



OFFICIAL REPORT
AITHISG OIFIGEIL

Rural Economy and Connectivity Committee

Wednesday 30 November 2016

Session 5



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RURAL ECONOMY AND CONNECTIVITY COMMITTEE
12th Meeting 2016, Session 5

CONVENER

*Edward Mountain (Highlands and Islands) (Con)

DEPUTY CONVENER

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

COMMITTEE MEMBERS

- *Peter Chapman (North East Scotland) (Con)
- *Mairi Evans (Angus North and Mearns) (SNP)
- *John Finnie (Highlands and Islands) (Green)
- *Rhoda Grant (Highlands and Islands) (Lab)
- *Jamie Greene (West Scotland) (Con)
- *Richard Lyle (Uddingston and Bellshill) (SNP)
- *John Mason (Glasgow Shettleston) (SNP)
- *Mike Rumbles (North East Scotland) (LD)
- *Stewart Stevenson (Banffshire and Buchan Coast) (SNP)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Magdalene Boyd (Scottish Government)
Professor Michael Fourman (Royal Society of Edinburgh)
Zoe Laird (Community Broadband Scotland)
Stuart Mackinnon (Federation of Small Businesses)
Glenn Preston (Ofcom Scotland)
Stuart Robertson (Highlands and Islands Enterprise)
Humza Yousaf (Minister for Transport and the Islands)

CLERK TO THE COMMITTEE

Steve Farrell

LOCATION

The Mary Fairfax Somerville Room (CR2)

Scottish Parliament

Rural Economy and Connectivity Committee

Wednesday 30 November 2016

[The Convener opened the meeting at 10:00]

Decision on Taking Business in Private

The Convener (Edward Mountain): I welcome everyone to the 12th meeting in 2016 of the Rural Economy and Connectivity Committee. Everyone present is reminded to switch off their mobile phones.

Apologies have been received from Gail Ross, the deputy convener. There are no other apologies.

Item 1 is to seek the committee's agreement to consider the evidence that it has heard on the forthcoming draft budget 2017-18 in private. Are we agreed?

Members *indicated agreement.*

Draft Budget 2017-18

10:00

The Convener: At item 2, the committee will take evidence on the Scottish Government's forthcoming draft budget 2017-18. Today, we are focusing on broadband. I welcome Stuart Mackinnon, senior public affairs adviser at the Federation of Small Businesses; Stuart Robertson, director of digital Highlands and Islands with Highlands and Islands Enterprise; Zoe Laird, director of community broadband Scotland; Glenn Preston, director of Ofcom Scotland; and Professor Michael Fourman of the Royal Society of Edinburgh. I welcome you all to the meeting and ask each of you to give a brief outline of the organisations that you represent.

Stuart Mackinnon (Federation of Small Businesses): I work for the Federation of Small Businesses in Scotland. The FSB is a business membership organisation with approximately 18,000 members in Scotland and 170,000 members across the United Kingdom. We campaign for a business environment that helps small businesses to thrive.

Stuart Robertson (Highlands and Islands Enterprise): I represent Highlands and Islands Enterprise, which is an economic and community development agency for the Highlands and Islands of Scotland. We have been closely involved in all things digital, including the roll-out of superfast broadband.

Zoe Laird (Community Broadband Scotland): I am the director of community broadband Scotland, which is under the governance of HIE and operates across Scotland to work with communities to develop broadband infrastructure solutions.

Glenn Preston (Ofcom Scotland): I am the Scotland director for Ofcom. We are the communications sector regulator, focusing specifically on fixed and mobile telecoms, broadband and broadcasting, as well as some post issues. I should add that we are about to assume regulatory responsibilities in relation to the BBC from April next year. Fortunately, that is not our topic of conversation today.

Professor Michael Fourman (Royal Society of Edinburgh): I am a fellow of the Royal Society of Edinburgh. I chaired a digital Scotland committee that produced two reports, one in 2010 and one in 2015. I am also a professor at the University of Edinburgh with a continued interest in these matters.

The Convener: Thank you. I remind witnesses that we are looking at the financial aspects of the

roll-out programme, but the questions that you will be asked this morning are quite wide ranging to help to inform us. If there is an opportunity to illustrate your answers with costs to inform our decisions, that would be extremely helpful.

The first question is from Stewart Stevenson.

Stewart Stevenson (Banffshire and Buchan Coast) (SNP): I expect that all the witnesses might wish to answer this question. On 3 November, the Scottish Government launched the consultation “A Digital Strategy for Scotland—2017 and beyond”. It might well be that a number of the organisations that are represented by panel members will respond to that, but it would be helpful if we had an indication of the sort of things that the FSB, Ofcom and the Royal Society in particular might wish to see reflected in the strategy.

Stuart Mackinnon: The FSB is still formulating its response to the new digital strategy but, broadly, we are going to say that, although some good progress has been made, we are far from being a world-leading digital nation. We need a programme of works across multiple fronts to try to close the gap between Scotland and the leading digital nations. On infrastructure, we are pleased with the Scottish Government commitment to universal superfast broadband, but we need progress across mobile as well. We need extra effort to boost skills and to deliver extensive business support and we are also looking for progress across digital government, on which Scotland lags behind other parts of the UK.

Professor Fourman: We need more ambitious targets, more investment and more open access, particularly where there is natural monopoly, as is the case in much of rural Scotland. On skills, I think that there is a common feeling among much of the fellowship that digital needs to be embedded in the curriculum throughout all stages of learning, alongside literacy and numeracy.

On exclusion, work that I have done recently looking at Ofcom data, for which I am grateful, shows that, although we are making huge progress on connectivity, those who remain offline are increasingly deprived with respect to those who are online, and that is serving to put them in a situation that it is hard for them to get out of. They do not have the digital benefits and they cannot get them because of the situation that they are in, so there is a cycle of deprivation.

The Convener: Mr Robertson, do you want to comment from a Highlands and Islands Enterprise perspective?

Stuart Robertson: We are responding to the consultation. On connectivity, we are involved in discussions about what comes next, and on the economy, skills, participation and security, we

have already given some informal feedback to the Scottish Government. We think that the themes are the correct ones and we will certainly be involved in all parts of the formation of the strategy.

The Convener: Rural areas were mentioned. I am sure that Zoe Laird has a view on that.

Zoe Laird: Connectivity is a key aspect. The more people are using broadband, the better economic and social impacts we will have, as Michael Fourman mentioned. We need to focus on that, but connectivity has to come to enable some of that to happen.

The Convener: Mr Preston, do you want to add something on that?

Glenn Preston: We are making a decision about whether we want to feed in formally to the consultation, and different parts of Ofcom are considering the key aspects or themes that have been identified in the new digital strategy.

The critical issue for us is probably the relationship between the UK Government’s proposal for a broadband universal service obligation and the Scottish Government’s commitment to 100 per cent superfast by 2021. The committee is probably aware that we are already involved in providing technical advice to the UK Government by the end of the year on the range of options that are available to it to deliver its commitment to a broadband USO. The question for us is how that might overlap with the Scottish Government’s plans for 100 per cent superfast.

We are encouraging dialogue between the two Administrations to understand how they want to achieve those things, what their timelines and implementation plans are and what technical advice Ofcom, as a regulator, can offer both Administrations to allow them to achieve their objectives.

Stewart Stevenson: We are thinking about budgets, so I want to go on to ask about what funding might be required, but I have a question on the back of what has come up, although it might relate to funding. We heard from Ofcom about its involvement with the two Governments. I wonder whether it has a view yet on the prospects of 5G delivering superfast broadband speeds to areas that might otherwise be expensive or difficult to reach. In particular, is consideration being given to what has happened in Germany, where the new technologies are preferentially focusing on filling in the areas that currently have zero G—in other words, no coverage—before services are upgraded in the already digitally rich areas in city centres?

Just to complete this round, I note that Professor Fourman referred earlier to “open access”, and I would like to have greater clarity as to what he meant, as I was a little uncertain about that.

The Convener: There are some quite meaty bits in that question. Perhaps Glenn Preston then Professor Fourman could comment on the 5G point that Stewart Stevenson raised. I will then ask each of you how much funding we need to achieve the Government’s ambition. Glenn, will you start, please?

Glenn Preston: Yes, and I am happy to respond on the funding point as well, as it is a feature of the conversation.

The Convener: If you could deal with 5G first, that would be perfect.

Glenn Preston: The short answer to Mr Stevenson’s question is that we do not yet know what 5G will mean in terms of the availability of superfast. However, we will consult on and consider that over the course of the next few months. We are talking about years, frankly, before there will be clear solutions as to the provision of 5G and links with superfast, but we are confident and our expectation is that 5G should provide the basis for the provision of superfast as well as improved latency in bandwidth and so on. We will consult openly on it, probably over the course of the next 12 to 18 months. We hope to engage with the Scottish Government, the UK Government and this committee on how 5G can deliver the sort of objectives that both Administrations want.

Stewart Stevenson: Are you also engaged in the issue of early delivery to areas without coverage?

Glenn Preston: Yes. When we consult we will look at the German model that you mentioned. That is a kind of inside-out rural model in which the obligation was placed on the providers to consider making the provision in rural areas come first, before they went to the urban areas. That is absolutely one of the options that we will be looking for views on.

The Convener: So no G will go straight to 5G. Is that what you are suggesting?

Glenn Preston: No. We are not suggesting that at all. We think that 5G could offer a significant step towards the superfast speeds that both Governments are looking for.

The Convener: Before we leave 5G, Jamie Greene has a question on it.

Jamie Greene (West Scotland) (Con): Is Ofcom holding a spectrum auction for the frequencies that are required to deliver 5G? If so,

how far into that process are we in terms of the parameters of the auction, such as who can bid and how much they can bid for?

Glenn Preston: The short answer is yes. That will feature as part of the spectrum auctions that Ofcom will bring forward over the next few months and couple of years. Last week, we brought forward a consultation on 2.3 gigahertz, and we have been quite clear about who is entitled to bid for certain elements of the spectrum. The process of clearance of 700 megahertz, which is one of the areas where we think that there is most scope to get deeper into buildings, for example, is still some time away. We will probably be looking to consult on that in the next 12 to 18 months or so.

The Convener: Professor Fourman, Stewart Stevenson asked you a specific question on open access.

Professor Fourman: We have made tremendous progress in the Highlands and Islands with the fibre that has been put in. That actually changes the game for western Scotland but, in my opinion and the opinion of plenty of my colleagues, those publicly funded assets are not being managed in such a way as to encourage competition and maximise the benefits. That is largely a regulatory issue in the UK. Those publicly funded assets now belong to BT and there is no way that BT would make a commercial decision to open them up to competition in a way that might maximise the benefits.

Stewart Stevenson: Are you suggesting that we could get to a position where the signals on the fibre can be created and managed by companies other than Openreach? In other words, could there be multiple carriers directly interfacing with the cable?

Professor Fourman: Many community projects have found that, despite the fact that there is fibre nearby, they cannot access it cost effectively. That is slowing some progress.

The Convener: The next question was about finances and how much this will cost us.

10:15

Stuart Mackinnon: The FSB accepts that progress has been made to improve Scotland’s broadband capabilities, but it is difficult to tally that with our members’ daily and weekly experience. We regularly get contact from businesses that are dissatisfied with their connectivity, and I am sure that the mailbags of members of the Scottish Parliament are similar. We are looking for sustained funding to improve Scotland’s connectivity. On a UK-wide basis, the FSB has been pushing for improved local infrastructure, specifically for roads and broadband.

We have suggested that any moneys coming to Scotland from the autumn statement could be deployed to improve local infrastructure, and specifically digital infrastructure. An interesting element of the autumn statement was a proposed new rate relief for digital infrastructure. There is a precedent for that in Scotland with the rate relief on mobile masts. Could that be deployed in Scotland?

Without the resources of Government at my disposal, I cannot say how much it would cost to bring Scotland up to speed. However, we can compare the current £400 million programme to improve digital and broadband infrastructure in Scotland to the cost of the new Forth bridge, at £1.4 billion. Although the new bridge is important, we need to see digital infrastructure in the same light as we do physical infrastructure.

The Convener: Just so that I understand your point, are you saying that the £400 million is not enough?

Stuart Mackinnon: If we are going to achieve 100 per cent coverage, I think that it is well recognised that that is not enough money.

Stewart Stevenson: Can I just check that the £400 million is merely the Government investment and that there are commercially viable areas that are also receiving investment from commercial providers?

Stuart Mackinnon: My information suggests that the £400 million is a combination of Scottish Government, UK Government, European and local government money plus a little bit of investment from BT.

Stewart Stevenson: I just want to check this. To choose the area around Turriff as a random example, it is not included in the area that is supported by Government because it is expected that it will be commercially viable and therefore the investment to make it accessible is coming solely from BT Openreach.

Stuart Mackinnon: Yes.

Stewart Stevenson: I do not know what the number for that is. I am merely suggesting that it may be a bigger number.

Stuart Mackinnon: Sure. To clarify, additional investment will be needed for interventions in the marketplace in places that the market will not service.

The Convener: Stuart Robertson, I feel confident that you have a figure to hand.

Stuart Robertson: I will try to come up with a figure. We have to remember that we have tried to address a market failure in areas where the private sector has gone so far by putting in public money to go further. I am certainly going on the

basis that, as we get towards 100 per cent coverage, that will be almost like dealing with a market failure on top of a market failure, so a very high proportion of that will be through public intervention.

The public intervention to date in the Highlands and Islands is quite different from that in the rest of Scotland. In the Highlands and Islands, there has been around 95 per cent public intervention, and I can only think that that level of intervention will continue.

The £410 million that has been earmarked to date includes a contribution from the winning bidder, but I cannot see that there will be a large contribution from the private sector. We need to rely on a very large proportion of that intervention being public money.

Highlands and Islands Enterprise has not done or does not have any analysis of the budget this time round, because we are not in the lead—as we were last time—for our region. However, last time, we got independent consultants to look at the budget and the estimate was that, to get to the then target, which was 90 per cent coverage in the Highlands and Islands, it would take between £200 million and £300 million. As members will know, we have a budget of £146 million and we will get to about 86 per cent coverage by the end of next year.

Going forward, it is reasonable to think that we will still need £200 million to £300 million, given that we are now seeking to get to 100 per cent coverage as opposed to 90 per cent. The target last time was to connect people to the infrastructure; this time it is superfast speeds for everyone. I will not try to guess what it would take for the rest of Scotland, but I would point out that, back in 2004, when we were investing in ADSL first-generation broadband, at the end of the day the public intervention for the Highlands and Islands was on a par with the public intervention for the rest of Scotland. It would appear that it is the landmass that has to be covered that indicates the cost, rather than necessarily the number of premises or people that have to be covered.

The Convener: Does that include the most expensive last 2 or 3 per cent that you think will be difficult? Are you talking about fibre, or is that using other means, too?

Stuart Robertson: We have to recognise that there may be a number of solutions to get to the 100 per cent. If we were trying to get fibre to everybody, the cost would be much greater.

The Convener: Zoe Laird, you have experienced that.

Zoe Laird: Stuart Robertson is right to aim for that. As what is possibly the ultimate solution, full

fibre is considerably expensive but should probably be considered over a longer term than our 2021 target. It would be possible to get an estimate of what that might cost from the officials who have been doing some modelling work. We can also draw on the experience of other countries. From what I have seen, other countries have tended to spend more to achieve more than we have done in Scotland historically. There are a few ways of getting a ballpark figure for the ultimate goal.

I want to raise a point in relation to something that Michael Fourman said earlier. When we are working with communities right at the edge of connectivity, the wholesale backhaul costs can be prohibitive, which tends to mean that, because of economies of scale, small projects find it very difficult to cover their annual costs. On an annual basis, what I would refer to as operating expenditure can be extremely challenging as we go ahead and we may need to find ways to support that in future.

Ultimately, that should be negated by a much longer roll-out of fibre and improved backhaul across the country, but there is a stepping stone before we get to that point. That does not necessarily answer your question with a number, but it gives you some clues.

The Convener: It gives us an indication that it is an on-going problem once connection is made.

Glenn Preston: Ofcom would recognise the points that Zoe Laird and Stuart Robertson have made. Our approach is slightly different, in the sense that we have been tasked with providing technical advice to the UK Government on its broadband USO proposals, which includes a strand of work looking at costs and technologies. We recognise that, as Zoe and Stuart said, for some of those remote and rural areas, that mix of technologies will be essential to deliver the objectives that the Governments seek.

We consulted on the broadband USO in the summer and ended up with a couple of distinct visions of how to achieve the objectives. There was what we would describe as the safety net, which gives access to key online services. That is the 10 megabits per second that the UK Government is talking about. There was also a service similar to that provided in the commercially competitive areas. Given where they feature on the spectrum, that would mean a minimum download speed of up to 30Mbps, which is what I think the Scottish Government has committed to.

Our job, over the course of the next three or four weeks, is to look at all the data that we gathered during the consultation and finalise that in advice to the UK Government on what the costs and technologies might look like. We do not have a

final figure yet. That is for the whole of the UK. I am not clear yet whether it is going to be disaggregated for different bits of the UK, but we can check that and come back to the committee. We have also committed to having a conversation with the Scottish Government about how, with our technical advice and consideration, we can support its commitment to do superfast by 2021.

Stewart Stevenson: We have constantly heard about download speeds. Are we looking at improving upload speeds in a similar way to download speeds?

Glenn Preston: Yes. That is the sort of thing that will absolutely feature in the consideration that we have to do.

Stewart Stevenson: For many rural industries in design and so on, upload is as important as download.

The Convener: Just to be clear, when will that piece of work be finished? You offered to come back to the committee and let us know about that.

Glenn Preston: The deadline from the UK Government is the end of the calendar year, so I think that it will be finished in the last week before Christmas. That is when we expect to share it with the UK Government.

The Convener: When will you be in a position to share it with others?

Glenn Preston: We will try to do that as quickly as possible. I make a commitment to the committee to get back to you and give a specific date when we can share what we can.

The Convener: That is perfect—thank you.

Professor Fourman: I am not a financial expert, but I can look around the world. Like Zoe Laird, I think that looking at other places is worth while. Our targets are set at 24Mbps or 30Mbps, and that is called next generation. There is a recognised problem of long lines, but it is not quantified very well so, when we give our targets for coverage, it is not always clear whether we are including the long lines where we will not get those speeds.

We are a small country with an 18 per cent rural population, and we have spent about £0.5 billion so far. France, which is eight times the area and has 10 times the population, with a 24 per cent rural population, has recently committed €20 billion of Government money. Therefore, we are underinvesting compared to France, and its target is 100 per cent to 100Mbps by 2022. Maybe France is too big, so let us think about Estonia. In Estonia, 31 per cent of the population is rural, and it has half the area that we have and only a quarter of the population, but its target is 98 per cent within 1.5km of fibre access.

As long as we use the kind of technologies that we are using at the moment, download and upload speeds will not match each other, because the technology for the latter connectivity means that, in effect, the upload is shared between a number of people, even though the download is getting better.

There are problems with the whole strategy. My feeling is that you should up the funding and the targets in order to compete with the rest of the world. Those are just two examples, but you could find many more.

Mike Rumbles (North East Scotland) (LD): My question, which is in two parts, follows on from that. Fergus Ewing, the cabinet secretary with responsibility for the issue, reaffirmed on 3 November that 95 per cent of households should be connected to superfast broadband by the end of next year. That is just 13 months from today. First, do you think that the target will be achieved in 13 months' time? Secondly, since we are focusing on the budget that is about to be presented to us, is there enough Scottish Government money in the programmes to ensure that we hit that target? If the target is not going to be hit, is that primarily to do with funding or is there something else? Do we have enough money in the budget?

The Convener: That is a difficult question. Who would like to go first? You are all looking the other way.

Stuart Robertson: Given that the 95 per cent target is based on connecting premises to the upgraded infrastructure, it is doable by 2017. As members will know, the Highlands and Islands project is running slightly ahead of the rest of Scotland. We were due to complete the first phase by the end of this calendar year, but additional roll-out will happen through next year, so we will go further than the 84 per cent that we originally thought. In the rest of Scotland, there is gainshare or clawback money to enable the programme to go further.

10:30

The target was set as the percentage of premises connected to the new infrastructure, not premises at 24Mbps or above. I think that that target is doable and that there is currently enough money for that. The challenge is to go beyond the 95 per cent target and do two things: bring everyone within the 95 per cent to superfast speeds and go beyond the 95 per cent and get superfast speeds to the remaining 5 per cent.

The Convener: I noticed a wry smile from Michael Fourman. I wonder whether he would like to come back in at this stage.

Professor Fourman: Stuart Robertson talked about the connection to superfast broadband. Frankly, the moment that someone is connected to the internet, they are connected to superfast somewhere. Being connected to superfast does not do anybody any good if they are just getting superslow speeds. I do not think that a superfast target should be publicised, because people would naturally expect to get superfast speeds if they were connected to superfast. I think that the Advertising Standards Authority should get involved in this area, because the public are not being told the truth.

Stewart Stevenson: I have a tiny semantic point, but there is something important behind it. I heard Stuart Robertson referring to 95 per cent of people being connected to superfast broadband. However, is it not the case that it is about 95 per cent of people who are connectable? Being connected requires us to sign up and pay money.

Stuart Robertson: Yes.

Stewart Stevenson: I just want to be clear about that.

Stuart Robertson: What you say is correct. It is about 95 per cent of premises being on a network, and they can sign up if they choose to do so. I was just trying to make the point earlier that the targets that we are working to were set some years back, but the world has moved on. For example, broadband delivery UK is now very much looking at the percentage of premises connected at 24Mbps or above. We have always seen that as the objective. I was perhaps being a bit pedantic when answering the earlier question, because I was working on the targets that were set previously. However, I think that everybody's aspiration now is for people to be able to connect to a true superfast service, should they choose to do so.

Stuart Mackinnon: Michael Fourman is right to talk about the user experience. It does not matter whether someone notionally has superfast speeds, because if their experience is terrible, they will end up grumpy. The Federation of Small Businesses has made representations to the Ofcom and others that the network providers should not be allowed to advertise superfast speeds. Having up to 10Mbps does not mean anything at all if someone is getting a poor experience. We were pleased to see Ofcom move on that.

On Mike Rumbles's point, I would not want to second-guess Audit Scotland, which said that the Government is on track to meet the target. However, I would make the point that available connections to small and medium-sized businesses lag behind those for the general population, specifically because there is such a

high proportion of small businesses in rural areas and in business parks, which are often poorly served by the current interventions. If we are going to develop a new programme of interventions, it would be great to see the business community being targeted in particular because that is where we think we will get the most bang for our buck.

The Convener: I am bringing Glenn Preston in here to be the adjudicator on what it all means.

Glenn Preston: We in Ofcom recognise the point that Michael Fourman and Stuart Mackinnon made about the “up to” aspect and the lived experience of residential and business customers. We have developed with industry a voluntary broadband speeds code of conduct, which focuses particularly on business services. All the main communications providers are signatories to it. Once they are signed up to the code, that requires them to provide transparent information at the point of sale—which is a point that was rightly made earlier in the meeting—to manage any speed-related problems and, what is important, to allow customers to exit when their speeds fall below a minimum threshold. However, we recognise that it is a voluntary code. Although it seems that communications providers are sticking to it, it is a first step for us and we need to think about what comes next to ensure that people are getting the speeds that they think they are signing up for.

The Convener: Does Zoe Laird want to add anything?

Zoe Laird: No. I am happy that everyone has answered the question.

The Convener: I think that Jamie Greene has an additional question on the issue.

Jamie Greene: I have lots of additional questions, convener. I will try to keep them brief.

On what Glenn Preston said—this is about the regulation of how people sell products—it is all very well for someone to have the right to terminate their contract if they are not getting the speeds that they thought that they would get, but the problem is that they probably have no choice, in that there is probably no other service provider to which they can go. If someone is getting only 1.5Mbps when they thought that they might get a couple, it is all very well to terminate the contract, but then they are left with no internet at all.

A voluntary code is a nice idea, but how far does Ofcom think that our Governments should go to ensure that people get the speeds that they were promised when they signed their contracts? Providers can just hold people to ransom by saying, “Well, Mr Customer, you can cancel your contract if you not happy.” That is not good enough for people who have nowhere else to go.

The Convener: That is an interesting question, and it is an issue that we have all had in our mailbags, but it is wandering a wee bit away from the budget side of things.

Jamie Greene: Perhaps, but given the context, it is still important.

The Convener: I ask Glenn Preston to give a succinct answer, please.

Glenn Preston: We absolutely recognise the point that Mr Greene made. One of the provisions of the UK Digital Economy Bill, which is currently before the Westminster Parliament, will allow us to take enforcement action and remedy the consequences of a breach of the new universal service obligation. We will be able to fine communications providers up to 10 per cent of their turnover.

That is a significant new power, which we have not had previously, and which should go some way to providing for the type of remedy that Mr Greene talked about. We recognise the point: if someone has no alternative provider, what next for them? That is the broader question that we are all trying to address.

John Finnie (Highlands and Islands) (Green): The questions that I was going to ask have largely been addressed, but I want to flesh out a couple of things. Does the panel think that the much-quoted sum of £412 million has been well spent thus far?

Professor Fourman: From a technical point of view, yes. In terms of the way in which those assets are now in private hands and there seems to be very little control over how they are used, no.

Stuart Robertson: Certainly in the Highlands and Islands the money has been well spent. Although what Professor Fourman said is largely true and the ability of, for example, community projects to get affordable connections from the infrastructure is still an issue, access is open to an extent. The new ducts that have been put in are open to other users under the normal regime that Ofcom has agreed with BT. It is not that there is no access to that publicly funded infrastructure; it is that the access is still not affordable enough or easy enough to be usable—that is perhaps what Professor Fourman meant.

Zoe Laird: My experience to date is that the money has been well spent to meet the objective that it was set at the time, which was to connect as many people as possible for the smallest amount of money. That was a sensible objective, but demand and expectations have changed and technology is marching on.

I disagree with Michael Fourman, in that I think that the fact that the network is in private hands is potentially a good thing, because of the pace of change and the ability to create competition.

Having said that, there is very little competition in the rural areas of Scotland. How to stimulate such competition is the challenge that we continually face. Even if there was competition between internet service providers through wholesale open-access ducts owned by Openreach, that would be much better than the position that we are currently in and would go some way to answering Jamie Greene's point about having competition for internet service providers in remote and rural areas.

I am one of those people who tried to move away from my provider and, three months later, finally got reconnected to the same one because there was no choice, despite advertising. I have a great deal of sympathy with what Jamie Greene said. Competition in internet service provision over technology that is already in place would be a strong strand to develop.

Stuart Mackinnon: Again, I reflect on the fact that the Audit Scotland report suggested that the contracts are delivering what was asked of them. However, I agree with Zoe Laird that demand and expectations are changing among consumers and businesses. If we are going to reap the rewards and true value of the investment that has been made, we need to build on infrastructure and develop Scotland's digital skills and digital businesses.

Glenn Preston: The direct answer to Mr Finnie's question is that Ofcom does not do the consideration of value for money for the broadband roll-out in Scotland but we have no reason to second-guess the Audit Scotland report that Stuart Mackinnon referred to.

Our focus has been on the point that has been made by the other panel members about increasing competition with BT so as to incentivise investment in the system while recognising how challenging that can be in rural Scotland as well as trying to support the thinking of Governments on the public investments in those commercially unviable areas. We did a digital communications review last year that will feature as part of our strategy over the course of the next couple of years around opening up BT's infrastructure—the ducts and poles stuff. It probably has not escaped anybody's notice that we announced yesterday that we will proceed with the formal notification to require the legal separation of Openreach from BT after we felt that BT had failed to offer voluntary proposals that addressed our concerns about competition. Lots of information on that, which we published yesterday, is available on the Ofcom website.

John Finnie: It is certainly the case that a large, private, multinational corporation has done very well from public money, and that might be entirely to do with the contract. I am not suggesting that

the contract terms have not been met but maybe the wrong contract was drawn up if public benefits should be the outcome of public expenditure and not private profit.

Why is there a cap of £1,700 on how much BT can spend on each premises?

The Convener: Before Stuart Robertson answers that, I just point out that all the committee members have questions to ask and there are quite a lot of them. I am conscious of time so if witnesses are as succinct as they can be, it will give everyone the opportunity to come in without reducing the quality of your answers, because that is a good question.

Stuart Robertson: The £1,700 was agreed earlier by BDUK to try to speed up the roll-out of the BDUK contracts across the UK. Our understanding is that it is not a cap. It is a requirement that, if it is going to cost more than £1,700 per premises in a certain part of the roll-out, BT are obliged to let the authority—HIE in our case—know that it will cost more and we can then decide whether it is value for money. There is no suggestion that we can spend only up to £1,700 on any premises; we can go above that if we believe that it would be value for money.

John Finnie: How many instances of that occurred? What constitutes value for money?

Stuart Robertson: I do not have all the figures but I do know that, in certain instances, we have gone over that amount as we got to the more challenging areas.

What constitutes value for money? We would certainly be looking to give as fair coverage as possible over the various local authority areas, for example. In the Western Isles, where coverage is lower, we might be more likely to agree to a roll-out that costs more than £1,700 per premises than we might be in Moray, for example.

John Finnie: Who adjudicates on the figure if it is going to cost £1,900 or £2,000? Does BT come up with the figure?

Stuart Robertson: BT tells us what it is looking like, and we encourage it to try to find a better and cheaper way of doing it, while still delivering effective coverage.

10:45

The Convener: Rhoda Grant has a small supplementary question.

Rhoda Grant (Highlands and Islands) (Lab): Zoe Laird mentioned choice of internet service providers. I understand that, in a community roll-out, there would be no choice, because people would be with the community provider. However, if BT has reached someone's premises, what is

stopping another service provider using that fibre to deliver a service? I am picking up that there is an issue with that.

Zoe Laird: Stuart Robertson might be better placed to answer that than I am, but my understanding is that competition is open and that ISPs can deliver services over the network. They might not choose to, however, because they might not think that there are enough customers in a particular area.

Stuart Robertson: The exchange that Zoe Laird uses is an exchange activate exchange, which has a limited number of potential ISPs.

Rhoda Grant's point is valid. As we seek solutions in order to deliver 100 per cent coverage, it is important that we get solutions that are as close as possible to the wider market delivery and that we do not end up with bespoke, niche solutions for rural areas. We want as many people as possible to be part of the mass market, so that the service that they get, the prices that they are offered and the range of choice that they have are as close as possible to what is available in urban areas.

Glenn Preston: I reaffirm the two points that have been made. There can be technical limitations as well as market limitations. We have heard from other providers that they are not willing to go to those places at the moment, because they are not commercially viable. The issue relates to Ofcom's desire to open up the infrastructure, particularly with regard to ducts and poles, and the legal separation of Openreach from BT that I mentioned earlier. We are trying to drive an attractive market for the other providers.

The Convener: We will leave that issue there. Rhoda Grant will ask the next question.

Rhoda Grant: To be honest, the question that I was going to ask has been largely covered. It relates to the cost of roll-out. If I am correct, it is estimated that, in order to get to the Government's 100 per cent target, we are looking at spending £200 million to £300 million for the Highlands and Islands, and double that for the rest of Scotland. In other words, it will cost up to £600 million to reach the 2021 target. Is that correct?

Stuart Robertson: As I said earlier, with regard to the history of this issue, it took as much public intervention in the Highlands and Islands as it did in the rest of Scotland to put first-generation broadband in place. I have no information about how much the project might cost in the rest of Scotland. I am basing my estimate for the Highlands and Islands on previous work. We have not done any analysis at this point, because the work to reach 100 per cent is being led by the Scottish Government's digital directorate, not HIE.

Rhoda Grant: How much of that funding was estimated to be coming from Europe? Will Brexit affect the levels of funding that are available?

Stuart Robertson: We did not use any European funding in our previous project. The amount that was available to us at that time was relatively small, so we chose not to use it. I cannot estimate what European funding might be available in the future. As far as I am aware, the only European funding that is available to the Highlands and Islands for broadband purposes is a sum of about £20 million from the structural funds.

Zoe Laird: Some £9 million of the £16.5 million budget is from the Scottish rural development programme, and £4.5 million of that is directly from Europe, with the rest being matched by the Scottish Government. We do not believe that that money is at risk. An agreement has been put in place that the funds do not have to be committed until we exit Europe, so we have plenty of time to spend the money.

The Convener: Richard Lyle will ask the next question.

Richard Lyle (Uddingston and Bellshill) (SNP): Professor Fourman, you spoke about digital deprivation. Scotland is a lovely country, but it has a lot of areas that are geographically challenging to get to. Can any of the witnesses provide any examples of pilot projects that have helped to boost mobile coverage in those challenging areas? If so, how was the funding for those projects raised? I know of one such project that cost about £130,000.

The Convener: It might be appropriate to start with Zoe Laird.

Zoe Laird: Is the question about mobile connectivity as opposed to fixed broadband?

Richard Lyle: Whatever. One of you talked about the cost of delivering fibre to these physically challenging areas. I am asking about satellite, wi-fi or whatever new technology might come along.

Zoe Laird: I can talk about the community broadband Scotland projects. There are 15 such projects around remote and rural parts of Scotland. Typically, they have used fixed wireless access—in other words, fixed broadband delivered through wireless connectors. The average cost of the active projects is around £500 per premises. We have not estimated fibre costs and have received no quotes for fibre costs for those areas. However, I can say that it would be significantly more than that amount.

That gives you a flavour, but there are a lot of variations in the costings, depending on where the backhaul is coming from, how the networks

connect to that, the detail of the geography and so on.

The Convener: Does anyone want to pick up on the mobile aspect of the question? Professor Fourman, do you want to come in?

Professor Fourman: Not on the mobile aspect but on the issue of delivering through fixed wireless. My colleague Professor Peter Buneman has been very involved in successful projects on the west coast, and I have been marginally involved in them. Zoe Laird knows about them, of course. Recently, an internet exchange was set up on the west coast so that the community networks can pool their backhaul, which is creative and a good way to do things.

The other thing that has happened is that the Scottish Government has put some money into some community-built fibre. I do not know much of the detail about that, but there were some difficulties in terms of connecting to the BT backhaul in order to get to the internet exchange here in Edinburgh, and that caused some delays.

I live in Edinburgh, but I get my internet using those technologies, just so that I can understand what they do. My signal comes to my house from Summerhall, about half a mile away from me. I get 50Mbps each way. I pay £25 a month for the service, which is delivered by a community broadband project and is as good as I would get from a commercial provider.

There is a lot of scope for doing these things in places where you can get backhaul. For a relatively low cost, communities can produce that kind of connectivity for small numbers of people. You cannot cover tens of thousands of people using fixed wireless, but you can certainly cover hundreds of people and deliver very fast speeds, by UK standards, at least.

The Convener: When you talk about that level of speed, those of us on the committee who represent rural areas are immediately jealous—0.2Mbps, regulated, means that I get no speed at all, most of the time.

Stewart Mackinnon, do you want to talk about phone masts?

Stuart Mackinnon: I want to talk about mobile phones, which is a pet subject of mine. Just as Scotland lags behind England on every measure of broadband connectivity, Scotland lags behind England on every level of mobile connectivity, including coverage to premises but especially geographic coverage. We were pleased to see the Scottish Government's mobile phone action plan, which has four proposed pilots where the Scottish Government is granting special rates relief, planning permissions and the like to boost coverage in especially poorly served areas. I am

aware of other pilot projects, but I am just not sure whether the pilot projects, which are great, are sufficient to close the gap in mobile coverage in Scotland, especially if we want to catch up with England.

One of the FSB's recently published reports was on bank branch closures, and the areas in which bank branches closing are also the areas that are most poorly served by digital connectivity. How do we ensure that communities are not left behind? We have seen quite a lot of intervention in the broadband market, but we have not seen the same level of intervention in the mobile market, which means that many areas are poorly served in Scotland.

Glenn Preston: On mobiles, two or three things are probably worth sharing with the committee. Earlier, I mentioned the lower frequency spectrum availability for 4G services that generally helps to extend mobile coverage over longer distances and deeper into buildings. As part of our work on the upcoming 700MHz auction, which I mentioned in response to Mr Greene's question, we are looking at how that frequency might be used to deliver the longer-range and deeper-into-buildings solutions. We are also looking at whether we can consider the kind of inside-outside model that we discussed with Mr Stevenson.

Another area of interest that we have not touched on yet is the Home Office's emergency services network procurement. We are keen to understand all the service conditions for that, how they will apply to different sites and whether there will be any constraints on their capacity to supply wider services. We think that there might be scope there, but we are trying to get more information from the UK Government and to have a discussion with the Scottish Government about how that will fit with its mobile action plan, which Stuart Mackinnon just mentioned.

The final thing that is probably worth mentioning is that we will do a new version of our annual "Connected Nations" report, which should be out some time before Christmas. We are changing the way in which we do the metrics in that and are looking at geographic coverage, which involves landmass and indoor coverage rather than some of the outdoor premises coverage that has happened before. I think that that will give us a truer reflection of the challenge that faces us on mobile coverage.

Richard Lyle: To return to the point that Stuart Mackinnon made about getting a mobile signal, over the years, many people have opposed mobile phone masts being erected. For some people, it seemed as if they went out to work in the morning and a mast was sitting outside their house when they came back. As a councillor, I got a company to move its mast about 300 yards away over a

railway where it was hidden from people. We have also seen innovative ways of designing masts as, for example, trees or flagpoles. Do you think that the public now accept that they need coverage for their mobile phones? Do you think that people now accept the masts? Is there any opposition now to masts being put up? Further, do you think that the fear of getting cancer from a mast has dissipated?

The Convener: To start off with, we will direct that to Stuart Robertson and see whether he has had any views on those issues in the Highlands area, then we will hear from Professor Fourman. We will probably leave it there after that if we get satisfactory answers.

Stuart Robertson: There is much greater acceptance that, if we want the technology, we have to have the infrastructure to go with it. Fears about masts have receded but decisions on many masts in the Highlands and Islands still go to the local authority planning people, who have discussions about the best sites and often require a mast to be put on another site. However, as I said, there is much greater recognition that we need more masts if we want better coverage.

The mobile sector is in quite a different place from the fixed sector, in that the mobile operators are spending a lot of their own money on rolling out coverage. I am sure that there will come a point when there will need to be intervention with public funds, but we have not yet reached that point. It is not easy to put public money into the mobile sector and to know that we will get value for money, but no doubt that point will come.

The Convener: Professor Fourman, do you have a view on masts and acceptability?

11:00

Professor Fourman: On acceptability, I was always concerned that schools found it difficult to put up masts, because they are well located with respect to the population, so they are an ideal place to put masts. However, that has not happened because of the concerns that Mr Lyle talked about, which I think are ill-founded.

On masts and funding, the mobile infrastructure project has not been discussed. We have talked about whether money has been well spent, but that bit was not well spent, because we did not get any masts. That is an aside.

The Convener: I will leave that as an aside, if I may. Mairi Evans has a question on challenges.

Mairi Evans (Angus North and Mearns) (SNP): I am sure that the witnesses will all be aware of "Taking the Connected Highway", which is a report that the Scottish Futures Trust published earlier this year that outlined some of the challenges that we face. What financial

support will be needed to overcome those challenges?

The Convener: Who would like to lead on that? Mr Preston—it looks like you are up first.

Glenn Preston: I am happy to have a first go.

We have touched on the issue already, and none of us appears to have a figure. The technical advice that Ofcom will give the UK Government by the end of the year will give a sense of what we think will be the costs and technologies needed to deliver whatever the broadband USO ends up being. We know that there is the safety net versus future-proofing issue in considering approaches. We will share our analysis with the UK Government, which will then have to make a public policy choice about the broadband USO and what type of public intervention will be necessary to achieve it across the UK, including in Scotland. We do not yet know how much it will cost either for the whole UK or separately for Scotland.

Stuart Robertson: I am afraid that HIE does not have a number, either. One of the most important things for rural Scotland is that, for both fixed and mobile communications, we require a foundation stone, which is more fibre further out into the more rural areas so that the backbone infrastructure exists that will allow solutions to be built on top. That is particularly the case in the island communities that, are at the moment, served by microwave wireless but need the higher capacity that fibre brings. That infrastructure may well be costly relative to the population of the islands, but we need to look at investment not just in terms of the number of broadband connections. We need also to think about delivery of public services and about stemming depopulation. We need to think in the widest terms about the investment. It might well be a large amount of money, but it is potentially money very well spent.

Mairi Evans: The SFT report also points out some particular problems—for example, the reluctance of house builders to install fibre in homes in new housing developments. What other problems do you think need to be addressed?

Stuart Mackinnon: The SFT's report looks at our ambitions for 2030. It will be much better placed to say how much it will all cost. Stuart Robertson was, however, absolutely right to point out the cost of not doing things. Her Majesty's Revenue and Customs increasingly expects small businesses to file their accounts online quarterly, so their not having suitable internet access has an impact on them. We are looking for Scottish businesses to do much more of their interaction with the state online, but without good infrastructure people will use old-fashioned services more—they will communicate face to face

or use telephone services, which will put greater pressure on the state and on costs.

On the point about housing estates, I have heard similar complaints about out-of-town business estates, where fibre has not been built in as part of the default. I understand that there have been recent changes made to the planning system to address that, but I would need to look into the matter.

Stuart Robertson: It is essential, if we are to meet the 100 per cent broadband commitment, that we find a way to ensure that new housing estates and business parks are adequately covered by broadband. At some point in the near future we will have an intervention area for putting in place, with new procurement, further roll-out, but the intervention area will not change through the contract, so there will always be new builds that are outside the project. It is essential that we do not come to the end of 2021 and find that new builds have been left outside the roll-out. I know that BT is doing more to ensure that fibre is put into larger estates. We also have to ensure that new business parks are adequately covered.

The Convener: Are you suggesting that all new housing projects over a certain size should have a planning requirement to provide fibre in homes?

Stuart Robertson: I am not necessarily saying that; I am saying that we need to find a way of ensuring that new developments get the full infrastructure. That might be about planning, or about buyers not buying—the power of the market—if the infrastructure is not there. It is about developers becoming more aware of the usefulness of fibre connections, which might make their houses easier to sell. We need to find a solution to ensure that, as we build new infrastructure, we put in broadband infrastructure at the same time.

The Convener: I think that Michael Fourman will have a view on that.

Professor Fourman: In our 2010 report, “Digital Scotland”, the RSE identified fibre rating, which has been mentioned, and the lack of planning requirements as issues that were slowing things down. We require sewerage, we require water and we require electricity: we should also require fibre. There is a problem with requiring fibre, because one cannot just put a bit of fibre in; it has to be connected to somewhere, so one needs to interact with the local providers, to get a connection back to the internet. That can be difficult in rural areas, for reasons of the natural monopoly that we have discussed. In towns, most new buildings are connected, but that is difficult to do in rural areas; connecting to a single source of supply might be prohibitively difficult. The fibre rating might also play a role in inhibiting developments.

Mairi Evans: It would be interesting to find out what dialogue, if any, has taken place with developers and house builders, to see how that issue might be progressed. I appreciate that we might not get an answer on that today.

The Convener: We can ask the cabinet secretary about that when he gives evidence to us—it is relevant. We must ensure that the costs are identified now and that people start building them in, rather than relying on the Government post-2021 to fill the gap. We will make a note of that.

Peter Chapman has questions on community broadband. I will look to Zoe Laird to answer them, in the main, unless anyone else wants to come in.

Peter Chapman (North East Scotland) (Con): I want to dig a wee bit deeper into community broadband Scotland. I understand that it has been very useful in the hard-to-reach areas. The funding comes from various sources, including the Scotland rural development programme, I think. Do any of the schemes that community broadband Scotland funds provide models of operation for other community-led projects, especially in remote areas?

How can value for money be ensured with community broadband projects? I am interested to see that you can identify that your organisation is providing value for money.

Zoe Laird: You are quite right that there are, in the projects that we have funded to date, good examples of how other communities could operate. We have supported some really strong projects. Michael Fourman mentioned one earlier—the one that we refer to as the west Highland access network—that helps small communities get economies of scale through backhaul and sharing services around it. That is a fantastic example that would be worth replicating. Again, it relies on connectivity, which comes with its own challenges.

There are other projects. Badenoch Broadband set out on its own: it started off with LEADER funding and community broadband Scotland recently funded an upgrade. That is a nicely growing business in Speyside, which is extending its coverage and is hoping to attract up to 300 customers on its network. Marykirk.com, for example, has been winning awards for a similar kind of model developing into a small business enterprise. Again, it is looking at a customer base of 200 to 300 premises. Those are good examples of what is possible. They happen to have fairly strong business-minded people running them, but such businesses can be a challenge for people who do not have similar skills in their communities, so that is something that we need to support more.

The projects also offer great value for money in terms of their reach. The average capital cost of the projects is about £500 per premises, which is great, but we need to look further ahead and think about how those projects could upgrade to more fibre, and whether they are bringing in enough revenue to do that. We have done some work on a study—which is not yet complete—of that, and the situation is looking quite positive. With the customers that they have attracted, the projects will be able to do some upgrading work with the revenues that they have raised, and they will be able to pay staff to do it, rather than have them volunteer.

Those are exceptional and strong projects. It is also worth saying that those projects are charging somewhere in the region of £25 to £30 a month per customer, which is not excessive. There is potential. These projects have grown using volunteers and they have been in negative cash flow during their lifetimes, but they have built up and are now strong, having relied on a huge amount of personal input to get to that stage.

Peter Chapman: How sustainable do you feel it is if such projects need a local champion to get them up and running? Are they sustainable in the long term? Does that local champion need to be involved with the project in years to come or can they step down and say that the project is now in place and can be allowed to run?

Zoe Laird: The projects that I mentioned—there is a similar one in Locheil—are starting to generate enough revenue to pay staff, have become more sustainable and are providing training so that there are more people around. However, it is quite a long and difficult journey, to be fair,; people involved must be commended for the effort that they have put in to get this far.

Can that model be part of the solution? It can be, but it is a pretty unique and challenging way of delivering the solution. We need to take care about the sustainability of such projects in the long term: sustainability will be evident only after they have been operating for about 10 years, when we can look at how dynamics have changed.

There is also the potential for competitors to come in and squeeze the marketplace for community projects. It would be pretty damaging for them if they were unable to compete on price or service. I am not saying that sustainability is not possible but it remains difficult.

The Convener: I am conscious of the time, Peter, so I want to drag you back to the final question that you indicated that you might like to ask.

Peter Chapman: The Scottish Government will consider the future of community broadband Scotland in the reaching 100 per cent project.

What action would the panel like to see regarding future provision of community broadband?

11:15

Zoe Laird: Community broadband Scotland has faced the most enormous challenges in getting some of its newer projects moving. They are not of our making; they include the state-aid decision and procurement regulations being changed. I would like to see a good shot being taken at getting new projects delivered by extending the models that I have described. That will give us more information about the extent to which such projects can be part of the longer-term solution.

It is a testing time. We need more things to be done so that we can show the role that they could play. However, I would not want to impose a solution on any community. It is something that communities need to want to be involved in and to feel strongly about. What I have described should not be people's only choice of how to get broadband.

The Convener: What do you want from your budget between now and 2021 to make sure that you continue to play the valuable role that you are playing to deliver to the very last houses?

Zoe Laird: The budget that we have is sufficient to connect somewhere between 8,000 and 10,000 premises. A huge question is coming on the back of the open market review, which is going to start imminently, as to which communities want to get involved in that type of solution and the scale of the problem yet to be addressed. Our budget will take us to roughly 10,000 premises. CBS does not have a budget to take it beyond that.

The Convener: Are you suggesting that your budget should be doubled, trebled or quadrupled? What do you perceive the need is going to be? You must have some idea of what you are going to be asked to do.

Zoe Laird: R100 is still a little bit ambiguous. I am sorry that this is not answering your question very well—

The Convener: I am trying to help you to get your plea across so that we can understand it.

Zoe Laird: Okay. You are right—we could do a lot more and extend a lot further, and it would be good value for money to reach that target and to get people involved. My view is that empowerment is a strong part of what Scotland is good at doing and a strong part of increasing demand for broadband. We could spend an awful lot more—tens of millions more—if people want to take that approach. We are doing a bit of work at present to assess the interest in that from the communities that are already expressing interest in what we are offering, just to check in with them.

The caveat is that some communities have expressed an interest in just having broadband done to them rather than getting hands on, and we need to offer those communities that choice through the wider R100 programme. It is about helping them to understand the distinctions in the levels of involvement that they might want to take. That would help to set the budget.

Rhoda Grant: Given that the promise is 100 per cent, community broadband Scotland is going to have to be involved in delivering that, because most of what is left is the hard-to-reach areas. Where do you see your budget going if we are to stay on track to deliver that with technologies that are sustainable into the future?

Zoe Laird: Do you mean in terms of geographic locations or technology types?

Rhoda Grant: Both.

Zoe Laird: In terms of geographic locations, we feel that our target customer base is in the most remote and rural places—the really quite small, far-flung places in what I call the nicest parts of Scotland. Those are often dispersed or geographically stretched-out communities. I would like to see the other parts of R100 extending fibre out to make those projects viable. That is really important. The technologies are likely to be mainly wireless, but we are working on encouraging communities to get involved in self-dig for fibre, because that is a more future-proof way of tackling some of the issues. Again, that depends on community resources and people's willingness to literally get their hands dirty. We are adapting the package of support that we offer to give people more choices on how they engage with that and helping them understand the difference between getting involved in something like a fibre self-dig and a connecting wireless project, which can be pretty easy to do in terms of the skills and equipment with which people work.

It is about giving people more of a choice about how they get involved, giving them flexibility and giving them understanding of how to make that choice. For me, the customer base for CBS will always be the most remote areas.

Rhoda Grant: Can you put a figure on it?

Zoe Laird: I cannot until we know more about the results of the open market review and which premises need to be connected and where they are. That will make things much easier. I cannot guess.

The Convener: As things develop, it would be helpful for you to keep the committee informed, so that we know where we are going. It is an on-going issue for everyone.

I will let Michael Fourman come in very briefly.

Professor Fourman: The scale of the problem is more like 200,000 premises, rather than 10,000 premises. Community broadband Scotland has done a fantastic job, but Zoe Laird has pointed out some of the issues in scaling it up. One is the know-how. Funding for some training would be good, as there is now enough activity for us to build on and for people to learn from. You can see when you look at the map that it is infectious, in the sense that where it happens, you can see it start to happen nearby. We need to find ways to make it happen on a bigger scale. Funding for that would be money well spent.

Glenn Preston: It is worth mentioning that the cross-party group on digital participation has just been reconstituted. Ofcom acts as its secretariat, and its first meeting since the election is taking place this evening. There are two strands to its work. There are the big infrastructure questions that we have addressed, and there is the skills and training piece. Although, as a regulator, we do not have a direct role in that, we are very happy to use that group to explore some of the issues that Michael Fourman and Zoe Laird have mentioned.

The Convener: I will leave that there. I think that Jamie Greene has some questions for Stuart Mackinnon.

Jamie Greene: Are you going to skip question 16?

The Convener: Yes. I will skip my question because we are short of time. I was going to ask the panel members whether they would like to give a written response to it afterwards.

Jamie Greene: I have a couple of questions, which I will shrink down to save time and also because I would like to raise another point about budgets.

I have one question for Stuart Mackinnon. What work has the FSB done on what happens if we do not do this and what happens if we get it wrong? What will be the effect on the Scottish economy if we do not get the answer to the digital question right in this parliamentary session? That would be helpful to know. When we look at how much we have to spend, we are just looking at the cost to the purse. We are not looking at that spend's upside or its return on investment. When you are making a spending decision, it is useful to know what the negative outcome is if you do not make the spend. What are your views on that?

Stuart Mackinnon: I do not have a number to say how much it would cost businesses if we did not do it. What we know is that three quarters of businesses say that digital is important or essential to their future growth plan. Three in four businesses say, "Our plan for growth involves digital technology," and if we do not have good

infrastructure, they cannot implement those growth plans.

Other work that we did suggests that, across a wide range of industries, about four in 10 of the largest businesses will be replaced by new business models that are powered by digital technology. The disruption that we have seen in retail, for example, with the rise of e-commerce, is likely to happen to other industries that we cannot even think about at the moment. If those new businesses are to be Scottish, Scotland must have the infrastructure to be able to cope with those industries.

Jamie Greene: I appreciate the succinct answer.

I want to raise a point about the budget in general, because it is very relevant to what we are trying to achieve.

The Convener: Before we do that, Stuart Robertson might have an idea of how much it would cost in the Highlands not to deliver this.

Stuart Robertson: Sorry, I do not have an answer, although I would echo what has already been said. Digital is essential everywhere. It is not just about the economy; it is about the way people live. I do not think that there is any disagreement that digital has to be 100 per cent.

The Convener: One thing that has not come up—the one question that I have not yet been able to ask—is on skills shortages and delivery. I assume that all the panel members accept that this is not just about business but about educating our children and giving them the ability to compete worldwide by having access to information on the web. Zoe, do you want to come in on that?

Zoe Laird: This will not be a particularly lengthy answer, but I totally agree that digital connectivity would enhance personal skills and learning for young people and adults. Lots of people feed back to us that they want to do online courses; increasingly schools are trying to do that with some of their more remote pupils. That is a hugely important part of it.

On the back of the previous question, we did a little bit of work on the benefits of broadband, which I can send to the committee as written evidence. It does not answer your question about what we would lose out on, but it says something about the economic gross value added that will come from increased connectivity. Apologies—my voice is going now.

The Convener: Jamie, did you want a quick follow-up?

Jamie Greene: That would be very welcome. For the record, I probably should have declared an interest, as I am a member of the cross-party

group on digital participation. I commend the work that the group does. If other committee members are interested in that area, it is a fascinating group to be a member of—or at least to follow the proceedings of. It is doing some great work in looking at the negative social and economic effects of not being included in digital Scotland.

I have a more general question about how we are going to formulate the scrutiny of the budget in this area. There seem to be very complex funding mechanisms in different parts of the country. We know that money has already been spent on the 95 per cent. We know that a tender process is coming up next year and that we will have to make recommendations on how we get to that last difficult 130,000 premises. We know that the UK Government's autumn statement last week contained a commitment to £740 million for digital infrastructure.

Ofcom is already working with the UK Government and advising it, technically and economically, on how it can achieve its targets. How will that follow through to the devolved Administrations? How will we ensure that there is a proper joined-up discussion about money that has been committed from Westminster and money that has been committed in the budget that we will scrutinise here?

The Convener: I am going to limit answers to Glenn Preston because of the time. If anyone else feels that they particularly want to add anything, I ask them to write to us on that.

Glenn Preston: We recognise the many different schemes that have existed, the commitments that the Administrations have made and the fact that it will be essential that the UK Government and the Scottish Government have a dialogue. Thinking about your scrutiny session with the cabinet secretary in December, Ofcom is quite keen to see that kind of direct engagement between the two Administrations to discuss how all this stuff fits together and what it means for us in terms of how we exercise our regulatory functions.

There are considerable differences, for example between a broadband USO, which is about a safety net or floor, and the commitments to 100 per cent superfast by 2021. We are very keen that the Administrations should have a conversation and dialogue. We would like to be involved in that, as would, I am sure, a number of the other partners that are represented here and elsewhere, so that we have a clear sense of when the Administrations want to do things and how much they think that it will cost.

The Convener: The last question is from John Mason.

John Mason (Glasgow Shettleston) (SNP): I have been told to be quick so I will run through it. My question is on inequalities and digital participation, and it may touch on public services, because poorer people tend to use public services a bit more. Some figures that we read are quite positive. Home internet access has increased from 42 per cent in 2003 to 80 per cent in 2014, which is very good. However, some figures are slightly more negative: 98 per cent of households with incomes over £40,000 have home internet access but only 60 per cent of households with incomes under £15,000 do. Other figures that we have been given show that 38 per cent of adults have reported that they had used a local authority website and that only 18 per cent had used a Government website. I recently saw, “I, Daniel Blake”. The guy in it, who is unemployed, does not know what to do with a mouse when he uses a computer.

What can we do about all that? Is it a job for schools? Should we just try to ensure that people have a higher income, because the issue is nothing to do with the digital side of things? Alternatively, should we put money specifically into this area?

11:30

The Convener: That is a huge question. We will take responses from my right—army right—starting with Michael Fourman and going along the panel.

Professor Fourman: As I said earlier, as we get more people online, those who are left behind are increasingly those who are in the bottom quintile of the Scottish index of multiple deprivation. The further down you go, the more likely you are to be offline and, if you are offline, you are likely to be suffering deprivation in other ways. It is essential that we focus on the areas where those people live. Some are rural and some are in cities. A large number of them are in Glasgow. Using the Ofcom data, one can pinpoint where people are online, where they are not online and how that links to the SIMD. The evidence is stark. The situation is getting much better, but there is a hard core of deprivation that we are not hitting hard enough at the moment.

Glenn Preston: The situation concerns a combination of the issues that you mention. Traditionally, Ofcom has been a kind of economic regulator that is focused on driving competition in the market, and there is a question as to whether our functions and powers allow us to address the sorts of issues that you have described. The issue came up last week in the Westminster Culture, Media and Sport Committee, when our chair and chief executive were asked whether more powers were needed to address these issues. We do not

have a direct answer to that question yet, although I can say that the UK Digital Economy Bill will be helpful in enabling us to drive change. We want to keep an eye on this issue. If we feel that we need more power in order to address some of the challenges that you have talked about, we will not be shy about asking for it.

Zoe Laird: It is important that we do something to address the level of inequality. It might not be about home connectivity; it might be about using public services such as schools and libraries and helping people to engage with digital technologies. We should spend more time and put a bit more effort into that area of work.

John Mason: And, presumably, more money.

Zoe Laird: Unfortunately, that is always the case.

Stuart Robertson: I agree with what has been said already. Digital participation needs continued funding. The biggest area of focus for Highlands and Islands Enterprise is the connectivity side, because we want to ensure that people have access to the services. However, other organisations must look at digital participation.

John Mason: So, to be clear, you would not be worried if a poor person in a village did not have access even though all the richer people did.

Stuart Robertson: No, that is not what I meant at all. What I mean is that different agencies will take care of different pieces of the jigsaw. It is absolutely important that everyone can get access. With regard to the situation that you mention, as Zoe Laird said, enabling digital access through libraries and public buildings would be useful.

The Convener: That is an issue in the Highlands. Nearly all the council buildings and the libraries have access to broadband, but I know from personal experience of visiting them in order to do constituency surgeries that there is no public access to computers in those buildings. Would you want to promote that?

Stuart Robertson: We would certainly be behind a continued focus on digital participation. The point that I was making was that I do not see it as one of HIE’s core activities. We have to focus on other parts of the jigsaw, and I was suggesting that getting the services out into the most rural parts of the area was our primary responsibility, as opposed to the issue of wi-fi access.

Stuart Mackinnon: Digital participation is a huge issue, and I highly recommend looking at the work that the Carnegie Trust has done on it. One of the things that seem to be improving digital participation is the mobile phone and having more mobile-friendly public services available. Digital government public services would be a good way

to go and better digital public services generally would allow more money to be focused on those most in need. It comes back to what the cost would be of not doing something about that.

On digital skills generally, Skills Development Scotland has done work to look at the digital skills of the technology industry. However, a wider bit of work is required to look at the digital skills that the wider workforce requires now and will require in the future, which could be expanded to look at the digital skills that we expect of all Scottish citizens.

The Convener: That leads on neatly to the one question that was not asked: what does the Government need to do to invest in making up the skills shortage, certainly at school and in education? Following this meeting, we would welcome your written responses on where you think that the Government is on that and where it needs to go on it. I was unable to ask that question during the meeting because of lack of time. Finally, do you have a comment now on anything that we did not ask you about?

Stuart Mackinnon: Would it not be great to use the money that is coming to Scotland from the apprenticeship levy as a focus for improving the country's digital skills? From memory, approximately £200 million is coming to Scotland and I think that we should pump it into digital skills. Generally, in terms of the budget, we encourage the Government to publish a list of the infrastructure works that it expects to be done every year so that businesses can make decisions on the basis of firm information about their infrastructure. Too many businesses simply do not know when their infrastructure is going to be improved.

Stuart Robertson: I have nothing to add. Thank you.

Zoe Laird: I think that we should look beyond the 2020 target and consider the budget over a longer period in order to get all the way to where we need to go.

Glenn Preston: I have one ask. Ofcom published for consultation yesterday this year's draft annual plan, which covers a range of strategic priorities. In line with the Smith commission and the Scotland Act 2016 provisions, we are consulting this committee, other Scottish Parliament committees and the Scottish Government. We would be very pleased if you would formally come back to us on that.

The Convener: We will certainly be looking at that.

Professor Fourman: I have had the chance to say quite a lot of what I wanted to say, for which I thank you. The Scottish Council for Voluntary Organisations is doing a fantastic job to address

the skills gap in some of the most deprived areas of Scotland, but we have to look to the future, and our education system is not yet digitally connected. We teach subjects without teaching how to use digital in those subjects. I am not talking about teaching computer science; I am talking about how we teach every subject so that, when people go into the workforce, they know how digital can affect whatever they are doing. That is something that we should focus on, from the teacher training colleges all the way through to the primary schools.

The Convener: That concludes our evidence session. On behalf of the committee, I thank you all for your evidence on what is a huge subject that is obviously of huge importance to Scotland and to the budget that will be considered after it is published in December. The committee is looking for some additional information from Glenn Preston and Zoe Laird, but the committee would welcome input from any of the witnesses if something that they feel is important comes to their attention. I thank you all for your time this morning. I suspend the meeting while we reorganise for the next witnesses.

11:39

Meeting suspended.

11:44

On resuming—

Subordinate Legislation

Aberdeen Harbour Revision Order 2016 [Draft]

The Convener: Item 3 is evidence on the draft Aberdeen Harbour Revision Order 2016. I welcome Humza Yousaf, Minister for Transport and the Islands, and Scottish Government officials Chris Wilcock, who is head of ports and harbours, and Magdalene Boyd, who is a solicitor.

The instrument is subject to the affirmative resolution procedure, which means that the Parliament must approve it before its provisions can come into force. Following this evidence session, under the next agenda item the committee will be invited to consider a motion to recommend approval of the instrument. I invite the minister to make a short opening statement.

The Minister for Transport and the Islands (Humza Yousaf): Thank you, convener. The expansion of Aberdeen harbour is a nationally significant project, as is indicated by its inclusion in the third national planning framework. It will benefit the economy of the north-east and Scotland as a whole, as support for the oil and gas industry moves into a new phase in the North Sea. It will enable the harbour to expand out of its city centre constraints and provide state-of-the-art facilities to current and new market customers. Aberdeen Harbour Board plans to invest around £400 million in the project.

Our environmental advisers considered the proposal in detail and concluded that, with mitigation in place, there will not be a significant effect on the environment. I will approve the construction and environmental management document, which will ensure mitigation, prior to work commencing. I am aware that some local objections remain, but I am satisfied that the board is working with Aberdeen City Council to improve local amenities, to compensate for loss of green space in Nigg Bay, through the mitigation plan. The recently signed Aberdeen city deal will support infrastructure improvements around the new harbour, but the full cost of the harbour construction will be met by the harbour board.

I commend the draft order to the committee and I am ready to take questions from members.

The Convener: Thank you.

John Finnie: Minister, I understand that planning permission has been granted for the landward-side works and that the revision order that we are considering is for the seaward-side works—to put it in layman's terms. Is that correct?

Humza Yousaf: Some work is commencing, but the main work that has to be conducted in the sea cannot commence until I, as the minister, approve the construction and environmental management document. That is correct.

John Finnie: What is your view on the level of scrutiny that is afforded to that work, compared with the other works?

Humza Yousaf: The level of scrutiny over the work that will take place in the sea is great. The main objections, which came from Scottish Natural Heritage, the council, the Scottish Environment Protection Agency, other environmental organisations and individual objectors, were about the environmental impacts on a number of species, from salmon to bottlenose dolphins, with many in between. Therefore, the level of scrutiny and mitigation work that is being done is vast. It is important that that is done, to give the necessary reassurance.

John Finnie: RSPB Scotland sent a letter, which also went to Marine Scotland and to Transport Scotland, which is in your remit, in which it talked about eider ducks, terns, kittiwakes and cetaceans—or dolphins, as you and I would call them—and the habitat management plan. On the environmental statement, it seems to me that engagement has worked quite well. Can you confirm that there has been good engagement?

Humza Yousaf: Yes, I think that the engagement has been very positive. Organisations such as the RSPB put in objections, and colleagues in the Government worked closely with them to give the necessary reassurance that mitigation would be put in place to lessen the environmental impact. The objections were then withdrawn.

The real test will be the detail in the construction and environmental management document. Paragraph 2(d) of the schedule to article 29 sets out the 13 management plans that are required. They include a marine mammal protection plan, an otter protection plan, a fish species protection plan and a habitat management plan. There is a lot of detail going in, which I hope will reassure organisations such as the RSPB and SNH.

John Finnie: Clearly it has, because on the basis of those reassurances the RSPB withdrew its objection. As a general principle, would you commend this way of approaching major developments?

Humza Yousaf: Yes, I would commend it. It is fair to say that we have learned from previous infrastructure projects in which the level of engagement was not as thorough. We are always learning. This is a good model, but that is not to say that everything has been ticked off. As I said, I am waiting to see some documents before the

work can be signed off, but the level of engagement has been good and it should be replicated.

John Finnie: Finally, minister, you talked about the benefit to the economy and you specifically mentioned oil and gas. I appreciate that it might be outwith your remit, but can you comment on the potential of the project for securing jobs in the renewables sector and in decommissioning, which will become increasingly important?

Humza Yousaf: You are absolutely right. That would be a decision for AHB, and is a conversation that it could more extensively have, but there is certainly potential.

We are all aware of the difficulties facing the North Sea oil and gas sector. AHB is looking to diversify, so servicing decommissioning is certainly part of its plans. AHB is also looking at other business opportunities such as cruise vessels—that is important. There is no reason why AHB should not be looking towards renewables; I am sure that they will be part of the plan, but I cannot say that they absolutely are. Oil and gas will continue to be important, but AHB will be looking closely at any opportunities to diversify business.

Stewart Stevenson: My question is about process; it would be useful to get the minister's response on the record.

Can the minister confirm that, in the event that Parliament approves the order, various parts of Government and its officials will continue to oversee the project? For example, there are time constraints on certain operations and, in his contribution, the minister talked about documents that he is waiting to see and sign off. It would be helpful to know that this is not the end of the process as far as the Government is concerned and that it will continue to have oversight and, in extremis, could pull the plug on the project, although I am 99.9 per cent certain that we will not reach that point.

Humza Yousaf: That is an important point, particularly when so many environmental factors have been questioned and considered. Although the project is being funded by AHB, not by the Government, and we know that it is a trust port that reinvests any profits in the harbour, the oversight that is mentioned in the environmental documentation will and should continue.

I should say that, from the outset, relationships have been very good and positive, as has the engagement. To go back to John Finnie's point, the work has been a good model for others to look at for future projects.

The Convener: I saw from the committee's papers that 21 local residents are still objecting to

the development. Minister, can you give me a flavour of those objections and the grounds on which they are made? You seem to have solved seven of the 28 objections but 21 remain.

Humza Yousaf: Many of the objections overlap with the environmental concerns that were raised by SNH or the RSPB. I am satisfied, therefore, that the order should be laid because of the mitigation measures and reassurances that we have provided about the environment.

The other strong theme that runs through the objections is loss of amenity, meaning the green space at Nigg Bay. I know that AHB and Aberdeen City Council are discussing how other local amenities, such as St Fittick's park, which is nearby, can be improved. That is separate to any conversation that the Government is involved in. Loss of amenity and green space are two of the main themes of the objections but there are also the environmental impacts and I think that we have gone as far as we can to give strong reassurances, which is why I hope that the order will be approved.

Peter Chapman: There have been a number of environmental objections. I just want to be sure that SNH, which is an important body, is content that the issues that it raised have been addressed and that the project should carry on.

Humza Yousaf: Yes. SNH objected and then withdrew its objections, which is generally the process that we go through. Objections will be made to infrastructure projects and we try to have discussions with the organisations and learn from them what we can do to give them the reassurances that they need. For example, one of the main environmental issues was to do with the bottlenose dolphins and, as a result of the mitigation and the reassurances that we have given, rock armour will be put in place and any blasting will be done behind it, thereby mitigating the sound and the environmental impacts. That came out of conversations with the likes of SNH.

To answer your specific question, SNH has withdrawn its objection so I surmise that SNH is satisfied. We will wait to see what is in the construction and environmental management documents and I hope that they will give even more reassurance to organisations such as SNH.

The Convener: I thank the minister and his officials for their evidence—although the officials did not say anything.

We move on to item 4, which is consideration of motion S5M-02398, which calls on the committee to recommend the approval of the draft order. I invite the minister to move the motion.

Motion moved,

That the Aberdeen Harbour Revision Order [draft] be approved.—[*Humza Yousaf.*]

Motion agreed to.

The Convener: That concludes consideration of the affirmative instrument and we will report the outcome of our consideration to Parliament. I thank the minister and his officials for giving evidence.

That concludes the public part of the meeting.

11:57

Meeting continued in private until 12:10.

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