Connected Nations update

Autumn 2022

Connected Nations update: Autumn 2022 – Welsh translation available

REPORT:

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1. Overview

This is the second interim update to our December 2021 annual Connected Nations report. It is based on mobile coverage and fixed broadband availability across the UK as of May 2022.

Key findings

Number of homes able to get gigabit capable broadband is up to almost 20.2 million homes (68% of all UK homes), up from 19.3 million (66%) since our last update

Full fibre coverage continues to increase at pace, up to 37% from 33% in the four months between January 2022 and May 2022, an increase of four percentage points, with just over 11 million homes now covered.

Superfast broadband coverage across the UK remains at 96%, with Northern Ireland seeing an increase of a percentage point in superfast coverage.

The number of premises unable to get decent broadband, when factoring in fixed wireless and fixed line, has dropped from 99,500 to 83,000 premises since our Spring update and those unable to achieve decent broadband over a fixed line has increased from 506,000[1] to 513,000 over the same period.

Mobile coverage remains stable and operators are beginning to roll out coverage to new areas through the **Shared Rural Network** scheme, agreed with the UK Government in 2020. As a result, nationwide coverage is set to increase in the coming years. *5G coverage continues to develop and we present some early coverage figures in the tables below.*

As with previous updates, we have published an interactive report that has both the latest and historical data.

We have also used the data in this report to update our broadband and mobile coverage checker.

Key findings – Fixed broadband

Gigabit capable broadband: availability of broadband capable of delivering gigabit[2] speeds for consumers continues to improve at a rapid pace, with nearly 20.2 million UK homes[3] (68%) now able to access these faster services, up from 19.3 million homes (66%) reported in our Spring 2022 update. This has been driven by the continued rollout of full-fibre broadband by many network operators, both well established and new market entrants. Virgin Media O2's upgrade programme has now concluded and the rate of growth of this coverage metric has slowed compared to the

[1] Small discrepancies can occur in the data due to differences in the 'epoch' of the property address database used by Ofcom compared with that used by service providers
[2] Gigabit capable networks include full fibre networks as well as any network that is able to offer at least 1Gbit/s download speeds (such as the latest version of Virgin Media O2's cable network technology – DOCSIS 3.1).
[3] Note that we report on residential properties (homes) for full fibre, and superfast coverage, but report on both residential and commercial properties for 'decent' broadband.

previous period. Virgin Media O2 has announced further plans to continue to expand the geographical scope of its infrastructure.[4]

Full fibre deployment: More than a third (37%) of homes have access to full fibre services. Full fibre coverage is now at just over 11 million, up from 9.6 million (33%) reported in our Spring 2022 update. This is driven predominantly through deployments by the larger fibre infrastructure operators but supported by a number of smaller providers across the UK serving individual communities and regions. Some of these deployments benefit from a range of public sector funding schemes which we outline below.

Superfast broadband (download speeds of at least 30 Mbit/s): Superfast broadband rollout across the UK continues to grow although at a reduced pace (coverage remains at 96% of UK homes). This may be due to the increasing difficulty in reaching the final 4% of properties, as well as the increased focus on rolling out new full fibre and other gigabit capable connections across the UK. There are still publicly funded schemes supporting superfast broadband which may improve this figure over time.

Decent broadband (at least 10 Mbit/s download and 1 Mbit/s upload speed): the vast majority of UK properties can access decent broadband. The number of properties (both residential and commercial) that cannot receive a decent broadband service from a fixed line stands at around 513,000 (remaining at 2%), having increased from 506,000 since our Spring Update.

Broadband services are also available from Fixed Wireless Access (FWA) networks, provided via mobile networks or through Wireless Internet Service Providers (WISPs). If managed well, FWA networks can deliver a decent broadband service, and can be used as an alternative network technology where consumers do not have access to a decent broadband connection over a fixed network. We continue to collect data from WISPs and based on the coverage reported by these providers, this remains at 7% of premises able to receive a decent broadband service from a WISP (the same as in our Spring 2022 Update). FWA coverage from mobile networks capable of providing decent broadband is available to almost 95% of premises.

Factoring in the coverage estimates provided by FWA providers, we estimate that there remain around 83,000 premises that do not have access to a decent broadband service from a fixed network or an FWA network. This has fallen from our estimate of 99,500 in our Spring Update.

Of these, around 66,000 premises are not expected to be covered by rollout of publicly funded schemes within the next twelve months. These may be eligible for the broadband USO product subject to further checks and confirmation by the universal service providers (BT and KCOM).

The above figures show the availability of broadband services across the UK; we shall report on take-up of broadband services in more detail in our annual Connected Nations report for 2022.

Key findings – Mobile

We measure mobile coverage in a way that reflects the likely experience of people using their mobile phones[5] There has not been a significant increase in coverage since our last update, but we

[4] Virgin Media O2 UK Extend Broadband to Older OFNL Sites - ISPreview UK
[5] Detailed definitions are available in the December 2021 report methodology.

expect the Shared Rural Network, agreed between the UK Government and industry in 2020, to drive forward coverage improvements over the coming years.

4G: Coverage of 4G mobile networks across the UK has not seen significant changes over the last reporting periods. Around 92% of the UK landmass is predicted to have good outdoor 4G coverage from at least one operator, and this area includes nearly all of the premises in the UK. This is expected to rise to 95% by end of 2025 as a result of the SRN. Coverage for both Scotland and Wales is currently significantly lower. It should be noted that individual MNOs are committed to achieving between 85% and 88% coverage in Wales by 2027[6] under the government's SRN investment, and between 82% and 85% in Scotland.

4G not-spots: The UK has both geographic and road not-spots (that is, areas where good 4G services are not available from any mobile operator). Geographic not-spots have remained the same since our Spring 2022 update at 8%. Road coverage remains largely the same with just 4% of all roads estimated to be an in-vehicle not-spot. This varies significantly across individual nations, particularly in Scotland and also in Wales. Scotland has benefited by a percentage point drop in geographic not-spots since our spring update, which we attribute the SRN scheme.

Calls and text coverage: As with 4G, predicted coverage remains largely unchanged over the previous reporting periods. The range of predicted coverage by MNOs varies from 85-92% of the UK landmass, depending upon operator, for calls and text services and between 99-c.100% of premises (outdoors) in the UK, again depending upon operator.

Calls/text not-spots: Areas where people are unable to make a call or send a text from any operator (not-spots) is similarly unchanged, with around 4% of the UK geography estimated as a not spot, and with around 2% of the UK's roads estimated to be a not spot for calls and texts made or received in vehicle. As with 4G, there are marked variations for individual nations; for example, geographic not-spots across Scotland remain higher than the rest of the UK, at around 10%. This along with Welsh not-spots has fallen by one percentage point since our last update in Spring.

5G: We reported on 5G coverage from 'All MNOs' and from 'At least one MNO' for the first time in December 2021. We continue to report on the same basis here, with coverage levels ranging from high to very high confidence. Coverage from 'At least one MNO' now ranges from 48% (very high confidence) to 64% (high confidence) of premises outdoors, up from 47% and 62% respectively when we reported in our last update in the Spring.[7]

Schemes across the UK and Nations supporting broadband networks

Ofcom, as part of its access review, has set in place rules to drive investment which is now delivering results. These rules are set over a five-year period.

UK: On 22 February 2022, 'Gigabit Broadband in the UK: Government targets and policy'[8] was published. This re-confirmed the government commitment to reach 85% of UK households with

[6] This has been revised for 2026 since our last update.
[7] We note that work to validate MNO's new 5G predictions remains ongoing.
[8] House of Commons Library, Gigabit Broadband in the UK: Government targets and policy, 25 February 2022.

Gigabit capable broadband by 2025 and that by 2030 this figure would reach at least 99%. A Prior Information Notice has been issued by the government to enable the release of a further £800m, from its Gigabit Infrastructure Subsidy Programme. Some 7,000 hard-to-reach premises in Dorset will benefit from Gigabit connectivity with expected completion by 2025.[9]

The government targets for mobile include 95% geographic coverage for 4G and that the majority of population would have access to a 5G signal by 2030.

Scotland: The Scottish Government's Reaching 100% (R100) programme contract build is well underway with connections now live in all contract areas across Scotland. This includes the North Lot, where work has started to lay 16 new subsea cables to extend faster broadband to Scotland's island communities. This will connect premises on 15 islands to faster broadband capable of one gigabit per second download speeds.[10] In August, the Scottish Government announced a further £36 million expansion of R100 contracts. The UK Government's Project Gigabit will fund £16 million of this additional investment, and the Scottish Government will provide the further £20 million to the North contract.[11] Additional support is provided through the Scottish Broadband Voucher Scheme, which in some cases, can be combined with funding from the UK Government's Gigabit Broadband Voucher Scheme.[12]

The Scottish Government also continues to support network rollout through the Full Fibre Charter with communications providers. In April 2022, five more providers pledged support to maximise coverage in Scotland. In return, the Scottish Government offers 100% non-domestic rates relief on newly laid fibre until 2034.[13]

In addition, the Scottish Government's 4G Infill Programme has now reached the halfway point, building and activating 28 masts, with the remaining 27 on track to be connected by 2023.[14] Alongside the Shared Rural Network, this will help address 4G mobile not-spots across Scotland.

Wales: In July, the Welsh Government issued an update on digital connectivity in Wales. It has reached an agreement with Openreach to extend the Superfast Cymru project to 31 March 2023 to ensure that as many premises as possible are able to benefit. The number of premises to be built to under the agreed roll-out is 37,137. While this is slightly lower than the anticipated 39,000 total premises, the Welsh Government recognises that a significant number of the premises de-scoped had already been given access to gigabit broadband under commercially led rollouts.

The Welsh Government's Local Broadband Fund continues to support local authorities and social enterprises to deliver broadband projects locally. The Access Broadband Cymru[15] scheme also provides grants to fund (or part-fund) the installation costs of new broadband connections for homes and businesses in Wales. Following a recommendation by the National Infrastructure Commission for Wales following its work on digital infrastructure issues, the Welsh Government has

[9] Work begins on first major broadband upgrade under £5 billion Project Gigabit - GOV.UK (www.gov.uk)
[10] Improving broadband access - gov.scot (www.gov.scot)
[11] https://www.gov.scot/news/delivering-faster-internet/
[12] Digital Scotland, Scottish Broadband Voucher Scheme.
[13] Scottish Government, Boosting broadband access, 2 April 2022.
[14] Improving rural connectivity - gov.scot (www.gov.scot)
[15] Welsh Government, Access Broadband Cymru grant scheme, 31 March 2022.

conducted a review of the scheme and as a result will simplify the application process for consumers.

Ogi, which entered the market just over a year ago, has confirmed a major expansion of its network reach across Wales in the latest phase of a £200m investment, extending its roll out to Bridgend, Caerphilly and Rhondda Cynon Taf. Ogi's ultrafast services are now available to a total of seven local authority areas – taking coverage to 80,000 premises and 38 communities. The latest expansion marks the mid-point of its first phase plan of reaching 150,000 premises.[16]

Northern Ireland: The £165 million contract for delivery of the Project Stratum broadband intervention scheme was awarded to Fibrus Networks Ltd in November 2020. In January 2022 additional funding of £32m[17] was secured from DCMS, the Department for the Economy (DfE) and the Department of Agriculture, Environment and Rural Affairs (DAERA) to bring a further 8,500 premises into the scope of the project. The additional premises include 2,500 harder-to-reach properties that were out of scope of the original contract, plus a further 6,000 premises.

The roll-out of the new full fibre network to reach all 85,000 premises, including the additional 8,500 premises, will continue across four extended quarters of network build, with Fibrus Networks expected to complete full deployment by March 2025. By the end of June 2022, Fibrus had delivered new infrastructure to almost 38,000 premises.

Data collection and reporting

We continue to increase the number of operators from whom we collect coverage data to improve the accuracy of the data we publish; data from 26 FWA providers (WISPs and MNOs), and 58 fixed line operators was used in the compilation of this report. We also continue to gather coverage data every four months and usage information once a year.

We are in the process of collecting and analysing planned network build information from communications providers in the UK and we shall be publishing the results of this activity in due course.

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[16] Ogi ramps up full-fibre broadband roll-out across south Wales (computerweekly.com)

[17] Project Stratum extends coverage plans to additional 8,500 premises | Department for the Economy (economy-ni.gov.uk)

2. Dashboards

Fixed broadband

Access to full fibre	September 2021	January 2022	May 2022
UK	28%	33%	37%
England	27%	31%	36%
Northern Ireland	71%	79%	83%
Scotland	27%	32%	36%
Wales	27%	32%	36%

Access to Gigabit-capable services	September 2021	January 2022	May 2022
UK	47%	66%	68%
England	46%	67%	69%
Northern Ireland	76%	82%	85%
Scotland	51%	60%	63%
Wales	36%	46%	49%

Access to superfast services	September 2021	January 2022	May 2022
UK	96%	96%	96%
England	96%	97%	97%
Northern Ireland	91%	92%	93%
Scotland	94%	94%	94%
Wales	94%	95%	95%

Access to at least 10 Mbit/s services	September 2021	January 2022	May 2022
UK	98%	99%	99%
England	99%	99%	99%
Northern Ireland	95%	96%	96%
Scotland	97%	97%	97%
Wales	97%	98%	98%

Fixed Wireless Access

Since our last update we have continued to collect data for Wireless Internet Service Providers (WISPs) providing a Fixed Wireless Access broadband service. The following shows premises, both residential and commercial, where decent broadband is obtainable via FWA.

Fixed Wireless	September 2021	January 2022	May 2022
UK Mobile Network Operators (MNO)	94%	94%	95%
UK Wireless Internet Service Providers (WISP)	7%	7%	7%

USO eligibility

The percentage of homes and businesses unable to access a decent broadband service, that is at least 10 Mbit/s download speed and at least 1 Mbit/s upload speed.

Unable to receive 10 Mbit/s download and 1 Mbit/s upload services (potentially USO eligible)	September 2021	January 2022	May 2022
UK	0.4%	0.3%	0.3%
England	0.2%	0.2%	0.2%
Northern Ireland	2%	2%	1.2%
Scotland	1%	1%	0.8%
Wales	1%	0.8%	0.6%

Note 1: We consider a property to have "full fibre coverage" only if: 1. fibre is deployed in close proximity to the premises, so only a dedicated fibre connection to the property is necessary to provide full (end to end) fibre connectivity, and 2.the end user would expect to pay only a published pre-agreed connection charge, if one was to be imposed.

Note 2: This may exclude broadband services available from some smaller providers.

Note 3: Figures for potential USO eligibility are for all (both residential and commercial) properties. Figures for other speeds refer to residential properties only.

5G coverage

Premises (outdoor) covered by at least one operator	January 2022	May 2022
UK	47-62%	48-64%
England	49-65%	51-67%
Northern Ireland	24-34%	24-34%
Scotland	40-54%	43-57%
Wales	27-38%	29-42%

Premises (outdoor) covered by all operators	January 2022	May 2022
UK	4-12%	5-12%
England	5-13%	5-13%
Northern Ireland	2-6%	2-6%
Scotland	2-8%	2-10%
Wales	2-5%	2-6%

Note 4: Thresholds for 5G Service are -110 dBm where we have high confidence in coverage and -100 dBm where we have very high confidence in coverage. Validation work on new 5G predictions remains ongoing.

4G coverage

Premises (outdoor) – coverage range across MNOs	September 2021	January 2022	May 2022
UK	99-c.100%	98-c.100%	99-c.100%
England	99-c.100%	99-c.100%	99-c.100%
Northern Ireland	97-99%	97-99%	97-99%
Scotland	97-99%	97-99%	97-99%
Wales	96-99%	95-99%	96-99%

Geographic area – coverage range across MNOs	September 2021	January 2022	May 2022
UK	79-86%	79-86%	79-87%
England	92-94%	92-94%	92-94%
Northern Ireland	87-92%	87-92%	88-92%
Scotland	57-73%	57-74%	57-75%
Wales	72-84%	72-85%	73-85%

Geographic area not covered by any operator (not spots)	September 2021	January 2022	May 2022
UK	8%	8%	8%
England	2%	2%	2%
Northern Ireland	3%	3%	3%
Scotland	18%	18%	17%
Wales	10%	10%	10%

Coverage of all roads (in vehicle) – coverage range across MNOs	September 2021	January 2022	May 2022
UK	78-83%	78-83%	78-84%
England	83-88%	83-88%	84-88%
Northern Ireland	63-79%	65-79%	69-80%
Scotland	64-77%	64-78%	65-79%
Wales	70-79%	70-79%	70-79%

All roads (in vehicle) not covered by any operator (not spots)	September 2021	January 2022	May 2022
UK	4%	4%	4%
England	2%	2%	2%
Northern Ireland	6%	7%	6%
Scotland	7%	7%	7%
Wales	9%	9%	9%

Note 5: Thresholds for 4G services: 4G (-105 dBm). This relates to nearly all connections being capable of delivering a connection speed of at least 2Mbit/s and reliable voice calls.

Voice and text coverage

Premises (outdoor) – coverage range across MNOs	September 2021	January 2022	May 2022
UK	99-c.100%	99-c.100%	99-c.100%
England	c.100%	c.100%	c.100%
Northern Ireland	98-c.100%	98-c.100%	98-c.100%
Scotland	99-c.100%	99-c.100%	99-c.100%
Wales	99%	99%	99%

Geographic area – coverage range across MNOs	September 2021	January 2022	May 2022
UK	85-92%	85-92%	85-92%
England	95-98%	95-98%	95-98%
Northern Ireland	89-98%	89-98%	89-98%
Scotland	68-82%	68-82%	68-82%
Wales	86-91%	86-91%	86-91%

Geographic area not covered by any operator (not-spots)	September 2021	January 2022	May 2022
UK	4%	4%	4%
England	1%	1%	1%
Northern Ireland	1%	1%	1%
Scotland	11%	11%	10%
Wales	5%	5%	4%

Coverage of all roads (in vehicle) – coverage range across MNOs	September 2021	January 2022	May 2022
UK	86-94%	86-95%	87-95%
England	90-98%	90-98%	90-98%
Northern Ireland	71-93%	72-93%	73-94%
Scotland	77-88%	77-88%	77-88%
Wales	82-88%	82-88%	82-88%

All roads (in vehicle) not covered by any operator (not-spots)	September 2021	January 2022	May 2022
UK	2%	2%	2%
England	1%	1%	1%
Northern Ireland	3%	3%	3%
Scotland	4%	3%	3%
Wales	5%	5%	5%

Note 7: Thresholds for voice and text are: 2G (-81 dBm), 3G (-100 dBm), 4G (-105 dBm).