HOUSE OF COMMONS

Scottish Affairs Committee

Oral evidence: Connectivity in Scotland: Digital connectivity, HC 166

Wednesday 28 October 2026

Ordered by the House of Commons to be published on 28 October 2026.

Watch the meeting

Members present: Patricia Ferguson (Chair); Maureen Burke; John Cooper; Lillian Jones; Douglas Lumsden; Douglas McAllister; Susan Murray; Kenneth Stevenson; Kirsteen Sullivan.

Questions 189-260

Witnesses

I: Ian Bolas, Director, Hebnet; Fiona Cayley, General Counsel, GoFibre; Garret Kavanagh, Managing Director of Complex Engineering, Openreach; Robert Thorburn, Partnership Director North, Openreach.

Examination of witnesses

Witnesses: Ian Bolas, Fiona Cayley, Garret Kavanagh and Robert Thorburn.

Q189 **Chair:** Good morning and welcome to this meeting of the Scottish Affairs Committee in connection with our digital connectivity in Scotland inquiry. We are very pleased to have a panel today consisting of some of the broadband infrastructure providers, so thank you all for coming along and giving us your time. We are looking forward to the session.

First, can you give us your names, who you are and what you do? We don't need your full CV; just tell us your place and why you are here today.

Ian Bolas: My name is Ian Bolas. I am a director of Hebnet CIC, a community internet provider. We have been running for 16 years and we cover the areas of Knoydart, Elgol and the Small Isles. We have about 300 customers.

Fiona Cayley: Good morning; I am Fiona Cayley. I am general counsel at GoFibre, which is a small, independent Scottish company delivering and operating broadband network across the eastern side of Scotland—from the Borders up the east side—and also a small amount in the north-east of England. We have two Project Gigabit contracts, one of which is in the Borders and East Lothian, and the other is up in the north-east.

Robert Thorburn: Good morning. I am Robert Thorburn, and I am the commercial partnership director for Openreach. I have been part of BT Group for 30 years, and I have been involved in talking broadband and delivery for the best part of 15 years. I managed the commercial contracts on both Project Gigabit and the R100 programme with the Scottish Government, and I interface with both the UK and Scottish Governments on a regular basis.

Garret Kavanagh: Good morning, everybody. I am Garret Kavanagh, and I am the managing director of complex engineering at Openreach. My teams work all over the UK to build fibre broadband in communities, particularly in Scotland—that is all four countries of the UK, and both urban and rural builds.

Q190 **Chair:** Thank you all very much, and thank you again for coming along this morning. I will begin by asking you a question, Mr Kavanagh, and we will then go along the panel. Why does gigabit coverage in Scotland continue to lag behind the rest of the UK?

Garret Kavanagh: First, thank you for the question. Gigabit broadband in Scotland is continuing to improve, and that is in large part due to the commercial investments of operators, as well as the foresight of the Scottish Government and Westminster in funding both R100 and Project Gigabit. We are continuing to ramp up our deployment as we go through.

As I suspect the Committee knows, Scotland offers a unique set of challenges in both geography and distribution, and the engineering

challenges are quite a bit different to the rest of the UK. I have experienced building in other rural parts of the UK, and they are all slightly different. On paper, broadband delivery can look like it is point A to point B, but in reality, particularly in Scotland, it becomes a large civil engineering project to deploy infrastructure across many miles of towns and cities and out into the countryside.

There are some unique challenges in Scotland. Every provider makes use of tall telegraph poles, and in the rest of the UK, about 11% of telegraph poles are on private land, so therefore about 90% are easy access. In Scotland, however, it is more like two thirds, so getting access to the infrastructure is slightly harder. Also, when those poles are on private land, it means that you are also dealing with lots of landowners. You also have the geography challenges of having very dispersed people.

All those things are what makes it difficult, but the reality is that we have a successful story in R100, and we have a successful story that is growing in Project Gigabit. These are solvable problems, and they are being solved through relationships with us at Openreach and others, as well as through the funding being provided by Government. While it is a challenge to build, it is not an impossible challenge, and we are now making good progress in getting through it.

Q191 **Chair:** You cite the geography and remoteness of parts of Scotland, and you say that it is not impossible—and it clearly is not. For other inquiries, the Committee has visited both Norway and the Faroe Islands, and I think people in both places would be shocked to hear about the disparity that we have in some of our communities, particularly in remote and rural Scotland, although not exclusively there. What is so different between Scotland and Norway?

Garret Kavanagh: I cannot comment on Norway; that example is not one I would be familiar with at all. Given the fact that it is possible to build, it is fundamentally a time, effort and money problem. We have demonstrated across the UK that you can build fibre broadband at scale, and that can be done on both a commercial basis and a Government-supported and funded basis. It is largely a function of how much funding and Government support is available to enable us to do the build. As you play back to me that the engineering is possible, it is just the level of support that is required to do that.

Q192 **Chair:** Mr Thorburn, do you want to add anything?

Robert Thorburn: We recognise the challenge. Obviously, I have spoken about broadband in the most rural communities of Scotland for the best part of a decade. I have visited Shetland and Orkney regularly, and those were two of the geographies that were really challenged in their access to broadband. The impact that the R100 programme has made to those communities is vast, and the subsea cable deployment that we did in 2022 has created the capacity to reach the north isles of Shetland, as well as Fair Isle. I know we have a delighted school and community in Fair Isle. It is the most connected place in the UK—a small island that really nobody

thinks about, other than for what they produce. From our point of view, it is really important that the investment is made and we are able to deliver, and that is just one strand of how we can deliver in those most rural communities.

Q193 **Chair:** Ms Cayley, would you like to add anything?

Fiona Cayley: I absolutely agree with my colleagues at Openreach about the engineering difficulties; we all face that, but GoFibre is really rising to the challenge, and we are actually delivering ahead of time in our two Project Gigabit contracts. All the milestones that we have in both of those lots will be delivered ahead of time. We are meeting those challenges and really delivering for the communities in the rural parts of Scotland that we deliver in.

We face the same challenges, but there are also specific issues that small companies like GoFibre face because we are dealing with our friends in Openreach and the Governments. We have a really good relationship with both the Scottish Government and the UK Government through BDUK, but these things are tricky, and we need that subsidy in order to meet our business case to deliver the fibre to those premises. There are plenty of challenges, but we are absolutely rising to them and delivering as fast as we possibly can.

Q194 **Chair:** Mr Bolas, I suppose your position is slightly different in that your company is a reaction to some of these problems.

Ian Bolas: Yes, I would agree with the others. I would certainly say that the highlands are a challenging area to build; a lot of Scotland is. I can understand what they are going through, but I feel like there is a lack of resource as well. There is not the engineering resource needed to deliver these projects. That is maybe why they are being held back as well.

As Fiona said, I think there is a lack of co-operation between providers. We could all help each other far more if we shared resource or worked together in some areas. It could be a contract-related thing. When, say, Openreach is awarded a contract, it almost prevents it from helping others, whereas we would like to see a bit more co-operation with others. That would enable a lot of areas to benefit quickly from some of these upgrades that BT Openreach apply, because they may catch up eventually—in the case of the area I operate anyway, they could certainly catch up eventually, but it would allow us to give people what they need now, because for many, they need the service now, not in five or ten years. They want it now, today.

Q195 **Chair:** If I were to ask you what we need to do to close the gap that clearly is there between the demand and the reality of the situation, would that co-operation be one thing that you would identify?

Ian Bolas: For the business I run, yes, definitely. Fiona would probably agree that there are areas where more co-operation for her business would help. It would certainly help speed up a lot of things for many of us on the operator side of things.

Q196 **Chair:** Would others concur?

Fiona Cayley: There is a very specific issue that we face in delivering our Project Gigabit contracts and coming up against the delivery of other operators. I do not know whether the Committee is aware of the open market review process, which is the process that informs the design of the intervention areas. Unfortunately, the information that comes from all the operators, including us, is not set in stone and can be changed, but of course, the procurement process follows a very specific track and a specific timescale. It can be the case that, at the beginning of the process, the OMR says one thing, but by the time you get to award the contract, or even as the contract is starting to be delivered, everything has changed. That means a certain amount of retrenching and redesign, and it just creates an unnecessary form of delay.

Unfortunately, we see a lot of Openreach coming in and overbuilding the networks that we were planning to build under those contracts. We then have to do the work to redesign, redeploy, think about it and talk to the Government about how we use the funding, because nobody wants to use public money unless it is really needed, so it is really important that we make best use of those contracts.

There are things that can be done to make the roll-out easier for everybody. I absolutely agree with Ian that funding in Scotland is an issue, because it is so much more challenging. We need take-up—Scottish companies like mine and Ian's need the people to really help us by coming along and taking up our service—so that we can come and do more.

Q197 **Chair:** Are there any other issues to deal with to help us to close the gap, Mr Kavanagh?

Garret Kavanagh: To be clear on some of the things Openreach does to provide support, because we are very mindful of our position and our scale, it is an obligation at Openreach, and something that we offer happily, that every provider in the UK, and anybody who signs up to it, is able to use what we call our passive infrastructure—our ducts and poles. That is available to everybody, and a large proportion of the UK's alternative network builders use our ducts and poles. When we are in an area first, the ducts and poles are available to use.

I would share the sentiment that, at its core, this is about how much we want to spend in how short a time period. Allowing us to have more access to funding and grant income—these premises are not commercial to build—is one thing, but there are things we can do to reduce the cost of delivering them, so that you get more return on the pound invested. Some areas we could look at are the right to access land for telegraph poles on private land, and some of the land access agreements and speeding up those processes. If you think about the activity of building a fibre from point A to point B, anything that is not actually building it could be considered a wasted effort or a wasted pound. Some of it will always be essential and required, but streamlining that process would allow us all to get on and build networks further and faster.

Q198 **Chair:** Would you like to add anything, Mr Thorburn?

Robert Thorburn: I echo what Fiona said about certainty of build. We have all been in contracts, for quite some time from an Openreach perspective. That has been the constant, but it will change. We recognise that where commercial provision has not needed intervention from public subsidy, Governments rightly make the choice to remove that build—we see that occurring quite regularly in our own contracts. It is challenging, because it leads to re-work, and a level of certainty for the supply chains delivering it tends to be what is looked for, but we recognise that where public subsidy is not needed, that would be the recommended approach. That is what has been driven from both the UK and Scottish Government: to maximise our own commercial investment wherever physically possible and follow through on our capability to deploy to avoid the need for public subsidy.

Q199 **John Cooper:** Thank you very much for your attendance. All of us around this table understand the story of the haves and have-nots. Although the overall figures are very good, and talk about something like 95% coverage, it is the 5% that is very difficult to solve. It is very serious for that 5%, and that 5% is disproportionately made up of remote and rural Scotland.

It always strikes me that if you go to the Shetland Isles, as we heard, or the Svalbard islands in Norway, you have tremendous broadband coverage, but if you come to a place called the Isle of Whithorn, which is not even actually an island, in my remote and rural constituency of Dumfries and Galloway, the broadband is dreadful. I do not want to misquote you, but is there something in throwing more money at this—is that the fundamental problem? Also, you spoke about the peculiarities of Scotland. Could something be done about the difficulties of achieving wayleaves, access and so on? If we were to declare this critical national infrastructure and smash through things, would that help?

Garret Kavanagh: On the importance of telecoms to society, maybe it was a nice-to-have in the ’70s or ’80s, but now, it is an essential. Every home in the UK has some sort of connected device, and it almost feels like the number of devices and amount of everyday life that everybody in society uses online devices for is increasing exponentially, so the haves and the have-nots feel it.

I would also say that the point about critical national infrastructure and the powers applies equally to repair. In the last few days, we have had some bad weather, and I have no doubt that the ability to go in and act more like they can in some other sectors would add value across all the companies here. Certainly for Openreach, we would be able to do things more off our own direction, because it is the right thing to do to provide connectivity. There is value in having a conversation about the scope of the powers that telecoms companies have within our remit.

To come back to my point in response to a previous question, that makes it easier to deploy, and therefore the amount of funding required comes down and we can build further. If the subsidy is there, every organisation

will be able to go off and build it. We are doing Project Gigabit and R100, but if we can make it easier to build, that has value.

Q200 **John Cooper:** Fiona, do you think everyone would benefit from that?

Fiona Cayley: A lot of what Garret said is true. It was interesting that he mentioned the passive infrastructure product—the ducts and the poles. We as an altnet—an alternative network provider—use those, as do a lot of our colleagues in the industry right across the country, but they are not provided for free. In Scotland, one of the main challenges is the distances that we have to cover between the properties and between communities. It is charged according to the distance, so it is fundamentally more expensive for us to deliver in Scotland than it is to do a similar number of properties elsewhere in the country. That is something to think about.

On land access points, pretty much everybody in the telecoms industry would say the same thing, but the electronic communications code is reasonably proactive. There are some issues about multiple dwelling units, which are a particular challenge in Scotland. Perhaps we can explore that more. Overall, we absolutely need more money, but a more proactive approach that is focused on Scotland, in terms of how that money is deployed, would be interesting.

Q201 **John Cooper:** Ian, one of the things that the Faroes demonstrate clearly is that depopulation is the killer for remote and rural areas right across the world. Have you found that by having jobs and connectivity in your area, you can reverse or at least slow down depopulation?

Ian Bolas: Yes, definitely. In the area that we operate, we have actually seen a population increase, and having reliable internet has been part of that success story. We have seen people come into the small isles—to Knoydart and Elgol—and many come with new skills. They are not coming as a joiner or a builder; they are coming as someone who works in accounts. They are online-based and work remotely. That has stabilised the population and has even enabled us to increase the population in these areas. It has encouraged young families in, which has been good.

To go back to your question about the poor internet in your area, the copper telephone lines that people in your area have are at the end of their life. You hear stories of hamlets where the broadband is terrible, and then you go over the hill and it is fantastic. You hear that everywhere. It is almost like there is a lack of resource or planning when going for these projects. We need to think, "We know these guys have a terrible service here. What can we do to improve it in the medium term to retain their custom?"

Many people, especially on the Isle of Skye, are leaving the traditional copper telephone lines, or even fibre, and moving to Starlink due to a combination of the unreliable service, the expense and the fact that they are fed up with poor customer service. The alternative product out there seems to be reliable and doesn't give them any hassle.

Q202 **John Cooper:** Is that a particular issue for Britain, where we are trying to

introduce a new system on top of an existing legacy system? Some countries that had effectively nothing—no telephone network—are actually ahead of us in the introduction of broadband because they are not trying to work with an old legacy system.

Ian Bolas: Potentially. Maybe they had lots of small networks that were not joined up, but the core infrastructure is joined up and everyone is linking into that wherever they can. As Fiona said, there are costs associated with the passive infrastructure. At Hebnet, we do not use any BT Openreach infrastructure, other than the main fibres that go from Mallaig to Edinburgh or Glasgow. We would like to use more infrastructure such as the subsea fibre that was laid in 2022 to the island of Eigg, but that has been dormant for four years. We believe it will be another two years before that will be activated, so we cannot access it, unfortunately. If we could then we could obviously improve the experience of our customers, but at the moment, for whatever reasons—contracts, things like that—we just cannot access it. That is so frustrating for us: we can see it; we just cannot quite touch it yet. That is very difficult.

Q203 **Douglas Lumsden:** Garret, you mentioned R100 and said it was a great success, but it was meant to be completed in 2021 and it is not going to be completed until 2028. That hardly seems a success.

Garret Kavanagh: I was describing it as a success in that there are tangible outcomes: communities have service that they would not otherwise have got. The R100 programme has three lots and each one has a different success rate.

You will get a less than perfect answer from me. Rob has lived and breathed R100 for its whole lifetime and is a much better person to answer it—if you wouldn't mind, Rob.

Robert Thorburn: I will try. First and foremost, I totally understand the 2021 commitment. It was a Scottish Government commitment that everyone would have access to superfast broadband, and we were proud to partner up with the Scottish Government on their delivery ambitions. As Garret said, there are three contracts with different milestone dates and different requirements inside them. The north lot has an end date of March 2028, which has always been in place. We have worked proactively right across the highlands of Scotland and that lot will include the connection of the subsea cable to the island of Eigg, likely next year, on the conclusion of our work in other island communities. We have built off the back of the subsea connections already in many of those communities, including up in Orkney on Westray, Sanday and Eday—it goes on. They are all live, all connected and all gaining the benefits of the broadband that has come through the R100 programme.

The challenge for us now is actually how we blend Project Gigabit and R100 together. The ask of both Governments is that we do that as effectively as we can. That may lead to some level of manoeuvre that makes it more efficient to deploy services in a combined fashion as opposed to a singular fashion. From our point of view that creates

efficiencies, which is what we are driving. The Western Isles are a good example. In both contracts they are going to have amazing outcomes at the end. From our perspective, the focus is now on combining the programmes to maximise the investment and the efficiency that we can get from every pound.

Q204 **Douglas Lumsden:** It strikes me that, if R100 and superfast broadband has been such a success, why do we have companies such as Hebnet having to do their own thing because they probably—though I do not want to put words into your mouth, Ian—feel abandoned by Openreach, which has not moved as fast as it should have? Communities are having to do their own thing.

Robert Thorburn: I can fully understand that. We set out on the ambition that we would love to cover 100% of Scotland where we could with the technology, but we recognise that alternative and complementary solutions are available and will be used by customers the length and breadth of the country.

We are focused on, first, our commercial build programme, which has driven as hard and as deep as we can. We are proud that we are the only provider, really, that is driving in rural parts of Scotland in a commercial fashion. Secondly, there is always a start, middle and end to the rollout sequences. I have worked with a number of MPs and MSPs to try to understand and deal with priorities and challenges that have gone through over the last five years particularly. My understanding is that mailbags are getting less full as a result of the coverage that is coming through, but challenges remain. We are now working on Project Gigabit to deliver even more connectivity over the next few years in a number of your constituencies.

Q205 **Douglas Lumsden:** Ian, briefly, do you think R100 has been a success?

Ian Bolas: For us, the voucher scheme has been successful because it is more geared up for smaller altnets—companies like that. The main scheme certainly seems to be slow, or slower than a lot hoped, and many people are still struggling with poor broadband. I know the voucher scheme is being wound up in November. If you look on the various websites for broadband availability, there is no plan for those properties. It may get pulled up in Project Gigabit, but again, it will be 2030 onwards before those properties see any difference in what they get. As I mentioned, these properties want it now, today. They are going to leave whatever they currently have and go to alternative products.

I suppose there is a risk that we get the fibre out to everybody, but many of them have decided that the alternative product is more than ample for them—is all the effort to get the fibre out to everybody going to be wasted? We might even have to draw a line to some extent and say that for certain properties that meet certain criteria, it is too much effort. I do not know, but every area is different. It is very difficult to have a one-size-fits-all approach with these things.

Where I operate with Hebnet, we work well. That does not mean our model will work well in another location. That is the challenge. We are a success story of our area, but I would not like to say, "We work here. We work everywhere." There are bits where you need Openreach to put the fibre in, and then the open market takes over and you get your broadband from whoever. It needs that balance of sometimes small scale and sometimes large scale to do it.

Q206 **Douglas Lumsden:** What has been your overall impression of how Project Gigabit and R100 have worked in terms of procurement and everything else? I will come to you first, Fiona.

Fiona Cayley: I can really only speak to Project Gigabit, because we are not involved in R100. As I said, we have made a success of Project Gigabit. We started by doing two small contracts in the north-east of England, and we were actually the first company in the whole of the UK to finish a Project Gigabit contract. We have taken the learning from those smaller contracts and brought it into the bigger contracts that we are now delivering in Scotland.

We have found a way to work with both Governments and to make a success of that, but there are some challenges. The fact that R100 is still out there—we see areas where there are R100 properties, Project Gigabit properties and commercial properties; actually, we deliver to commercial properties in Scotland as well, not just Openreach. There is a perhaps a little bit of difficulty at the edges. I understand where Ian is coming from; perhaps we need to have a bit more of a joined-up approach.

Openreach are clearly really good at this. They are the incumbent; they are here for a reason. But I have a 10-year history working in the alternative network sector, and it was our creation and drive in the late 20-teens that drove the full-fibre roll-out to the point that it is. Openreach were playing catch-up in that. They would have sat back on their laurels a lot longer. I think that is their preference; they do things at their own pace, and we are trying to get everything done faster. We would like to see more support for companies like ours—smaller companies that are hyper local-focused. We are doing great things in the community, delivering benefits beyond just the broadband that we are bringing, and we would like to see more support, more funding, more interest and more engagement.

Q207 **Douglas Lumsden:** Robert, how could the process be improved?

Robert Thorburn: I think we are already doing it. We are running both contracts—we are running the R100 contract with the Scottish Government, and we are running Project Gigabit, which is managed by the Scottish Government and interfaces with both the UK Government and us. We are already having these open conversations around how we get the most out of the funding that is available, because we do appreciate that capital is challenged. It is really important to maximise the coverage and reach. We have those conversations about how far you go and where you have to deliver. There is a cost cap in mind in relation to Project Gigabit,

and obviously that is something we need to consider constantly—how far can we push the funding that we have available?

The key thing that Garret said was that the things that would help to move this forward are around access and MDUs. There are a lot of MDUs within the contract areas that we are looking to cover, and the speed and execution of getting into those apartments and flats can delay us. There is the issue of access on land, particularly when we have to build big, long connections. The motorway network connecting us to a community tends to be quite far in parts of Scotland, and not having access to land really quickly causes some of the delays that we have. Equally, when we are trying to deliver an island solution, it is really important to have pretty much every logistic set up in advance for it.

From our point of view, we are working really well with both Governments. There is always more we can do, but it is more about the evolution over the next few years, and more funding coming through. Is it enough? We would probably want more, to go further, but we have to work with the funding available at the moment, and that is what we would be pressing both Governments for.

Q208 **Susan Murray:** We are hearing, broadly, about a success story from Openreach, yet you are implying that there is a group of customers who will look for other solutions—you are never claiming to be able to do 100%. There are a number of Gigabit contracts in Scotland that have yet to be awarded. Why is it taking so long to award them, and what is causing the delays? That is to all of you

Ian Bolas: We cannot apply for them; we are too small, for one, and we do not have the backhaul available to be part of Project Gigabit. We would be able to if we had access to subsea fibre to the island, but until that happens, we are effectively out of the game for Project Gigabit.

Fiona Cayley: It is tricky, because we cannot comment on live procurements, but we absolutely have an appetite to have more funding and to do more. We have very supportive funders, including the Scottish National Investment Bank, so if there was an opportunity, we would absolutely be interested and would want to apply what we are doing in the other lots in other areas.

Garret Kavanagh: We have the scale to be able to consume it at Openreach, so we would absolutely encourage all parties to make it a fast process. When it is there, we can mobilise quickly, and we can go out and build it. We have the supply chain there to do it, and we have engineers who live and work all across Scotland to do it, both with our own resources and with our partners. If there is one thing coming from all my contributions today, it is about how speed is really important in fibre, and not just speed for customers, but the speed of deployment and getting it out there. Generally, fast is efficient, efficient is cheaper, and cheaper gets more customers, so speed at every stage of the process is something we should all focus on.

Q209 **Susan Murray:** Once a contract is awarded, how long does it typically take for the customer to get their broadband?

Garret Kavanagh: In each of the contracts there is a start and an end date. While everybody would love to have all customers connect on the first day of a contract, it is a civil engineering contract, so the reality is that some will be done at the start, some in the middle and some at the end. We typically go through cycles of surveying and deciding what needs done, deciding the cost, checking the cost per home and making sure it does not breach any thresholds, and then you can go out and build. The start to the finish of a build is not typically more than about three months—when you decide to build it; it is the bits around the edges that take the time to get there, and then there is obviously a schedule to go through.

Q210 **Susan Murray:** Would those schedules not be part of the contract process, so that that would all be ready once the contract was awarded? Are you saying that, because that work has been done during contact process, it would take three months for the customer to receive it?

Garret Kavanagh: As soon as we get one of our contracts, we will start work on it. There is some process of back and forth with Government Departments whenever we are doing these projects, but once we start a build, it is about three months before the customer gets connected. Whenever we sign new contracts, we want to get off to a flying start—we want to do it and we want to move. The first stage for us is getting out and surveying, and we do that reasonably quickly.

Q211 **Susan Murray:** Do you think it is fair that some customers in Scotland have to wait longer for connectivity? Can anything be done to speed up how quickly the more remote areas can be connected?

Garret Kavanagh: It is very understandable that everybody wants this product. For all of us on the panel, I assume—we mentioned it earlier on—demand and people wanting to buy the product is crucial to our business success. We are motivated to get people connected, because that is how we get a return. We want people to buy our service, too. It is not that we are holding people back and do not want to do that—it is a commercial imperative for us to get people connected to the network—but there are the practical challenges of building a network at scale and over geographies. For both R100 and Gigabit, certain premises are identified and certain premises are not. The scheduling is always part of the conversation with Government—maybe Rob will have some insight on that—but there will always be customers at the start, middle and end on these projects. I suspect that that would be the same for every fibre broadband provider in the UK and across the world.

Q212 **Susan Murray:** If more fibre companies were involved in providing Project Gigabit, would you expect delivery in Scotland to accelerate?

Garret Kavanagh: I think the number of companies is secondary. It is about the number of homes you need to do, the funding that is available and the supply chain to deliver that. How many legal constructs are

involved in that process? I would suggest that it would slow the process down—again, scale is important. For me, it is about quick procurement and getting it out there, and then having the scale of operation to go out and deploy it. I am not sure that the legal entities would change it a huge amount—it is about the supply chain.

Fiona Cayley: I agree; quick procurement is great. The faster we can get through the early stages of the procurement phase, the faster we can deliver for customers. We plan meticulously and survey—there are stages in the contact delivery that allow for that. As you say, there are milestones that match that requirement, and we deliver all those milestones well ahead of schedule.

The problem, as I mentioned earlier, is in the identification of subsidised properties, which can change. The slower the procurement, the more change there is, so it becomes a self-fulfilling prophecy and slows the whole thing down. You have to redesign to accommodate delivery that has suddenly appeared out of nowhere, even though it was not flagged in an open-market review at the start of the procurement. Speed is a benefit in all sorts of ways, particularly to get to those properties quicker and in a more joined-up and efficient way.

Q213 **Maureen Burke:** Given that Project Gigabit was designed to roll out broadband across the whole of the UK, including Scotland's highlands and islands, do you think that the policy design is sufficiently rural-proofed?

Fiona Cayley: An interesting point, on which we would probably agree, is that there may be different approaches for different levels of rurality. How we define "rural" and "urban" is potentially very tricky. In the end, we are building a network that has to connect. I will not talk about engineering when we have Garret here, but everything has to connect together, and you have to bring it from where the backhaul is and where the main cables are coming from. It is an engineering challenge as much as anything, but I think you are right to say that the policy design must recognise that and maybe adapt, so that some of the rural properties that we might call slightly easier to deliver get a different approach from what we might decide for the very hard-to-reach properties or those at the edge. Ian has experience in that. It is almost that the further out we get, the more collaboration we need, in an industry-wide approach so that we can all work together on those properties

Robert Thorburn: To echo something I said earlier, there is a policy in place between the Scottish Government and the UK Government on reaching rural properties in the highlands and islands. As we have talked about, our R100 programme in the north is predominantly driven through authorities—Shetland and Orkney, Western Isles and Highland, and Argyll and Bute. We recognise the challenges that they bring.

On top of that, we now have Project Gigabit, which will enhance coverage even further in a number of those areas. Again, I highlighted the Western Isles where, as a result of Project Gigabit and our programme on the island groups, there will be growth in coverage of around 50%. Some of

the most challenging build is in the Western Isles, but equally, we have islands and mainland that need to be connected.

Fiona raises a really great point. While it is really important to invest in rural, because of depopulation and the need to attract people to live and work there, we are still hearing about challenges in our towns and cities, which should be benefiting too, and where some public subsidy is needed. It is about trying to get the balancing act really clear. But there is a policy in place, and we have already seen at first hand the investment being made in those rural locations.

People are delighted when our engineers turn up to build. I have had lots of fantastic emails, with people saying how amazing they are feeling in a number of your constituencies in which we have had community events. I think the communication angle is there, and it will need more funding to go even further, depending on the capacity of Governments and the subsidy available.

Q214 **Douglas Lumsden:** Ian, you mentioned the voucher scheme earlier. How important was that for you and your community to move forward with the schemes you had?

Ian Bolas: We were obviously planning our build without the voucher scheme, and then we became part of it. It enabled us to do some projects or upgrade infrastructure in months, or a year or two, rather than over several years. That has enabled us to bring our network up to a standard where about 60% of our customers are on fibre. It is radio-fed fibre, but it is still fibre to the premises. It enabled us to get to that point a lot quicker.

We plan to get around 90% of our customers on to fibre over the next couple of years, with the tail end of the voucher scheme, so it has just accelerated what we can do. We are now also able to offer commercial customers products that would not have been available to them previously, so it helps support some of the businesses in the area to do more than they would have done previously, and has advanced the commercial side of the business, which helps to maintain the residential cost model for our customers.

We operate a model where we try to keep the residential cost as low as we can for that side of the business, and the commercial customers pay a little more for an elevated service—that subsidises our residential customers. It has not been touched on yet, but in these rural areas, the average income is often lower than in cities and places like that. Affordability is important to us. Our customers pay a very low cost for their service, but they get a very good product.

In some areas I have been to outside of where we operate, customers have only two options, say, and both are expensive—or at least above average for a broadband service—but ultimately they have to have it. We typically save our residential customers roughly £25 a month on the average cost of broadband. The voucher scheme has helped us because we have not had to put up their prices to pay for our upgrades; we have

been able to upgrade our infrastructure through the voucher scheme and deliver a good service while maintaining a low price.

Q215 **Douglas Lumsden:** Without the voucher scheme, you may still have been able to do it, but it would have been more expensive for the end user and would have taken longer to implement.

Ian Bolas: Yes, definitely. It would have taken us longer to implement, and we would probably have had to look at price rises to help pay for it and move it along. Because of the voucher scheme, we have not had to do either of those things. We have been able to do it outside the customer and grow the business as part of the whole thing.

Q216 **Douglas Lumsden:** Fiona, I think GoFibre has used the voucher scheme as well. What has been your experience of that scheme?

Fiona Cayley: We have used the voucher scheme in the past, but at the moment we are focusing on our Project Gigabit delivery. That just suits the way our company is set up at the moment; we are really geared up to deliver those big contracts.

This is an example of what we were talking about just a minute ago about a different policy approach for different challenges. Certainly, if you are getting out to the remoteness that Ian deals with, you can see that, at the edge, vouchers may well be the best way to make sure you are targeting that spending at the people who really need it.

I know from voucher schemes I have experienced in the past that the good thing is you are delivering to people who actually want it. They are participating in the process of getting that voucher, so they are invested in that delivery to them.

Q217 **Douglas Lumsden:** I guess the question to you all is: do you think it is wise that the voucher scheme is being removed when we have not completed R100 or Project Gigabit? It seems a bit strange that we are pulling it just now. Robert, do you have a view on that?

Robert Thorburn: It is a matter for Government to decide, ultimately, whether they are able to service customers outside Project Gigabit. Like GoFibre, Openreach is focused on R100 delivery and Project Gigabit. We have actively used vouchers previously, both with the UK Government and the Scottish Government. It was successful to bridge the gap between contracts and blend in communities at the time, but at the moment we are focused fully on delivery of our contract infrastructure and pushing it as far as we can get.

Q218 **Douglas Lumsden:** Fiona or Ian, do you have a view? Should there also be something to replace it with?

Fiona Cayley: I wonder whether it could be improved, yes. Maybe it is not appropriate for the likes of Openreach to have access to the vouchers, but it is certainly appropriate for Ian. There is definitely a horses-for-courses approach there. It would be worth looking at.

Q219 **Douglas Lumsden:** Ian, do you think there should be something to replace it with?

Ian Bolas: It is certainly a shame that there is nothing to replace it, because thousands of properties will be affected by this. It will cost those households personally—they will have to pay extra for satellite or ask Openreach to put a fibre to their property—so it would be nice to have something come in. For Hebnet, once we have completed our core network, there is potentially an opportunity to expand our business in a few other areas if there is still an active voucher scheme, whereas at the moment, once we have completed our area, we will not go beyond it without a voucher scheme or any incentive.

Q220 **Douglas Lumsden:** I guess for those hard-to-reach rural areas, there will be no voucher scheme for companies like you to get involved in, and Openreach will probably say it is too expensive for them to go in, so those people will be left with nothing at all—only Starlink.

Ian Bolas: Yes, ultimately, it will be satellite services. It would be better if there were more competition for satellite, but that is not easy. You cannot just put up lots of satellites and offer an alternative product, whereas with fibre, you could have two fibre networks in an area for competition. Ultimately, the recommendation for most people will be to go with satellite, unfortunately.

Q221 **Kirsteen Sullivan:** Throughout the session, you have all spoken about the need for more funding. My question is whether the current level of funding from the UK Government for Project Gigabit is sufficient. I am hearing a no, but correct me if I am wrong. It also sounds as if you are suggesting that there needs to be something more bespoke to reflect the distinctive challenges in Scotland. Is that the case?

Garret Kavanagh: How far the coverage reaches inside Scotland is ultimately a governmental decision, whether it be a Scottish Government or a Westminster decision. I said at the start that it is technically possible to do, but it is about how much funding and support there is. We had a conversation about vouchers being one of the funding methods, but equally, fully funding Project Gigabit to deliver 100% is another policy way of doing it, and I am sure there would be others. For me, it is about what society and Government want to achieve, and then what the industry can do to deliver that as quickly as possible.

Q222 **Kirsteen Sullivan:** Do you think we start with Government objectives and then work out how much it will cost? Also, should the funding level reflect the distinctive challenges that we have in Scotland as opposed to other places in the UK?

Garret Kavanagh: Typically, whenever we respond to bids—I suspect it will be the same for everybody—we are asked how much it will cost and we give a price; I do not think any provider would go in and say they could do it for under. Part of the process is working out what you want to accomplish as Government—either the Scottish Government or

Westminster—and then the cost to deliver it from all the organisations that take part.

Q223 **Kirsteen Sullivan:** Would anyone else like to add anything?

Fiona Cayley: We would agree. More funding will always be welcome, because it is more expensive to deliver broadband in Scotland than it is in other parts of the UK. We can absolutely do more for more.

Q224 **Kirsteen Sullivan:** You have all spoken about the various challenges and barriers. You have mentioned the geography, procurement, land access and the supply chain. Are there any other barriers, and do you think those barriers are well understood by both the UK and Scottish Governments?

Garret Kavanagh: I would add multi-dwelling units to your list—I think we have called mentioned MDUs a few times. They can be a series of flats and apartments or multi-business units. I think there is some disparity between the legislative approaches in England and Scotland, and there is work we could do to make them consistent. If a landlord or somebody is required to give permission but is absent, or we cannot get in contact with them, there is a process to handle that in England, but that does not necessarily apply in Scotland.

As we approach this, we can also talk about people who live in a very rural environment; there are people on the Scottish islands who live in multi-dwelling units where this could also potentially be an issue. One of the things I would put on the list is multi-dwelling units and the ability to proceed in those buildings if the landlord is absent.

Q225 **Kirsteen Sullivan:** There has rightly been a focus on the rural areas that very often face a rural penalty in so many ways—whether it is transport, connectivity or housing. Do you think we have perhaps overlooked some of the challenges in the towns and cities? Do you think they are as well articulated?

Robert Thorburn: As I echoed, we should not forget about our cities and large towns, as there are challenges there. I think there is an expectation that commercial providers like ourselves and others will just deliver that connectivity and you do not need to intervene.

However, there are quite a lot of reasons why we need state subsidy to intervene in cities and large towns, and I think that is being recognised more through the market consultation that is now going out publicly. It is including more of those locations that were not previously available to be considered for subsidy. We welcome that opportunity now to revisit areas, such as Glasgow, Edinburgh or Aberdeen, that have not yet been completed commercially, and are not planned to be. They could then be eligible for public subsidy, which I think is the right decision and one that we welcome.

Q226 **Kirsteen Sullivan:** What action do you want to see from Government and industry to remove some of those barriers. You talked about the different legislative landscapes in Scotland and England, and you said that we might have issues in Scotland with proceeding where we cannot contact

landlords. Is that something you would like to see change? Has that been raised with Government?

Robert Thorburn: We welcome the constitutional discussion around the leasehold Bill and allowing more access in England, but that leasehold approach sadly does not support Scotland at all, because we are freehold. We would really encourage both Governments to talk about what they can do to level the playing field in access, and to look at the constitutional changes that are coming through and how both Governments can deliver on that.

We are continuing to work, and we will continue to drive hard to access any flats and apartments where we can get agreement to do so, and I have a team dedicated to doing that every day. We chap doors, we speak to customers and we are actually engaged. I know that many of the tenants who live there want the service, but we are actually sometimes blocked from giving them it, which is really frustrating.

Fiona Cayley: We absolutely support Openreach, and we have actually discussed this as well. The MDUs are a challenge because of that specific different approach to those multiple dwelling units. We would certainly be able to get more people connected if we could address that problem.

On the wider question, someone mentioned earlier—I don't know whether it was Garret or Robert—raising the profile of what we are doing. We are bringing the connectivity, and the Government are supporting that in the funding they are giving, because they see the benefits and want the economic growth. It is almost like saying, "If we build it, they have to come." We need that take-up, and we need people to sign up to the broadband deals that are then available to them on this new network that we are bringing. From our point of view—I am sure Ian would agree—we also want them to support their local companies. We have to see that realisation that we need connectivity to grow as a country.

Q227 **Kirsteen Sullivan:** Mr Bolas, would you like to see any specific action from Government to remove barriers?

Ian Bolas: Obviously, it is a little bit different for us compared with the larger companies.

Q228 **Kirsteen Sullivan:** That is why I wanted to hear your perspective—I knew it would be very different.

Ian Bolas: As a smaller company, we use a lot of radio links in the highlands. We have connections that go across water, so we use microwave wireless links. The way Ofcom is set up, there is a standard UK model for pricing, whereas where we operate there is not really any competition as such. It would be nice to have a bit more flexibility with the pricing models in our area, and potentially with the frequency bands we can use. It is not like a city, where you have lots of commercial operators that want certain bandwidth or frequencies. Where we are, it is just us. Under the Ofcom model, we effectively have to pay a lot of money for

something where, if you lived in a town or a city, you would just have a fibre-optic connection for the equivalent product.

I can give you an example, so that you can understand the challenges we have. An Openreach fibre connection to the island of Eigg would cost us, say, £10,000, and would give us 10 gigabytes—10,000 megabytes. A microwave connection costs us over £5,000, but for only 1 gigabyte. You can see that it is quite expensive for us for 1 gigabyte, whereas a little bit more money would give us a lot more bandwidth. It is these kinds of challenges where, if Ofcom was cheaper or we could have easier access to things, it would make our job a lot easier to deliver faster services and so on. That is one thing where we feel that the one-size-fits-all approach of Ofcom does not strictly work in rural areas, and there needs to be more flexibility.

It would be good for us—and probably for Fiona as well—if there was a bit more co-operation, or common sense, built into the contract. In some areas I am sure GoFibre will have existing infrastructure, but there may be a Gigabit contract awarded over the top of that for, say, BT Openreach to deliver to part of that area. It would make sense for these areas not to get overbuilt, especially with Government money. For us at Hebnet, we have built Eigg with fibre—the island of Eigg has full fibre to every premises through Hebnet—but BT Openreach has a contract to build, I think, 30 connections there as part of the R100 contract. It seems crazy to overbuild what we have done when Openreach could probably build that somewhere else where someone needs it, or where there are demand or resource issues. There needs to be more co-operation and flexibility. A one-size-fits-all approach cannot be used for these things.

Q229 **Douglas Lumsden:** Can I ask BT Openreach why you would do that? Why would you build where there is already fibre in place from another company? Why would you not just concentrate on the areas you have still got to do?

Robert Thorburn: Openreach work in relation to the intervention area and available funding. Eigg is available in the intervention area and was presented as part of our original bid in relation to the R100 delivery plan. That funding was agreed. It also included full subsea connections, and we have funded and delivered a subsea connection directly to the island on the basis that we would bring additional connectivity to it and then extend coverage and full-fibre, gigabit-capable broadband to individual homes and businesses.

I cannot comment directly on the selection, or not, of islands. There are areas defined by Governments that dictate where you can invest and where you should not invest. It would be a decision for the Scottish Government whether or not we deliver there, because they authorise the build of everything we deliver in relation to R100. From our end, we have already started the journey of delivery to Eigg with the fact that the subsea connection is connected, in effect ready to be used to deliver full-fibre services. As I say, it is for Governments to decide what the

intervention area is and where they want funding to intervene, and that is a legitimate location to intervene.

Q230 **Douglas Lumsden:** But is the scheduling not within your remit? Why would you not schedule somewhere else that does not have fast internet rather than somewhere that does?

Robert Thorburn: As I have said, that location is part of our contract milestones that are already in place. From our perspective, when we present the work to be done, it is up to the Government to decide whether to go ahead with said build or not. Whether it is in Gigabit or in R100, those decisions are taken at different points depending on the requirements, as Fiona mentioned, and build can be changed because of another intervention that has occurred in life.

We are working very closely with the Scottish Government. We are aware of sensitivities when we build network in locations. Alternative options and community solutions may have been agreed, but again we are working on the basis of delivering to the UK strategy of 99% coverage of gigabit by the end of 2032. We just play our part in delivery.

Q231 **Lillian Jones:** On the conclusion of the Project Gigabit programme, the Government estimate that some of the hardest-to-reach premises in Scotland will remain without broadband coverage. Is that a fair outcome for the communities affected? Which areas in Scotland will remain not covered by broadband?

Ian Bolas: That is a difficult one for me. I do not think it is fair that a lot of those communities are going to miss out. Some properties are just so difficult to justify. I can understand why BT Openreach and others might never get to them, but thankfully, alternatives are out there. For me, is it acceptable that there is no competition for that household to choose from? At the moment, for all the properties that are going to get missed off by Gigabit—in effect, the voucher properties, which have no alternatives—is it fair that they do not have a choice of service? They can get fast broadband but they do not get to choose where it comes from and how much it costs, effectively. I suppose it is a Government thing whether that is deemed as fair.

It would be good for those properties to have both options, but I think there are challenges as well for Openreach when supporting such connections in very rural areas. Sometimes the lines could be down for weeks because of bad weather, and alternate technologies may give overall better availability to the customer. When they live in a rural area, their internet might only be on for, say, 99% of the time, because for one or two days of the year, the bad weather knocks it off, whereas other products out there might give closer to 100% availability. That may cost a bit more, but people get the availability.

Certainly, speaking from the islands' point of view, I have had experience of phone lines going off on one of the islands and it taking weeks, if not months, to get that fixed. If that were a broadband connection, that is just not acceptable. I appreciate that the islands are not easy to get to, and

there is that kind of trade-off about, I guess, where you live, to some extent. Satellite products are not impacted so much by weather, telephone lines or power going off, say to the telephone exchange—if the power is off for two or three days, I think the telephone exchange will go off as well.

So to summarise, I do not think it is fair. I think it would be good for customers to have choice, but there is an element of that just not being achievable to some extent.

Fiona Cayley: I agree, actually. You will probably find a consensus across the communications industry that there are just some properties at the edge that will not be reachable with fibre. That does not mean that there aren't other solutions that can give good connectivity to those properties. It is a question for the Government as to how they look at the funding, how they support those customers, and how they make sure that those customers are not being unfairly treated by organisations outside the UK Government's control. There are issues with things like satellite links, aren't there? So you are right—there is a fairness angle, but there is also an engineering angle. We need to find a solution that serves those properties in the most reliable way we can for the best use of public funds.

Robert Thorburn: From our end, we have already echoed that. It is possible to provide fibre in the most remote locations, but it takes investment and funding, and I think we all recognise that it is not always possible to reach every single home and business in Scotland with technology. It comes at a cost point and I think that is really what it boils down to.

We have had significant investment through the R100 programme, with more than £600 million of funding. On top of that, we have secured an additional £177 million so far through Project Gigabit to deliver what we have been asked to do. When we go to communities to deliver, we do not just do what we are asked; we do more. What we are trying to do every time we reach a community is stretch the funding and maximise the coverage and reach. That is how we get closer to closing any gap that is perceived or is unexpected in reaching the final few.

There will be locations that are a challenge, but for us, and all the contract owners in relation to Gigabit and R100, it is incumbent on us to try to stretch the delivery as much as possible. That is what we are all trying to deliver, but Scotland is challenging to deliver on. We have a very unique topology compared with other parts of the UK, but we have demonstrated that we have already delivered in some of the hardest-to-reach areas, and we can do more of that.

Garret Kavanagh: One thing to say, which goes back to the crux of your question, is that full fibre is the gold standard communications choice of 2026 and for the foreseeable future. It is the most reliable medium and it provides the speed today and, crucially, the speed for decades to come, as it is upgradable. As I think Robert said earlier, it is akin to building a motorway—it is a thing that exists and persists, going on—so it is very

understandable that people would like it, because it will allow them to be connected not only today but into the future.

One aspect that we have talked about is competition, and there are different levels of competition. There is the competition in who people buy their broadband from. Certainly, one of the things we are very proud of is not only the work we do with our passive infrastructure to allow other organisations to build network, but the fact that we do not sell to customers directly; we have up to 600 providers that sell on the Openreach network, and people compete at a retail level for service. That happens all over the UK, so that the provider in the centre of London can potentially offer services on a Scottish island equally as well. So on competition and reliability, full fibre is the gold standard.

Q232 **Lillian Jones:** My question was: is this a fair outcome for communities in the affected areas? Could you just answer that: yes or no?

Garret Kavanagh: It is ultimately a policy decision. We have come around this a few times, and we would have a view that we can—

Q233 **Lillian Jones:** If you were a member of the community that wasnae being covered by broadband following the conclusion of this project, would you say that was a fair conclusion: yes or no?

Garret Kavanagh: I would want full-fibre broadband.

Robert Thorburn: Again, from our perspective, there are lots of opportunities out there for different products and services. Again, driven from the policies, what is right for a household and what is not is a matter for others. From our end, we are focused on delivering full fibre to the maximum number of premises possible. That is the goal.

Fiona Cayley: Yes, we are a full-fibre provider; that is what we do. We think it is absolutely the best, and we do as much as we can.

Lillian Jones: Ian has already said that he thinks—

Ian Bolas: I think it should be, yes.

Q234 **Lillian Jones:** Which areas in Scotland will continue to lack coverage following the conclusion of the programme?

Garret Kavanagh: It is probably impossible for us to say. We talked a little about the open market review process. That is our forward-looking view of the areas that we plan to go to, but it is very much subject to change, based on what happens with Project Gigabit procurements and the like. I think the question is probably better answered by asking, "Where is there unlikely to be Government Project Gigabit funding to deliver?" Anything not in that is likely to be left out.

Fiona Cayley: I think that is probably true. We are focused on the areas where our skills are based—where our people are based—and we are now expanding up to the north-east coast and building out that network and presence. We are subject to Project Gigabit procurements. If more Project

Gigabit procurements are available, we will absolutely look at delivering those, but I think Garret is right: you need to look at the properties that are within that procurement. But to go back to the OMR process, we need to make it work so that the procurements can be quick and efficient, so that we are not being overbuilt by Openreach while we are trying to deliver that connectivity as well.

Ian Bolas: In terms of Hebnet, we are excluded from Project Gigabit in our area, apart from the isle of Eigg. The other five areas we cover would effectively be left out of scope, so our customers would have no options other than satellite if we did not exist, as two thirds of our area would be left out of Project Gigabit.

Q235 **Chair:** Perhaps I can follow that theme up with you, Mr Thorburn. I have heard colleagues, not least my colleague Torcuil Crichton, who represents the Western Isles, mention the issue that arises as copper wire stops being used and analogue systems are switched off, and the dependence on digital that comes as a result. That is not possible for everyone, and for some older people it is particularly challenging.

We know that there were issues in some areas at the weekend with the wind and storms. I understand that that is a problem for everyone, but what digital resilience will providers such as you build up in areas like that, where the wind is blowing at 70 miles per hour and the ambulance is an hour away? How can we help those people get over that hurdle?

Robert Thorburn: If it is all right, I will pass that to Garret, who is the technical engineer.

Garret Kavanagh: One thing to say up front is that the copper wire will be here for a relatively long time. What is turning off is not the copper wire, but some of the electronics in the telephone exchange that provide signals. Copper wires will still form a part of it, but the voice signal will be delivered over a digital service rather than an analogue one—just in case people were worried about their service working. It is a change from an analogue system to an IP one, and the system that underpins it is many years old and coming to the end of its life.

There are concerns that people would have about the services available. What about people with vulnerable needs? What about Telecor? Openreach is proud to support the Telecor assist service, where we go out and work with communication providers and our engineers to make sure that we go in with the service working and leave with the service working, because that is the bit you would not want to change. We have signed up to the code of conduct on that.

The reality is that the digital service and the full-fibre service as part of that is much more reliable for those customers than what they are on today. It will be a challenge to get customers moved over, and I encourage anybody who has that concern to reach out to their communication provider in the first instance; they are the right person to speak to. Openreach provides loads of services to all the communication providers to make that transition seamless, but it is the right approach for

any concerned constituents across Scotland to speak to their provider in the first instance.

Q236 **Chair:** What happens if their digital system is down, they do not have the analogue and they are fairly remote, and then there is a big storm and an incident?

Garret Kavanagh: The digital system and the analogue system have lots of parallels. The conversation people would have is, "What about power?"—that is what most people would articulate. For vulnerable customers, what you see at the retail end is that the communication provider provides battery back-up solutions that can support customers in the event of power outages. There will be other concerns beyond power, but it is one for our communication provider customers to speak to.

The full-fibre network we are deploying is a much more reliable technology, and it is much newer; it is not 30-plus years old, which the other one is. People should speak to their communication provider in the first instance if they are concerned.

Q237 **Chair:** Are the battery packs successful? I have heard that they can present problems for people.

Garret Kavanagh: That is probably beyond my remit. It gets into the aspect of what the providers provide.

Chair: I will get colleagues to follow that one up then.

Q238 **Kenneth Stevenson:** I know that this is maybe not in your remit, but how long would a battery last in the event of a storm as a back-up for copper?

Garret Kavanagh: That is not knowledge I have in my head.

Fiona Cayley: As I understand it, the Ofcom requirement is that they have to give at least an hour worth of power. Obviously, if you are aware of it, you can switch them off and on and use that wisely, but I am not an expert either. It is only a very limited and temporary solution. This is a general question of resilience, and power companies also have to take their share of the challenge.

Garret Kavanagh: In terms of resilience more widely, we spend a lot of time and effort making sure that our networks are built to a standard. Openreach has a long legacy and history of well over 100 years. We build our network to last. I used the analogy of a motorway earlier and we are building our network to last and when we build it, we design it with durability in mind.

Q239 **Kenneth Stevenson:** The UK Government have indicated that a different approach, rather than full fibre, will be needed for hard-to-reach communities. What alternative approaches should be considered, and which are likely to be most effective? You have sort of covered that, and I guess that the answer might be satellites, but I would like to hear what the alternatives are, if there is anything other than that.

Robert Thorburn: We are also looking at innovation. It is still linked to full fibre, but there is also the innovation that we are delivering using radio full fibre. Similar to what others have been doing with wireless, we are looking at deploying gigabit-capable broadband, but without necessarily the need for a subsea cable. We have one active solution going live next year in Fetlar in Shetland. We are hoping that that solution becomes one of the options that we can deploy in Openreach, both through our contracts, and equally, through the need to upgrade communities in the future by giving them access to gigabit-capable broadband. That is one of our innovations.

There are lots of things going on to try and stretch and reimagine how we deploy networks further. I am sure that Garret has got the T-shirt in relation to exactly how much technology we can deploy. Things are changing all the time. We are not stopping where we are. We are looking at what further we can do to reach those harder-to-reach locations. Fetlar is a good example of a location that has no subsea cable, but we could and will be serving it with gigabit-capable broadband.

Q240 **Kenneth Stevenson:** Do you know what sort of uptime your radio signal would have? Would it be constant—100%—or 99%? I am an engineer, so I always like to know what the efficiency is. If it is radio, I am guessing that it must be quite high.

Robert Thorburn: It is extremely high. I am not an engineer, so I am going to defer on the reality of it. My understanding is that we have got a spectrum and the backhaul capability will allow customers—the whole of the island—to be gigabit-capable, if they all wanted to download "Call of Duty" or whatever they want to do at any given time. We would be happy to take this discussion offline and give a further response in a little more detail on the innovation that we are working on, if it would be helpful.

Q241 **Kirsteen Sullivan:** One key lesson from previous broadband programmes was the importance of starting with hard-to-reach communities and having an outside-in approach. That starts with those communities where they do not have anything, or it is more difficult and costly, and working inwards towards the easier areas such as the more urban centres. To what extent are you prioritising the rural and remote communities so that they do not lose out in the way that they have in previous broadband roll-outs?

Robert Thorburn: I can cover that from our side and Garret can add further from a technical point. First and foremost, we are looking at the whole solution. The outside-in analogy means that you have to get to the outside and have to build from the inside to the outside to receive it.

Q242 **Kirsteen Sullivan:** Do you disagree with the premise?

Robert Thorburn: The solution is right. One example I can give is that we have done exactly that in the Western Isles where we have deployed to Timsgarry in Uig—if Torcuil was here, he would clarify that. That is a remote community. We have passed through a number of villages to take the network directly to that community in Timsgarry and then expanded it further. That was on the premise that they did not have great

connectivity. They had poor access to mobile signal, and it was seen as a necessity to deliver. That is an example of where we have done exactly that.

However, from an efficiency and community understanding perspective, if you are bringing engineers through villages, it is probably more likely that they would expect you to build there and then move on in the sequence. We do both. We will look at the outside where we can directly deliver, but where there is a dependent link—the spine or the network has to build through communities to reach it—we look and judge whether or not we should build as we go forward, or whether you start and work backwards.

Q243 **Kirsteen Sullivan:** That seems quite contrary to what this Committee heard when we visited the Western Isles. We spoke to many local residents who said that years ago, BT had offered reassurances that they were going to start with the more difficult-to-reach areas. Again, that does not seem to have materialised. In Skye, we heard concerns about the pace of the roll-out as well. It seems to be a common theme that, whenever we have these programmes, the same people are being left behind. Of course, programmes then evolve and we look to deliver better services, but that is not helping the people who have no service at all. What would you say to that? Ms Cayley, you are nodding your head.

Fiona Cayley: This has been a theme throughout, or for as long as we have been talking about the fibre roll-out. I remember the original procurement theory being the outside-in theory. I can totally see where Openreach is coming from; there is a certain amount of engineering efficiency in building from where you already have a network outwards. But I think there needs to be a focus on what you are trying to achieve. We are a small company and we do not have huge access to funds, so we have to target what we are building, and we have to generate enough revenue so that our investors see that return on the money that they are putting into this. It is the same for the public money that we are spending; the public need to see that the connectivity is there.

I think there are things in the design of these procurements that could help that outside-in approach a bit more, and it goes back to what we said about overbuild. If what we build while we are trying to get to those difficult-to-reach properties is overbuilt, we then have to redesign things, and the economics of that build just become incredibly difficult for a company of our size to cope with. Unfortunately, those harder-to-reach properties are then de-scoped, because the funding just does not stack up for either our private investors or the Government investor.

There are definitely some flaws in the way in which these schemes have been designed from the outset, which is driving what I like to call the hole in the middle of the doughnut. It does not get to those properties that are scattered around, and that are harder and more expensive to deliver.

Q244 **Kirsteen Sullivan:** So is it your view that more needs to be done within the procurement process to set out the parameters, aims and objectives, and to perhaps have a clearer scope that does not move?

Fiona Cayley: I absolutely think that the procurement process could be done better—we are talking UK-wide here, as this is not just a problem in Scotland but across the country. I think you should be talking to Ofcom about the way that it is also helping to keep a level playing field and to provide a fair crack of the whip for all of us. You have heard Ian's view on that, and we would have similar views. Competition is a great thing, but competition for those harder-to-reach areas is maybe not such a great thing. We need to have a sensible approach.

Q245 **Kirsteen Sullivan:** Just to come back to the feedback we had from the Western Isles, where residents told us that Openreach had not met its commitment to work outside in, do you agree with residents that you have fallen short of the expectations that were set?

Robert Thorburn: First, I am not aware of those examples of communities that have said we have not worked from the outside in. To reaffirm, the R100 programme and Project Gigabit have kicked off in earnest. I was at the council meeting earlier in February this year to talk through the roll-out planning for the whole of the Western Isles. In fact, the whole council, a member of the Scottish Government and I were there presenting.

We were able to hear at first hand the challenges and difficulties across the whole of the Western Isles. It is not just one location; you have multiple island groups. I was obviously able to take the Scottish Government team out to the most remote community, which is Timsgarry in Uig, as I mentioned, and that is at the end of the line. We also looked at three communities, which are called Islivig, Breanais and—the other one has gone straight out of my head. We looked at three remote communities there that were not part of the current plan, and they are now being included in the plan. That is taking the outside-in approach even further and, from our end, extending coverage and reach to the most remote communities we have.

I think that is why our approach in the Western Isles is key, this joint effort and joint support. Again, we are happy to review any specific examples, but I am working right now in a number of areas in the Western Isles. We have already built to more than a third of homes and businesses across the Western Isles particularly, right now.

Q246 **Kirsteen Sullivan:** I am pleased to hear that those three remote communities have been brought in, but I suggest that given the feedback we have heard directly from residents, there is still a job of work to do.

Ian Bolas: Just to answer the original question about the outside-in approach, I think it can work, but as Robert mentioned, you obviously need to get the infrastructure to those areas as well to support it. In our case, we have built the outside on the islands and we are going back. Mallaig is our nearest point of presence where the infrastructure is suitable for us, so if you like, the inside for us is there, and we are building out towards that. It can work, and for us, it did work, because we have done our fibre and our network is gigabit-capable.

I have a couple of other points to touch on quickly. As part of that outside-in approach, we use a radio network. Robert mentioned that Openreach is looking at the innovation of using radio links for its network. Our radios are gigabit-capable. That is not something new. In terms of availability, that can be 100%; it just depends how you wish to arrange those radios. If you put them all in one place and the power goes off, you will lose that, but if you put them in two locations, with separate power, you can reduce the risk of a total loss of service.

Typically, it is 100% availability on those radios, so it is not a lesser service to fibre. That is what we use currently. We would like to use fibre, but again, we would not use subsea fibre as an exclusive connectivity, because that is not immune to problems. The one in Tiree was off for eight weeks, with no radio back-up. That highlights why you still need to have radio or microwave connections and the subsea fibre connections to help balance the risk for customers.

There are a lot of things to consider in rural areas. That perhaps should be part of builds or contracts now, that certain elements of resilience are built in as standard. In Tiree, that was maybe not built in. Mobile phone operators do not necessarily build in as much resilience as they could with their networks, so again, that could be something that can be addressed. You mentioned the copper telephone lines being switched off and the risks from that, but we have mobile phones now, which we did not have in, say, the 1980s, when it was just copper telephone lines. There is a mixture of technologies, so we just need at least one of them to be available in some description in that area. In certain scenarios, we want to make sure, "Well, if that happens, we still have this", so we do not have all our eggs in one basket. Tiree is an example of where everything relied on subsea fibre, and when that went, that was it—the whole island suffers and is at risk from problems.

Q247 **Lillian Jones:** Ian, businesses have told this Committee about difficulties engaging with Openreach to secure connections, despite infrastructure already being available. What is Hebner's experience of engaging with Openreach to secure a connection?

Ian Bolas: I think Openreach said it has 600 suppliers, effectively, so we would order from BT, Vodafone or one of those companies to access Openreach. We do not deal with Openreach directly. The only direct dealing we have had is on the subsea fibre on Eigg. I guess our experience was okay, but we did not get what we wanted from it. From speaking to local engineers and other people involved, we know that the product is potentially available—the cable is there and available for service—but there is no mechanism to get through the front door of Openreach to enable that for us. My experience has probably not been what I wished, and I would say that others have probably had similar experiences, having spoken to them.

Q248 **Lillian Jones:** Fiona, how has your experience compared?

Fiona Cayley: We use the Openreach pole and duct network to build our network to deliver fibre, as a lot of providers do across the country, so our interaction with Openreach is absolutely daily. It is operating a very well set-up product, which is regulated by Ofcom. We have had some issues with it in that, if Openreach wants to change its pricing, approach or commercial terms, there is a process. We recently had the telecoms access review that Ofcom published back in March. There was a lot of input into that to persuade Ofcom to stop Openreach increasing the prices on what we call the dark fibre product, because that would have massively affected the costs that we would face bringing some of that connectivity to the remoter places.

We got together as the alternative networks and lobbied Ofcom, but we do not all individually have the resource to constantly check that we are on top of everything, so it is a bit of a David and Goliath situation in the industry. As I said earlier, the PIA—physical infrastructure access—is the product that we access in order to use the ducts and the poles, which is the most efficient and cheapest way for us to get that connectivity out to rural areas. It is not for free and it is more expensive across the longer lengths of delivery that we have to do. It is delivering in Scotland, so delivering in Scotland becomes more expensive as a result.

Q249 **Lillian Jones:** Ian and Fiona, what impact have difficulties securing connections from Openreach had on your businesses and customers?

Ian Bolas: For us, we had one project that, as a result of not accessing the subsea fibre on Eigg, cost us more money. Capital expenditure was increased, so we had to spend more money on that. At the moment, it is capping what we can offer our customers. From a business point of view, we cannot really plan ahead until, at the moment, March 2028, which is when the BT Openreach website says the Eigg work will be complete. That is the only date we can go off.

We cannot really offer any additional services to our customers until that date unless we go down the radio-microwave route, which is fine but very expensive. We are only a small business, so we cannot afford to spend £10,000, £20,000 or £30,000 a year for, say, a 5 or 10 gigabit radio link, when we will potentially utilise only 10% of that. We need to manage our costs versus our bandwidth.

For a lot of bigger providers, which are obviously working in more built-up urban areas, they can afford to have surplus connectivity or surplus bandwidth sat there doing nothing and paying for it. But for us as a small operator in a rural area, we do not want to pay for lots of bandwidth and only use a small percentage of it.

Accessing dark fibre, for example, gives us opportunity to have more bandwidth. Again, with the dark fibre specific to Hebnet in this case, where we are, we could use dark fibre to the island if Openreach allowed us, but we would need written consent from them because we would be using it to deliver fibre to the premises on Eigg itself. Alternatively, if we use a wireless link in our network to, say, Rùm or Muck, we would be allowed to

use dark fibre without consent from BT Openreach. But we need its consent in our case because there is a mixture of fibre to the premises on Eigg and radio links.

Ultimately, we are in a rural area with no competition and no option for people, so we feel that this is an Ofcom thing, not Openreach. We feel that with Ofcom the one-size-fits-all approach doesn't really work when you get into rural areas. Hopefully that gives you our view.

Fiona Cayley: I absolutely defer to Ian, who is really in the weeds of the engineering on this, but it is about cost, ultimately. We are making the best use of the product that we can, but it does not matter how many customers we have on the end of it—we are paying the same amount for that access, ultimately. It is not necessarily the most cost-effective way of us delivering the network, but it is even more expensive to dig your own and create a new network from scratch, so we are stuck with it as it is. We rely on Ofcom to regulate it as best it can. As Ian says, it is not a one size fits all; we have got to have a sensible approach to some of the more challenging delivery that we need to address.

Q250 **Douglas Lumsden:** I will give Openreach the opportunity to respond and defend themselves. Why are Openreach slow to engage with businesses that are really just trying to provide, probably better, their own broadband services?

Garret Kavanagh: I mentioned earlier that we have 600 providers on our network. Any telecommunications company can register as an organisation to be No. 601. There is a process to go through. That involves a direct relationship with Openreach. That would have been what Fiona and Go Fibre went through. So there is the option of doing that, but we operate under a series of regulations, and one of the fundamental tenets of that is equal treatment—treating every provider the same. That is how we operate.

Whenever we are answering a specific question, one of the key thoughts in our mind is, "How are we being consistent and equal across the whole of the UK?" That is the onus on us. For anybody who is interested, certainly, we would be able to help with the establishment process for dealing with us, but once a communication provider is dealing with us—we heard a few described—the answer that we give to one company is the same as we give to everybody. That is the fundamental tenet of Openreach, and part of the reason why we exist.

On the commercials of our products, in the Telecoms Access Review—the TAR, in my language—there are lots of conversations back and forth with Ofcom. It is ultimately an Ofcom framework that we operate inside, and it has landed on a series of pricing and conditions associated with our PIA product, and we are happy to deliver them in the way we currently are.

Q251 **Douglas Lumsden:** Just to clarify, because it is important for us as a Committee, your hands are basically tied by regulations set out by Ofcom. Is it really Ofcom we should have in here to answer some of these

questions?

Garret Kavanagh: I would not use the language "tied". Openreach operates within a framework and we deliver services effectively to all corners of the UK. We provide services to over 600 providers and we do that on a fair and equal basis. The telecommunications full-fibre roll-out of the UK is one of those very few success stories that is ahead of schedule and under cost. The framework that is enabled by that regulation is a success story for UK infrastructure deployments. But we are a regulated industry—we do have a regulator—and certain aspects of our business are dictated by what that regulatory framework is like, so Ofcom definitely have a role.

Q252 **Douglas Lumsden:** If your hands are not tied, can you show more flexibility to other companies that are providing broadband services to areas that Openreach are not able to reach?

Garret Kavanagh: What we can do is offer the same service to everyone. If we offer service here, we have to offer it everywhere across the UK.

Q253 **Douglas Lumsden:** Is that set by Ofcom—

Garret Kavanagh: Yes.

Douglas Lumsden: Or can you show a bit of flexibility in that?

Garret Kavanagh: No, it is equal treatment by definition.

Q254 **Douglas Lumsden:** Okay. At the end of the day, businesses and home consumers are suffering because they do not have a decent internet connection, and it seems that you are just treating these people, who are providing a service that it is probably not cost-efficient for you to provide, just the same as everyone else. I am lucky; I live in a city and I have the option of probably 20 or 30 broadband providers. In rural communities they don't have that option.

Garret Kavanagh: In this context, I would suggest that there are tiers. There is the retail level—the providers that we have had described—and then there are the organisations, like Go Fibre, that deal with us directly. They are treated differently. I would suggest that if a more direct conversation is required, providers can work directly with us.

Q255 **Douglas Lumsden:** Can they do that just now?

Garret Kavanagh: Yes, you can register as a communications provider with Openreach and access Openreach services directly.

Q256 **Douglas Lumsden:** Is that something you have looked at?

Fiona Cayley: That is the PIA product that I was talking about that we have access to. We pay for the use of the ducts and the poles that we are using in our network.

Q257 **Douglas Lumsden:** I guess there is no flexibility in pricing, even though you are providing a service that Openreach cannot provide.

Fiona Cayley: Exactly.

Ian Bolas: We go through a reseller of Openreach products—one of the 600—because they do work elsewhere. We work with them, so we do not deal with Openreach directly. In our case, I feel that there is nothing stopping Openreach allowing our supplier to access or provide products where we are on Eigg. I feel like it is a contract, or the computer says no, and they will not let us do it because it has not been updated on the computer side. We are not asking for special discounts or anything like that; we are just asking for a connection. Everything is there to do it, but there is just something in the system somewhere that is not allowing us to have it.

Q258 **Douglas Lumsden:** Let's ask Openreach. Why is that happening?

Robert Thorburn: As I mentioned earlier, the delivery of Eigg is linked to the provision in the R100 contract milestones. Ultimately, for us, we are completing the survey, we are working with the Government and we delivered the subsea connections in 2022, as we said. We are proactively looking at the delivery plan for what we are asked to deliver next year, as part of the standard R100 north contract. That will allow consumers to benefit from choice, so it could be one of the 600-650 service providers that those households can have, but they may equally be able to choose the Hebnet solution as well.

Q259 **Douglas Lumsden:** It seems that there has been a huge amount of Government subsidy into this—hundreds of millions of pounds—so surely there should be a bit more flexibility in working together to provide what communities want: a decent internet service.

Robert Thorburn: I reaffirm that we are linking into the contract at the moment, and Ian is providing existing services. We have this in other parts of the UK, where other complementary solutions are in place, but then ultimately a slightly different solution becomes available.

Q260 **Kenneth Stevenson:** We have heard from individuals whose homes are classed as "hard to reach" that, despite a fibre product or line running past their driveway, they are not being connected. Robert or Garret, is there an explanation for how that might happen?

Garret Kavanagh: This is something that you hear a lot. I think people make a link to the power industry and think that where you see a line, you can tap into it and bring it into your home. In reality, that is not how the technology of fibre works. That said, fibre being in proximity to your home is an enabler to you being able to get connected. However, there will be instances in the UK, in Scotland and in your constituency where there is fibre in proximity to people's homes but they do not do it.

Also, if we talk about the outside-in approach, the fibre is going past to go somewhere for service, and that area will no doubt be built. However, is every home on the route of that fibre connected? It is unlikely to be, and I think that would be the same for all providers. Sometime that fibre acts a bit like a motorway—apologies for using that sort of language. It is going

to a point, and it has not yet dropped off everywhere along the way, but it would be an indicator that fibre at the homes of those constituents is more readily able to be deployed than not.

Chair: That concludes our questions to you today. Thank you once again for coming along and giving us your time; we really appreciate it. As part of our wider inquiry, to reflect on Mr Lumsden's question on whether we should be speaking to Ofcom about some of these issues, we will be at a later date. Thank you all very much.