 premises by January 2027, as a result of plans to expand coverage with public funding over the next year, with the remaining premises potentially eligible for a broadband service under the universal service obligation (USO).

Table 2.6: Approximate remaining premises without access to a decent broadband service from either a fixed or FWA network, 2024 and 2025[4]

Nation	2024	2025
England	0.1% (33,000)	0.1% (26,000)
Northern Ireland	0.2% (2,000)	0.2% (1,800)
Scotland	0.5% (16,000)	0.4% (10,000)
Wales	0.5% (8,000)	0.4% (6,000)
UK	**0.2% (58,000)**	**0.1% (44,000)**

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

The broadband universal service obligation

The broadband 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).[5] BT is the universal service provider for the UK (excluding Hull), and KCOM for the Hull area. They are

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

[5] 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.

required to deliver the USO and to report at six monthly intervals on delivery. They are required to provide the USO and to report on this to Ofcom.[6]

As of September 2025, BT had received 1,702 orders in England since the launch of the USO in March 2020, out of 2,171 orders for the whole of the UK. 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 8,418 premises in England.

[6] BT, USO Reports,30 March 2025; KCOM, USO Reports, 30 March 2025. To date, we understand that KCOM has not received any eligible USO orders.

Mobile, data, and voice

Introduction

Mobile connectivity plays a vital role in how people across England access services, communicate and stay connected. This section provides an update on the availability of mobile services, based on data submitted by MNOs.

We report on the rollout of 5G services, including for the first time an overview of 5G SA coverage. We continue to track the availability of 4G coverage, both outdoors and indoors, across England's landmass and road network. We also include selected statistics from our new, consumer-facing web-based coverage checker tool, Map Your Mobile, which provides local coverage information.

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.

We recommend that this section is read in conjunction with the 'Mobile, data and voice' section of our Connected Nations: UK Report 2025.

Summary of mobile coverage

Figure 3.1: Overview of voice and data coverage across the UK [7,8]

	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)

5G coverage

5G standalone

We are reporting on 5G SA coverage for the first time this year, with 5G SA accounting for approximately 41% of all 5G sites across the UK.[9] In England, 5G SA coverage outside premises from at least one MNO stands at 85% at the High Confidence level and 75% at the Very High Confidence level. This compares to 83% at the High Confidence level, and 74% at the Very High Confidence level across the UK.[10]

Outdoor premises coverage of 5G

Overall 5G coverage in areas outside of premises from at least one MNO increased by two percentage points compared to 2024 at the High Confidence level, reaching 98%, and by three

[7] 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.

[8] Further information on how we define and measure coverage can be found in our Connected Nations Methodology

[9] 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.

[10] 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.

percentage points at the Very High Confidence level, reaching 95%. These gains reflect UK growth trends.

Figure 3.2: MNO range for 5G coverage outside premises at the high confidence level.

Source: Ofcom analysis of MNO data (July 2025)

In England across the four MNOs, outside premises 5G coverage ranges from 67% to 91% at the High Confidence level (up from 65% to 81% in September 2024) and 41% to 87% at the Very High Confidence level (up from 40% to 78%). BT/EE remains the MNO with the highest level of coverage at both High and Very High Confidence levels.

Table 3.1: 5G outside premises coverage in England by mobile operator

	Very High Confidence	High Confidence
BT/EE	87%	91%
Three	41%	73%
VMO2	72%	79%
Vodafone	54%	67%

Source: Ofcom analysis of MNO data (July 2025)

5G geographic coverage

5G geographic coverage in England continues to progress at a modest pace. England's landmass has 81% coverage from at least one MNO at the High Confidence level (up from 76% in 2024). The range of 5G geographic coverage across MNOs at the High Confidence level is 26% to 66% (up from 23% to 57% in 2024) and 13% to 56% at the Very High Confidence level (up from 12% to 48% in 2024).

5G deployments

These modest increases in coverage have been driven by additional 5G deployments, with over 29,100 5G sites now operational across the UK, representing an increase of 26% in 2025.[11]

[11] 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

Distribution of these sites across the UK nations has remained consistent – with 84% located in England – and is broadly aligned with national distribution of mobile traffic.

4G coverage

4G geographic coverage

While 5G coverage is expanding, it is important to note that most people still use voice and data services over 4G. Levels of 4G geographic coverage have been broadly stable in England between 2024 and 2025, as demonstrated in Table 3.2.

Table 3.2: 4G geographic coverage in England by MNO

	2024	2025
BT/EE	95%	96%
Three	96%	96%
VMO2	94%	95%
Vodafone	95%	96%

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

England continues to have the highest levels of 4G geographic coverage across the UK nations, however coverage has also expanded in other areas of the UK such as Scotland and Wales, because of the Shared Rural Network initiative. 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.[12] Further obligations are in place for MNOs to rollout additional sites in "Total Not Spot" areas by 2027.[13] Additional information on the Shared Rural Network can be found in the Connected Nations: UK Report 2025.

Table 3.3: 4G geographic coverage where it is available from 'All MNOs' by UK nation

Nation	2024	2025
England	90%	90%
Northern Ireland	85%	85%
Scotland	65%	67%
Wales	75%	77%
UK	**80%**	**81%**

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).

[12] 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.

[13] "Total Not Spot" means geographical areas within the UK falling outside all the MNOs' 2020 Baseline Coverage Footprints.

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

Outdoor premises 4G coverage

England has retained very high levels of 4G coverage outside premises, with 99%+ of premises predicted to have outdoor 4G coverage from at least one MNO, and 99% of premises being covered by all MNOs. Outdoor voice coverage also remains very high across premises in England, at 99% for all MNOs.[14] All four operators also provide high levels of coverage in rural areas. Table 3.4 shows coverage outside premises across all MNOs in rural areas of England.

Table 3.4: Outdoor premises 4G coverage in rural England (by operator)

MNO	% of rural premises with outdoor 4G coverage
BT/EE	99%
Three	97%
VMO2	98%
Vodafone	98%

Source: Ofcom analysis of MNO data (July 2025)

Indoor premises 4G coverage

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.[15] In England, indoor 4G coverage continues to vary between urban and rural areas. Indoor coverage in rural England ranges from 77% to 85% across operators, compared to 97% to 99% of urban areas in England. These figures are mostly in line with last year's figures on 4G coverage in urban and rural areas of England. Indoor coverage from at least one MNO is available to 98% of premises in rural areas, and 57% are able to receive coverage from all four MNOs, representing an increase of one percentage point on last year.

Indoor voice coverage across England has remained high and is now available from all MNOs at 93% of premises, with individual voice coverage by MNO ranging from 96% to 99%+.

Map Your Mobile coverage checker

As mentioned in the introduction, 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 the 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

[14] Mobile voice services through 2G, 3G and 4G.

[15] 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.

50m x 50m pixels.[16],[17] 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.[18]

Table 3.5 gives an overview of England's coverage compared to the other UK nations using the MYM thresholds, with more detailed data available through our interactive report.[19]

Table 3.5: UK Geographic coverage using MYM thresholds

Nation	From at least one MNO		From all four MNOs	
	-105dBm	-95dBm	-105dBm	-95dBm
England	99%	94%	91%	59%
Northern Ireland	98%	92%	86%	51%
Scotland	90%	78%	67%	39%
Wales	97%	87%	77%	47%
UK	96%	88%	82%	51%

Source: Ofcom analysis of MNO data (July 2025)

Voice coverage

Mobile voice services from all four MNOs are available across 92% of England's geography, which is the same as last year. Voice coverage inside and outside premises from all MNOs increased slightly to 93% and 99%, respectively. There also remains a disparity between urban and rural inside premises coverage from all MNOs, with urban areas at 97% compared to rural which is at 66%. However, 99% of rural premises do have voice coverage from at least one MNO. Further information can be found on our interactive dashboard.

Roads coverage

England's road network covers 188,000 miles (76.4% of the UK total), ranging from major trunk routes to single carriageway sections in remote areas.[20] Good 4G and voice coverage is important along this road network to assist with vehicle communications, navigation, infotainment and safety aids. A detailed breakdown of in-vehicle coverage along motorways, A and B roads can be found via our interactive dashboard.

[16] 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.

[17] Map Your Mobile coverage checker methodology - August 2025

[18] 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.

[19] Interactive report

[20] UK Government, National Statistics: Road Lengths in Great Britain: 2024, 20 February 2025.

Mobile traffic

Monthly mobile traffic has continued to grow in England, with traffic rising from 913 PB to 1066 PB since last year,[21] representing an increase of c.17%.[22] 4G continues to carry the dominant share (c.71%) of traffic across England, however 5G traffic has seen the highest growth rising from 204 PB to 302 PB, representing c.28% of the total monthly traffic in England in 2025.

Further information about these trends can be found in our Connected Nations: UK Report 2025.

[21] These figures refer to monthly mobile traffic based on data collected from MNOs in the month of July 2024 and 2025. 1 PB (petabyte) is equivalent to 1,000,000 GB (gigabyte).

[22] 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 MNO's, offer FWA services with varying traffic splits, ranging from approximately 2% to 40%.