OFFICIAL REPORT
AITHISG OIFIGEIL

# Rural Economy and Connectivity Committee

**Wednesday 3 April 2019**

Session 5

The Scottish Parliament
Pàrlamaid na h-Alba

# Wednesday 3 April 2019

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## RURAL ECONOMY AND CONNECTIVITY COMMITTEE

**12th Meeting 2019, Session 5**

**CONVENER**

*Edward Mountain (Highlands and Islands) (Con)

**DEPUTY CONVENER**

*Gail Ross (Caithness, Sutherland and Ross) (SNP)

**COMMITTEE MEMBERS**

*Peter Chapman (North East Scotland) (Con)
*John Finnie (Highlands and Islands) (Green)
*Jamie Greene (West Scotland) (Con)
*Richard Lyle (Uddingston and Bellshill) (SNP)
*John Mason (Glasgow Shettleston) (SNP)
*Mike Rumbles (North East Scotland) (LD)
*Colin Smyth (South Scotland) (Lab)
*Stewart Stevenson (Banffshire and Buchan Coast) (SNP)
*Maureen Watt (Aberdeen South and North Kincardine) (SNP)

*attended

**THE FOLLOWING ALSO PARTICIPATED:**

Mansoor Hanif (Ofcom)
Glenn Preston (Ofcom)
Jonathan Ruff (Ofcom)

**CLERK TO THE COMMITTEE**

Steve Farrell

**LOCATION**

The Mary Fairfax Somerville Room (CR2)

# Scottish Parliament

## Rural Economy and Connectivity Committee

*Wednesday 3 April 2019*

*[The Convener opened the meeting at 10:01]*

## Decision on Taking Business in Private

**The Convener (Edward Mountain):** Good morning, everyone, and welcome to the committee's 12th meeting in 2019. I ask everyone present to ensure that their mobile phones are turned to silent. No apologies have been received.

Agenda item 1 is a decision on taking business in private. Does the committee agree to take in private item 4, which is a discussion of the committee's future work programme?

**Members** *indicated agreement.*

## Ofcom

10:02

**The Convener:** Item 2 is evidence from Ofcom on "Ofcom's Annual Plan: Our programme of work for 2019/20", its "Connected Nations 2018: Scotland report" and other issues relating to superfast broadband and mobile phone connectivity in Scotland. I welcome Glenn Preston, who is Ofcom's director in Scotland; Jonathan Ruff, who is Ofcom's regulatory affairs manager in Scotland; and Mansoor Hanif, who is chief technology officer at Ofcom.

Glenn Preston, would you like to make a short opening statement of no more than three minutes? If you do not want to, we can go straight to questions from the committee.

**Glenn Preston (Ofcom):** I am happy to do the three minutes. Thank you for the opportunity to talk to the committee about our annual plan and our "Connected Nations" report. I was about to introduce my colleagues, but the convener has done that for me, so thank you.

I will briefly highlight to the committee some important aspects from both documents. The final version of the annual plan was published last week, and we have circulated it to the committee.

The "Connected Nations" report, which we published in December 2018, shows that although there have been significant improvements in recent years, we are still concerned that too many people in rural areas of Scotland experience slow broadband speeds and poor geographic mobile coverage. We expect to publish an interim update to the data in the coming weeks, but I am happy to share the latest data with the committee this morning. It shows that 92 per cent of premises in Scotland have superfast coverage, with 66 per cent of rural areas covered. There has been an incremental increase on the rural side. On mobile, 41 per cent of Scotland's landmass has 4G geographic coverage from all four operators. However, it is worth adding that that rises to 78 per cent for at least one operator. I know that that area has been of interest to the committee in the past.

The annual plan sets out our priorities for this financial year. It follows a public consultation on a draft plan, which closed on 8 February. Events were held around the United Kingdom, including in our Edinburgh office, where we had around 40 people in attendance from across the sectors that Ofcom regulates. The event was facilitated by the Ofcom board member for Scotland, who was able to provide direct feedback to the Ofcom board about what stakeholders in Scotland have told us

we should be delivering for citizens and consumers.

It is worth saying that the annex to the plan sets out how we have taken into account written and oral representations, including from the Scottish Government, Citizens Advice Scotland, Which? and academics in Scotland. Among other things, the consultation covered opening up spectrum access and its allocation, and price differentiation for broadband packages.

The final plan takes into account our statutory duties, developments in the markets that we regulate and our own strategic priorities. The main themes are similar to those that we discussed when we were in front of you in February last year: we still want better broadband and mobile services for all, and we are still looking to protect consumers from harmful pricing practices.

We are continuing to innovate our approach to regulation to get better outcomes for people and businesses in Scotland and across the rest of the UK. We have shared with the committee our access report, which was published in the past few days and which we might touch on later.

I am very pleased to report some significant progress after our last appearance before the committee. During that session, Mr Lyle raised concerns about the cost of calling directory inquiries services. On Monday, we introduced new rules that will protect callers by capping 118 prices, and that move will significantly cut the cost of many calls, bringing them back to 2012 levels. I commend Mr Lyle's press release on this matter to other committee members, if they have not seen it.

Moreover, as of 1 April, broadband and land-line customers will automatically get money back from their providers for delayed repairs or installations or missed engineer appointments. We have calculated that, as a result of that new scheme, customers across the UK could benefit from around £142 million in payments. That figure has not been disaggregated for Scotland, but we think that the amount for Scotland will be significant.

It is also worth drawing the committee's attention to our boost your broadband campaign, which aims to help people identify the fixed broadband services that are available to them and to get better value from their broadband deals. Despite superfast broadband being available to more than nine in 10 Scottish premises and momentum building behind full-fibre broadband, our data shows that people are often not on the fastest service in their area. We recognise that in certain parts of Scotland, there is an issue with limited competition and, therefore, limited consumer choice, but we are encouraging people to check what broadband they need and what is available in their area and to speak to their provider—or, where it is possible for them to do so, shop around—to make sure that they are on the best deal.

Obviously, our "Connected Nations" report and our annual plan are the main focus of today's evidence-taking session, but I know from our previous sessions that members will have a wide range of questions about connectivity, including in Scotland's rural and remote areas. We will be very happy to pick up any questions in the session.

Thank you very much, convener.

**The Convener:** Thank you for that. As Richard Lyle got the first mention this morning, he can have the first question, too.

**Richard Lyle (Uddingston and Bellshill) (SNP):** Good morning, gentlemen. First, I must thank you for resolving the problem that I raised with you last year. As Mr Preston has said, Ofcom announced on Monday a price cap on 118 calls, as a result of a request made by the committee and me last year. On behalf of consumers, I thank you.

Now for my next request. [*Laughter.*] Will Ofcom assess the fairness of pricing differentials for consumers, and how will that be linked back to contract status and length of tenure?

**Jonathan Ruff (Ofcom):** Good morning, committee, and thank you for that question, Mr Lyle. As we say in our annual plan, we have just launched our review of pricing practices in broadband services, focusing in particular on vulnerable consumers. In that review, we will look at length of contracts and the experience of people who have been on contracts for a long time and have encountered what is called a loyalty penalty. As the committee will be aware, Citizens Advice has lodged a super-complaint with the Competition and Markets Authority on that matter.

We will be looking specifically at end-of-contract notifications for fixed broadband and mobile services that are designed to prompt people who are reaching the end of their contract to shop around for the best deal available. The idea behind that is that competition is good for increased choice, lower prices and innovation, and consumers who are coming to the end of their contract, particularly those who might have been less engaged with markets in the past, will be prompted to look around for the best deal. We would encourage people in such a position to approach their provider and ask for a discount, because we have found that to be one of the best ways of getting a reduction in what they pay monthly.

**Richard Lyle:** Yes, if people are paying too much, they need to shop around. I do not often hear people asking for a discount nowadays, but

they should do. Ofcom has teeth, and I know that it is using its teeth to ensure that consumers get a fair deal.

What level of competition exists in the physical infrastructure market? How concentrated is that in urban settings? How is Ofcom incentivising competition in rural locations, particularly in Scotland?

**Jonathan Ruff:** Ofcom's goal is to encourage long-term significant investment in new networks; to give consumers the choice to switch between those networks, where that is feasible—I note Glenn Preston's comments about the limited scope for competition in rural areas—and to allow the companies that are making those investments to get a fair return.

We are more likely to see regulation varying by geography, to take account of the different levels of competition across Scotland. That takes three forms. One form is having competitive areas and putting in place measures to support competition in network build. We want companies and providers to build competing networks, but we recognise that doing that will not always be possible in Scotland, so we might have to look at how we can support different commercial models here.

There are things that we will do where there is less competition or fewer prospects for completion. One action is to open up Openreach ducts and poles, to allow other operators to get access to the existing infrastructure. We are proposing to allow Openreach to recover the costs of roll-out in uncompetitive areas by spreading the cost among consumers in an area. That is similar to our regulated asset-based model. Where there are fewer prospects for mobile competition, we have consulted on what to do and, for Scotland, we are proposing a 74 per cent coverage obligation across the geographic landmass. Those are just a couple of measures that we are putting in place where there are fewer prospects for completion.

On the physical infrastructure access point, you might have seen that we launched a proposal last week on conducting future market assessments by geography. That approach, which we have not taken in the past, is really important, and one that I think would bring benefits to consumers in Scotland who might not have been able to get the benefits from competition that are possible for those in more densely populated parts of the UK.

**Jamie Greene (West Scotland) (Con):** Good morning, panel. I will follow on from the opening line of questioning on consumer choice. Given that many broadband and mobile packages are bundled together with other entertainment services, what work is Ofcom doing to make it easier for consumers to switch between providers in the same way as has happened in other industries that have seen a marked shift in provision? For example, the Office of Gas and Electricity Markets has done a lot of work to ensure that customers can easily switch between providers. Are we seeing a shift in the amount of people who are switching providers in the telecommunications sector? Is the situation stagnant? Are people finding it difficult to switch between one provider and another?

**Jonathan Ruff:** I am sorry, but I do not have the data on switching levels to hand. Perhaps we could provide that to the committee afterwards.

On your question about bundled services, you may be aware that Ofcom has an enhanced broadband speed code of practice. The code includes a provision—I am sure that we will touch on this later—to allow customers to exit their contract without penalty if they are not being provided with the speeds that were promised to them. The code has been enhanced recently, to extend its coverage to all bundled services. One of the main obstacles to switching is if there is an issue that affects, for example, broadband, but not the other parts of a person's service, such as pay TV and land-line telephone. That is just one small change that we have made on broadband, to—

**Jamie Greene:** Sorry, but can I pick you up on that point? That gets the nub of the issue. Take, for example, a person who is with a provider that provides multiple services. The person is unhappy with one element—it may be the television provision, the internet speed or the mobile aspect—but they do not want to switch because doing so would mean that they lose all the other services. How do you address one element of a package when a person is in a contract that encompasses all the services? What protections are there for people in that regard?

10:15

**Jonathan Ruff:** We do not regulate pay TV in the way that we regulate fixed, mobile and broadband services. There are different protections in place for each of those aspects of the package, and you would have to look at them as a combined package. The protections that you have for specific elements of the package, particularly on broadband, apply to the whole package. That means that, if there is an issue with your broadband, you are able to exit your contract for that specific reason. I am not sure what you would do if you were happy with your pay TV service and other aspects of the package. I guess that you would have to weigh that up in terms of the offerings from other providers. However, there are specific protections for each element of your

bundled package; there is nothing that covers it as a whole.

**Stewart Stevenson (Banffshire and Buchan Coast) (SNP):** I have a question on the narrow issue of switching. If you split your packages across a number of suppliers, you end up paying a line rental to each of the suppliers, despite the fact that there is still only one physical line going into your premises. Is that a proper way for companies to conduct themselves? Should it not be only the prime contractor, which is delivering the physical connection, that makes a line rental charge?

**Jonathan Ruff:** I am not sure whether this addresses your specific question, but I can talk about the issue of there being only one line. A lot of older people have only a fixed land-line connection. In the past, they had effectively been subsidising consumers who were taking a broadband and land-line package, because the price of having a land line on its own was not much different from the price of having broadband and land-line connections. That disproportionately impacted on some older consumers who, for whatever reason, did not feel that they needed to have a broadband connection.

Last year, we proposed a cap on land-line-only services—I think that it was of around £5 or £7. That meant that people who had land-line-only services—

**Stewart Stevenson:** Forgive me, what you are saying is interesting, but it is not addressing the point that I am trying to make at all. Historically, I had my broadband through TalkTalk, and I paid a line rental to that company. My voice connection was done through BT, and I paid a line rental to it, as well. When I swapped from TalkTalk broadband to BT broadband, I eliminated the line rental from TalkTalk. Given that BT was always providing the physical connection, was it proper and fair that TalkTalk was charging line rental? I know from constituents that I was far from alone in having that experience. People are being driven to buy packages when they really may not wish to do so.

**Glenn Preston:** I am not sure that I have seen lots of evidence of people paying for the land line twice, which is effectively what you are saying. It would be helpful to pick up this issue in conversation afterwards, if we could.

**Stewart Stevenson:** We will do that.

**The Convener:** I think that it would be helpful to pick up that issue, but it would also be helpful for the committee to understand the problem. Once you have had that conversation, Mr Stevenson, perhaps you could let the committee know if you feel that there is something that needs to be addressed.

**Stewart Stevenson:** I will do so, convener.

**Gail Ross (Caithness, Sutherland and Ross) (SNP):** One of Ofcom's key actions involves moving towards the universal availability of high quality and secure communications networks and the designation of universal service providers. How will you determine which companies will be designated as universal service providers? Will companies be incentivised for that, or will it be linked to licensing?

**Jonathan Ruff:** As you might be aware, we have been consulting on two potential universal service providers: BT in the majority of the UK; and KCOM in the Hull region—for historical reasons KCOM is the main provider there. We had a consultation last year that was open to expressions of interest from anyone who wanted to be a universal service provider. We did not get the level of interest that we expected, but we have the powers to designate the universal service provider, which takes into account BT's market power, network reach and historical position as the incumbent operator.

**Gail Ross:** Has the industry highlighted to you any barriers to designating universal service providers?

**Jonathan Ruff:** Part of the reason why companies might not have been interested in being the universal service provider is that it is cost neutral to them. They are compensated for any costs that they incur in deploying the network to areas where it might not be economical, but they are not allowed to make a profit out of it. There might not have been a commercial case for other operators. They might not have seen any benefit, apart from the reputational impact of saying that they have delivered to those areas, but there is no commercial benefit to a company being the universal service provider. Based on Ofcom's powers, we are able to designate the provider if they meet certain criteria. In this case, BT had significant market power.

**Gail Ross:** How does having a universal service provider affect competition in the market? Perhaps Mansoor Hanif can also answer this question.

**Jonathan Ruff:** The universal service is there because of a lack of competition in areas and because it is uneconomical to roll the service out. It is more of a safety net; it is not to drive competition.

**Mansoor Hanif (Ofcom):** This universal service was for broadband and has a minimum service of 10 megabits per second—we feel that that is the absolute minimum that people should be getting—so the area is quite limited. We already have a universal service for voice, which is, surprise, surprise, BT and KCOM. The big blocker is that an operator must have the reach and scale to be credible and able to deliver a service everywhere

in the country. At the moment, unfortunately, that pool of companies is very limited.

**Stewart Stevenson:** Could you confirm that KCOM is the previous monopoly supplier in Hull, where it was parallel to the old BT?

**Jonathan Ruff:** That is correct.

**Gail Ross:** Another key action is to aim for universal mobile coverage. Other members will ask about 4G, but we are still having massive problems getting any mobile signal in big rural areas. Aside from the planned statement on your spectrum-based solutions for rural mobile coverage, what other technologies is Ofcom exploring?

**Mansoor Hanif:** That is a great question. Universal mobile coverage is very hard to solve. Many people, including me in my old roles at BT and EE, have tried hard to push out more coverage. The reality is that it is improving, but not fast enough, and demands are increasing. As a country, we share the Government's ambitions to have universal mobile coverage. The Government has set a target of 95 per cent geographic coverage, which is a revolution in the way in which we measure coverage—before, we targeted coverage only to where people live, which is houses.

That is a big challenge, so we believe that there must be a stepped approach. We will use the on-going spectrum auction as a first step to get as far as we can. We have set reasonable targets and several operators have two-coverage obligations, because we need to have choice. It is no good just having one operator—we need more than one.

We can get a certain distance that way and we will see where we land. It includes an obligation to build at least 500 masts each—we hope that quite a few will be in Scotland, where they are needed very much—and will also cover partial not-spots where indoor coverage is not good.

We will not get to the 95 per cent, so the next thing would be to see what the gap is between where we are and full coverage—as 95 per cent geographic coverage is equivalent to everywhere.

A lot of the areas that are not covered are national parks, such as the Cairngorms national park, and mountains. I flew over the mountains yesterday and saw what a challenge there is. That can be cracked, but only through innovation.

I will give examples of two or three technologies that we could look at. There are new 5G technologies that allow for beamforming. That uses a higher-frequency spectrum and smaller antennas, but more of them are put together on a single box, which means that coverage can be targeted in a much more precise way. We could trial that approach on existing broadcast towers, because there are lots of 1,000 feet towers for broadcasting in Scotland. Operators use them, but on average they install at only 30m on the towers, because the old technology meant that the right antenna type had to be chosen, and things get really hard above 30m. The new system allows flexibility so that the coverage can be targeted for every single user. That is totally revolutionary and we are pushing the Government to trial that approach later this year, especially in Scotland, where antennas can be put on the existing broadcast towers to see whether we can get much more efficiency. That is one technology.

A revolution is going on in low-earth orbit satellite technologies. At least two global consortia are rolling out those technologies in the next few years. We had a look at them for the USO, but they were not mature enough at the time. We think that they will be mature enough to some extent in the next two to three years. We will need to keep a close eye on whether the satellites will fly over Scotland; we hope that they will. They fly at 500km rather than the tens of thousands of kilometres that the existing satellites fly at, which means that they can connect directly to mobile devices.

The third example is device technology, which is used in the emergency services. If the police are out of coverage, they can hop from one phone to another phone and back to the network. We think that there is scope to do that in places such as the national parks. The biggest issue relating to the national parks is that nobody really wants to build thousands of ugly towers in them, and that is a challenge if we really want universal coverage. If there are smarter ways of achieving that through innovation, we should consider them.

The final issue relates to communities. The biggest issue in getting a model that gives return on investment is the cost of running the infrastructure. If there are communities out there—especially in Scotland—that think that they have a solution that they can use to lower the cost of running the networks and meet a certain level of reliability, the operators have a lot of appetite to speak to them. We can facilitate those discussions to try to get something that works for everybody.

**Maureen Watt (Aberdeen South and North Kincardine) (SNP):** Where are you with national roaming? I think that that was alluded in the recent consultation on the 700 megahertz band. You say that your work is not about raising money, but why cannot you open up the spectrum to anybody and everybody, accept lower receipts and therefore allow higher coverage?

**Mansoor Hanif:** If you look at the "Connected Nations" update, you will see that we are currently reporting on places where there are all four operators, which is the worst-case scenario. As I have said, we want people to have choice, so

there should be more than one operator, but all four are not necessarily needed. We do not want to discourage investment—the same applies to fibre.

The environment is competitive. One operator is pushing out across the country and is slightly ahead, two operators are not that far behind, and one operator simply has no interest in rural areas. If an obligation for mobile roaming is put in, people will be disincentivised from building networks. The situation is very similar to the fibre situation. We need to get a balance. There should be incentivisation to build networks and, where that cannot work, we should be open to forms of sharing or roaming.

We have had a look at the issue of roaming several times, and we think that a roaming obligation would disincentivise investment in rural areas in places such as Scotland in particular, so that is not the right way. If the coverage obligation that we are putting in and the other innovation levers do not deliver in the medium term, we can always go back to that. We have not excluded that.

10:30

However, we think that rather than having a roaming obligation, voluntary roaming should be very much more in vogue because, as I mentioned before, it is about roaming not just between operators but local community networks such as the fixed wireless networks that are run in many places in Scotland or community radio networks or community internet of things networks. We would like to allow better roaming on a voluntary basis, because we think that that is in the interests of the operators and the local communities. It is much better to look at those models now rather than providing an obligation that would disincentivise people to invest.

**Gail Ross:** You mentioned the emergency services network. The contract for that was given to EE quite a while ago, but I know that masts have been put up that are still not live. When is the whole system due to go live?

**Mansoor Hanif:** We are very close to that point. That was one of my projects when I was with EE. There are masts going up every day. Sometimes, it takes a long time to do the groundwork and then you remove the block and they will work. The programme is complex and I cannot go into all the detail. It is managed by the Home Office.

Masts are being put up around Scotland every single day. It is the biggest mast build that we have had in the past 15 years. In a lot of the areas around the Highlands and Islands, there was a lack of road coverage in particular. I know that road coverage is a sensitive issue, but thanks to this scheme, a lot of the roads are being covered because the roads are the main targets for the emergency services.

EE is building several hundred towers as part of that scheme but the most remote areas fall under a separate contract, where the Home Office is building the masts. Those have been slightly delayed but they are also coming on air. When we looked at the coverage obligation, we looked at the current status. Where there was credible evidence of progress, we took that into account but not where it was still uncertain. We now have the consultation responses back so we will have another look to see what real progress has been made.

The overall programme launch has been delayed by about two years, I think. It is a staggered transition over three to four years and, unfortunately, Scotland comes towards the end of that transition. That is the overall programme for emergency services; it is also linked to the core network that is being built.

However, in the meantime, the physical masts are coming on air all the time so there should be benefits. For example, just in the past four months, there has been a 3 per cent geographic increase. That is about 2,500km$^2$ in the past four months in Scotland alone, so things are moving ahead. It takes a bit of time before people notice a difference with their phones.

**The Convener:** The next question relates to protecting consumers from harm. A TBEST scheme to assess whether businesses are capable of countering penetration to their systems was to be rolled out early this year. Can you give the committee an update on how that is going?

**Mansoor Hanif:** I am happy to do that. The scheme is being run through my team. It is very new for us. For those who are not aware of it, the TBEST scheme is modelled on the extremely successful CBEST scheme, which is run by the Financial Conduct Authority for the banking and finance sectors. The scheme is based on threat-based, intelligence-led penetration testing to prevent successful attacks on banks and so on. Over the past three or four years it has been very effective, so the Government decided to expand the scheme to other sectors; TBEST is the telecoms scheme, which the Government has asked us to take over.

Last year, the Department for Digital, Culture, Media and Sport ran two pilots for the scheme, one with a fixed operator and the other with a mobile operator. We participated, but we did not lead on that work. We took the learnings and we have adapted the scheme for the telecoms sector to fit our duties and obligations under section 105 of the Communications Act 2003, on security and

resilience. In January this year, we took over, with the plan to kick off the scheme around March or April.

We plan to apply the scheme to all the large mobile and fixed operators. The current status is that the telecoms operators have all received a detailed questionnaire to allow us to build visibility around their approaches to security and resilience. We should have the responses within a few weeks.

Several large operators have volunteered to go first for penetration testing, because they take seriously the problem, which is difficult to solve 100 per cent. We have a list of operators that will do penetration testing, which will start in the summer and run for three to four months.

I make it clear that the scheme is voluntary, which means that the operators will pay for the testing. The fact that operators are volunteering is testament to the fact that they see value in the testing. That is positive, because it is important for everybody to take security and resilience seriously. The testing is moving ahead.

**The Convener:** Is there a way for consumers to know whether companies have been through the process? Can they automatically see a symbol that shows that such testing has been done? That would give consumers confidence.

**Mansoor Hanif:** That is a good question. We have not discussed having a badge or certification, but that is a good idea that we will look at. We will communicate further with the public and the Government on where we are with the scheme.

The one point that we will be sensitive about is not giving the impression that, because an operator has been through the scheme, it is immune. The reality of security threats is that they are continual and that there will never be a 100 per cent guarantee.

**The Convener:** Glenn Preston made Richard Lyle's day when call charges were capped; I am not ashamed to refer to that again, because it is a good result from the committee's work.

Last year, I pressed you on nuisance calls. I have not seen a drop in their number; I still see no drop-off in nuisance calls that cannot be traced or in nuisance contacts from companies that know—because, if they have been told once, they have been told 10 times—that we do not want their continued solicitations for business, whether that relates to smart meters, which seem to be the current topic, or anything else. What are you doing on nuisance calls? Will you address them and make my day next year by coming back to say that you have solved the issue?

**Jonathan Ruff:** Nuisance calls remain an important priority for us. With the Information Commissioner's Office—you might be aware that the issue is not just Ofcom's responsibility—we play an active role in tackling the problem.

You made a point about whether nuisance calls are reducing. There has been a 30 per cent year-on-year decrease in nuisance calls since 2015. I apologise if you are not feeling that, but we have information that suggests that about 500 million calls have been blocked since 2015. A lot of technical challenges are involved in how we block calls and deal with number spoofing.

Since 1 October 2018, we have had powers to remove phone numbers from people. That is a worthwhile addition to our toolkit for tackling the problem. We do not go into a lot of detail on nuisance calls in the plan, which does not explicitly mention them, but they are picked up through our on-going enforcement across the range of Ofcom's work, which we refer to. I reassure you that, although nuisance calls are not specifically in the plan, they remain a priority and there has been a year-on-year reduction, as I said.

**Mansoor Hanif:** We are also trying new technology. As people move more from traditional telephony to internet protocol-based internet services, the situation gets harder, because that makes it easier to spoof numbers. We have therefore announced that we are doing work on blockchain, which can allow us to better manage where numbers are allocated in the IP space. The first thing that we will do with that is put a lot of focus on help to stop nuisance calls, which come from IP spoofing, too.

**The Convener:** I hope that I will see the decrease next year; I have not seen it yet.

**Stewart Stevenson:** You gave us updated numbers for geographic coverage. If I wrote them down correctly, you said that 41 per cent of our landmass has 4G coverage from all operators and 78 per cent has coverage from at least one 4G operator. I am not impressed by the latter figure, because it means that, to exploit 4G, people must have multiple handsets, depending on where they are. At home, I have precisely zero G—I do not have 2G, 3G or 4G outside the house, far less inside it. Is it not perverse that we are seeing the target for coverage being reduced rather than increased?

**Jonathan Ruff:** Which target is being reduced?

**Stewart Stevenson:** Ofcom has reduced the target for geographic coverage in Scotland.

**Jonathan Ruff:** You are talking about the 74 per cent figure.

**Stewart Stevenson:** Correct. That is perverse. We should have no improvements in telephony services in cities of any kind, including 5G, until we get decent rural coverage. I am an extremist on

this, but I am not alone. Why is Ofcom reducing the target precisely at the point at which we should be seeing renewed and additional effort for coverage in rural areas.

**Jonathan Ruff:** I do not think that you are an extremist. I think that everyone here would agree that more needs to be done to improve rural coverage.

It is worth reinforcing the point that the 74 per cent target that we have proposed for Scotland represents the largest increase in any of the UK nations. Scotland is coming from a much lower starting point. The average 4G coverage is around 50 per cent of landmass. What is proposed is a huge increase but I take the point that coverage still lags behind the rest of the UK. I guess that these things have to be done in steps. It is the largest increase in any of the UK nations.

Mansoor Hanif talked earlier about the value of the spectrum. The majority of the value of the spectrum option is going to Scotland. That is an important point to make.

The coverage target for Scotland is lower in comparison to the other UK nations because we have to weigh up the costs for the operators in deploying this and the benefits. If we did not get the balance right in setting that coverage target, there is a risk that the spectrum obligation would go unsold. That would be a big problem for everyone across the UK. Ofcom has to strike a balance and we have a duty to ensure the optimal use of spectrum. There is tension when it comes to balancing the costs of deploying networks in these areas.

Mansoor Hanif also touched on this. For Scotland to get up to the equivalent of the target for the UK, somewhere in the region of 500 extra masts would need to be built. There is no escaping the fact that the commercial case for deploying is not as strong in these areas, partly because of the challenging terrain and partly because they are less densely populated than other areas. That is not to say that we should not be trying to achieve as wide coverage as possible. As I said, Scotland has the largest increase of any of the UK nations.

**Stewart Stevenson:** Yes, but if we had roaming, the 41 per cent would automatically go to 78 per cent, which is an uplift of 37 percentage points.

Mansoor Hanif said that that cannot be done commercially, but that is nonsense. I will give you an example of why it is nonsense. When banks started to join their ATM networks together, they recognised that the wee bank networks would get huge benefits from getting access to the big network, so there was an interchange fee. In other words, if a customer of bank A used an ATM at bank B, bank B would get paid by bank A. Over about 10 years, the small networks grew so that there was more or less a balance in the amount of money that went between the banks. The same could be done in telephony networking, where a tiny mobile operator would have to pay but would have a legal obligation. We are viewing this as a technology problem when it is also a business problem. I just do not accept the arguments against network roaming that I heard.

The incentive in Scotland is immense. You could get coverage for me on my phone, on whatever network operator I was using, from 41 per cent to 78 per cent simply by changing the business rules.

I also want to hear about the unused but licensed spectrum. I spoke to Nominet and I know that it has views on this.

I am sorry for having a rant, convener.

10:45

**The Convener:** I was not going to suggest that, but can we let Mansoor Hanif answer the first part of that question.

**Mansoor Hanif:** I take your point. Maybe I was not clear enough. I am not saying that there are not commercial solutions of the type that you mentioned. The problem is that the overheads for those in the telecoms field are so big that the scale that is shown in those areas is not that relevant.

However, that is not the main point that I was making. My main point was that one operator in the UK said, “National roaming is a great idea. Why don’t we do it?”, but that operator is the one that is dragging its feet and causing everybody to be at 40 or 50 per cent coverage, because it could not care less about rural areas. When an operator is investing hundred of millions of pounds to lead on the rural side, because it believes that it is something that needs to be done for its strategy, and the other two operators are not far behind, if you just compensate them with an obligation in which they will never recover their costs, the result will not be good for Scotland because, basically, the operators that are not investing will get an easy ride.

When we say that we think that roaming could be a good solution, provided that it is based on a voluntary approach, it means that we need to ask what is the right commercial deal that can compensate and still incentivise companies to invest in Scotland. That is where we are. I think that new technologies are coming out that can do that.

If one company is dragging its feet, it will be happy to have national roaming, because it does not want to invest. If there is a voluntary scheme

whereby the companies that are investing can be suitably compensated for doing so and for allowing the other companies to roam, we should and will encourage that.

The other point—sharing the use of spectrum that is not out there—is linked to that. There is a fallacy that it is spectrum that is the issue, but the reality is that, in the areas where, unfortunately, you have no coverage, nobody is using the spectrum there, because there is no coverage.

**Stewart Stevenson:** Correct.

**Mansoor Hanif:** So national roaming would not help you anyway, because there is nobody there to roam on. However, nobody is using the spectrum either. The reality is that, if you were to get together with your friends and build your own network—you might be building a fixed wireless or local community network—and you can show that you have local resources and teams who can help to lower the cost of monitoring and providing a quality of service, I am 100 per cent sure that at least one, maybe two, and perhaps all the operators would say that they have no issue in letting you use their spectrum, and that they will put in place a scheme like the one that you mentioned in the banks to allow their customers to roam back and forth.

**Stewart Stevenson:** Are you saying that therefore the commercial operators have the veto on the communities being able to do that in areas where there is white space on the ground?

**Mansoor Hanif:** No. If you want to use TV white space or any other spectrum that is not licensed spectrum, you can do that. Until now, there has been no agreement, because people have just been saying, "Give us the operator's spectrum and we'll do it ourselves." Without an agreement on roaming, that approach will not get very far.

We now see that the operators understand that they are not offering the service that they should be to people like you—they get that now. We have made that a big headache for them; I used to have that headache when I was working for the operators. The problem is how to get to a point at which it is constructive for everybody.

I have been approached by many fixed wireless operators, which are sometimes small family companies or community radio and community internet of things companies. There are many of those companies in Scotland, such as SmartRules, which is very good at what it does. I have said to them that if they can get the operating costs down to a reasonable level that is attractive, and do that better than the operators, Ofcom will be the facilitator and will ensure that the operators understand the opportunity, are ready to give whatever spectrum is needed to them and put in the necessary roaming agreement. If the operators do that, we will take that percentage of coverage off their coverage obligations, because that is a win-win for everybody. We think that that idea has legs now. It is about everybody putting their best resources together.

**Colin Smyth (South Scotland) (Lab):** Sticking to the subject of inferior service in rural areas, I turn to broadband. In your opening comments you updated the committee that superfast broadband coverage in Scotland is 92 per cent, but in rural Scotland it is just 66 per cent. That compares to 74 per cent in rural areas in the rest of the UK. Do you accept that there is a digital divide, in that, frankly, rural areas are being discriminated against? When do you estimate that all premises in Scotland will have access to decent broadband?

**Jonathan Ruff:** Yes; I think that everybody around the table acknowledges that, and we did so in the "Connected Nations" report. There has been, and still is, a divide between urban and rural areas. The gap is closing and we have seen significant improvements in coverage across Scotland.

With regard to your question about when we will see improvements, a number of things are happening. Ofcom is implementing the UK Government's universal service obligation and expects that people will be able to request the universal service obligation from late 2019 and early 2020. As Mansoor Hanif said, that is 10Mbps download and an upload speed of 1Mbps—that is the minimum that Ofcom considers people need to be able to do the full range of activities such as streaming, online shopping and gaming. In parallel to our progress on our USO responsibilities, the Scottish Government has its reaching 100 per cent programme with the aim of bringing 30Mbps speed to 100 per cent of premises. I would expect to see improvements in rural areas from those two immediate programmes.

As Mr Lyle touched on earlier, just last week we set out proposals on how we assess competition and the remedies that we would put in place based on geography. There is recognition that there are competitive areas—a large part of Scotland will not fall into that category; areas where we might have to support alternative models, such as single or shared networks; and a third category where there is no commercial case for people to roll out broadband and no prospect of that any time soon. With the latter category, we are supporting public policy makers by providing technical and regulatory advice on the programmes that they are looking to roll out. There comes a point where you reach the limits of what regulation can do, when there is a case for public intervention from the UK or Scottish Government or other public policy makers.

Ofcom's role is to provide support with technical and regulatory advice and data. For example, we want to see smooth interaction between our USO scheme and the Scottish Government scheme. It is worth reminding the committee that we do not have a formal role on R100, but we are looking at how those two schemes can link up together to deliver the improvements for people in rural areas that you spoke about.

**Colin Smyth:** You do not have a formal role in R100, but do you have a view on whether it should start with the rural areas instead of simply allowing urban areas to have a competitive advantage all the time? Should R100 focus heavily on the outside-in approach to ensure that rural areas do not continue to have a competitive disadvantage, with all the impact that that has?

**Jonathan Ruff:** The Scottish Government has said in its most recent publications that the focus is on rural areas first. A lot of Scotland's urban centres—the main cities—have been taken out of scope for R100, because the Government believes that commercial investment, what Ofcom is doing and normal operator deployment will address the urban areas. The Government has said that the priority for immediate focus is the rural areas; about £383 million of the total £600 million has been allocated to the Highlands and Islands and another significant chunk of the money will go to the Borders and elsewhere in south Scotland.

**Colin Smyth:** I know that colleagues will have specific questions on R100, so I will focus on the work that you have said Ofcom is carrying out. What do you think would be a good result at the end of 2019, bearing in mind that 66 per cent of rural Scotland gets superfast broadband coverage at the moment?

**Jonathan Ruff:** I guess that it depends on what speed we are looking at. Only 4 per cent of Scotland does not meet the USO criterion of 10Mbps. Hopefully, universal service would address those issues.

I take the point that deploying the network to a number of the premises in Scotland might exceed the USO cost threshold of £3,400 per premises. We have taken that feedback on board and are proposing something called demand aggregation. That means that, if one person in a community calls up and says that they want to exercise their right to request the USO, there is an automatic assumption that 70 per cent of the premises in that area would also want to take it up. The idea behind that is that it speeds up the deployment, which means that we will be in a better position when the USO takes effect. In the majority of cases, we would expect the roll-out of USO to be within 12 months.

**Mansoor Hanif:** It is worth pointing out the issue of timing with regard to your question of what we can expect to see by the end of 2019. The steady progress that we have seen in the past three to four months, which we have just updated you on, is likely to continue between now and the end of 2019. What can move the dial on that is the implementation of the programmes that we have just mentioned: the USO, which we are in charge of implementing; the R100 programme, from the Scottish Government; and the outside-in fibre programme, from the UK Government. All those schemes are just ramping up. The USO will only just be kicking off by the end of this year, and people can start ordering it by the end of this year or the beginning of next year. Thereafter, there is a 12-month timeline for it to be delivered.

**Colin Smyth:** But the figures that you gave at the start were for superfast broadband, which means we are talking about speeds of 30Mbps. You said that the coverage at that level was 92 per cent across the whole of Scotland, and your report showed that the coverage at that level in rural Scotland was 66 per cent at the end of 2018. What do you expect the coverage in rural areas to be at the end of 2019?

**Mansoor Hanif:** As I said, I expect to see the same kind of incremental progression until the end of 2019 that we have seen over the past three months, because nothing will happen this year that is going to move the dial.

**Glenn Preston:** It is hard to put a number on how much of an increase you will see from 66 per cent. However, it is worth making the additional point that there is still legacy investment from some of the existing schemes, such as the digital Scotland superfast broadband programme and the broadband delivery UK scheme. The gainshare that came from those initiatives is still being invested. That will contribute to the small increments that Mansoor Hanif mentions. However, you will not see the dial being shifted until the end of 2019 and 2020, when the effects of USO and R100 are felt.

**Mansoor Hanif:** In relation to the point about the geographic economics of network roll-out, area 3 covers most of Scotland. What we are consulting on is effectively a new investment model to encourage Openreach to invest in those areas in a way that is difficult to do, and it is unlikely that there will be any other investment in those areas. The areas that are not going to be covered by the other UK Government or Scottish Government schemes will be addressed through that, too. We are also consulting on allowing access to dark fibre to allow greater competition. If there is only going to be one piece of infrastructure, we need to allow access to as many players as possible. All of that will shift the dial considerably. However,

again, that scheme will be implemented only in the next round from 2021.

**Jonathan Ruff:** I was just having a quick look at the "Connected Nations" report. It shows that, in December 2017, there was 87 per cent superfast coverage, and that has progressed to 92 per cent over the course of the year. I imagine that you will see similar incremental improvements. Before that, coverage was hovering at around 75 per cent. I think that that gives you a sense of how coverage moves on each year.

**The Convener:** Before we move on, I think that we should address delivery of R100. Maureen Watt wants to ask about it.

**Maureen Watt:** Does Ofcom have a target for full fibre coverage in Scotland by the end of 2019? You talk about the schemes that are being ruled out. How quickly, do you think, will coverage increase in the coming years? Will it increase to the extent that Scotland will match the rest of the UK? At the moment, we still have a lag between Scotland and the rest of the UK.

**Jonathan Ruff:** Do you mean full fibre to all premises?

**Maureen Watt:** Yes.

**Jonathan Ruff:** Ofcom does not have a target for full fibre. The UK Government has one in "Future Telecoms Infrastructure Review", but I cannot remember the exact number.

11:00

**Mansoor Hanif:** I think that the UK Government target in the FTIR is 15 million lines by 2025 and then to cover pretty much all of the country by 2032. That is full fibre, which is defined as 300Mbps and above. It is beyond superfast broadband and everything else that we have discussed.

**Jonathan Ruff:** At the moment, Scotland has 4 per cent full-fibre coverage. I believe that the figure is not much more in the rest of the UK—it is about 6 per cent. Although Ofcom does not have a target for full fibre, we obviously want to see it move forward as much as possible: the document that we published last week is all about encouraging full-fibre investment.

We have touched many times on the fact that in rural areas there is not always a good commercial case for operators. The safeguards that we are putting in are to ensure that Openreach is still incentivised to invest in full fibre. We will allow it to spread the cost of deployment over its customer base. We have a strong focus on the future of full fibre, because the UK lags behind some European countries in that respect. The proposals that we put out last week are all designed to ensure that, if Openreach is not doing so, other providers are investing in full fibre.

**Mansoor Hanif:** There is a range of possibilities—from the USO, which is the minimum, to full fibre, which is the maximum, and in between is superfast broadband and everything else. Of the schemes that we have mentioned, the USO will not deliver full fibre and R100 is aiming for 30Mbps, which is not full fibre.

The outside-in UK Government approach is looking at full fibre and is kicking off just about now. Broadband delivery UK was pushing 30Mbps, but it has been decided that for the final 5 or 6 per cent the focus should be on full fibre from the outside in, rather than on pushing 30Mbps. That is an interesting but very difficult approach that might start delivery of full fibre from the rural areas in. It is ambitious, but it will add to coverage.

As Jonny Ruff pointed out, we are focusing on area 3 and are looking at the economics of full-fibre investment in rural areas to ensure that they are not left behind, as fibre goes to the rest of the country.

**Maureen Watt:** Do you see your role as being the pusher or the incentiviser to get private companies involved because they will not do it unless there is some sort of push?

**Jonathan Ruff:** That is exactly what we have set out in our document. In the areas where we expect to see competition, or in which there is an expectation that people will build competing full-fibre networks, we are allowing pricing flexibility so that operators can compete with each other.

However, as Mansoor Hanif said, the final third of the UK, where there is no commercial case for investing, is where we must drive investment and ensure that a digital divide does not open up, such as has happened with superfast broadband over the years. It is all about the forward-looking agenda and trying to drive investment.

**Mansoor Hanif:** Where we think it likely that people will build their own fibre infrastructure, we want to encourage it and support it by reducing cost and bureaucracy and removing the blockers. If, in order to do that, people need access to ducts and poles that are currently owned by BT, that would be a good way of doing it. That is our focus in areas where we think that people can and are ready to invest. We are working on the whole system so that Openreach has an incentive to invest, but we are opening up the assets so that it is easier for other people to build new physical infrastructure.

Then there is area 3 where, even with all that, we do not see any appetite to invest because the costs and geographical limitations are very challenging. In those places, we are making sure

that we develop a model in which at least Openreach continues to invest in fibre, and we are opening up the Openreach infrastructure to as many players as possible who might use Openreach's fibre or put retail offerings on the wholesale offers.

**The Convener:** I know that providers other than BT have fibre connections across Scotland. Probably the best example is power lines. SSE has a fibre connector on all pylons. I have asked SSE why it does not utilise that facility, and it says that it is because it cannot get a licence to do so. Would you consider licensing companies such as SSE for fibre broadband? Has SSE approached you? It has told me that it cannot get a licence

**Mansoor Hanif:** I think that you are talking about code powers. Since last year, when we changed the electronic communications code to encourage more players on to the field, there has been a huge rush of applications for code powers. We publish consultations on attributing code powers nearly every week. I am not up to speed on whether SSE has asked for that, but we can check.

**The Convener:** Rural areas often have pylons with broadband connectors on them. Making use of those might make it easier to connect remote houses. A huge number of houses across the Highlands would benefit, but SSE tells me that it encounters nothing but problems. Perhaps you could clarify the situation.

**Glenn Preston:** I am not entirely sure by whom the problems would be presented. It is worth saying that there is a scheme under the Communications (Access to Infrastructure) Regulations 2016 that explicitly allows telecoms and communications providers to use other infrastructure, including gas and electricity infrastructure. We had a conversation with the Minister for Energy, Connectivity and the Islands and Ofgem about that a few weeks ago, and we will hold a round-table discussion on access to infrastructure with providers, Ofgem and the minister. The date is still to be confirmed.

There are two important points to make. First, that system was not designed for large-scale infrastructure or network build. Secondly, Ofcom has a formal function in resolving disputes between commercial operators about access to infrastructure. If they cannot agree commercial terms, they can come to Ofcom and say so and ask us to arbitrate for them. We are active in that space, and we expect the gas and electricity providers to come to the session that we will hold with the Scottish Government in a few weeks.

**The Convener:** I understand. The fact that the issue has been raised might prompt one or two of the companies that have fibre-optic cables to start thinking about how to use them. We are pushed for time and we have a lot of questions to get through, so I will park that there. I might take up the issue with you later.

**Jamie Greene:** I want to look specifically at the R100 programme. How many premises does Ofcom think have access to superfast broadband—broadband of at least 30Mbps? I am referring to commercial and residential premises.

**Jonathan Ruff:** The "Connected Nations" report—

**Jamie Greene:** You can give a number or a percentage.

**Jonathan Ruff:** The figure is 92 per cent of premises.

**Jamie Greene:** When will the R100 project reach its target? There seems to be a bit of confusion about what "by 2021" means. It could mean the end of December 2020, the end of 2021 or, as one media report put it, the end of the financial year 2021, which would mean March 2022.

**Jonathan Ruff:** As I said, Ofcom does not have a formal role in the R100 programme, so we are not party to the procurement discussions, as is right. We understand that the connectivity minister said that contracts would be awarded in 2019. The Scottish Government still has the target date of 2021. Our focus has been on aligning the USO and the R100 programmes, which means that we are focused on the start of 2020, when the USO will kick in. At that point, we must have in place the mechanisms to allow the two schemes to interact smoothly.

Sharing data will be extremely important. There will have to be an exchange of information between the R100 contractor, whoever that might be, and the USO provider, to ensure that there is no overlap in the roll-out and that people receive what they are entitled to within the correct timescales. The target date for the R100 project will not affect our engagement on the USO because, as I said, the USO will take effect from the start of 2020.

**Jamie Greene:** My reading of your answer is that your engagement or focus is on responsibility for the USO, not for R100. Therefore, the information that you get about R100 is a courtesy by the Scottish Government and its directorate, and you do not have any formal role in the programme's roll-out. Is that correct?

**Jonathan Ruff:** Yes—although I would not put it quite in those terms. We have discussions to get updates on progress. The project is in the procurement phase, so what can be said publicly and to us is limited, as you would expect. Our focus has been to ensure that consumers who

exceed the USO cost threshold and who might not be immediately picked up through the first phase of R100 are not left out. There is scope for us to look at how to line up the two schemes, and that is not dependent on the end time of completion.

**Mansoor Hanif:** We are also happy to provide technical advice, on request, to the Scottish Government and to all the schemes—for example, on the best way to configure infrastructure.

**Jamie Greene:** The interaction between the two Government schemes is interesting. It is clear that the last 8 per cent will be the hardest to reach—it is the last 8 per cent for geographic and technical reasons. Inevitably, there are challenges in ensuring that 100 per cent of premises are covered. Can you explain to me the interaction between the universal service obligation for 10Mbps in 100 per cent of Scotland, and the R100 scheme for 30Mbps? We touched on that previously, but never quite got to the bottom of it. Are there separate contracts and is a single provider responsible for both, or are two providers working alongside each other? What will the interaction be? Is public money being spent twice or do the two schemes complement each other?

**Jonathan Ruff:** That is a very good question. The right to request the universal service obligation will not apply if a person is due to receive deployment of another publicly funded scheme that has given a firm commitment that it will come to their premises within 12 months. That is designed to address duplication of effort and public funds. It is worth saying that the USO is not publicly funded; it is funded by the industry. UK taxpayers' money has not gone into it, unlike the R100 programme.

**The Convener:** I am sure that Jamie Greene was going to ask you this. R100 is to be rolled out and we do not have a date for it, so if we do not have broadband at the end of this year, we could ask for USO speed broadband of 10Mbps but be told that, because we will get R100 by 2021, the USO level broadband need not be supplied. Is that what you are saying, or have I misunderstood?

**Jonathan Ruff:** As I said, there has to be a firm commitment. The R100 contractor or contractors would have to share with the USO provider information to show that they have a clear roll-out plan and will come to those premises within 12 months, in which case the USO would not apply. That is why I mentioned earlier that data sharing is so important.

**The Convener:** What would happen to the poor consumer if neither target date is achieved and they do not get the service by that time? I am sorry; I am standing on Jamie Greene's question.

**Jonathan Ruff:** Do you mean the R100 or the USO roll-out?

**The Convener:** If the consumer is told that they are getting R100, but it is not delivered on the date on which it is supposed to be delivered, so they have missed out on the USO, what would happen?

**Jonathan Ruff:** They would be in a better position than they would otherwise have been, because at least they could request the USO. It is worth saying that they would, because of the technology, not merely get bang on 10Mbps. In many cases, the speed could be more than that—people could end up with a superfast connection and be taken out of the scope of R100. However, if R100 contractors were not coming to their premises by that date, the consumer would still have the option to request the USO. That is something that people can consider in the interim, at least, while they wait for R100.

**Mansoor Hanif:** The work requires close co-ordination, so as we said up front, the first thing to make sure of is that clear plans are shared. That is fully understood by the R100 people and the USO people. Ideally, we would have liked to have a single provisioning software tool so that the USO provider could see updates directly from the R100 programme.

11:15

I come to the convener's point—which is a very good one—about the detail of what would happen if there was a firm plan to deliver R100 to a customer, such that they would not be eligible for the USO. Our aim—we need to work through the detail of this as we go into implementation—would be that the person who was due to have R100 delivered would be flagged, and we would expect regular updates from the R100 suppliers on where they are. If they were to reach a block at any stage, we would have the option to reactivate the USO and accelerate things, where possible. That is our ambition, but we need to work through all the details.

**The Convener:** Okay. I apologise for standing on Jamie Greene's question.

**Jamie Greene:** You raised a very interesting issue. I will not duplicate your question; rather, I will follow on from it.

It is clear that, from a consumer's point of view, 30Mbps is better than 10Mbps—there is no dispute about that—but, if they are getting speeds of 1 or 2Mbps, 10Mbps is better than nothing. My problem is that the end of 2021 or perhaps the beginning of 2022 may seem far away to a business or a residential consumer, and they will not know the date on which the R100 programme will come to them, because the contracts have not been awarded yet. Could they request the 10Mbps under the USO in the interim? How achievable is

that? If one single household in the middle of nowhere said, "We have no idea when R100 is coming to us—it could be two and a half years away—but we want a better service now", who would be obliged to provide that service?

**Jonathan Ruff:** There is no expectation that the consumer would have sight of the deployment plan. Mansoor Hanif's point was that it is for the USO provider and the R100 contractors to share that information. Obviously, we accept that there is a risk of customer confusion, but it is not for the consumer to find out when R100 is coming to their premises. That will take place behind the scenes and will involve the R100 contractors and the USO provider.

**Jamie Greene:** I appreciate that, but you have not answered my question. If a person has no idea and no way of learning, whether proactively or reactively, when R100 will come to them, although it may be coming down the line, and they would like better broadband now, can they utilise the USO, and will that connection be deliverable to a single house in the middle of nowhere?

**Jonathan Ruff:** The short answer is yes, they can utilise the USO. On the point about the person being in the middle of nowhere, there is the cost threshold issue and the question of how the operator would go out to them. I have mentioned the demand aggregation point. To speed up the deployment of the USO and reduce the cost, there is, as I have said, an assumption that 70 per cent of premises or a cluster of premises—however that is defined; that is yet to be determined—in the area would be able to request the USO. The point is that it is a legal right to request that. There are criteria that might affect the cost and the speed at which it will reach you, but that is a legal right.

It is worth making the point—this is not just an R100 point—that the broadband universal service order says that the USO is publicly funded; the same applies to the schemes in Wales and Northern Ireland. It is designed to address the point that you made about public funds and duplication.

**Mansoor Hanif:** To clarify, we expect customers to be able to order a USO connection by the end of this year or the beginning of next year at the latest—that is the rough timescale. There is then a 12-month timescale. We will use the best visibility that we have to ensure that the USO provider can take into account R100 delivery.

If a customer has ordered a USO connection—that is, a 10Mbps connection at a reasonable price; there will be price restrictions—and any other service becomes available or R100 lands after that date, they will have the choice to upgrade to a 30Mbps connection with a different contract. Therefore, there will be flexibility.

As Jonathan Ruff has pointed out, there will obviously be a long tail of individual residences for which the cost will be prohibitive. The first port of call is to consider whether we can aggregate the cost to some extent and solve it at a group level. Beyond that, we will be working with the USO provider to see what other technical solutions are available that could be used as a back-up and where they could be applied—I am talking about the small minority of really extreme cases. Our aim is to have a solution for everybody wherever possible.

**The Convener:** The committee has talked about the importance of getting the exact dates for the roll-out in specific areas in just about every meeting that we have had on broadband.

**Peter Chapman (North East Scotland) (Con):** Jamie Greene mentioned contracts. We were told that the Scottish Government was aiming to announce that contracts had been signed by early 2019, but we are unaware of how far along we are in that process. Do the witnesses feel that the R100 programme is already slipping behind schedule, or will we hear that contracts will be signed very shortly? Do you know?

**Glenn Preston:** We do not know; we are not privy to that information. As Jonathan Ruff said, we need to focus on our statutory responsibilities for the implementation of the UK universal service obligation and for any interaction. That is where our conversations are focused. We are not privy to the on-going dialogue on procurement that the Scottish Government is having with the different potential providers. It is important that we are able to understand when exactly the roll-out will happen, so that we can get into detailed conversations about the sharing of data, but we are no more privy to the information than the committee or anyone else is.

**Peter Chapman:** Openreach has a copper rearrangement programme to allow upgrades to exchange-only cabinets, which are mainly in rural areas. Is that programme on schedule? Will it be completed in time to allow the further roll-out to take place?

**Mansoor Hanif:** As part of the commitments from last year that have been implemented, an Openreach monitoring unit is looking at all the programmes in detail. An interim report came out in November last year, and the full annual report will come out later this year—in the summer, I think. The unit will report on how all the relevant Openreach programmes are performing. Following the new commitments, we have a clear role in ensuring, through the monitoring unit, that the programmes deliver on the promises that have been made, and we take that role very seriously.

There has been a long programme of upgrading all the exchanges to the new generation, which allows full fibre. That work is proceeding but, due to the challenges that we mentioned earlier, we need a bit of a boost in the rural areas in particular to speed up that work.

**Peter Chapman:** In rural areas, a premises might be connected to a green cabinet, but there is no doubt that the big problem is if it is too far down the line or if there is too much copper between it and the cabinet for it to be of any use, which results in 1, 2 or 3Mbps being the maximum that can be achieved. Therefore, in some respects, a premises being connected to a cabinet is no damned use if it is too far down the copper line.

**Mansoor Hanif:** That is the problem, in a nutshell. We can make technology as complicated as we want it to be, but the bottom line is the distance on the copper line between the premises and the nearest exchange or cabinet. In addition, the variability of that distance has a huge impact on the quality of service that people get. The fibre might be going to the exchange or from the exchange to the cabinet, but if there is huge variation in the distance to the cabinet, we cannot guarantee the quality of service. That is the fundamental challenge in Scotland, given that there is huge variation in the distance from individual houses to their nearest cabinet.

**Stewart Stevenson:** I have a very specific question. Aberdeenshire and Dumfries and Galloway, in particular, are areas where there is a much higher proportion of exchange-only lines than is the case elsewhere, so people in those areas are automatically excluded, even if their copper lines are short enough, from being connected to the current generation of fibre-enabled copper that is being rolled out. Does Ofcom have a focus on those areas where the copper rearrangement programme is particularly important locally, in a way that it is less important for homes in central Edinburgh that use exchange-only lines?

**Jonathan Ruff:** You are quite right to point out that there is a higher proportion of exchange-only cabinets in Scotland than in the rest of the UK. The proportion in Scotland is 5 per cent—it was 8 per cent last year—whereas the UK average is 3 per cent. It is worth pointing out that, as Openreach deploys its network, it will make the upgrades to the cabinets.

For all the work, initiatives and schemes that we have spoken about today, upgrades will have to happen as part of the process to deliver superfast speeds and full-fibre investment. For the reasons that Mansoor Hanif gave in relation to the length of the line, the speeds that people in rural areas can get are restricted, but the cabinets should be upgraded as part of Openreach's on-going programme.

**Stewart Stevenson:** When?

**Jonathan Ruff:** We have no oversight of Openreach's commercial deployment plans, but we expect that work to be part of the R100 programme and the investment in full fibre and that it will potentially happen through the USO.

**Peter Chapman:** We are focusing on the last 8 per cent—the hard-to-reach premises. How important will other technologies, such as fixed wireless access networks, be as solutions in hard-to-reach areas? You mentioned such technologies earlier. Will they be a main way of achieving R100?

**Mansoor Hanif:** First, I will hook into the point about SSE. Beyond fibre, if we were talking about a licence to put an antenna on an SSE mast, the operator could ask for fixed wireless. Spectrum is available now and is unlicensed; we are also consulting on shared spectrum from 3.8GHz to 4.2GHz.

When the Scottish Government has asked for our opinion on technologies for R100, we have been clear that, given the variability of lines in rural areas, it would be foolish not to look at all the options to reach all customers. Fixed wireless should therefore be in the mix. The committee would need to ask the R100 team whether it is promoting that, but we said in our technical advice that it should be in the mix.

Across the UK and in Scotland in particular, we have made it clear that fixed wireless has a huge impact on the USO in two ways. First, in relation to the fixed wireless services that are being rolled out across rural areas, where copper lines are way too long to get a decent service, radio waves are sometimes a better shout, if a line of sight is available. Several mobile operators are rolling that out in rural areas; they are providing an equivalent of the 10Mbps service to customers in such areas.

We did quite a lot of analysis because we wanted to ensure that the quality, reliability and capacity of a fixed wireless service that an operator provides are similar to that of a 10Mbps line. We did a full analysis of that, which used probes and real customers, and we are confident that those things are similar to the 10Mbps service, although we would not say that there was equivalence with full fibre. We encourage operators to roll out the fixed wireless service, especially for people who have nothing.

Beyond that, if a USO provider cannot get a fixed broadband solution for the people who are in scope for the USO but can provide a fixed wireless service, we will have a good look at that and offer that as a solution. The reality is that the issue is so

hard for everybody to solve that as many tools as possible are needed in the toolbox, and fixed wireless is one of them.

**Peter Chapman:** You said that fixed wireless was a solution to get at least 10Mbps, but could it deliver 30Mbps?

**Mansoor Hanif:** That is a good question. We have done the analysis for the 10Mbps USO and we are confident that fixed wireless can be used, although we would prefer fixed broadband. We have looked more at an analysis of 5G fixed wireless for the 30Mbps USO. As you know, one mobile operator in the UK has been public about its plans to offer fixed wireless over the existing 5G spectrum that it is rolling out. We feel that, if that was done in the right way, it could offer an equivalent to superfast 30Mbps broadband. However, for ultrafast broadband of 300Mbps and above, full fibre—together with cable and other fixed technologies—is still the only solution.

**John Mason (Glasgow Shettleston) (SNP):** I will return to mobiles, which have been mentioned. We were provided with a table that shows 4G and voice coverage for different aspects. The figures show that, in 99 per cent of premises, there is good 4G indoor coverage from at least one operator, and that, in 100 per cent of premises, there is good indoor voice coverage from at least one operator. Can you confirm whether I have understood those figures correctly? Do they sound correct to you?

11:30

**Jonathan Ruff:** Sorry, are they from the "Connected Nations" report?

**John Mason:** I am not sure where the figures came from.

**The Convener:** They are from that report.

**Jonathan Ruff:** Broadly speaking, indoor coverage in Scotland is comparable to that in the rest of the UK, at 90 per cent. The specific example that you mention involves at least one operator that provides 100 per cent indoor coverage.

**John Mason:** And "indoor coverage" means inside a building—any building. Is that right?

**Jonathan Ruff:** Yes, and the figures show that that level is provided by at least one operator.

**John Mason:** On Saturday, I was in a restaurant in my constituency that happens to be underneath an old church—

**Jonathan Ruff:** That is probably the issue.

**John Mason:** I do not think that there was any coverage there.

**Jonathan Ruff:** The figures say that there is 100 per cent indoor coverage from at least one operator, so it depends which operator you were on.

**John Mason:** I could check that.

**Mansoor Hanif:** I could clarify a little bit. This is a tricky subject, but we are working on making our "Connected Nations" reports even more clear.

In terms of indoor coverage, there is a clear leader in our statistics. That is because one operator had an obligation on 4G for indoor coverage. When we talk about 4G coverage, we are talking about voice plus a minimum of 2Mbps of data, whereas, when you talk about the voice statistics, that can include 3G as well. That is why the numbers are slightly different.

It is true that there are places where you do not get indoor coverage. However, every calculation is an approximation. As you know, a church is not the same as a bungalow, and stone houses are different again. Further, unfortunately, the more double and triple glazing that you put in, the more your indoor coverage will go down—that is the reality because, when you stop heat going out, you stop radio signals coming in.

When we report, we have to come up with something that is communicable. We therefore make an assumption about the loss of signal going into an average household. That means that, if you are in a stone house or in the basement of a church, you will not have necessarily have the coverage that is indicated by the report. If we did not take that approach, a report that covered all the buildings in the country would be 1,000 pages long.

**The Convener:** It is dangerous to talk about there being 100 per cent indoor voice coverage from at least one operator. I am sure that in every constituency there are houses in which there is no coverage. Using a figure of 100 per cent might just provoke people.

**Stewart Stevenson:** I just want to say that I do not have outdoor coverage. Just to illustrate how severe the situation is, a company tried to fit our house with a smart meter. Our meter is on the outside wall of the house, and it relies on a connection to a mobile network. We told the people that there was no signal. They spent two thirds of a day on the job. They installed the meter and waited an hour. No coverage. They then spent another two hours taking it away again.

I really counsel you not to use that 100 per cent figure, even if I am the only example of it not being met, and I know that I am not.

**The Convener:** I think that we have made the point on that.

**Glenn Preston:** You have. I would quite like to come back to you on the issue, because I do not think that that is a figure from the "Connected Nations" report. However, we are happy to clarify the point.

**John Mason:** I was concentrating on indoor coverage to start with, but I think that the issue expanded. However, the issue of geographic coverage was my next point. Various figures have been mentioned. The figure that I have been given for good 4G geographic coverage in Scotland from all operators is 38 per cent, and the figure for good 4G geographic coverage from at least one operator is 78 per cent. Is there a target for where that figure should be going?

**Jonathan Ruff:** The latest geographic coverage is now at 41 per cent, which shows that there has been an improvement. This is, obviously, Mansoor Hanif's area, but the "Connected Nations" report is not designed to set out policy objectives and targets; it is more about presenting the state of communications across the UK. It takes a retrospective look, as well. The geographic coverage target for Scotland, of 74 per cent, is linked to the auction of the 700MHz band, which is particularly good for rural coverage. There is a coverage obligation target, which is separate from what we are reporting on in the "Connected Nations" report.

**John Mason:** On the land target, is that just any land? For a lot of motorists, it is the roads that matter, whether that is motorways or A roads. Is there any way of differentiating between those and specifically measuring how they are doing?

**Mansoor Hanif:** To clarify, the Government has a target of 95 per cent geographical coverage in the long term. We broadly support that target as an overall ambition. As Jonathan Ruff said, the coverage obligations are a step towards that.

On John Mason's point about roads, we think that roads are an area of importance and we plan to increase our focus on that. We are taking views from around the country and we would like to give more clarity on the coverage. There are a few sentences in the "Connected Nations" report, but we need to give a bit more clarity on quality, spread and choice in relation to road and rail coverage across the UK. We hope to do that sometime this year—it is likely to be in the final annual report in December. In the meantime, however, we might be able to give a bit more clarity during some of the quarterly updates.

**John Mason:** Can I also ask about 5G and where we are going with that? I think that there has been some commitment to publish findings on a minimum level of service for 5G. Can you comment on that?

**Mansoor Hanif:** I am not sure about a commitment on a minimum level of service. However, it is clear—and it is good news—that we will have the first commercial launches of 5G this year. From our perspective, we would like to get ready to make sure that we can start reporting on the quality and coverage of 5G in at least the same way that we do with existing technologies, if not in a better way. As part of that, we might consider what is relevant and useful to consumers around the UK in relation to what 5G means for them, whether that is minimum level of service, speed, coverage or anything else that might be part of the mix.

**John Mason:** The question of rural and urban has already been mentioned. I think that there is a project called 5G RuralFirst. Can you say anything on that?

**Mansoor Hanif:** It is a wonderful project; I absolutely love it. Many years ago—in my previous roles—I used to go up to Inverness, and we kicked off what we called the Scottish innovation partnership. We did not really know where it was going; we just thought that we had to do something to get people to focus more on rural areas. Most of the people who were there have now morphed into that DCMS-funded project, 5G RuralFirst. I was at their event in Glasgow last Thursday and what they are doing is wonderful.

Their work is focused on many of the difficult areas that we have discussed, which they are trying to crack. It is not really 5G yet, because the 5G terminals were not available until this year. The good news is that the project has been extended by the Government, so it will run into next year, when we will have the real 5G kit coming in. As the committee knows, the Orkney Islands are a key focus for the project, as are other areas around Scotland. I have asked DCMS to include many of the innovations that I mentioned previously—in response to the question from Gail Ross—in the future extensions of that project and more specific rural projects.

I would like to draw the committee's attention to how the project is doing absolutely the right thing for the country. Number one, it gets together everybody who is involved to look at the real problems and at pragmatic ways of solving them. Number two, it turns the perceived weaknesses into strengths. The team that is involved in the project has put its finger on everything that we have said about why it is so difficult in Scotland and it has asked how we can get over those difficulties and break down those barriers.

I was with the team in Barcelona, where it was presenting at the mobile world congress, which 107,000 people went to. The project got attention from every country that passed by the stand. It got an amazing amount of focus because nobody else

in the world is trying to solve the rural problem with 5G—the project looks at what new technologies in 5G could help with the rural coverage problem. It is exciting to hear from many Governments and regulators that it is one of the most innovative 5G projects.

I ask again—if we know the difficulties that we face in Scotland, how can we turn them into strengths? We do that by showcasing the innovation and talent in Scotland and opening that up to the world. It is a fantastic project and you should all go to the Orkney Islands. My colleague Philip Marnick was there yesterday, and it is the most amazing project. The problems are very challenging and it has not solved them all, but it is definitely worth a visit.

**The Convener:** Jamie Greene has a brief question. It will be the last one.

**Jamie Greene:** There is an issue that we have not really touched on. We have talked about access to services, but what work is Ofcom doing to promote some of the voucher schemes that are available? Unfortunately, we hear very little about them, but there are some good schemes around, such as the gigabit broadband voucher scheme, which offers up to £2,500 to businesses, and the extension of the better broadband subsidy scheme, which offers £350 to people who live in rural areas to connect at home. Consumer awareness in Scotland of those voucher schemes is very low. What is being done to improve that awareness?

**Glenn Preston:** We do not have a formal function in the promotion of those schemes, but I think that you are right. Over the past couple of years, we have wrestled with the fact that, although services and schemes are available, people have not been taking them up. We stressed that in the "Connected Nations" report. There are other schemes, such as the local full fibre networks programme, in which the UK Government provides money to local authorities to improve services in public buildings.

We need to do more. We need to work with the Governments and probably with local government, and potentially other public service bodies, to promote those schemes more. A strand of work that we have to look at with the implementation of the universal service obligation is consumer advice and information. As Mr Greene pointed out, the space is quite confusing. We will try to set things out in a simple way so that people understand what is available to them.

**The Convener:** I thank Glenn Preston, Jonathan Ruff and Mansoor Hanif for their evidence. It has been very interesting—as it always is—to hear about the work that is going on.

11:41

*Meeting suspended.*

11:49

*On resuming—*

# European Union (Withdrawal) Act 2018

## Common Agricultural Policy (Direct Payments to Farmers) (Amendment) (EU Exit) (No 2) Regulations 2019

## Food and Drink (Amendment) (EU Exit) Regulations 2019

**The Convener:** Item 3 is the European Union (Withdrawal) Act 2018. We have received consent notifications in relation to two UK statutory instruments, as detailed on the agenda. The instruments cover the common agricultural policy and food and drink policy, and they are being laid in the UK Parliament in relation to the European Union (Withdrawal) Act 2018.

Does anyone wish to make any comments on the instruments?

**Members:** No.

**The Convener:** Does the committee agree to write to the Scottish Government to confirm that it is content for consent to be given for the UK SIs that are referred to in the notifications?

**Members** *indicated agreement.*

**The Convener:** We will now move into private session.

11:50

*Meeting continued in private until 12:33.*

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