
3G and 2G switch-off

Our expectations of mobile providers

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1. Overview

The UK's mobile network operators have confirmed to the Government that they do not intend to offer 2G and 3G mobile networks past 2033 at the latest. This will support the roll-out of the 4G and 5G networks which will offer faster and more reliable services for customers. The operators are making their own decisions on the timing and process of the switch-offs, and they all plan to switch off their 3G networks first. The switch-off will impact customers using older mobile devices and services – most customers already have 4G (and increasingly 5G) capable devices and their services won't be affected.

While Ofcom does not have a formal role in the switch-off process itself, we want to ensure that consumers are treated fairly and can continue to access the services they need. This document sets out how we expect mobile providers to approach implementing the switch-off of their services to ensure that those consumer-focussed objectives are met. We also set out the relevant regulatory requirements that providers will need to comply with during this process.

Key expectations:

- **Minimising coverage impact:** EE, Three and Vodafone have committed to ensure that they offer a broadly equivalent level of coverage after the 3G and subsequent 2G switch-off, with areas currently reliant on 3G/2G being upgraded to 4G ahead of switch-off. We welcome this and expect Virgin Media O2 (who has yet to set a date for its 3G switch-off) to make a similar commitment once it has progressed its plans. We expect operators to undertake detailed coverage analysis ahead of switching-off their networks to ensure they meet these commitments and customers do not experience a reduction in coverage.
- **Contractual information about the switch-off of services:** mobile providers should explain in their contract information and summary when the service being purchased will no longer function on the 3G and/or 2G networks (where known) and that the customer will need a 4G-capable handset after that date.
- **Communicating with and providing support to customers:** where customers need to replace or update their handset, we expect mobile providers to provide a minimum of three to six months' notice of the steps they need to take, and to communicate in a clear and timely way, using a range of methods to raise customer awareness. Vulnerable customers, particularly those struggling financially, will need to be given additional support – this might include offering discounts on replacement handsets.
- **Other services that rely on mobile networks:** as well as customers using older handsets, switch-off will also impact a range of other devices such as telecare alarms and payment terminals. These services will need a longer notice period. Many of them also use 'roaming SIMs' and do not have a direct customer relationship with UK mobile providers. We expect mobile providers to make every effort to identify these services, sharing knowledge across industry where possible, helping to raise awareness so that relevant suppliers have sufficient time to update their devices and consumers do not lose access to vital services.

Next steps

We have already been working closely with mobile providers, and other affected stakeholders, to understand the issues that 2G/3G switch-off will raise and to provide clarity on what we expect during this process. Over the coming months and years as switch-off progresses we will be actively monitoring the mobile providers' plans, and meeting with them regularly to get updates on their progress, as well as gathering key metrics on numbers of affected customers and coverage upgrades. As part of that engagement, we will be asking them how they are taking account of the expectations set out in this document. We will continue to report on progress of 2G/3G switch-off as part of our annual Connected Nations report.

We will also continue to work closely with the Government, consumer groups and other relevant stakeholders to help raise awareness of the upcoming switch-offs.

2. Introduction and background

- 2.1 In this section we set out the detail of the 3G and 2G switch-off in the UK, including timings, potential impact on customers, the role of Ofcom and Government, and next steps. In the next section we set out the relevant regulatory obligations that mobile providers will need to adhere to during the process as well as our expectations of best practice.

Background and timescales for switch-off

- 2.2 Mobile network technology continues its rapid pace of development. 2G networks were first deployed during the early 1990s and are used for voice calls and text messaging, as well as very low-speed data communications. 3G networks were rolled-out during the early 2000s, and they made it possible to access the internet through a mobile phone, alongside voice services. The launch of 4G in the 2010s allowed for faster mobile broadband and higher bandwidth data services, including supporting more connected and smart devices.
- 2.3 More recently, 5G services are being deployed across the UK. 5G provides enhanced access to data, with faster speeds and greater capacity, allowing thousands of devices to be connected in a small area at the same time.

Mobile network operators have agreed with Government to switch-off their 2G and 3G networks

- 2.4 In December 2021, the UK's mobile network operators (MNOs) confirmed to the Government (the Department for Digital, Culture, Media & Sport - DCMS) that they will not offer 2G or 3G services beyond 2033.¹ This followed the Government's Diversification Taskforce recommendation to establish a date by which all public 2G and 3G networks in the UK would be switched off.
- 2.5 Switching off these networks will free up spectrum for 4G and 5G networks, enabling customers to benefit from better, faster and more reliable services. The 2G and 3G networks rely on older technology and running them alongside newer 4G and 5G services involves increased operating costs, as well as a less efficient use of spectrum and energy.

Each MNO is setting its own timetable for switch-off

- 2.6 Each MNO has confirmed that its 3G network will be switched off first, starting from early 2023:
- Vodafone is starting its switch-off in early 2023.²
 - EE plans to start its switch-off in early 2024.³

¹ DCMS, [A joint statement on the sunset of 2G and 3G networks and public ambition for Open RAN rollout as part of the Telecoms Supply Chain Diversification Strategy](#)

² Vodafone, [We're switching off 3G in 2023](#).

³ EE, [We're saying goodbye to 3G in 2024](#).

- Three expects to switch off by the end of 2024.⁴
 - Virgin Media (VM)-O2 has not yet announced its planned 3G switch-off date.
- 2.7 Vodafone will be starting its 3G switch-off first in the Plymouth and Basingstoke areas (later this month). We expect that other MNOs will adopt a similar approach, targeting specific geographic areas initially, before moving gradually towards full UK switch-off.
- 2.8 To date, none of the MNOs have set a specific date for 2G switch-off. We expect they will start making plans to switch off their 2G networks after they have switched off 3G networks, likely towards the latter half of this decade.
- 2.9 Mobile virtual network operators (MVNOs) that provide services over the MNOs networks will need to migrate all affected customers off 3G (and 2G) networks at the same time or ahead of the switch-off date of their host network. Some of the main MVNOs in the UK include:
- Lebara Mobile, Asda Mobile and Talk Mobile who use the Vodafone network;
 - Your Co-op, 1p Mobile and Utility Warehouse who use the EE network;
 - iD Mobile who use the Three network; and
 - Lycamobile, Giffgaff, Tesco Mobile, Sky Mobile and, Virgin Mobile who use the O2 network.

Impact on customer devices

- 2.10 The 3G and 2G network switch-offs are likely to impact customers with older devices in particular. Given that take-up of 4G devices is already high,⁵ the majority of mobile customers are unlikely to be affected. Most mobile providers stopped selling 3G only handsets some time ago, albeit there are still a few being sold, particularly from third-party retailers. The latest estimates from MNOs indicate that there are likely to be around 5.5m⁶ customers using devices reliant on 2G or 3G connectivity (around 6% of all mobile subscriptions).⁷
- 2.11 Even after 3G switch-off, customers using the EE, Vodafone and O2 networks with an older device will still be able make voice calls and send text messages, as these rely on the 2G network. But the 2G network was not designed to work for accessing data services, so customers with older devices will no longer be able to access most of their mobile data services after 3G switch-off (although worth noting these customers will still be able to connect to Wi-Fi to access data services from their phone).
- 2.12 Because Three does not have a 2G network, customers with older devices using its network will need to replace their devices ahead of its 3G switch-off to ensure they can continue to

⁴ Three, [Our plans to switch off 3G](#).

⁵ 85% of active mobile connections have access to either 4G or 5G services: Ofcom, [Communications Market Report](#) (CMR), 2022, p.18.

⁶ This excludes 2G/3G smart meters supported by VM-O2 in southern England and Wales. See footnote 99 of the [2022 Connected Nations report](#) for details of caveats associated with the 5.5m customers estimate.

⁷ There are 99m mobile connections in the UK, including machine to machine services: Ofcom, [Telecommunications Market Data Update Q2 2022](#).

access all their services. Customers who do not upgrade their device ahead of Three's 3G switch-off will only be able to make emergency calls from their old device.⁸

- 2.13 Longer term, all customers using older devices (and regardless of what network they are using) will need to replace these with a 4G or 5G capable device to ensure they can continue to receive their services, as well as access emergency services.
- 2.14 There are also some customers who are already using 4G or 5G mobile devices that may need to update their settings or software to ensure that any calls they make are using the 4G network (using a standard known as VoLTE).⁹ There may also be cases where customers who purchased their device indirectly (i.e. not from their mobile provider), or those using devices on a different network from their original network, experience difficulty using VoLTE on those devices (this will only become an issue in future once the 2G networks are switched off). This is because, particularly for less common handset models, there may be some incompatibility in the implementation of the VoLTE standard between the handset and the network.
- 2.15 Even where a customer is able to make calls using 2G or VoLTE over 4G and 5G in the UK, this may not be the case when traveling abroad. In some countries 2G networks have already been switched-off and, in relation to VoLTE, 'roaming' arrangements may not currently be in place. MNOs are working with international partners to resolve these 'roaming' issues and there are ongoing discussions with the GSMA¹⁰ regarding improving the compatibility of VoLTE standards implementations internationally (these discussions also cover the handset compatibility issues set out in the paragraph above).
- 2.16 In terms of types of customers that are likely to be affected, our research shows that the older customers are, the more likely they are to have an older device (10% of the over 45s said they have a mobile phone that is older than ten years compared to 4% of those aged 16-44).¹¹
- 2.17 Customers on both pay-monthly and pay as you go (PAYG) plans will be affected if they have an older device. Because PAYG customers do not necessarily have to register their details with their mobile provider, the only available option for mobile providers to contact these customers and tell them about the impact of switch-off is via a text message. There may therefore be a greater risk that these customers do not realise the action they need to take - particularly if they tend to turn off their devices when not in use. There is a higher proportion of customers that are more financially vulnerable on PAYG plans (27%, compared to 12% of the least financially vulnerable). Those with impacting or limiting

⁸ This is because the MNOs have roaming agreements in place for emergency calls, so customer's using the Three network will be able to roam onto the other MNOs networks to make emergency calls. These roaming agreements do not extend to the emergency SMS service for users with hearing impairments (see paragraph 3.15 below) so this service will no longer be accessible to users with older phones after switch-off.

⁹ Voice over Long-Term Evolution is a technology that enables voice calls over a 4G network, rather than via 2G or 3G connections.

¹⁰ The GSMA is an industry body addressing a range of technology and operational issues for its MNO members around the world.

¹¹ Ofcom, [Switching Tracker 2022](#).

conditions are also more likely to be on PAYG (29% compared to 19% for those who do not have an impacting or limiting condition).¹²

Impact on coverage

- 2.18 4G coverage is already very widespread across the UK – 98% of premises (outdoor) have access to coverage from all four MNOs and c.99% of premises (outdoor) have access to at least one MNO.¹³ There are, however, some geographic areas of the UK that do not yet have 4G coverage, particularly in some rural areas – whilst 92% of the UK landmass has outdoor coverage from at least one operator, this drops to 83% in Scotland.
- 2.19 There are some areas of the UK which may currently be reliant on 2G and 3G coverage for their mobile services. The extent of 2G and 3G coverage does, however, vary by MNO. EE and Three, for example, have less slightly extensive 3G coverage compared to their 4G coverage.¹⁴ As highlighted in our most recent Connected Nations report, all the MNOs are making improvements to their 4G coverage with the aim of meeting their Shared Rural Network (SRN) commitments of 95% 4G geographic coverage by 2025.¹⁵
- 2.20 Given this ongoing work to improve 4G coverage, we expect that any impact on coverage as a result of 2G/3G switch-off is likely to be negligible. We discuss in section 3 how we expect MNOs to assess any potential impact and take steps to address it prior to switch-off.

Impact on other types of devices

- 2.21 The switch-off will affect all types of devices reliant on 2G/3G mobile connectivity, including devices used for services such as telecare alarms, security alarms and payment terminals amongst others. If these devices are not 4G capable, they will need to be upgraded to ensure they continue to work properly after switch-off.
- 2.22 A number of these devices rely on 2G/3G ‘roaming SIMs’, which are usually non-UK SIMs brought into the UK, which roam between the available mobile networks to provide data connectivity. Service providers often choose these types of SIMs to ensure they have access to all the MNOs networks, maximising the chance of getting good coverage and reliable connectivity for their service.
- 2.23 Because these service providers do not have a direct relationship with the MNOs, and there is often a long supply chain through various intermediaries, there is more complexity involved in making relevant parties aware of the implications of switch-off to ensure they take the necessary steps to upgrade their devices. We also discuss in section 3 the steps we expect MNOs to take in relation to these services.

¹² Ofcom, [Technology Tracker 2022](#). ‘Impacting or limiting conditions’ refers to consumers who identified that they have physical and/or mental health conditions which impact or limit their daily activities or work they can do.

¹³ Ofcom, [Connected Nations, 2022](#).

¹⁴ EE and Three’s 3G outdoor premise coverage is 98%, compared to over 99% and 99% respectively via their 4G networks. EE’s 2G network is also less extensive, at 95% of all outdoor premises. Ofcom analysis of Connected Nations 2022 data.

¹⁵ Ofcom, [Connected Nations 2022](#), Section 3.

- 2.24 The eCall feature in some newer models of cars also relies on a 2G roaming SIM. eCall is a button in cars that can be pressed by the driver or passengers in the event of an emergency. It is also automatically activated by the vehicle, for example, in the event of an incident when the airbags are deployed.¹⁶ Most cars and vans produced after 2018 have an eCall system installed – and these devices currently rely on 2G networks to make the emergency call.
- 2.25 Most energy smart meters in southern England and Wales also currently rely on 2G/3G connectivity. This connectivity is provided by Virgin Media O2, who have a contract with the Data Communications Company (DCC). DCC operate and manage the telecommunications network that supports smart meters across the UK.¹⁷ All smart meters reliant on 2G/3G will need to be upgraded to 4G ahead of Virgin Media O2 switching-off its 2G/3G networks (which it has not yet set a date for). DCC recently announced that it has signed contracts for a 4G solution for smart meters and mobilisation of the new device is in progress.¹⁸ As set out below, Government is giving further consideration to the issues raised by switch-off on eCall systems and smart meters.

Ofcom's role

- 2.26 The decision and timings for switching off 3G and 2G networks is being led by each individual MNO. While Ofcom does not have a formal regulatory role in the switch-off process itself, we want to ensure that customers are treated fairly and can continue to access the services they need with minimal disruption.¹⁹ It will also be particularly important that vulnerable customers are protected and receive the support they need during switch-off. We believe we can play a role in helping to ensure that these aims are met.
- 2.27 We have already been working closely with mobile providers, and other affected stakeholders, to understand the implications of 2G/3G switch-off and to provide clarity on what we expect during this process. We also believe we can support the process of raising awareness of switch-off with stakeholders more broadly, to help ensure that all impacted customers understand the steps they need to take.
- 2.28 As part of fulfilling this role we will be:
- a) meeting regularly with the mobile providers to get updates on their switch-off progress, including the steps they are taking to communicate with customers, how they are meeting their obligations to support vulnerable consumers and how they are taking account of the expectations set out in this document;²⁰

¹⁶ National Highways – [eCall SOS](#).

¹⁷ [What is the DCC? | Smart DCC](#).

¹⁸ [The journey continues - Closing out 2022 | Smart DCC](#).

¹⁹ In line with our duty under section 3(1) of the [Communications Act 2003](#) to further the interests of citizens and consumers in relation to communications markets.

²⁰ Ofcom, [Vulnerable People](#).

- b) gathering key metrics from mobile providers to help us monitor progress, in particular how many customers have updated their devices and the steps MNOs are taking to improve their 4G coverage. We will use our annual Connected Nations reports to update on the use of 2G and 3G networks, as well as changes in coverage;
 - c) keeping our [website guide](#) up to date with the latest developments and reviewing what other information we can usefully publish;
 - d) monitoring complaints we receive via our consumer contact team about customers' experience of switch-off, including their interactions with mobile providers and the support they are offered; and
 - e) continuing to engage with government, industry, trade bodies, consumer groups and other relevant stakeholders to help raise awareness of the upcoming switch-offs and the actions that customers may need to take. We have already started engagement with a range of these stakeholders, including writing to telecare service providers and meeting with trade bodies for other affected services, and we will be looking for opportunities to co-ordinate communications messages with groups representing affected services and customer groups.
- 2.29 We are also aware there are interactions between the impact of 2G/3G switch-off and the migration of fixed telephony networks from the traditional public switched telephone network (PSTN) to newer internet protocol (IP) networks. BT has taken the decision to retire the PSTN by December 2025 and other providers plan to follow a broadly similar timescale. This change is being led by broadband and phone companies, but we (and Government) also are playing a role in monitoring the implementation of the change, to support our objective of helping to ensure customers experience minimal disruption.²¹
- 2.30 Given the similar timescales between the switch off of the traditional telephony networks and the 3G switch-off in particular, and that a number of service providers impacted by IP migration may look to mobile solutions as an alternative, we will be closely monitoring the interactions between these programmes of work, and making sure that awareness raising across both areas of work is consistent and joined-up.

Government's role

- 2.31 The Government has a key role to play in helping to ensure that the sectors that rely on 2G/3G connectivity for their services, including the health, energy and transport sectors, are aware of the change and prepare accordingly. It is working with Ofcom and network operators to ensure a smooth transition that meets the needs of business users and consumers, including vulnerable groups.
- 2.32 In particular the Government is giving consideration to the requirements of key services ahead of switch-off, including eCall and smart meters. We will continue to work with and

²¹ Ofcom, [The future of fixed telephone services](#), February 2019. See also our consumer guide: [Upgrading landlines to digital technology – what you need to know - Ofcom](#).

support DCMS, and governments in the devolved nations, with the cross-departmental engagement that is required.

3. Our expectations of mobile providers

- 3.1 In this section we set out how we expect mobile providers to ensure that the switch-off of 2G and 3G networks runs smoothly. These expectations relate to:
- a) minimising the impact on coverage;
 - b) communicating with, and providing support to, affected customers; and
 - c) raising awareness with those providing other devices that may rely on MNOs networks.
- 3.2 We first detail the relevant regulatory environment that mobile providers must take into account before setting out our additional expectations of providers.

Relevant regulatory obligations and commitments

- 3.3 There are a number of Ofcom rules²² and consumer law provisions,²³ which are relevant to the process of switching-off 2G/3G networks. These fall into three main areas:
- transparency of contract terms and giving customers a right to exit their contract without penalty if their contracts are modified (General Condition C1 and relevant consumer law);
 - the treatment of vulnerable customers (General Condition C5); and
 - access to emergency services (General Condition A3).
- 3.4 We discuss each of these below. In addition, all the MNOs, and some MVNOs, have signed up to our voluntary Fairness for Customers commitments and we also set out how these are relevant in the context of 2G/3G switch-off.

Transparency of contracts and customer rights to exit

- 3.5 Under our rules, when a customer is signing up to a new contract (and before the customer agrees to that contract, i.e. is bound by that contract), mobile providers are required to give customers a detailed set of contract information, as well as a short summary document with key information about the contract.²⁴ This information needs to include a description of the services offered.
- 3.6 We consider that, to help ensure customers have the information they need to make informed decisions about their service (particularly those customers who are using older or non-VoLTE capable handsets), it will be important for the contract information and summary to explain:

²² Ofcom, [General Conditions of Entitlement - Ofcom](#).

²³ Including the [Consumer Rights Act 2015](#), the [Consumer Protection from Unfair Trading Regulations 2008](#) and the [Consumer Contracts \(Information, Cancellation and Additional Charges\) Regulations 2013](#).

²⁴ See General Conditions C1.3-C1.7 in particular, and our associated guidance on these rules: [Ofcom's guidance under General Condition C1 – contract requirements \(June 2022\)](#).

- a) the date at which the service will no longer function on the 2G and/or 3G networks (where known); and
 - b) that the customer will need a 4G VoLTE capable handset to be able to use all their services from that date.
- 3.7 We consider the inclusion of this information would be helpful in the lead up to the relevant switch-off dates and up until the point when all 2G/3G network switch-offs are complete (across all MNOs).
- 3.8 Relevant consumer law contains similar requirements about providing customers with material information before they purchase a service, as well as ensuring that the information they provide is accurate and does not mislead the customer – these laws also apply to device retailers (who are not covered by specific Ofcom rules if they are selling devices on a standalone basis, i.e. without an associated airtime service, such as a SIM). When customers are purchasing a new device which is only 3G capable (or in future only 2G capable), we consider that it will be important for those selling the device to indicate that those devices will not work on all MNO networks in future (i.e. from 2024 onwards for 3G) to ensure customers are not misled.²⁵ As discussed in section 2, most mobile providers have stopped selling 3G-only devices, but some are still being sold.
- 3.9 Mobile providers are also required to give customers at least one month’s notice of any modifications to their contractual terms that are not to the customer’s benefit. If the contractual change goes beyond what the customer agreed to when they signed up, the provider should allow the customer to exit the contract without penalty (such as early termination charges) if they wish to do so.²⁶
- 3.10 Mobile providers who have not already informed customers at the point of sale about 2G/3G switch-off (as set out in paragraph 3.6 above) will therefore need to notify customers who will be impacted by the 2G/3G switch-off, setting out the likely impact it will have on them. This may also involve providing any customers who are still be within their minimum contract period with the right to exit their contract penalty-free if it is a contractual change that was not made clear at the point when the customer signed up.

Treatment of vulnerable customers

- 3.11 Our rules require mobile providers to put in place policies and procedures to support vulnerable customers,²⁷ to take all measures required to meet the needs of users with disabilities, and to provide communications in accessible formats for customers with

²⁵ For example, see provisions 9 and 10 of the Consumer Contract (Information, Cancellation and Additional Charges) Regulations 2013, and also parts 5 and 6 of the Consumer Protection from Unfair Trading Regulations 2008.

²⁶ See General Conditions C1.14-C1.20, and our associated guidance.

²⁷ In our [Treating Vulnerable Customers Fairly](#) document we note that anybody can face circumstances that lead to them becoming vulnerable - temporarily or permanently. This might include physical or mental health problems, specific characteristics such as age or literacy skills, or changes in personal circumstances such as bereavement, job loss or changes in household income. We also note that organisations use a range of different terminologies and some people might not like to be labelled as a vulnerable customer. However, the term is well-recognised among communications providers and allows us to discuss the topic openly and clearly, so we can seek improvements for customers in the communications sector.

specific needs (for example in large print or Braille).²⁸ Given that there may be a number of customers in vulnerable circumstances who will be impacted by 2G/3G switch-off, it will be important for mobile providers to ensure that these policies and procedures are adhered to, and that customers with specific accessibility needs receive any communications about the switch-off of their services in a format that meets their needs.

- 3.12 Alongside these rules, we have also published a guide²⁹ which suggests practical measures that providers could adopt to help make sure they are treating vulnerable customers fairly. We expect mobile providers to take particular account of the best practice set out in this guide in their approach to 2G/3G switch-off.
- 3.13 In particular, some of the measures set out in the guide which are likely to be relevant in making sure that vulnerable people receive a high level of customer care to help them through the switch-off of 2G/3G services, include:
- i) taking an inclusive approach to who may be considered vulnerable during this process;
 - ii) offering customers a wide range of communication channels (and taking account of a customer's preferred communication channel);
 - iii) ensuring that key written communications are clear and use plain English - information provided on their websites should be easy to understand and navigate;
 - iv) offering direct contact to specialist teams or members of staff;
 - v) monitoring how they are performing in responding to vulnerable customers' needs; and
 - vi) working with consumer bodies and charities when developing their approach to switch-off.

Access to emergency services

- 3.14 All mobile providers offering voice services are required to ensure they offer uninterrupted access to emergency organisations under our rules.³⁰ As part of meeting these obligations, there are longstanding arrangements in place which mean that when making an emergency call, a mobile handset will be able to use any MNO network that is available, even if the user is not a customer of that MNO.
- 3.15 Our rules also require mobile providers to provide end-users with hearing or speech impairments with mobile SMS access to emergency services³¹ as well as providing access to an emergency video relay service.³²

²⁸ See General Conditions C5.1-C5.16.

²⁹ Ofcom, [Treating Vulnerable Consumers Fairly](#).

³⁰ General Condition A3.2.

³¹ General Condition C5.10.

³² General Condition C5.11-C5.12.

- 3.16 We have also published guidance on how providers can ensure they meet their obligations to offer uninterrupted access to emergency services from fixed telephony services in the event of a power cut (given that following the migration to voice over IP services, fixed voice lines will not function without a power source).³³ That guidance recognises that mobile solutions may be offered as an option for customers who need an alternative to their landline for contacting emergency services in the event of a power cut. It will therefore be important going forward for any mobile solutions offered to be at least 4G based, with customers having access to a 4G signal in their area.
- 3.17 In the short-term, emergency calls and SMS can continue to use the 2G networks when the 3G networks are switched off. However, the emergency video relay service requires a data connection and therefore customers will need to ensure they have at least a 4G-capable phone to be able to continue to access this service after 3G switch-off. It will therefore be important for relevant users of this service to be made aware of this.³⁴
- 3.18 Longer term ahead of 2G switch-off the use of emergency communications via 4G VoLTE, and the ability to roam onto another network using VoLTE when making emergency calls, will become necessary to ensure the MNOs continue to meet their obligations to provide uninterrupted access to the emergency services. Two MNOs already support emergency calling via VoLTE³⁵ - the other two MNOs have confirmed this will be in place ahead of switch-off, and all MNOs have confirmed that the ability for emergency calls to roam onto another network via VoLTE will also be in place ahead of switch-off.
- 3.19 We will continue to monitor the MNOs progress in implementing emergency VoLTE calls and roaming. We already report on this as part of our annual Connected Nations publications.³⁶ The requirement for continued access to the emergency services also highlights the importance of ensuring that existing coverage levels are maintained (as discussed further below).
- 3.20 As part of meeting their obligations to ensure uninterrupted access to emergency services, we also expect mobile providers to continue to work with roaming partners to agree VoLTE arrangements that will allow people visiting the UK from another country (and using a SIM registered in another country) to access emergency calls when they are in the UK.

Fairness commitments

- 3.21 In 2019, all the MNOs, and a number of MVNOs, committed to putting fairness at the heart of their business and going beyond their legal obligations for how they treat their customers by signing up to our Fairness for Customers commitments.³⁷ We consider that some of these commitments are relevant in the context of 2G/3G switch-off and

³³ Ofcom, [Protecting access to emergency organisations when there is a power cut at the customer's premises](#), October 2018.

³⁴ We expect most users of this service are likely to already have a 4G-capable phone as there may be performance issues with relying on 3G only given its lower data speeds.

³⁵ See pp. 38-39 of the [2022 UK Connected Nations report](#).

³⁶ [Connected Nations and infrastructure reports - Ofcom](#).

³⁷ [Fairness for Customers - Ofcom](#). In addition to EE, O2, Three and Vodafone, other mobile provider signatories include GiffGaff, Sky and Tesco Mobile.

signatories should therefore be taking account of these commitments as part of their approach. In particular, the commitments which are likely to be relevant include:

- a) customers get a fair deal, which is right for their needs (commitment 1);
- b) customers get the support they need when their circumstances make them vulnerable (commitment 2); and
- c) customers are supported to make well-informed decisions with clear information about their options before, during and at the end of their contract (commitment 3).

3.22 We set out in more detail below our expectations for how mobile providers can ensure customers are treated fairly, and we consider that signatories should be meeting these expectations as part of fulfilling their promises under the Fairness for Customers commitments.

Ofcom's additional expectations of providers

Coverage

- 3.23 Customers increasingly rely on mobile as their only source of connectivity – including for access to emergency communications. We want to ensure that any risk of customers losing access to their services because of changes to coverage resulting from 2G/3G switch-off is minimised as much as possible. This is particularly important where there may be critical services, such as telecare, which are reliant on mobile connectivity and coverage.
- 3.24 EE, Three and Vodafone have already made it clear to us that they plan to offer broadly the same level of coverage via their 4G networks as they currently offer on their 2G and 3G networks. Three, for example, has committed that by the time 3G switch-off happens, it will have enabled 4G in any areas that are currently 3G-only.³⁸ We welcome these commitments and we note that these MNOs have already assessed their networks in terms of coverage and have identified only a relatively small number of sites that are 3G-only and will require 4G coverage upgrades ahead of switch-off. VM-O2 has not yet set a date for its 3G switch-off and it has therefore not yet carried out any detailed analysis of coverage impacts. We expect it to offer a similar commitment to ensure broadly similar coverage levels after switch-off once its plans have progressed.
- 3.25 In addition, as noted in section 2, the MNOs have already made commitments to further improve 4G coverage in rural areas due to the Shared Rural Network.³⁹ This joint initiative between the UK Government and the four MNOs will deliver 4G coverage to 95% of the UK landmass by 2025. The improved coverage will help further reduce the number of areas in the UK that do not have access to mobile services.
- 3.26 MNOs are also aware of the potential increase in voice traffic on the 2G network resulting from the 3G switch-off. Whilst we expect a significant proportion of traffic to move to 4G VoLTE, we encourage MNOs to ensure that there are minimal congestion issues on the 2G

³⁸ Three, [Our plans to switch off 3G](#).

³⁹ See the [Shared Rural Network](#) website for more details.

network when 3G is switched off so that any customers who have not yet upgraded their devices do not experience any degradation in their services.

3.27 Finally, customers should be clear when services will no longer be available so in addition to providing the contractual information set out above, this should also be clear on mobile providers' coverage checkers.

3.28 In summary, we expect MNOs to:

Coverage

- **undertake detailed analysis of potential coverage impacts** ahead of switch-off and take this into account as part of their switch-off planning processes (e.g. only switching off in a particular area once coverage in that area has been upgraded to 4G);
- **meet their commitments to deliver the same level of coverage via 4G** to ensure that customers do not experience any reduction in coverage and access to their services;
- **ensure that their 2G networks have sufficient capacity** to handle the additional traffic that is likely to be generated after 3G switch-off; and
- **ensure that online coverage checkers are updated with expected switch-off dates** in different areas.

Communicating with, and providing support to, affected customers

3.29 All mobile providers, regardless of whether or not they operate their own network, will need to communicate and provide support to their affected customers ahead of, and during, switch-off.

3.30 As well as adhering to their obligations in terms of transparency of contracts and customers' right to exit as mentioned above, we expect providers to use clear and simple language to help ensure customers understand the implications of the switch-off. In particular it will need to be clear to customers what action they need to take, what will happen if they do not take action (i.e. what services they will lose access to) and the different options available to them).

3.31 We also expect mobile providers to communicate with customers sufficiently far in advance of switch-off so that customers have time to make informed choices about upgrading their devices. In the case of customers that will need a new mobile handset, we consider that at least three months notice is likely to be needed so that customers have time to review the available handset options and can obtain one. It may also be helpful for providers to inform these customers up to six months in advance, so that, even if customers do not take action immediately, they can plan ahead to replace their handset at a time that suits their circumstances.

3.32 Whilst providers are likely to use text messages as the primary method for communicating with customers (and for unregistered PAYG users this will be the only method available for direct contact), we consider that using as wide a range of methods as possible will be important to improve customer engagement. As set out above, it will also be important for mobile providers to take account of individual customer needs and preferences where

appropriate (and in accordance with their obligations in our rules relating to vulnerable customers).

- 3.33 Some of the affected customer groups may be more difficult to engage (for example those relying on unregistered PAYG devices), so we encourage providers to look at alternative options for raising awareness with these groups. This might include partnering with relevant charity groups or local bodies in affected areas.
- 3.34 We also want to make sure that vulnerable customers, including those that might be financially vulnerable, are given extra support to help them through the process. In addition to the measures set out in our vulnerability guide, we also consider providers should aim to ensure that customers experience minimal financial impact as a result of having to purchase a new device or package. There are a number of affordable 4G handset options available, including some non-smart (or 'dumb') phones from as little as £10, and smartphones from £40. We expect providers to make customers aware that such options are available, and ensure they provide appropriate advice on handsets suitable for their needs, as well as sign-posting other options for purchasing affordable devices, such as second-hand or refurbished handsets. It may also be appropriate for providers to offer discounts on handsets.
- 3.35 It is also important for customers to understand how 2G and 3G switch-offs happening in other countries may impact on their roaming experience when travelling, particularly for those on older devices or which are not yet VoLTE-enabled. This may require communicating directly with customers who are more likely to be directly impacted (i.e. those who are regular travellers to relevant destinations).
- 3.36 MVNOs will be reliant on information from their MNO partner about timings and process involved with switch-off, and it will therefore be important for MNOs to have close engagement with their MVNO partners to share information about timings and affected areas, and for this to continue throughout the lead-up to switch-off.
- 3.37 In summary, we expect MNOs to:

Supporting affected customers

- **give customers adequate notice of the changes:** affected customers will need enough time to acquire and configure new handsets. We consider providing three to six months' notice would be good practice.
- **ensure all communications are simple and clear, with information about the actions the customer needs to take and their options:** customers need to understand what will happen if they do not take action and the specific steps they need to take to maintain access to their services.
- **use a range of communication methods:** providers should use a format that reflects the needs of customers and send increasingly regular reminders as switch-off gets closer. Information should also be easily accessible on their websites.
- **provide extra help to customers that need it, particularly those who may be struggling financially:** providers should follow the best practice in our vulnerability guide. Customers in financial difficulties should also be given additional support to help them replace their handsets, in particular signposting to affordable options and potentially offering discounts.
- **provide information to customers about the impact of international switch-offs on roaming:** this may include communicating directly with customers more likely to travel to affected destinations.

Other services that rely on mobile networks

- 3.38 As discussed in section 2, there are a range of other types of devices which also may rely on the 3G or 2G network for connectivity (e.g. IoT-type devices such as ATMs or telecare services).
- 3.39 For these types of customers, clear communication and adequate notice will also be important. We consider in particular that these types of customers are likely to need a longer period of notice about the switch-off, as they will need time to find and source suitable 4G-capable devices and in some cases may need to physically replace installed equipment. Many of these types of devices can continue to work on the 2G network, so 3G switch-off may have less of an impact. We therefore consider that around 12 months' notice for 3G switch-off is likely to be needed for these customers, whereas for 2G switch-off a much longer period (e.g. several years) may be necessary given the lead times and supply chains potentially involved in updating or replacing affected devices. Giving as much detail to these types of customers about timings and locations of switch-off will help them plan in advance and avoid disruption to services.
- 3.40 There are also a number of third-party services using roaming SIMs for other types of services and devices which will be impacted by 2G/3G switch-off and customers using these services also need to be made aware of the steps they need to take.
- 3.41 We recognise that MNOs are not necessarily able to easily identify these services, given they are not their direct customers and the SIMs being used may have been supplied by international partners (often involving a series of intermediaries as part of the supply chain). We have been working with MNOs to look at alternative ways they could use their

available data to help identify these users. We will also engage with other relevant stakeholder groups, such as industry bodies representing the relevant services offered using roaming SIMs (e.g. ATM and payment terminals), to help raise awareness. We consider it is important for MNOs, and other suppliers of mobile services (for example UK suppliers of roaming SIMs) to work closely with us to ensure that services are not disrupted – this is particularly important where these SIMs are used for critical services such as telecare.

3.42 To help minimise disruption for these services, and reduce the likelihood of unexpected consequences, we consider it will be important for MNOs either to trial switch-off in specific areas first, or at least to assess the impact of switch-offs in specific areas before moving ahead to wider switch-off across the whole of the UK.⁴⁰ As noted earlier, Vodafone is starting its 3G switch-off in the Plymouth and Basingstoke areas first.

3.43 In summary we expect mobile providers to:

Other devices and services

- **give customers using other types of devices adequate notice:** these customers will need sufficient time to find suitable 4G capable devices and therefore up to 12 months notice may be needed for 3G switch-off, whereas several years may be needed for 2G switch-off.
- **give adequate notice of switch-off plans to international partners** to help ensure there is enough time for this to be passed on to UK services that may be reliant on international roaming SIMs. For 3G switch-off, we consider at least twelve months' notice would be good practice, whereas for 2G switch-off a longer period might be needed;
- **make every effort to identify affected devices using roaming SIMs and contact relevant industry groups where possible,** working with international partners and/or relevant UK suppliers, as well as sharing knowledge and information about any identified affected services with Ofcom and through industry working groups (where appropriate); and
- **carefully evaluate and assess results of switch-off trials, or localised switch-offs, before moving ahead with wider UK switch-offs:** this should include close engagement with relevant local bodies to ensure all impacts have been taken into account, with appropriate mitigations being put in place for any identified issues before proceeding with wider switch-offs.

⁴⁰ Area-based switch-offs have similarly been used for the migration of fixed voice services to IP.