



The Scottish Parliament  
Pàrlamaid na h-Alba

## Official Report

# RURAL AFFAIRS, CLIMATE CHANGE AND ENVIRONMENT COMMITTEE

Wednesday 2 October 2013

© Parliamentary copyright. Scottish Parliamentary Corporate Body

Information on the Scottish Parliament's copyright policy can be found on the website - [www.scottish.parliament.uk](http://www.scottish.parliament.uk) or by contacting Public Information on 0131 348 5000

---

**Wednesday 2 October 2013**

**CONTENTS**

	<b>Col.</b>
<b>CIRCULAR ECONOMY</b> .....	2651
<b>DRAFT BUDGET SCRUTINY 2014-15</b> .....	2668

---

**RURAL AFFAIRS, CLIMATE CHANGE AND ENVIRONMENT COMMITTEE**  
**28<sup>th</sup> Meeting 2013, Session 4**

**CONVENER**

\*Rob Gibson (Caithness, Sutherland and Ross) (SNP)

**DEPUTY CONVENER**

\*Graeme Dey (Angus South) (SNP)

**COMMITTEE MEMBERS**

\*Jayne Baxter (Mid Scotland and Fife) (Lab)

\*Claudia Beamish (South Scotland) (Lab)

\*Nigel Don (Angus North and Mearns) (SNP)

\*Alex Fergusson (Galloway and West Dumfries) (Con)

\*Jim Hume (South Scotland) (LD)

\*Richard Lyle (Central Scotland) (SNP)

\*Angus MacDonald (Falkirk East) (SNP)

\*attended

**THE FOLLOWING ALSO PARTICIPATED:**

Brendan Dick (BT)

Paul Hendy (Scottish Flood Forum)

Philip McKay (Aberdeenshire Council)

Alex Paterson (Highlands and Islands Enterprise)

Dr David Pirie (Scottish Environment Protection Agency)

Professor Walter Stahel (Product Life Institute)

Gavin Stevenson (South of Scotland Alliance)

Lisa Webb (RSPB Scotland)

**CLERK TO THE COMMITTEE**

Lynn Tullis

**LOCATION**

Committee Room 2



## Scottish Parliament

### Rural Affairs, Climate Change and Environment Committee

Wednesday 2 October 2013

[The Convener opened the meeting at 09:35]

#### Circular Economy

**The Convener (Rob Gibson):** Good morning and welcome to the 28th meeting this year of the Rural Affairs, Climate Change and Environment Committee. Members and the public should turn off their mobile phones and BlackBerrys, as leaving them in flight mode or on silent will affect the broadcasting system.

Agenda item 1 is on resource use in the circular economy, and we will take evidence from Professor Walter Stahel of the Product Life Institute. I welcome Walter to the meeting and invite him to make an opening statement about the principles involved.

**Professor Walter Stahel (Product Life Institute):** Good morning. Thank you for inviting me. Agriculture or farming is an interesting case, because we basically have two economic models in competition. One is the industrial production model, the objective of which is to create value added by managing a flow. The other is the circular economy, the objective of which is to preserve value by managing a stock. In the first case, aggressive marketing is needed as a tool. In the second case, a caring attitude will give the best results.

A farmer has to work on both levels—on one side, preserving the natural capital, stock, biodiversity, clean water and all those things, as well as the skills and the acquired capital, in how they do the farming. On the other hand, farmers are forced to produce value, to sell value added, and to sell products that the market wants, so it is the only sector that has to optimise the two economic systems in parallel.

**The Convener:** So that is where you want to kick off, and I am sure that we can apply those models to industry. Can you give us a short discussion about the principles behind a circular economy and how such an economy would work in the wider sense? We have to think about industry, the public sector and all sorts of services if we are going to apply those principles in Scotland today.

**Professor Stahel:** The circular economy is about managing stocks. There is the natural stock or capital, the human stock or capital, the

manufactured stock or capital, and the financial capital, so there are different levels that you must try to optimise. If you are talking about manufactured goods such as buildings, infrastructure or durable goods, reusing and extending the service life of goods is the main strategy of the circular economy.

There is a problem with the word “economy”, so the economics of the circular economy are very important, and the economics tell you that the smaller the loop the more profitable it is. If you can reuse a product locally, you will make a better price than if you have to remanufacture it or recycle it. If you look at the economics, recycling is the least interesting option. It may be necessary to prevent waste or to reduce waste volumes, but from a profit point of view recycling is normally not an interesting option.

For example, providing mineral water in bottles is by far the most interesting option environmentally speaking, but the problem is that global companies such as Nestlé want to sell their Perrier or San Pellegrino water in glass bottles worldwide, which is a complete nonsense. A big change for Nestlé might be to sell Nestlé-branded local water from the highland springs in every region in Europe that provide good mineral water. Big companies—I am using Nestlé just as an example—would need to adapt their marketing by no longer using their water brand but using their overall brand to say, “We are capable of finding the best sources everywhere.” Therefore, Nestlé might sell Nestlé mineral water instead of San Pellegrino water. We could then have reusable drink containers in a regional context, whereas in a global context one needs to use cans or plastic bottles. A lot of adaptations would be needed to work profitably in a circular economy.

**The Convener:** I am sure that members will have lots of questions for you as we consider the detail of the issue. Are the cradle-to-cradle approach and the circular economy approach the same thing?

**Professor Stahel:** Personally, I do not like the term “cradle to cradle” because that implies some kind of mechanism or automatism. I defined the circular economy in a report to the European Commission in 1976 called “The Potential for Substituting Manpower for Energy.” My conclusion was that the circular economy, compared to the manufacturing economy, was exactly that—it was about substituting manpower for energy. For me, a big advantage of the circular economy is that it creates jobs and saves huge amounts of resource consumption and greenhouse gas emissions in a local or regional economy. However, the term “cradle to cradle” suggests a mechanistic approach and the jobs element is completely missing in the discussion.

The second element in the circular economy is that you should give preference to resources that you can upgrade. One such resource is the human resource because, through education and training, you can make labour more productive and more creative. That also means that you need to use labour, because unemployment is not only a waste of resource but a loss of skills—labour is the only resource that degrades when it is not used. Natural resources such as farmland may have a similar effect depending on the different options used, such as planting trees for reforestation, keeping sheep or cultivating arable land. Each of those different options has downstream activity. For example, the advantage provided by reforestation would be highest where that is coupled with building up industries that use wood in construction and in the high-value end of the industrial economy. The important thing is to consider the circular economy in the wider economic or societal context of a region.

09:45

**The Convener:** The question of the availability of labour occurs to me. Birth rates are falling in the industrialised world, and some of that has to be taken up with people migrating into the economies that we have. That is an important component in the future—and it raises tensions of another sort.

You talk about maintaining the human element. I presume that we must be thinking about economies where we try to substitute people for energy. Therefore, we have to find ways of paying those people at a reasonable rate so that they can live properly. As far as farming is concerned, it is obvious that there is very cheap labour for the harvesting of vegetables. For family farms, there is a very different approach.

How can we optimise the ways in which people can get a fair return for their labour and their efforts? Machines have taken over so much of what labour used to do. We are not talking about going back to an utterly labour-intensive era but, in relation to what you have been speaking about, we are talking about having a new emphasis on substituting labour for energy use.

**Professor Stahel:** One of my battle horses over the past few years has been the need to introduce sustainable taxation, or sustainable framework conditions, although taxation is part of those framework conditions. To me, sustainable taxation means to tax only unwanted things. That means taxing emissions, waste and the consumption of non-renewable resources—all the things that you wish to reduce; you should not tax the things that you wish to promote, such as human labour. That is the main battlefield. The other one is value-added tax, which should be levied only on activities where there is value added. The circular

economy—farming in this sense—preserves values, and any activity that preserves values should not have to pay VAT.

Funnily enough, I had a discussion with people from the United Kingdom Treasury, and they had no problems with the VAT idea but, like economists, they had a lot of problems with the labour tax. Taxing labour was introduced in the UK to finance the French-British war. In France, it was introduced in 1914. It is normally introduced to fight a war but, when the war is over, the reason is forgotten.

If labour is not taxed, the main impact will be on any activity involving caring—education, health, farming, and especially organic or biological farming. Any caring activity is labour intensive and local, and economies of scale are not possible. Not taxing labour would not only promote farming—organic farming, in particular—and the circular economy of reusing, repairing and remanufacturing products, infrastructure and buildings; it would promote all the other caring activities, too.

**Claudia Beamish (South Scotland) (Lab):** Could you highlight for us why those approaches have not been fully adopted to date?

**Professor Stahel:** Sorry—which approach?

**Claudia Beamish:** The circular economy approach. What would be the barriers to adopting that approach, in which the committee is very interested? At what levels might the barriers be?

**Professor Stahel:** Actually, the approach has been increasingly adopted, especially over the past 10 years in investment goods. Most of the approaches have been widely adopted where tools are involved and people need goods to produce income.

Toys are the opposite of tools. The consumer market is ruled by fashion, which means bigger, better, faster and safer products. You will hardly ever find publicity for car sharing or for rental agreements in marketing or newspapers; rather, everything is about new cars, which now have 55 airbags instead of 24, and that is obvious progress. Marketing is geared to pushing the industrial economy, selling and shortening life cycles—of smartphones, for example. However, that has started to change. The young generation is fully hooked on smartphones, but many young people, at least on the continent, do not have a driving licence because they do not think that they need a car. Therefore, they do not buy cars. If they have a driving licence, they will rent a car or be in a car-sharing or lease scheme. The consumer side is therefore changing to some extent.

The manufacturing side is changing, too. The most important change that happened—this is

starting to dawn on industry—was that the prices of resources came down throughout the 20th century. From 2000 to 2010, there was a huge jump, and resource prices are now higher than they were in 1900. It has been forecast that that trend will continue. Resources got cheaper in the 20th century, and it made sense to buy them, produce products, sell them and forget about it. In the new paradigm of increasing resource prices, it starts to make sense for many companies to retain the ownership of resources, and the only way to do that is by renting goods, or operational leasing or whatever else you want to call it. The goods in the market are then the resources of tomorrow at yesterday's resource prices. That is completely changing resource securities and how the industrial economy looks at matters.

The role of the state is a bit difficult. Its role is very much to do with resource exploitation, which implies child labour and environmental issues in South Africa and other regions, and to do with waste. The 2008 European Union waste framework directive should now be implemented. As I said, the state could have a big influence on the circular economy through taxation by not taxing labour or not applying VAT. The European Commission is trying to promote resource security and efficiency, but that is much more difficult than dealing with the two ends of resource extraction and waste production.

**Claudia Beamish:** You have emphasised the issue of aggressive marketing in the economy within the current model, but you have also highlighted changes. I can understand the model of car clubs, which is a clear example. Where would marketing fit in? In the shift that you describe, it seems that it would still need to have a role. How would that alter? You talked about a caring attitude, but I am not sure how that would fit with marketing models.

**Professor Stahel:** Let us take global companies, which are being squeezed. The circular economy is basically an economic model for markets that are near the point of saturation. Those are the industrialised countries. The huge markets in China and India are far away from saturation, and the traditional model of creating waste through more products, better products, more infrastructure and more schools is still the right way to increase the quality of life. Global companies such as Nestlé or Mercedes-Benz would have to develop a split personality to push sales in emerging markets while taking a conserving or preserving attitude in the developed markets. For any company, it is difficult to have two models competing with each other.

On the caring attitude, for a long time the publicity for Audemars Piguet, which makes expensive watches, has been that you never buy

an Audemars Piguet for yourself—or you do not own it; you safeguard it or look after it for your children. Caring basically excludes fashion—it means having quality that one then keeps. I call that the teddy bear effect. I have a lot of teddy bears. My watch is more than 50 years old and I have had the pens that I use and other things for 40 or 50 years. Usually, they were given as presents, so I have a link to the people who gave them to me. I have two cars that were produced in 1969. If people develop a relationship with goods, the value of those goods is more than only the function.

The traditional manufacturing industry has successfully destroyed that relationship. People should not have any kind of personal relationship with a house, furniture or the goods around them—they are simply a toy for people to enjoy until they get a better one. Basically, a caring attitude means that we recreate or revalue the personal links to goods, because then we do not throw them away. Of course, we then buy quality, because it does not make sense to buy a cheap disposable thing and keep it for life.

**Graeme Dey (Angus South) (SNP):** Will you outline the major challenges for Government in trying to take forward a circular economy approach? Are they to do with the general mindset and consumer habit or the unwillingness of industry and manufacturing to change practices?

10:00

**Professor Stahel:** The major challenge is to shift the minds of people from thinking that waste is a problem that is inherent to the product to thinking that waste is a problem only in the minds of people and that if they no longer want something, that does not mean that the product has become waste.

Therefore, it is important to educate people to know that if they are fed up with something or no longer want it, they have a moral or ethical obligation to find another user for it—another buyer. The success of eBay is based on the fact that there is a huge global market for trading used goods.

There are several other challenges. One is that, in people's minds, new products are of superior quality to used or remanufactured goods. However, an Organisation for Economic Co-operation and Development report stipulates that people who have young children should prefer to buy used clothes, which produce fewer allergies than new clothes, because they have been washed a couple of times. However, people who promote such ideas are immediately hit by the industry that manufactures new clothes.

The same thing could be said about some technical goods—remanufactured car and truck engines are of a higher quality and normally last longer. Caterpillar has good statistics among manufacturers that also remanufacture. However, such things are taboo, because they attack the main idea of the industrial economy that new goods are better than used ones.

Another issue is selling the idea that using regional resources—including the manufactured stock—and regional skilled labour creates a valuable regional economy, which is only part of the total economy. We will always have new products—such as those in life sciences and nanotechnology—that are innovative and creative, use fewer resources and normally produce higher value added. The Government must push for better management of existing stocks, although that is difficult to export, and for new products that use revolutionary technology, which can be exported and which reach out. In a way, that is a split personality—we do one thing but also push the other.

**Graeme Dey:** We are in difficult economic circumstances, so people tend to buy the cheapest goods rather than the best quality, even though that is a false economy. Whether we believe that we are in the middle of or just coming out of a recession, is timing a problem?

**Professor Stahel:** The problem is more sociological. Ten years ago, the book “The Multi-option Society” showed that people today always want to keep all their options open; they do not want to take decisions. In his famous song, Freddie Mercury sang:

“I want it all, and I want it now.”

If we combine that with the multi-option society, we have a complete mess, because people—especially young people—take loans to buy things that they do not really need but which they think that they might need or which they want. They do not want to buy high-quality goods, because they then lose the multi-option.

The problem is partly one of education and values. We come to the philosophy of how we should educate young people to define their basic needs and to focus on quality. The same thing applies in human relationships. People should think twice before buying something and should buy something that might be durable. The context is wider, but the consumer society is very much within young people in particular.

**Alex Fergusson (Galloway and West Dumfries) (Con):** Good morning, professor. If a company decided that it wanted to adopt the circular economy approach, what are the main challenges that it would face? Are they similar to the challenges of mindset change and behavioural

change that you have described as facing Governments and states, or would a company face different challenges? If so, how would it go about overcoming those?

**Professor Stahel:** The main problem is that, normally, you cannot profitably work in two worlds. If you want to change to the circular economy, you have to give up the throughput model.

A nice example of the problems faced in doing that is provided by Rolls-Royce, which changed from a model of selling jet engines and spare parts to selling power by the hour. In other words, Rolls-Royce decided that it would put at the disposal of airlines the service of its jet engines and get paid a fixed fee per hour for them. In the beginning, Rolls-Royce had to buy back all the engines and spare parts in the market, so it had a huge capital outlay in becoming the owner of the fleet and of the goods. However, its annual income from renting the engines was initially smaller than what it got from selling engines, for which it got a huge sum.

Rolls-Royce quickly realised that it had to change its business model completely. If you sell power by the hour, basically you no longer want spare parts, which are a huge waste of money and are inefficient. Instead, you want spareless repair technologies and in-flight monitoring of engines to avoid breakdowns. Under the new model, you make more profits by prevention. Basically, you want to keep the engines running, so you need to ensure that you have the lowest possible repair and maintenance costs. That requires a complete change in mindset, and it takes time. Once you have done it, you are much better off, but the changeover is difficult.

**Alex Fergusson:** Is Government stimulus required to introduce that change of mindset, or can that come from the bottom up?

**Professor Stahel:** I think that both are required. Big international companies probably do not need Government stimulus, but small and medium-sized enterprises normally lack the knowledge and the overall view. For SMEs, it would be useful if the Government, possibly together with the universities, could provide some kind of data bank that would allow them to see what other companies have done, what the successful models are, what new capabilities and skills they might need and where they can get those. If you can produce clusters of universities and companies that actively use this approach, that will both provide young people with an incentive to study it, because they will be able to see where the jobs are, and allow the companies to see where they will get the people that they need.

One trick to attract companies such as Caterpillar, which are already active in this field,

might be for the Government to announce that it wants to promote the circular economy. By producing clusters involving academia and industry, that might attract companies that are willing to make the step to come to Scotland for that reason.

**Alex Fergusson:** I also want to ask about a slightly different topic, but I think that other members may have questions.

**The Convener:** Yes, we will take supplementaries and then come to your second topic.

**Claudia Beamish:** Professor, can I ask about the place of the eco-industrial park in the discussion about businesses? Would Government need to kick-start something like that, or could it happen in a different way?

**Professor Stahel:** From a risk management point of view, I am a bit sceptical about eco-industrial parks, which involve one company using the waste of another as a resource. The German Democratic Republic was the biggest eco-industrial park that ever existed, because it had to make do with what it had. Everything was based on coal, on pork and on other centralised agriculture. When the German Democratic Republic changed to a market economy in 1989, it was efficient for western industrialists to buy certain parts of that chain of production and with that they destroyed the chain and the whole economy collapsed.

In an eco-industrial park, if one of the major companies decides to change the model or production process—whatever the product—or goes bankrupt, other companies might have the problem of trying to source new resources, having lost access to their previous supply. I am all for looking at the total, but from a risk management point of view you should never depend fully on one supplier of any resource, product or part.

**Nigel Don (Angus North and Mearns) (SNP):** Going back more than 20 years, I used to work for a little business called Unilever. I know nothing of what it is doing now, but I would like to draw on my experience of working there to ask you how businesses might work both nationally and internationally. Back in the days when I made detergents—though it hardly matters that it was detergents—there was a business that was based in the United Kingdom and there were many other businesses that were based around the world.

You indicated earlier that it would be difficult for a business to have two different mindsets, but it seems perfectly possible for one business that is based in the United Kingdom to have one mindset, particularly if it felt that it had the resources there, and for other businesses in other markets or places to have a different mindset. The only

difficulty that I think the company overall would have had would have been profitability: if the UK business had been able to generate its 8 per cent—or whatever—frankly, the board at head office would not have worried about how it had achieved that, as long as it was done ethically. Is it that difficult for international businesses to have different models in different places?

**Professor Stahel:** I do not think that it is difficult. The problem is that, in the mindset of economists, economy of scale means that if you produce something for the global market in one factory the costs will be lower, as the cost of transport is more or less zero—a 20-foot ISO container shipping from China to Europe costs something like \$6. However, what all those economy-of-scale calculations never take into account is catastrophic risk.

I discovered during a discussion about solar storms that if a solar storm were to hit the northern hemisphere it could knock out several transformers for high-tension electricity transfer lines. You simply need new transformers, but delivery time for those transformers is about one year, and there is only one company left that produces them, which is a very efficient company in South Korea. When you think about it, that is absolutely crazy. Europe and the United States no longer produce transformers because the South Koreans are more efficient, but we have completely lost out, not only on a national and policy level but on a corporate level, given the strategic importance of having regional and national manufacturers.

10:15

Let us think about the famous volcano, Eyjafjallajökull, the tsunami in Japan on 11 March 2011 and, six months later, the floods in Bangkok. In relation to the volcano's effect on companies, it was transport that came to a standstill. The tsunami on 11 March and the Bangkok flood destroyed unique companies that produced a single component for the car industry, with the result that certain Volkswagen models, for example, were not on sale for six or eight months. Industry is learning that it may not be such a good idea to have a global supply chain that becomes vulnerable.

You mentioned Unilever. The food situation is normally better than the car situation partly because people want local food. You eat porridge in Scotland but in Asia people do not eat porridge. The food market is much more local and regional than companies would like it to be. There is also organic farming, and the trend on the continent—I do not know about the UK—is for people to go to farms to buy food or to have contracts with farmers to supply them with seasonal food. That

change in the food chain is slowly happening—regional and seasonal food is seen as more fun and exciting—but mainly among people who do not have to buy the cheapest food.

**Nigel Don:** Can I go back to the basic point? Unilever had very local manufacturing for most things. The issue is the ability to make a profit—probably over the reasonably short term—so that the business can be persuaded to have a different model. Is there any evidence that that cannot happen?

**Professor Stahel:** The global players are always in competition with the regional or national players. They normally have similar competitiveness or profitability, but corporate strategy people believe that global branding, global production and global products are, in the long term, the winning proposal. If we cannot convince them that we can have a series of regional and national companies that are as profitable and competitive, they will always go for the global branding.

**Jim Hume (South Scotland) (LD):** You mentioned the concept of car leasing, and the fact that companies such as eBay, Rolls-Royce and Caterpillar have, to an extent, started working with a circular economy. Are there any businesses that have fully embraced the circular economy approach? From a Scottish perspective, it would be interesting to know whether other countries have started to embrace or have embraced the concept of a circular economy.

**Professor Stahel:** The term “circular economy” can be interpreted differently. We can see from the internet that the leading country as far as the circular economy is concerned is China—although we do not really consider China to be a circular economy. The reason why the circular economy is different in different countries is essentially that the approach is based on using existing capital and stock—mostly human capital and manufactured goods.

One of the big problems in almost all industrialised countries, including the US, is the neglect of operation and maintenance. Our roads, water systems and sewerage systems are all 50 to 100 years old, and they are falling apart. The big challenge is to bring about the proper operation and maintenance of infrastructure—for example, adapting existing Government building stock to satisfy energy saving requirements. There is a huge market there, because we have neglected that stock for a long time.

A lot of local, regional and national companies thrive on the rental of goods. Children’s furniture is one such area. In Germany, high-quality wooden furniture for babies has become fashionable. People might use baby cots and other such things

for one or two years. What do they do with them after that? People will want to buy a nice one but, instead of buying a nice one, they can rent one and then give it back and rent another one.

Ladies’ handbags are a big fashionable thing at the moment. A young lady might like to have the latest Gucci handbag or whatever every weekend, but she cannot afford to buy such things, as they can cost upwards of £3,000. However, she can rent one for, say, £50, so she can get a different very expensive handbag every weekend and be the king of fashion. It has started to dawn on people that, if they want something new to impress their friends—a Ferrari or another expensive car, for example—and the last thing they can afford to do is to buy it, they can rent it instead. Nobody will know whether it is rented or bought. That is one of the drivers of the new economy. People who are very fashion conscious but who do not have much money realise that they can buy the illusion for their peers by renting goods.

**Jim Hume:** That is fascinating.

**Angus MacDonald (Falkirk East) (SNP):** I am sure that our colleagues Claudia Beamish and Jayne Baxter have taken note of the Gucci handbag proposal. There might well be a social enterprise coming up soon.

**Jayne Baxter (Mid Scotland and Fife) (Lab):** Aye, that’ll be right.

**Angus MacDonald:** Professor Stahel, your comments on the need to improve infrastructure are certainly noted. You have mentioned proposals such as not taxing labour and taxing only unwanted things, although you will be aware that, in Scotland, we do not have complete powers over tax. The Scottish Government, Zero Waste Scotland and Scottish Enterprise are actively engaged in exploring and implementing activities that could help to build a more circular economy although, currently, there is no single circular economy plan or strategy for Scotland. You have touched on some of this, but I am interested in your views on the priorities that Scotland should pursue over the short, medium and long term to progress a more circular economy.

**Professor Stahel:** On a general level, a circular economy basically allows you to build a more resilient economy and more resilient communities. That applies in any area. For example, in energy, the trend is to have a national grid or even a European grid— as with Unilever, the trend is to always have a bigger system to manage centrally. From a risk management or sustainability perspective, however, you would be much better off with diversified energy production. In other words, depending on the energies that are available regionally, you could combine

geothermal energy with wind, tidal and photovoltaic to a degree.

If you use photovoltaic, do not do it the German way, which is to feed everything into the national grid. Photovoltaic is 12V direct current, and if you feed it into the national grid, you will have a lot of transformation losses. People can easily convert their home to 12V DC—all the technology is available from the car and camper van market, which is all 12V DC, and energy saving lightbulbs and so on are available for 12V DC at cheap prices. If people convert their home to photovoltaic using truck batteries, the utility companies lose them as customers and suddenly do not profit from photovoltaic. It is the same problem: the big players want everything to feed into the big system, whereas, from a decentralised perspective and if you want to build resilient communities, you are much better off having local independent units that work up to the grid. The grid should not dictate the way in which the local units function.

Basically, it is bottom up versus top down and, at the moment, in most cases, the top-down approach wins. Obviously, there are governance issues. Being Swiss and a fan of direct democracy, I have to tell you that bottom-up solutions are normally much more long lasting, sustainable and resilient.

Did I lose your question or did I answer it?

**Angus MacDonald:** You partly covered it. You have covered the energy sector, but are there any other examples of how we could progress to a more circular economy?

**Professor Stahel:** There is a huge volume of manufactured goods. Another top-down approach that has been popular in the past few years has been cash for clunkers schemes, under which any car that is older than eight years is scrapped and people are given a bonus of €5,000 or whatever to buy a new car.

In a circular economy, a much more intelligent policy would have been to give people €5,000 to replace their car's polluting engine. In other words, the engine would be remanufactured or a diesel engine would be replaced by a compressed natural gas engine, which is basically the same technology. That would have had a much higher impact on local employment, because all the conversions would have been done locally, and on pollution, because new cars would not have had to be produced. There would also have been a better impact on the utilisation of the cars than there was through replacing eight-year-old cars with new cars that had the same technology.

We did a calculation on the resources that go into scrapping cars and producing new ones. Applying the circular economy approach instead of

a cash for clunkers scheme would have had a huge impact on local economies and the environment. However, that approach probably could not have been pushed politically, because the car industry would have come on to the barricades. The industrial economy wants people to throw away functioning products and buy new ones, of course, as that fuels it, but that is not the best approach.

10:30

**Richard Lyle (Central Scotland) (SNP):** I have listened intently to what has been said about your concept, professor. We have had the industrial revolution and the consumer society. Basically, we live on a factor of need, as you say, and sometimes greed. People say, "I want this handbag," "I want that jacket," "I want that car," or whatever. From 200 years ago, people have come off the land, manufactured goods, earned a wage and then bought other goods, and that has created other jobs. Does your concept basically mean that everything would be circularised within a region, and the region would manufacture and use all the products? Many companies have centralised into one big factory for the whole country, but you are suggesting that they could devolve operations down into a region. I can see the concept. At the end of the day, that will reduce pollution and movement and ensure that people use products in a regional society. Have I basically got a handle on what you mean?

**Professor Stahel:** No. We cannot produce everything locally or regionally. Europe no longer produces mobile phones, because Nokia has been sold to Microsoft, so mobile phones are now produced only in North America, China and South Korea. There are many other products in the same situation. We should take advantage of large-scale manufacturing and low costs to import products, but we should have better quality control of what we want. Basically, we want repairable goods. If we import repairable goods, we can do the maintenance and repairs operations locally. As a policy, we should try to get the best products, but we should develop an economy that reuses, remarkets, repairs and remanufactures properly, making the stock that we have last as long as possible and then recycling the materials, which are a strategic stock.

If I have correctly understood what is basically happening in Scotland, you import a lot of goods and export a lot of waste. With the circular economy, you would look at the region as an enterprise and close the loops by looking at the waste material that is exported as a resource and finding ways of making new products and getting new value out of it.

**Richard Lyle:** Your point about renting is interesting. After all, back in the 1960s and 1970s, people rented a television, a hi-fi or whatever.

I also agree with your comment about reusing things. When my wife throws stuff out, I mostly take it to charity shops so that people can use it again. I abhor things being thrown into skips or dumps when someone else can get some use out of them. I certainly find your concept quite interesting and thank you for answering my question.

**Professor Stahel:** Let me give you a couple more examples of consumers buying use or utilisation very often without realising it. They rent cars, apartments, taxis, public spaces such as roads, hotel rooms, libraries, concert halls, cinemas, the internet and public transport; in all those cases, you do not buy the thing itself but buy the use of it. It is therefore more important that we make people and, indeed, SMEs aware that the concept of renting is not some revolutionary new thing that will endanger everything that they have done in the past.

On the issue of quality, when people check in at a hotel, they never ask, "Who slept in the bed last night? Was it Idi Amin Dada? Some other dictator?" You trust the hotel to maintain the quality of its service. In most cases, however, the hotel's bedlinen and towels are owned not by the hotel itself but by a textile-leasing company; after all, that is the core business of such companies, not hotels. The process that textile-leasing companies go through almost every day in delivering and taking back goods is very intensive, with a radius of efficiency of 60 miles, or 90km. Because transport limits efficiency, there are many regional or even local textile-leasing companies; you will never have a global textile-leasing company. Inherent in the concept of selling services is the need to be close to the client whereas, with industrial production, you can be on the other side of the globe.

Similarly, people who take aeroplanes do not realise that, although they might get a ticket and reservation from the airline, the airline itself does not own the aircraft; that the stewardesses' uniforms are owned not by the airline but by a textile-leasing company; and that the food is provided by a catering company. All these businesses are selling and buying services. The fact is that public procurement could have a very big influence in the buying of services. For example, if you look at the websites of the Pentagon and NASA, you will find that the procurement preference of those United States administrations is to buy services. The space shuttle will be the last piece of hardware that NASA will own and operate; in future, all those services will be bought.

Public procurement can have a very strong influence on industry and creativity. If it means that services will be bought, there will immediately be huge competition among start-up companies for providing those services.

**The Convener:** I will allow two short supplementaries to round things off. We have had a good overview of how renting rather than buying could be an issue that Governments, particularly the Scottish Government, could consider seriously. Claudia Beamish, do you have a very short point to make?

**Claudia Beamish:** I assure you that this will be a very short point. Given the forthcoming public procurement bill, today's conversation has been very helpful, so I first want to thank Professor Stahel for that.

On the issue of renting, which I fully adhere to as a concept for moving us forward, I want to respond to Angus MacDonald's point about Gucci handbags by putting into the dialogue that such a proposal would still encourage the consumer society and all that side of things. Therefore, further to Professor Stahel's earlier reference to people caring for special things, I want to point out that my handbag was given to me by my school when I left after 10 years to become an MSP. When the handles of the handbag broke, I got my partner to replace them with plumber's tubes. I leave you with that thought.

**The Convener:** Thank you for that.

**Graeme Dey:** Follow that.

I want to go back to Professor Stahel's point about the national grid. In Scotland, 24/7 and 365 days a year, we export electricity through the national grid to England and Northern Ireland. That allows the lights to stay on and industry to continue in those places. We use a range of energy sources for that, but we are increasingly moving towards using greener contributions in the energy mix. The plan is for that to continue if Scotland votes for independence. Therefore, although I understand the point about the need for a local focus, is a national grid not essential and in fact a good thing?

**Professor Stahel:** The national grid—or, on the continent, the European grid—makes absolute sense for transferring surpluses to balance demand and supply, but it would still perform that function if the regional grids were more independent or stronger. The national grid is paid by volume, so the more electricity it shifts around, the more money it makes and the more power it has. If you increase regional production and the price for using the national grid goes up, there will be more incentive to make regional grids or networks. Basically, big systems always employ arguments about economy of scale by claiming

that, if you want the price to be cheap, the system needs to be big.

Another argument is that, if the national or centralised solutions are expensive, that will provide incentives for using regional systems as part of the circular economy. We should take into account the need for risk management, such as for a catastrophic failure of the national grid, and move to regional systems. For example, if that solar storm was to happen, there could be a prolonged blackout of several months, for which the national grid would provide no remedy. I hope that that will never happen, but the chances of its happening are increasing through probability. That provides a lesson about the need for local sources of energy.

Actually, the biggest promoter of plus-energy buildings, which is a really decentralised model, is the mayor of New York, Michael Bloomberg, who is certainly not a green. His argument is that, if we have more and more buildings that are energy autonomous from the grid, whenever there is a blackout there will be less pressure on the emergency services—the police and fire brigade—to get people out of elevators and there will be higher security because buildings will remain lit. The big push is that he wants all new buildings in Manhattan to be plus-energy buildings because that takes the pressure off the state and the emergency services.

**The Convener:** Thank you. We have heard a wide range of things to get us thinking, and I believe that our colleagues on every other committee in the Parliament should be thinking about these things as well, because they are all interrelated, joined up and even circular, I guess.

Thank you for your stimulating evidence. I suspend the meeting briefly to enable us to change over witnesses.

10:45

*Meeting suspended.*

10:52

*On resuming—*

## Draft Budget Scrutiny 2014-15

**The Convener:** Agenda item 2 is scrutiny of the draft budget for 2014-15. We will hear from two panels of stakeholders. The second panel will be on flood protection and alleviation. Our first is on delivery of broadband in rural areas, in keeping with our remit. I welcome our witnesses. They are Brendan Dick from BT, Gavin Stevenson from Dumfries and Galloway Council and Alex Paterson from Highlands and Islands Enterprise.

We will start with questions about the next generation digital fund. How do that fund and the broader step change programme fit within the £280 million budget? Who wants to kick off?

**Alex Paterson (Highlands and Islands Enterprise):** Good morning, and thank you for the invitation to give evidence.

The next generation fund is critical; we are all involved in projects that are delivering against that. In the Highlands and Islands, we have embarked on the largest and, probably, most complex broadband project that the UK has seen. The fund is critical to enabling us to do that.

A £146 million project is being rolled out across the Highlands and Islands, in partnership with BT. That will be transformational for the Highlands and Islands. Without the project, we would have broadband coverage of about 21 per cent through commercial intervention. The project will take us up to 84 per cent, and we hope to go further. The budget that has been allocated to rural broadband is fundamental to the Highlands and Islands. We have stopped talking about the desire for broadband and are making it happen.

**The Convener:** How does the step change programme fit in?

**Alex Paterson:** The step change programme has a couple of elements. We have the contract for the Highlands and Islands project; the other part of the programme is the contract for the rest of Scotland. Both those contracts are delivering the step change element of the digital strategy.

**Brendan Dick (BT):** I will supplement what Alex Paterson said. I genuinely believe, as a Scot, that the projects will be transformational. They are clearly massive projects. As Alex Paterson said, the Highlands project is massive. To be frank, both the projects are, in scale terms, massive by British standards. We can see that by looking at some of the components that underlie the ultimate outcome, particularly in the Highlands and Islands; members will see reference in our submission to

400km of subsea cables and 800km of core backhaul.

My first point is that I believe that not only will the project transform the availability of high-speed broadband for citizens and for small businesses, but it will transform the capability, from an inward investment perspective, to encourage businesses into rural Scotland—that will also apply in southern Scotland—which has in the past been hard to do.

Secondly, the evidence from across the world—not just the UK—on the potential economic impact of exploitation of higher-speed broadband, as opposed to first-generation broadband, is already, in a recession, showing a good uplift in gross value added, gross domestic product and so forth.

Credit is due to the Scottish Government for the step change programme, to which Alex Paterson alluded, because it is important that it is emphasising how we will exploit this. I was recently speaking at a business conference in the Inchyra hotel in Falkirk—where I was christened and had my wedding, so I know it quite well—to an audience of about 180 SMEs in the Falkirk Council area. The bulk of that conversation was about what we are going to do with higher-speed broadband. Clearly, Falkirk is not rural in the way that much of the geography that the committee is concerned about is. Nonetheless, in my opinion the potential for people running businesses in communities will change wherever they are in Scotland—from Shetland down to the Borders.

**Gavin Stevenson (South of Scotland Alliance):** It is important to say to members that the reason for the step change programme is market failure. The attraction of the big cities to internet providers is that they can make money because the infrastructure costs are much lower. The project is so important for the committee and the South of Scotland Alliance—which I am here representing and which represents Scottish Borders and Dumfries and Galloway councils—is that there is clear market failure. I live in the centre of Dumfries and have broadband connectivity of less than 2 megabytes, which means that I still get a wee clock. I am sure that Alex Fergusson probably does not get such connectivity at all in his area.

The key is how we address that market failure. Our young people are having to move from the Borders and our other rural areas in order to find jobs. We need to take jobs to our people; we need to put the infrastructure in place. There is about 7 miles of dual carriageway and 4,500km of other roads in Dumfries and Galloway. That was the 20th century connectivity infrastructure, but we are talking about the 21st century infrastructure. The investment is small compared with the roads expenditure, but it is crucial to our area. It is also crucial for addressing some of the demographic

issues that we face in rural Scotland around how we provide services to where our elderly people live, rather than taking them to where we have the services. I cannot do that if I do not have the connectivity and modern infrastructure to put the technology into their homes.

The investment in the broadband project is small in terms of the Scottish Government's £30 billion budget, but I think that it is absolutely crucial for the future of rural Scotland.

**The Convener:** How are the organisations that are here funded by the proposed investment? What is their core function and where do they operate? HIE and BT have particular functions, so how does the next-generation-digital programme fit into your overall plans?

11:00

**Brendan Dick:** I will answer the question initially, convener, if I have understood it correctly. Clearly—Gavin Stevenson alluded to this earlier—we are undertaking significant commercial deployment throughout the UK. To recap for members' benefit, we are spending about £2.5 billion across the UK—a commensurate amount of which will be spent in Scotland. That programme will be complete in spring next year. It means that between ourselves and other industry players—predominantly Virgin, which is quite strong in much of the urban Scottish patch—we will have around 67 to 70 per cent high-speed broadband coverage of Scotland.

What we are doing, and what we have bid to do in partnership with the Highlands project and with the rest of Scotland, is bringing the same technical capability to bear in achieving the coverage and targets that members are familiar with. We believe that that is critical. I know from talking to people throughout Scotland—many of your constituents—that they want not only speed but choice. The infrastructure that we are deploying will give choice of service provider; as we speak, something like 80 communication providers are providing services on the network across the UK. That will grow, ranging from the obvious ones such as the retail arms of BT and Sky to other providers, and it will be sustainable.

The outcome, in my view, will be that someone on the high-speed broadband service in Gavin Stevenson's area in south-west Scotland will have exactly the same choice of providers and costs and, critically, the same evolution of service as I have in Edinburgh.

**Alex Paterson:** You asked how the programme fits with our plans. We have in our operating plan the clear statement that the Highlands and Islands needs to be a digital region. It is as basic and as simple as that. We are an economic community

development agency. Access to superfast broadband and exploitation of it are right at the heart of all that we do. We cannot operate in the commercial world—from a business point of view, looking at productivity enhancements—without access to superfast broadband.

In many of our most remote and fragile areas, such access reduces isolation and the problems of fragility and rurality. Many of the economic opportunities that are coming from renewable energy and other innovations are happening in our remote areas. Tourists expect to have good connectivity wherever they go, and it does something for the attractiveness of the region if you have digital connectivity. If you want to deliver digital healthcare services and public services, you have to have broadband.

On Monday, I pointed out to the Economy, Energy and Tourism Committee that digital connectivity runs through almost everything that we do—in our individual lives, in our business lives, in our communities and public services, and as an attractiveness indicator to tourists, businesses and inward investors coming into our region. It is fundamental. We started off on the process in 2009, long before the momentum built, and said that if we did not do something we would be accepting that the region would be digitally divided. We cannot accept that. Right at the top of our agenda is the fact that the Highlands and Islands has to be a digital region, not for the sake of having fibre in the ground—that is a means to an end—but because of what we then do with it, but we have got to start by getting the basic infrastructure in place, and that is what the step change programme aims to deliver.

**Graeme Dey:** Unlike yourselves, gentlemen, I am not an expert, so I would like you to clarify something. We are talking about investing a great deal of public money in infrastructure for the whole of Scotland. Who will own that infrastructure, once it is in place?

**Brendan Dick:** BT will own the infrastructure.

**Graeme Dey:** Is that appropriate? I can understand why you would manage it, but why would BT own the infrastructure when it has taken a great deal of public investment?

**Brendan Dick:** It is a joint investment. We are going to be investing, in round numbers, about £126 million out of about £410 million in total. Critically, we will be maintaining and running that infrastructure for the long term. One of the mistaken assumptions—I do not think that it is happening here, but it does happen—that many people make is to see it as the Government, whether that is an English county or the Scottish Government, buying something from BT. The procurements that have happened across the UK

have been based on finding a co-investor, and that is what we are doing. We will maintain and enhance the network long beyond the terms of the contract, as we have done with previous contracts.

**Graeme Dey:** Will you bear the cost for that?

**Brendan Dick:** Yes. I can cite the first-generation broadband contract as an example, which is the easiest thing to do as some members know about it and have been closely involved in it. The first-generation broadband contract deployment finished at the end of 2005 and the contract term concluded in April 2010. We did not switch off—we continue to invest in that network in areas such as Perthshire in the same way as we invest in commercially deployed technology in the more urban parts of the country.

**Jayne Baxter:** Good morning. I want to move on to some of the operational issues of the NGDF. How many more addresses have been connected in the past year? Are you on track to deliver the 95 per cent target that the Cabinet Secretary for Finance, Employment and Sustainable Growth outlined in his draft budget speech?

**Brendan Dick:** I will kick off. As you will appreciate, there are two different contracts in Scotland. The contract with Alex Paterson and his colleagues was signed in late March and that for the rest of Scotland project, as we call it, was signed in late July. In all such projects—as I said, similar projects are happening elsewhere in the UK—there is significant detailed planning that takes about six months.

To answer your questions specifically, nothing new has been deployed yet as a result of the contracts, but around mid-October Highlands and Islands Enterprise and BT will go public in our first-phase deployments. There will then be phased announcements by quarter. I expect that in the early part of the next calendar year—if not before, if we are lucky—we will see the first deployments resulting from the HIE contract. The rest of Scotland contract is a bit behind that, but it will happen in the same window of time, rolling through to the targets.

Jayne Baxter will know that the target to which she referred is pretty ambitious. However, I am very confident about it—partly through experience and partly through the genuine commitment of my colleagues and me, who live and work here and want to ensure that it gets done and will happen. Cornwall started a similar project some time ago with European funding. That project is on schedule and getting near the end of deployment, and because of technical innovation and genuine partnership working with the customer for nearly two years, the amount of fibre-based high-speed broadband that BT has deployed as part of the partnership is higher than we originally envisaged.

I hope that we can achieve more with what we have in Scotland than we currently believe we can achieve.

**Alex Paterson:** We signed the contract only in March; we are on schedule and will announce the first roll-out later this month. Our view is that we will get at least 84 per cent coverage. That is not the target of 95 per cent, but commercial deployment would have got about 20 or 21 per cent in the Highlands and Islands and perhaps about 70 per cent in the rest of Scotland, while areas such as Orkney, Shetland and the Western Isles would have had zero commercial deployment. The 84 per cent coverage will be a huge step change.

We are not resting; we are trying to do other things. As Brendan Dick said, we hope that the contract can go further. It is accepted that other funds will be required in order to go beyond where we are today. Other initiatives, including Community Broadband Scotland, are providing alternative solutions for communities, in particular where the step change programmes will not reach.

I think that the 95 per cent is a target for 2017; we are saying that we will have 84 per cent coverage in the Highlands and Islands by the end of 2016. Although 84 per cent is huge coverage, we need to cover the remaining 16 per cent, as well.

**Jayne Baxter:** Of the approximately 45 per cent of properties that will need to be connected in the next three years in order to hit the target, what proportion are in rural and remote rural areas?

**Brendan Dick:** I am not sure of the definition of "remote" or "very remote". However, if it helps, I can tell you that the breakdown by local authority—you might have this information—of the total coverage that we will get to at the end is fantastic, in my view. Frankly, when we started working on the project, I might not have believed that we would get to that.

I have an example of an area that I am not sure counts as very remote, but South Ayrshire is an area in which, frankly, we need superfast broadband capability to drive the economy and change the shape of jobs. By the end of the contract, we will have in the region of 96.5 per cent high-speed broadband coverage. Many of the parts of Scotland that we would all feel are quite rural are going to be in and around that; not all of them will be, but a fair chunk will.

That is very positive, as Alex Paterson suggested, particularly given Community Broadband Scotland, which is relatively unique in the UK. It creates a focal point to address the needs of the rest of Scotland as best we can, working with industry. I genuinely believe that the initiative is a game changer if we, as Scots, use

innovative thinking about how we drive our communities and businesses.

**Gavin Stevenson:** In the south of Scotland, of 120,000 households, we will connect an additional 80,000. Across the area, only 40,000 can currently connect, and the amount is less than a quarter of households in Dumfries and Galloway. There will be 80,000 more households that can connect.

We need to be clear that connecting does not mean that the households are connected, but that they will be able to connect through a provider. Demand stimulation, working with communities and doing promotion over the next few years, will be vital if we are to get ahead. I again emphasise the ability to connect. In respect of how some newspapers have been presenting the matter, it should be made clear to the public that they need to express their demand in order to get the internet providers in to connect them.

**Brendan Dick:** Let me add to that, chair. This is an interesting point. Let us consider Edinburgh—I was looking at the figures with an Edinburgh councillor recently. A number of exchanges in Edinburgh have been operational for two years, give or take, with high-speed broadband connectivity. Although it is true that speeds in Edinburgh are pretty good as regards conventional first-generation broadband—they are very good by British standards, in fact—take-up of the new service on most of the exchanges, which have been live for two years, is only about 10 per cent. That is interesting. The infrastructure is there, but what will trigger people to change how they use technology and get social or economic value is in many respects a harder intellectual question than the question of putting the stuff in the ground.

**The Convener:** I remind you that I am a convener, not a chair.

**Brendan Dick:** I am sorry.

**The Convener:** We want to go further with questions about the development of the measures being taken. Did you have a question, Jayne?

**Jayne Baxter:** Yes—I cannot help myself, convener.

You say that there is a big job to do to develop an awareness of the possibilities. Who will do that job? I live in Fife and I am a councillor in Fife. I have seen lots of very interesting things develop, including telecare and lots of small businesses now using web-based marketing. It is possible to order all sorts of things from local businesses in Fife. I have seen what the possibilities are. How do you intend to promote that and to raise awareness?

**Alex Paterson:** I can give you an example of some things that have already started. I made the point earlier that getting the fibre in the ground, or

securing the wireless connections, is a means to an end. The question is what people do with that. Along with business gateway, we have established a range of demand stimulation services. We have specialist advice for businesses and we are running a number of events. We are encouraging digital participation with citizens online. Along with business gateway, we have plans to roll out a mobile technology showcase, taking the technology around the Highlands and Islands and demonstrating what can be done. We have plans to launch a small digital innovation grant scheme. A whole raft of things are already starting. Over the next couple of weeks, we are running courses on e-commerce and so on.

The two things run hand in hand. We cannot wait until the fibre is there before starting work on the demand. We are already promoting a digital Highlands and Islands as part of our inward investment proposition. We will have that opportunity. What does it mean to business services companies that are considering using home workers? People now do not have to go in to the office—they can operate from anywhere if they have the technology. We are already starting quite a bit of that work.

**Brendan Dick:** I will supplement that from a communities perspective. I have the honour of being honorary president of the Scottish Council for Voluntary Organisations and I have always had a strong interest in the third sector. In parallel with the business activity, the Scottish Government is cognisant of a strategic programme that will do two things. First, it will help to drive exploitation of technology in the voluntary and third sector. Secondly, it will use that as a conduit—I think back to some examples; I am aware of some good work in Fife—to help people at an individual level, many of whom are not online at all. That is not a sustainable option for a civilised society given, for example, the trend for digital public service delivery.

**Gavin Stevenson:** Certainly in the Highlands and Islands and in the rest of Scotland projects, partnership has been developed. The local authorities have been very much at the centre of that, recognising their community leadership role. BT has worked with each local authority on the initial roll-out, because where we do it first is crucial, particularly politically, as members will recognise. We have had excellent dialogue there and local authorities have accepted that they need to lead the demand stimulation. The secret is the point at which we do it. To do a big thing now, when they might not get it until 2017, would create an expectation that we could not fulfil.

The plan is that once we have absolute clarity on the roll-out programme, we will go to elected members in each council area and say, “This

would be the programme for your team, working with BT colleagues, to get ahead of the game and create that community capacity.” That co-ordination is essential, and it has been there right through the negotiations, which I have been involved in since the start.

11:15

**Alex Fergusson:** I want to explore that a little bit. I am particularly interested in the areas that will not be covered. Living where I do, in the extreme south-west of Scotland, quite a large percentage of my constituents are likely to come into that category. Brendan Dick mentioned the detailed survey work and so on that has to be gone into before any announcements can be made. Is that work at the stage at which precise plans are in place for what will and which will not be covered or is it still a work in progress?

**Brendan Dick:** I can kick off on that. For your geography, Alex, given that we signed the contract in July, we are talking about roughly a six-month window before we do what we will do with Highlands and Islands Enterprise in mid-October for Alex Paterson’s geography. That process in effect gives granularity and—in a phased way—firms up on certainty about where we will go in the short term.

What we would like to do—again, with partners this has proven to be the best way—is to try to give some clarity about what may happen downstream but without saying that, in 2016-17, an area will definitely be in or will definitely not be in. To take the Cornish example, life changes, and if we say to a community, “You’re definitely not in,” we might be wrong and would be doing that community a disservice.

That said, I recognise that if your community was really at the edge and had no chance, you and your constituents would want to know that up front. As part of our current exercise, we want to get to that position. That is when organisations such as community broadband Scotland can assist. They can help people to do things faster when a community knows that it is really at the edge and that connection will not happen for them.

**Gavin Stevenson:** For south-west Scotland, we know that that will be about 7,000 premises. When we talk about 5 per cent, that is a big number of people not connected.

There are some contractual issues that mean that, with the funding that we are getting at the moment, we cannot do two interventions at the same time. There are state aid issues around that. It does not mean that local authorities cannot do different things.

The roll-out of the Scottish wide area network will provide opportunities to use the infrastructure of local authorities, such as schools. It might be possible to do short-range wireless to communities where we cannot get BT in.

I can give an example of an interesting experiment with white space in Annan. As part of a pilot project, we have been experimenting with using the white space that exists in the television signal to deliver local broadband. For commercial purposes, it will not fly, but if the hard-to-reach areas can get a television signal, they can get a white space signal. We could do broadband but it also means that simple things like getting health test results to the valleys could be done that way. We are well progressed in that, and it was launched this month. That is the type of technology that we are already looking to invest in.

Even though this contract is for 1MB, we are all committed, through other interventions, to get everybody a minimum of 2MB by 2017. For Alex Fergusson's area, we may use the British rail radio communication masts that are being installed down to Stranraer and beam off them to get in to some of the valleys where we do not get a clear digital signal. A range of interventions are being considered and worked on. I am probably 99.9 per cent certain where my 5 per cent will lie. We are already drawing up plans for our engagement with those communities—and engaging the communities—about the answers.

**Alex Fergusson:** I am sure that you would all agree that if communities know where they will be, they can plan ahead. It was brought to my attention that a local authority—I think that it was Sutherland—identified the not-spots very early on, and opened up those areas to other providers to come in and negotiate with communities, individuals, businesses and so on. Can you reassure us that areas that are unlikely to be reached by broadband will be identified and that people there will be notified as soon as possible and will have other options put to them?

**Alex Paterson:** Yes. We are a long way away geographically but, from a Highlands and Islands point of view, we, along with BT, will be announcing on a quarterly basis, starting this month, the roll-out of the next generation infrastructure. I pause at this point and ask you to look at the map that we included in our submission. We know that some bits of the Highlands and Islands will not get the infrastructure until beyond 2014 because we are laying 20 subsea cables. Without the basic building blocks, we cannot put the house on top of the foundations, so we are doing that work.

One intervention that has been made is the community broadband Scotland initiative, which was set up to help those communities that are

unlikely to benefit from the step change programme to take forward projects of their own. There has to be sharing of information between the step change programme and the community broadband interventions on where the step change backhaul on infrastructure is going to take us. The two have to work hand in glove.

That takes us on to the community broadband offer, which is designed for those communities that the step change programme will not reach and where 2Mbps will not be achieved either today or going forward. A range of advice and sources of information are available for those communities to develop their own solutions.

I emphasise the complementary nature of the two. The backhaul of the step change programme is fundamental to the community projects, and the communities can benefit cost-wise and in other ways from having access to that backhaul. The two are complementary, but the sharing of information to enable the community broadband projects to develop is vital.

**Alex Fergusson:** I am grateful for those reassurances and pleased to hear that, but I have to ask a further question in the context of the Westminster Public Accounts Committee report that came out just a couple of days ago, which is quite scathing in some ways. Margaret Hodge's statement says:

"BT is ... preventing local authorities from publishing proper information on the areas the company will and will not cover. Details of speed and coverage in each local project are also being kept confidential, preventing other suppliers from developing schemes".

I ask Brendan Dick to comment on that.

**Brendan Dick:** I am happy to do that. She is wrong.

What Alex Paterson said is absolutely right. I will quote a specific example. Northamptonshire County Council has issued information, and a lot of that will be based on what we have told it—and what others have told it, because in many parts of the UK it is not the case that there is only BT infrastructure. I accept that that is probably the case in your geography. Public bodies can and will issue information, and that approach has been taken.

I need to emphasise a key point. About a week ago, I had the pleasure of meeting the newly appointed director of CBS, whom Alex Paterson and colleagues in Government have recruited. I think that it is recognised that our approaches are complementary. We have to avoid hitting the problem of having two parallel things that clatter against each other. My view, and I think that CBS would agree, is that we need to drive fibre and the big industrial-strength technology as far as we can and recognise that CBS is there to address the

really tough bits, but we should not do things as a knee-jerk reaction that might obviate what would have come through industrial-strength evolution. It is a fine balance, but I think that we are all on the same page in trying to achieve the outcomes that you are after.

**Gavin Stevenson:** It will perhaps give members some confidence if I say that it was a great concern for local authorities when we came in and they were asked to put up £100 million of local authority money at the front end. There were some difficult discussions and I had some difficult phone calls with some council leaders to get everyone to understand the process.

When we started the contract negotiation with BT, we used exactly the same metrics that were being used in the English model, and we came to the figure that we would probably not get beyond 75 per cent. I say to Brendan Dick that I think it is fair to share that with the committee because it is in the public domain.

**Brendan Dick:** Yes.

**Gavin Stevenson:** We said, "This is just stupid. Let's share all the information from both sides. We'll put the entire funding package up in front of you so that you know exactly how much money is on the table, and you can give us all the metrics. We'll then get independent examination of that data." We started the contract negotiations from both sides by putting everything on the table. Through that process, we arrived at 95 per cent. If we had followed the English model that was reported at Parliament, we would probably have achieved 75 per cent.

To reassure you about whether BT will be able to share information, I hold up this map of the speeds. It says "Commercial—in confidence", so I will not hold it up too much in case somebody sees it.

That was shared with all my chief executive colleagues at a meeting last week. So there is absolute transparency. When I have asked for information on my area, at no time has it not been provided by BT.

**The Convener:** I have to follow that up, because the consumers and not just the councils have to know that information. The question of who will and will not be coming on at any particular time must be addressed. I have a dozen emails to respond to from people in my area, where BT is virtually the sole provider, as in many parts. We do not need to go into the technicalities of competition, but it is probably easier for you if you work through BT, because I presume that other providers get only a quota of space under the existing scheme. That certainly seems to work in some places.

How can people find out where they are in relation to the core network that is being set up and when they will come on to it? You talked about a three monthly discussion. Will that give people an idea of whether—and if so when—they are likely to get hooked up?

**Alex Paterson:** One source of information will be the Openreach superfast broadband website, which I think Brendan Dick and his colleagues use across the UK. All the exchanges will be put in different categories, and people will see those that will be rolled out or upgraded. In the Highlands and Islands, the first ones will happen between January and March. The website will give an indication of what stage the rest are at. However, it is right that we should be specific only when we have the specific information. There is no point in promising something that we are not absolutely certain about. That is why the mechanism that we will use will be the quarterly updating of the information about which exchanges are to be upgraded.

Our submission contains a map that shows that a huge amount—£50 million—is being invested in basic backhaul, or the basic telecommunications infrastructure. That will take time to put in. The 20 subsea crossings, involving 400km of subsea cable, will not be deployed until next summer. So there is an obvious timeline for that. However, starting this month, there will be quarterly updates on the website. That is the place where people can see how it is coming to them.

**Brendan Dick:** I agree. Throughout the contract, the information refresh will happen quarterly. However, at any minute of any day, people will be able to go on to the Openreach website—I think that Alex Paterson said that he has provided information on it—and see exactly where things are at. That is the same information that one gets through the commercial deployment.

I want to give a bit of reassurance on the subsea work, which is on schedule to happen next year. It is a massive contract that we are letting to providers of that capability.

**Gavin Stevenson:** People need to understand that there are three tiers of internet provision. It is important to say that, in establishing the contract with BT for Scotland, we were clear that we are putting in the infrastructure and that BT has the contract for that, but when it sells on the use of that, it will sell it to BT's other arm at exactly the same price as it will offer to every other provider. That is clear in the contract. There is an equity issue. In effect, there is the rail, and then the issue of who is going to use it. We have said that the rail use can be sold to BT's other arm at the same price as it can be offered to everybody else.

**Brendan Dick:** That is correct.

**Gavin Stevenson:** That is the point on which I think that there was some confusion, certainly in the evidence that went to the Parliament in England. We have been clear from the start that we are investing in infrastructure and that it must be open and available to all providers to buy.

**Brendan Dick:** To supplement that, a number of members have enough knowledge of the telecoms industry to know that, for historic reasons, that is in effect a requirement under state-aid legislation. The retail arms of BT that are communication providers buy capacity and services from Openreach, which is deploying the network, in exactly the same way as, for example, Sky does, which is quite a big competitor of ours in one respect. Critically, to go back to Graeme Dey's point, that means that, once the contract technically is concluded, that carries on because it is just part of normal network investment. As I said, 80 providers are already on the UK network for high-speed services, and that number will grow.

11:30

**Graeme Dey:** We have heard about two specific projects, one in the south of Scotland and the other in the Highlands and Islands, but in the middle of all that there are 14 local authorities engaging with BT in trying to drive very localised provision for their areas. Obviously I have an interest, as Angus Council is involved in that activity, and I wonder whether Brendan Dick can update us on where things stand in that respect and what progress is being made with regard to what we were discussing earlier about advising people in localities of when the roll-out will happen and getting them prepared for that. Will that be done local authority by local authority or even ward by ward? Will oversight of the process be left to the councils? How will things work in practice?

**Gavin Stevenson:** I was actually on the infrastructure board that negotiated this contract on behalf of all local authorities. You are absolutely right that 14 authorities have invested further funds but all local authorities are involved in the programme. A number of them will hit the 95 per cent target with no real intervention but all local authorities will be involved in working with BT on the roll-out programme and how that will be communicated. In fact, they have all been involved in influencing the programme, because there are a number of issues that BT could not have handled on its own. One big issue is the need to dig up most of Scotland to get this infrastructure in; I know that meeting our 75 per cent target is going to be a very interesting challenge in my ward and am pretty sure that the same will be true in Angus and the town centres.

It is important that local authorities are involved in that work, and one key element will be the road planning authority. After all, we are putting into the centre of all our communities enough cable to go to Sydney and back a couple of times, so you can imagine the kinds of issues that will arise. All local authorities have already engaged on and influenced the roll-out and have discussed some of the sensitivities for BT. From this point on, they will all be in charge of co-ordinating and communicating the roll-out with BT in their areas. I cannot overemphasise the challenge of doing all this in two years, slap-bang in the centre of our communities, given the amount of cable that we are talking about. Co-ordinating the activity to ensure that BT does not become the roads-shut-for-six-months pariah will also be an enormous exercise, and that is why local authorities have been heavily engaged up to this point. Indeed, as I am sure became clear in the Highlands, from the point at which the contract begins and the roll-out becomes certain, local authorities will have to make heavy investment and commitment to make it work.

**Alex Paterson:** The Highlands and Islands contract is probably a wee bit different because we are managing it on behalf of all public agencies and local authorities in the Highlands and Islands area. That said, my director of digital and Brendan Dick and his colleagues regularly put on roadshows for all the local authorities. As Gavin Stevenson has made clear, the authorities have to be intimately involved because of planning and transport considerations—after all, this is fundamentally an engineering project—and we are carrying out extensive briefings. All the Highlands and Islands local authorities are certainly heavily involved, but the contract is managed in a slightly different way.

**Graeme Dey:** Have individual workstreams been put in place for the 14 local authorities that are putting in a little bit extra for specific purposes and has there been individual engagement on that additional work?

**Brendan Dick:** Yes, with and through the central projects. Obviously this is a very important strategic programme and we are taking cognisance of those inputs and ensuring that that dialogue is happening. As Alex Paterson and Gavin Stevenson have pointed out, the focus is very clearly on building the actual infrastructure; however, as I have mentioned, I have spoken at a conference in Falkirk and am sure that I will be doing more such talks. That kind of intellectually complex engagement about what we are doing with this infrastructure is vital and in everyone's interest, and we would be doing ourselves a collective disservice if we did not try to make it work.

**Gavin Stevenson:** The south of Scotland has invested £21 million in this, and I have to be able to demonstrate to my members that the money is providing that additionality; indeed, I need to do so for state aid and other reasons. Without that investment, we would probably have been able to manage only 84 per cent coverage; with it, we will get up to 95 per cent. Having already moved from 75 to 84 to 95 per cent, I have to say that chances are that we might actually achieve higher than that by 2017.

The key issue is that we are able to demonstrate additionality to each of the 14 local authorities that are making additional investment in this area. Of course, we also have to demonstrate that additionality to the Government, because, after all, there are two separate funding streams to take into account. Nevertheless, I can already go back to my members and say, "At the moment additionality is somewhere between 9 and 10 per cent but, as we get closer to the roll-out, I will be able to tell you exactly how much there will be." On my maps, those areas are shaded green.

**Brendan Dick:** I will comment on the ambition. Some members know that, if take-up exceeds the expected business model, it is inappropriate and legally wrong for the provider—BT in this case—to take all the benefit so, as part of the contract, the clawback mechanism kicks in. The customer—that is two separate projects in this case—gets back an apportioned share of the investment, which could be but does not have to be reinvested.

It will be interesting to see how things go. As I said, take-up in some urban areas where there has been deployment is not massive yet but, as I know rural Scotland pretty well, I have no doubt that take-up—with adequate encouragement and support—will be high there. I would like to think that, if money is available for reinvestment because take-up is high, that will stretch the boundary a bit further.

**The Convener:** We have quite a number of questions still to ask and limited time in which to do so.

**Jim Hume:** Brendan Dick mentioned community broadband Scotland, which was given £5 million from the next generation digital fund to champion community-based solutions. Does the panel have examples of such solutions? What were their costs and how much value—or additionality, which is the word that is used—have they provided?

**Brendan Dick:** I do not know the details, to be honest. I am aware of a couple of examples, such as a wireless-based solution up in Alex Paterson's patch. It is fair to say that it is early days. The experience in England, where there are similar concepts, is that different technologies can be applied. We are talking about communities that get

nothing just now. Additionality has economic, social and community benefits.

**Alex Paterson:** I will give some facts and figures. The CBS team is working with 43 community groups across Scotland that are expressing an interest. There are also six pioneer projects, one of which—the project in Applecross—has been allocated funds. The five others are in Colonsay, Tomintoul and Glenlivet, Corgarff in Aberdeenshire, Elvanfoot in South Lanarkshire and Ewes valley in Dumfries and Galloway.

The CBS process has three phases. The first is community engagement, which involves mapping what is there, what the size of the challenge is, what the community support for the project is and so on. There are 28 projects at stage 1. The next stage is project planning—the business and technical planning of the appropriate solution for a community. Eight projects are at that stage. Stage 3 involves capital assistance, which we can award up to a state-aid limit to help with implementation. The six pioneer projects are working their way through that, and Applecross has been awarded just over £68,000 towards its wireless project.

It is early days, but that is the volume of activity that is in the pipeline. I think that I am right in saying that 191 inquiries have been received. The five advisers, who are spread across Scotland, are working with 43 community groups already.

**Jim Hume:** It sounds as if quite good progress is being made.

**Nigel Don:** What we are talking about is enormously important. My concern is for those who will be in the not-spots and not for those who will be covered, as I am sure—and grateful—that you will make that happen. I thought that I picked up from one submission that community schemes will probably leave communities in the hands of one provider rather than with a technology that is available to all providers. Am I right in that? If so, that is a significant concern.

**Brendan Dick:** I said in my submission that that is a possibility to factor in, because I have seen it in recent years. However, having one provider might be the only option. As I said, we want collectively to push the big, industrial-strength, communications provider-neutral solutions as far as we can, but it is inevitable that some places might not get there and might end up with one provider.

My observation is that it is critical that, as well as providing the capital investment to build the infrastructure, there is on-going support for the operating costs and also, frankly, human involvement at a community level to sustain things. Across the UK—I am not referring specifically to Scotland—there have been many

examples of communities doing their own thing with the best of intent and then finding that things fall down when the guy who knows how it works moves away.

**Nigel Don:** For example, if, as is apparently the case, the village of Marykirk in south Aberdeenshire, which I represent, is too far away from the North Water Bridge exchange to get a good signal, why could BT not use some sort of satellite technology as part of the bigger process to get the technology on the ground, rather than worry about the cabling, and then distribute it from there?

**Brendan Dick:** That is the sort of thing that we are looking at. As Alex Paterson may have mentioned, the project includes an innovation fund so, although our primary focus is on deploying the big stuff, we are also investigating a range of options. For example, as Gavin Stevenson alluded to, we have done a white space trial in Bute, which was quite successful but involves different challenges. We are also looking at using long-term evolution—LTE—wireless technology to take the signal from the exchange to the cabinet, which can be quite far out in the community, where conventional copper could then be used. As far as CBS is concerned, as I said at my meeting with the new director last week, we genuinely want to play an active part not just in building the big stuff but in offering any solutions that we have in other areas.

**Nigel Don:** Forgive me, but does that mean that CBS might also engage BT to do exactly that sort of thing? It might look like the solution has been provided by BT, but it will actually have come from that fund if the location involved is too far away.

**Brendan Dick:** I guess so, if our solution is better than the alternatives. CBS will be looking for the best option from the market for what it is trying to do, so if we have a good option, it might come to us but, if we do not, it will go elsewhere.

**Alex Paterson:** That is exactly the point. As Brendan Dick said in his opening comments, we hope that BT has a role to play in CBS, but there is not a role exclusively for BT. Will one provider own all the technology? Probably not. For CBS, the starting point is twofold in that, although the project aims to provide the basic core infrastructure or fibre skeleton—which, ideally, community broadband projects should connect to because that provides the backhaul—the solutions for communities will be developed in those communities and will depend on what is best for them. There will be a mix of different technologies.

**Graeme Dey:** On that point, I want to ask about the truly hard-to-reach areas, for which innovation and thinking outside the box are required. In the north of England—I think that I am right in saying

this—one council loaned money at a good rate of interest to a satellite provider so that it could provide a solution for the local area. Will that kind of thinking come into play in Scotland?

**Alex Paterson:** With CBS, often we get fixated with the £5 million start-up fund, which is to run CBS as well as to give the grants, but a core part of the offering is the technological, financial and business planning advice. Every situation will have a different solution, which might involve a different funding package and a different technology mix. All options for how things are financed are on the table.

However, CBS cannot use the £5 million to fund whole projects, as state-aid rules prevent us from doing that. Communities might generate income from other sources, private businesses in communities might choose to contribute to a project or innovative loan funds might be available to plug the gaps. We are at an early stage. On technology, let us see what the right solution is—whether that is satellite, wireless or white space, which is another form of wireless—and, on funding solutions, let us be creative.

**Jim Hume:** On hard-to-help areas, Alex Paterson mentioned that the Highlands and Islands project will result in broadband coverage increasing from 21 per cent to 84 per cent, which is fantastic. That is all good work, of course, and I am sure that something similar will happen in South Scotland, which I represent. However, that leaves 16 per cent of areas that will not be helped at all. What are the barriers for those apparently impossible-to-help places? In your view, will the next generation digital fund provide enough cash to overcome the barriers there?

11:45

**Alex Paterson:** The next generation fund provides for what we need to do and what we have set out to do. I agree that the 16 per cent looms into focus, but to get to 84 per cent, in some cases from nothing, is hugely important.

The barriers include geography, distance from exchanges and technological challenges, which is why new technologies and new ways of doing things are vital. I emphasise that, while the 84 per cent or any more that we get from the step change programme is great, we are just as focused on the 16 per cent. Although as Brendan Dick says in recognising that within the contract we have an innovation fund, we are not quite sure what we will do with it, it is for taking technologies that are currently in the labs and deploying them, and the first call will be in those areas.

The second element is community broadband Scotland, which is there for the not-spots.

The third element—and I am surprised that I have not been asked this question, but maybe it is the last one—is whether we have enough money. No we do not. We will need more money to go beyond where we are today and to get out. Everybody recognises that; the Scottish Government recognises it.

There is more money available through the UK Government for this project. Under the model that we use in the Highlands and Islands, we have not asked any local authorities to contribute to our project so far. We fund it with BT, the UK Government and the Scottish Government and we say what we can guarantee to deliver. We also tell local authorities that if they know that they will get X per cent, if they put so much more on the table, they could go from there to where they might be. We are having those conversations already.

Therefore, there are four or five strings to our bow in moving from the 84 per cent, ideally to 100 per cent, but certainly to 95 per cent by 2017.

**Brendan Dick:** In answer to Jim Hume's question, the other factor in the mix is population density in rural areas, as well as distance from exchanges. I have asked myself and have talked to friends and colleagues across Scottish society about whether, on a Scottish or British level, we have analysed the relative value of different kinds of capital investment—for example, investment in telecommunications compared with investment in roads or rail, or whatever it might be. My gut feel is that if that analysis was done, given that the Government, understandably, has limited funding available at the moment, what came out would be interesting for rural Scotland. That is not to say that one does one thing to the exclusion of the other, but it would be sensible for us as a country to understand that kind of work better.

**Jim Hume:** I want to follow on from that, and to refer to something that Gavin Stevenson mentioned about sharing information with BT. We have two projects in rural Scotland, with the south of Scotland alliance and HIE. How much co-operation has there been between the two? Did you ever think about amalgamating your projects to achieve economies of scale and to work in co-operation, or do you compete for funds?

**Alex Paterson:** I will answer and hope that Gavin agrees with me. There are two projects because we have been working on this for quite a while, so for some time we were ahead of the rest of Scotland project. Given that we were already more than a year into the competitive dialogue process, it made sense to conclude it.

Gavin Stevenson and I sit on the digital infrastructure programme board, so we were both equally sighted on both projects. What is more important in terms of delivery—I have staff working

on this—is that both projects are working hand-in-glove with the Scottish Government's digital team so that we do not compete in any way. We are joined up and sharing, but there is a difference in timing and procurement. That is why we have two contracts.

**Brendan Dick:** There is an explanation for having two contracts, but BT's resource on this in Scotland is headed up by a single unit. We have a group programme director—our Openreach programme director—who is a colleague called Andy Hepburn; he lives in Perth. He is responsible for what we do in both projects. We are conscious that we need to maximise the thinking and minimise the costs and so on for both projects.

**Angus MacDonald:** I am keen to get an indication of where we are compared with the rest of northern Europe. You touched on funding. I certainly do not want to rain on your parade, as it is clear that you are very upbeat on rolling out the programme, but are we playing catch-up compared with Scandinavia? For example, how far behind Norway and Sweden are we with the roll-out of next generation broadband in rural areas? Indeed, is the opposite the case? Are we ahead of the game?

**Brendan Dick:** My view—perhaps not so much on Scandinavia, where there has been more early investment by Government—is that, compared with our big competing nations, we are way up there. Reference was made to this by the Public Accounts Committee last week, but the independent research that I have is that the United Kingdom is second in the G8 countries on average broadband speeds and is ahead of all our major European Union competitors on availability and price. That is important.

To return to the point about the open network, people have a choice between the cheap and cheerful and the much more sophisticated. Our deployment is very good; I think that it is the fastest that is happening globally. It is interesting—I think that some of you will know this—that, two or three years ago, Australia announced a massive investment of money to achieve the very big ambition of having high-speed broadband across the country. The approach that it took struggled, and it is now looking at the approach that Scotland and Britain have taken—I do not mean only BT's technical approach—to achieving the outcome as a model. I think that we are well up there.

**Alex Paterson:** Brendan Dick has the facts. All that I will say is that we would be way behind if we were not doing what we are doing. It is preventing us from getting into a catch-up or divided situation. I am not entirely sure whether we are ahead, but what we are doing is vital to ensure that we stay competitive.

**Gavin Stevenson:** We need to recognise that some of the problems that the Westminster Parliament picked up related to the fractional nature of each local authority area putting in bids. Obviously, I communicate with the Cumbria chief executive. Cumbria salivates at what we will get in Scotland, because what it has ended up with is not very good. Its gap area is far larger than Scotland's.

Superfast broadband for up to 90 or 95 per cent and a guarantee that some areas will have 100 per cent coverage by 2017 will put us in a fantastic position to move forward. That investment came about only because two major projects were pulled together. The rest of Scotland project could have involved seven or eight different procurements. We in the south of Scotland were well down towards procuring our own, with the huge costs and investment involved in that. Through having a single plan for Scotland with two key projects, the economies from the procurement process have been fantastic, but there is also the learning that we have been able to take. I tried to sell a 75 per cent deal to 27 council leaders. When I went back and said, "Actually, it could be 90 or 95 per cent," that was fantastic.

We are well placed, but the challenge might come in having a Scandinavian approach to how we use the infrastructure. Perhaps the next debate will be on how we ensure that we get the maximum benefit from it. That is probably where we can learn from our Scandinavian cousins.

**Angus MacDonald:** Indeed.

I want to touch briefly on the figures in the draft budget. Given your planned activities over the next three financial years, will the profile of the draft budget affect your project timetables?

**Alex Paterson:** I have looked at the rural affairs budget. I understand that money in it is part of the bigger next generation fund. We have an arrangement or agreement with the Government on a profile of calling down those funds over the period between now and 2016. We and it are aware of that, and I think that that has been factored into the profiling.

**Gavin Stevenson:** There is a £400 million project between the pair of us and the numbers look small in the budget, but part of the reason for that is that the European regional development fund funding has to go first. It has to be applied to what we call the white areas, which are definitely hard to reach with market failure. The numbers therefore look low in the budget, but that relates to the fact that the other external funding and local authority applications will go in early, and the Government funding will come at the back end of that programme. The numbers have very much been agreed through the Government team to

profile spending moving forward, but £40 million or £50 million of European money will go in as the first tranche, as that has to be spent by the end of 2015.

**Angus MacDonald:** And that £40 million or £50 million is ERDF funding.

**Gavin Stevenson:** I think that it is from two different funds, but yes—it is European funding. The fact that the money has to be spent first on the hardest-to-reach areas has an impact on the roll-out plan; after all, they might not be the places where BT would have wanted to go first. That is another complexity that we have had to work our way through.

**Graeme Dey:** The Scottish Government has said that it is prioritising next generation broadband connection for

"rural small and medium sized businesses to encourage economic growth in hard to reach areas"

and, beyond that, the draft budget is estimating that next generation has the potential to deliver £2 billion in economic benefit over 15 years. Where in your activities does connecting business sit in relation to connecting domestic properties? Will domestic connection dominate in the short term in the expectation that, when there is good broadband access, rural businesses will start up? Secondly, have you been directly involved in the modelling of the projected £2 billion economic benefit or are you aware of the evidence supporting it?

**Alex Paterson:** The coverage figures for the Highlands and Islands relate to all premises. In other words, our project will reach 207,000 premises, whether they be houses, businesses or whatever else, in the Highlands and Islands.

As for our rationale for getting involved in this project back in 2009-10, of course our kids would love to be able to watch iPlayer without buffering but there was an economic and community development rationale behind this that had spin-off benefits for us as members of the public. The business and competitiveness dimension is vital. Our teams have been involved with the Scottish Government and in the early days we did a wee bit of work that suggested that we might in time get £70 million GVA uplift per annum from this move. The economic benefits are very significant.

The project is not just consumer focused; there is very much a focus on businesses, and we are also ensuring that key economic development opportunities and hot-spots—including, from the convener's point of view, Scrabster and other such places where we are trying to grow a renewables industry or the Inverness campus, which is a fantastic resource—have digital connectivity.

**Brendan Dick:** I am sure that, like me, all of you work from home some of the time. In this modern world, there is a significant fuzziness between work and home—or between businesses and consumers, if you want to use that phrase—and for some of the reasons that Alex Paterson alluded to I think that this is very much a mixed bag. Connectivity is critical for educating kids at home, and 60 per cent of new businesses in the UK and Scotland originally start up in the house. As for the SME sector, our information suggests that the 75 per cent figure for SMEs in Scotland that work online has not changed very much in recent times, and there is a lot to do in that respect.

Critically, however, information from organisations such as McKinsey & Company in Boston on trends in the global internet economy shows that there is a massive opportunity here. It is just a question of our getting our brains around that, putting in the infrastructure and, as Graeme Dey has suggested, working with local authorities and business gateway to drive out some of these messages.

**Graeme Dey:** Has Gavin Stevenson or Brendan Dick been involved in the modelling of the projected £2 billion economic benefit? Are you aware of the evidence that supports that assertion?

**Brendan Dick:** I have not been involved in the Scottish Government's evidence but, as I think I pointed out in my short submission, we were involved last year with a company called Regeneris that carried out an independent review of the benefits of investing in broadband in different geographic economies in the UK. For example, it looked at Norfolk and Suffolk, which is a pretty rural area, and found an uplift in GVA of between 0.3 and 0.5 per cent a year for 15 years. The situation will vary by geography, but I think that most people recognise that the opportunity is pretty high.

**Gavin Stevenson:** We worked on the matter with regard to procurement and, in the paper that I produced for the south of Scotland alliance at the time, we expected a 9:1 ratio for investment, so the £2 billion figure might be too low or too high. The difficulty with making such projections is that these are economically difficult times and my success might be measured by the fact that I have maintained a certain number of jobs in my region.

Without this investment, we will reduce future prospects for our rural areas. We need them to be able to attract high-paid jobs; Dumfries and Galloway used to have one of the highest average wages in Scotland but now has the lowest. We need to bring in new industries and create employment opportunities to keep our people in the area, and this is the infrastructure that will allow me to do that. I did not get a chance to

answer your last question but if you give me more money I will do even more with it. I could throw money at roads—the road backlog amounts to £200 million—but if you gave me £200 million for digital infrastructure we could connect our small business sector to the rest of the world. At the moment, we do not have that connection.

**The Convener:** With those thoughts, I draw this evidence session on the budget to a close. I thank the witnesses for their contribution and have no doubt that we will be speaking to them again quite soon to see how all this is rolling out.

I suspend the meeting briefly for a changeover of witnesses.

12:00

*Meeting suspended.*

12:04

*On resuming—*

**The Convener:** We will make a start with the next panel. We are still on scrutiny of the rural affairs element of the Scottish Government's draft budget for 2014-15. I welcome our panel of witnesses: Paul Hendy is director of the Scottish Flood Forum; Philip McKay is head of service for roads and landscape at Aberdeenshire Council; Lisa Webb is land use policy officer—water at RSPB Scotland; and Dr David Pirie is an executive director of the Scottish Environment Protection Agency.

We will kick off as quickly as possible with questions. The first question is from Claudia Beamish.

**Claudia Beamish:** I was going to say good morning, but I realise that it is afternoon. Welcome, everyone.

The Flood Risk Management (Scotland) Act 2009, as we know, transposes the EU floods directive into Scottish law. The Scottish Government has highlighted the importance of that legislation in relation to climate change and the determination to create a more joined-up and co-ordinated approach to flood risk management at the national and local levels. A range of partners are working in this area, including landowners, local authorities, SEPA, the Scottish Government and Scottish Water, as well as some non-governmental organisations.

In the budget document, the Government states:

“Through our work in partnership with Scottish Environmental Protection Agency (SEPA), local authorities, Scottish Water and others to deliver the Flood Risk Management (Scotland) Act 2009,”

the determination is to

“reduce the number of homes and businesses adversely affected by flooding.”

Can any of the panel members tell us how the co-ordination of and co-operation between organisations involved in flooding are working and might be improved, whether there is a sufficient budget to support that work and who is not receiving support if they should be?

**Dr David Pirie (Scottish Environment Protection Agency):** We are making excellent progress; the system is working really well. It is useful to step back and think about how we are progressing with the 2009 act.

There are four big steps. The first step is identification of the areas that are most vulnerable, and that step is largely complete. You will be aware that we published the flood risk assessment in December 2011.

The second step is very much about identification of where flood waters go and the damage that they cause, and that is the next big milestone that we are about to reach. SEPA is about to publish flood risk and flood hazard maps in December of this year, which will be a big step forward. They will outline the risk of flooding in high, medium and low-likelihood scenarios, and will identify where those floods might be and the impact on receptors—properties, transportation links and community infrastructure, for example. They will contribute a lot of the evidence on which we will base decisions.

The step that we have only just begun involves producing what we call flood risk management strategies, which are about bringing together the consortium of partners that Claudia Beamish outlined. We have worked together on guidance on producing those strategies, which will be used by our partners to produce the local flood risk management plans. Consultation on the draft plans will begin in December 2014 and they will be finalised by June 2016. We have a range of groups working at the local and national levels, and a range of partnerships and so on are beginning to take shape as we make progress.

**Claudia Beamish:** Can you comment on whether the budget is sufficient?

**Dr Pirie:** That is a difficult question to which you are looking for a nice, simple yes/no-type answer from me.

**Claudia Beamish:** That is what I always hope for, but I never expect to get it.

**Dr Pirie:** I do not think that I can give you an answer like that, because the stage that we are at is very much about identifying the evidence, and until we get all that evidence together and see the plans and know the areas that we can afford to fix and, perhaps more importantly, those that we

cannot afford not to fix, we do not know what will be needed. We are just at that stage.

Funding has been identified. In the previous spending review, it was agreed that flood capital grants to local authorities—£42 million per annum—should be ring fenced, so there is some funding in place.

It would be really helpful for us to have more clarity on how future funding will be distributed, as that would aid the development of the flood risk management strategies. It would be very useful to have that in advance of the 2015-16 spending review period and the flood risk management strategies, which will be published in December 2015. You can appreciate that, if there is uncertainty as to how the mechanism is going to work, that hinders progress with the development of those strategies, on which we are doing really good work.

**Nigel Don:** I will pick up with the panel the comment that £42 million, or whatever the number turned out to be, is not really very much—we do not get much for that in the capital world. Am I right in thinking that the strategies that are being developed recognise that, by and large, if the water comes, you cannot stop it, and that they are mostly about working out how to minimise the damage that the water does if it arrives?

**Philip McKay (Aberdeenshire Council):** As we develop the schemes that will go into the local flood risk plans, there will not be a physical intervention for each problem area. It is quite right that the prime responsibility for the protection of a residential or commercial development rests with the owner, and that position will maintain. The schemes that we are developing in potentially vulnerable areas aim to provide the largest positive cost benefit analysis. To go back to the previous point, those are the schemes where we perhaps cannot afford not to make a physical intervention, because the impact of floods can be so devastating.

The plans are still at an early stage but, as they develop, we will get more clarity about the level of capital funding that will be required to make interventions in those areas where we cannot afford not to do so.

**Nigel Don:** You are trying to work out the areas where you cannot afford not to make interventions. That is what will really define the capital that you want over a period.

**Philip McKay:** As we proceed in the 14 local plan districts, that is what all the partner agencies are considering. There is also a requirement to promote flood awareness and to use other tools to build resilience in local communities; it is not all about the physical interventions. The flood risk management plans will not focus solely on

physical interventions, although those are obviously a major element of what will be a six-year programme—the plans will have a six-year life before they are refreshed. Although the process is iterative for the first time that it is being done at a national level, it is important that we get it right, as it will guide the funding for the six years after the plans are approved in 2016.

**Lisa Webb (RSPB Scotland):** RSPB Scotland very much welcomed the Flood Risk Management (Scotland) Act 2009 and the fact that sustainable flood management was at its heart. As has been mentioned, we do not yet have the flood risk management plans—we will have them from 2015 onwards. Although I do not wish to comment on the specifics of the budget line for local authorities for flooding, it is important to note that any funding should be dependent on the measures being sustainable. That is our main point on that.

**Angus MacDonald:** I return to the 2009 act and the points that Claudia Beamish raised. Do the witnesses believe that the act has allowed the development of new methods to enable the public to contribute to managing flood risk, for example through the Scottish Flood Forum and other non-governmental organisations? Are sufficient funds available to support that engagement with NGOs and the Scottish Flood Forum?

12:15

**Paul Hendy (Scottish Flood Forum):** One of the problems is that there is a certain amount of inconsistency across Scotland regarding support to local communities. It depends on engagement with local authorities. For instance, Dumfries and Galloway Council based a property-level protection scheme on the Scottish Borders scheme but then developed it further. A number of products were available to the community at a subsidised price. The figures show a real and positive take-up when we compare them with figures in other areas. For instance, when the snapshot was taken, the take-up of the subsidy was 120 properties, with 206 properties applying. Take-up was about 60 per cent, which is quite high.

In Comrie, Perth and Kinross Council does not have a specific property-level protection scheme, apart from the deployment of synthetic sandbags. Those are very good for low-level flooding—indeed, they are probably ideal for it—but as soon as floodwater reaches anything above about 6 to 12 inches, other factors probably need to be considered. At the moment, Comrie is suffering from a real problem with insurance, as is Stonehaven. Many insurance companies specify particular types of product, such as kite-marked products or ones that are approved to British standards and, as much as possible, automated

protection schemes. Traditionally, we gave people a choice of barriers to cover the air bricks on their house, but there are now air bricks on the market that automatically shut and prevent water from going into the underfloor void.

Local authorities need to understand that there has to be on-going development to keep pace with the requirements of the insurance industry and property owners. For instance, Aberdeenshire Council has a property-level scheme in place that works fairly well. The only problem there is that, following a recent survey, we found that there is not enough choice. Obviously, as soon as we begin to increase choice, we increase cost. Therefore, we strongly support additional measures being made available to local authorities to fund appropriate property-level protection.

We have just completed a survey of more than 800 properties in Fife, and Fife Council is considering a two-year programme to roll out property-level protection, which again will be subsidised. The subsidy for the products will probably be 50 to 60 per cent, which will increase take-up among vulnerable people who are particularly at risk.

**Angus MacDonald:** Apart from extra funding, which you mentioned, what can be done to encourage local authorities to introduce property-level protection schemes and automated protection schemes in places such as Comrie or Stonehaven?

**Paul Hendy:** In fairness, I have to give you the response from the local authorities, which is that the issue really comes down to budgets and the affordability of the products. Some local authorities have moved fairly quickly. For instance, Highland Council introduced a limited scheme, and the measures that Aberdeenshire Council has taken have certainly been effective; the difficulty there is the additional funding that is required to roll out the bigger choice of products. In those localities, the incentive is there—the degree of flooding is sufficient impetus, and there is certainly a loud voice from communities requesting such measures. However, the issue comes down to availability of resources, particularly financial resources.

**Dr Pirie:** That was a useful response. We like to think of the approach to flooding as being about avoid, prevent and prepare, and at present we are talking about the prepare part.

You will be familiar with SEPA's flood warning services—the flood forecasting service and the floodline service. However, we are talking about community engagement, so it may be worth while for me to highlight some of the work that we have been doing in that area. In places such as Comrie—that specific example has been

mentioned—we are doing work through schools and other community engagement. We have the new flood warning scheme, letter drops, drop-in sessions and school sessions. Some 40 per cent of the community have signed up to the flood warning scheme. That is a success story and it shows how effective such schemes can be.

**Angus MacDonald:** Are the flood risk and flood hazard maps that you mentioned produced through the light detection and ranging—LIDAR—system?

**Dr Pirie:** Yes.

**Angus MacDonald:** You said that the maps will be available in November or December. Will they be available to the general public rather than just to local authorities?

**Dr Pirie:** Yes. They will be prepared in December and they will be available on SEPA's website through a web browser. They will be scaleable and zoomable, so people will be able to go in and look at different areas. There will be different search filters, and people will be able to look at different sources of flooding, such as surface water, coastal and river. They will also be able to look at the different risk and likelihood of flooding and see its impact on a range of receptors such as houses, railways infrastructure and so on, and they will be able to see the potential depth of flooding and the velocity of the water. The maps will be detailed. I am sure that you are familiar with web products where it is possible to zoom in on areas and see different ranges of detail. They are impressive.

**Angus MacDonald:** Okay. Thank you.

**Jim Hume:** Good afternoon, everyone. The draft budget states that the Scottish Government will

“make best use of all the available delivery mechanisms, including the renewed SRDP to ensure that our land resources deliver improved and enduring benefits for Scotland”.

Has that happened in the past? Have delivery mechanisms such as the common agricultural policy, the Scotland rural development programme, agri-environment schemes and forestry schemes been used to support flood risk management in recent years?

**Lisa Webb:** I do not feel that they have been used in ways that have delivered much in the way of flood risk management. We would be concerned if, in the future, the SRDP was to be relied on to fund sustainable flood management. That funding must most definitely come out of local authority budgets. As you possibly know, we also believe that full use must be made of the flexibility between the pillars of CAP. We need to

move the full 15 per cent from pillar 1 to pillar 2 to increase the amount of agri-environment spend.

We also need to look ahead to longer-term agreements. As you know, SRDP agri-environment money is for five-year agreements. That is simply not sufficient to secure flood management on the ground.

**Jim Hume:** Do other panel members have views?

**Philip McKay:** I back up what Lisa Webb said to a certain extent, but we also need to look at some of the more minor issues with flooding. There can be significant water flows on to roads and railways, and it is certainly worth while to progress changes in agricultural practice to mitigate that.

On the major schemes, in our experience with the Huntly scheme in Aberdeenshire, there is quite a bit of sacrificial flooding—if that is the expression—to prevent water from reaching the main receptors of the houses in the town, but it is quite a difficult process to manage how landowners will be recompensed for any losses that they are faced with. The natural flood management approach has some way to go and there is a need to polish the finer details of how that is developed in the long term so that all parties are aware of and comfortable with the long-term arrangements that are in place to manage flooding.

**Jim Hume:** That is fine, unless anybody has anything to add.

**Lisa Webb:** I should say that any opportunity that can be taken to deliver multiple benefits is a good thing, and that includes flood risk management. We need to be a bit wiser and look further afield to, for example, Scottish Water's budget, which is not within the portfolio that we are discussing. Scottish Water is funded to carry out sustainable land management in drinking water catchments, which we are supportive of. We need to look to see whether opportunities can be seized to restore upper parts of catchments to reduce flood risk downstream.

**Jim Hume:** But the panel does not support the use of CAP and SRDP agri-environment schemes to provide financial support for flood prevention.

**Lisa Webb:** Yes. I do not think that enough funding would be provided.

**Graeme Dey:** I think that we have covered budgetary aspects.

I would like to look at how we approach properly maintaining the existing drainage infrastructure and shaping future provision to minimise the impact of flooding. First, how good are our councils at doing the basics such as clearing out

gullies and ensuring that there is somewhere for the water to go? Secondly, when councils grant planning consent for sizeable developments, are the associated drainage requirements matched against current expectations of usage, or do the councils look 10, 20 or 30 years ahead, track the data on increased rainfall and the increased incidence of severe climate change events, and require provision to cope with that in future?

**Philip McKay:** Obviously, I would say that we are very good at maintaining what we have.

When it comes to drainage infrastructure, it is important to differentiate between road drainage and flooding drainage. Road drainage is designed to carry out a specific function, which is to remove water from the road surface to protect the travelling public. It is not a flood protection measure. It is designed to cope with a one-in-one-year event when the system is assessed on the basis of a one-in-five-year event. Therefore, it is frequently inundated as far as its capacity to remove water is concerned. There is no flood drainage system that could cope with the situation that arose in Stonehaven when the River Carron came over its banks. The road drainage system certainly could not cope with it. There is a distinction to be made in that regard.

It might be difficult to upgrade the system to provide a higher level of flood protection because, certainly in our older settlements, the water gullies will discharge into Scottish Water combined sewers. The investment and improvement of those is a matter for Scottish Water, which designs sewers to take a one-in-30-year load. I suggest that there is a bit of a disjoint when it comes to the one-in-200-year protection that we might be looking for from flood protection works. We have systems that are generally very good at doing what they do, but there is an expectation that they do a great deal more than that.

On the issue of planning permission and the assessment of new build, the basic principle in removing a greenfield site and covering it with a development is that the impact on the watercourses should be no greater in terms of volume or time—the unit hydrograph—than it was before. That is what the drainage impact assessment for a new development will look at.

Climate change is factored in. If I am right, I think that the calculations on which the Stonehaven flood protection scheme is based involve 2050 water levels. As you would expect, those water volumes are significantly increased. I think that that is being looked at. The issue is where we draw the line.

We employ the sustainable urban drainage system—SUDS—in all new developments, whereby water is treated at its source. The water

from the roof of a new house will be treated within the curtilage of the house before it passes on. If it is road water, it will be treated through swales or something similar before it eventually reaches a combined system. There are an awful lot of steps, but most of them are primarily designed for something other than flood protection, which is probably where there is a slight disjoint.

12:30

**Nigel Don:** You talked about one in 30 and one in 200, and I understand what the numbers might mean. Am I right in thinking that those numbers have a currency that is rather like the supposed value of my house for rateable purposes? In other words, those numbers are what we believed once upon a time and they have not been changed. Perhaps the reality is that something that we now call one in 200 is going to happen rather more often but we still use the old currency to understand what we are saying. Is that perception wrong?

**Philip McKay:** I would have to defer to SEPA on that. The one-in-200 figure is just a statistical analysis of a storm. Certainly, in the Stonehaven catchment we have been upgrading our understanding of that with our SEPA and Met Office colleagues. Every time we have an event, that changes the statistical base for the one-in-200 figure, so it is a moveable feast.

**Dr Pirie:** You are right; I agree with that. In two of the particular scenarios, we apply a climate change factor. We do them at one in 200, then we do them at one in 200 plus climate change. We therefore take account of climate change in the flood predictions.

**Nigel Don:** So it is a rolling currency. I am encouraged to hear that, because I was not sure about it.

I will pick up on an issue that I do not think anybody has mentioned yet, which is research. There is some funding in the budget for research. Do folk believe that what is currently being researched is helpful and important? Who is doing it? What is the money going to? Is anybody able to comment on that? I studied fluid mechanics 30-odd years ago, but nothing much has changed on water since, has it? Am I being unreasonably cynical?

**Dr Pirie:** Within the base budget that has been allocated to SEPA, there is a small amount of money that we use for research and development funding. We use it to exert influence on partnerships through other funding arrangements, so we tie up with organisations such as living with environmental change and the Centre of Expertise for Waters—CREW—which provide us with expertise and advice from the academic sector.

We use a small amount of funding for those areas of work and it is very much about seedcorn or exerting influence through other funding arrangements that are out there. We think that we get good support in the area and are able to exert influence on it.

**Lisa Webb:** We would like to see that funding increased because SEPA carries out a lot of work on natural flood management research, setting up pilot projects and that type of thing to inform our understanding of how effective the measures will be in different flood scenarios. We think that that work needs to be expanded so that we are really equipped as we move forward into the new era of sustainable flood management.

**Philip McKay:** We in Aberdeenshire Council have been involved in European projects in which we have done what we would call peer learning, where we have shared our experiences with the northern Europeans partners in particular. On the back of that, we developed a natural flood management scheme at Fettercairn, and we brought some of the partner organisations from Europe to see what we had managed to achieve working with a landowner who was prepared to allow us to do something a wee bit different. We are still doing research when we try to do things that are slightly different and learn from our peer group, who perhaps approach things from a slightly different direction. That is maximising the impact that we can get for the money that we have within our local authority budgets.

**Graeme Dey:** I would say in response to Philip McKay that how well gullies are maintained, how many there are and what is expected of developers can at times come together to create difficulties in small-scale settings, some of which are in my constituency. They are obviously not on the scale of Stonehaven, though.

I will move this on slightly and perhaps direct a question to SEPA. In terms of combating flooding, I know that SEPA has been trying very hard to engage with the farming community to tackle drainage issues in a way that supports agriculture but does not create downstream consequences. Dr Pirie, will you update the committee on how that work is going? My understanding is that it is a bit patchy—it is going well in some parts of the country but you are encountering difficulties in others.

**Dr Pirie:** You are right. We have four pilot catchments, on the Nith, the Glazert, the South Esk and the Dee, so there is on-going work, which is about demonstrating synergies in relation to natural flood management, which we talked about earlier, and improving the water environment and thereby getting multiple benefits in the context of biodiversity, access and so on.

The issue is complicated and difficult. This is the first time that this sort of thing has been done. We have had some demonstration projects that have been successful—I am sure that members are aware of the Eddleston Water project, which the minister launched a wee while ago; there is also the Allan Water project, just up from Bridge of Allan. Other projects are still at the scoping stage. It is difficult to get all the partners and landowners to buy in, so that we can make progress.

You are entirely correct, in that some projects have gone really well and others have been a bit more patchy, but that is what we expect when something is new and in its early stages.

**Graeme Dey:** Do you accept that the work is hugely important? If there is no progress, there will be occasions when local authorities are left to clear up the mess.

**Dr Pirie:** It is hugely important and will make a good contribution. I do not think that natural flood management alone is the solution to the problems; it is part of the solution.

**Paul Hendy:** I can talk about some of the work that we have done on the ground. A lot of people make enquiries of the Scottish Flood Forum about run-off from agricultural land into their properties. People have a lot of problems getting landowners to take sufficient account of the importance of drainage and what they can do about it, given the impact on homes and communities.

We have a major problem up at Culloden moor, which has been going on for two years and causes extreme distress. Somehow or other, we need to try to break down the communication problems and get landowners, in particular, to take responsibility.

**The Convener:** Landowners in Scotland have a responsibility to keep watercourses clear, unlike landowners south of the border. Why is there no means of ensuring that landowners comply with the law?

**Paul Hendy:** That is a really good question. It is partly to do with landowners choosing to ignore the problem. They also consider that engagement with SEPA will mean that they are immediately constrained in what they can do with watercourses. More important, tenant farmers who are not the owners of the land escape responsibility by passing it back to the landowner, and tracking down the landowner can be problematic.

**Lisa Webb:** We must be extremely careful here. Clearing out drains at field level might solve a flooding problem locally by moving floodwater off the land more quickly, but when we view the issue at catchment scale we can see that moving water off the land faster just shifts the problem. That is

why we need a sustainable approach. The solution is not just to encourage farmers to clean out drains at every opportunity.

**Paul Hendy:** I concur entirely with what Lisa Webb has just said.

**Graeme Dey:** That is absolutely the point that I was making. There might be a perception that SEPA is a problem, but it is not a problem; SEPA wants to engage positively with landowners. That takes me back to your point about the communication problem. As far as I have observed over the past few months, SEPA is keen to engage positively and to ensure that there are not problems further downstream. That is all good. However, in some places such dialogue is just not happening.

**Paul Hendy:** I concur. I certainly do not see SEPA as the problem—not by any stretch of the imagination. In fact, every time we have approached SEPA to come and offer advice, assistance and guidance to landowners, it has come without any problem at all. The difficulties are in getting landowners to listen to what is going on and, sometimes, in their perception of SEPA's responsibilities or control over watercourses and watercourse maintenance.

**Dr Pirie:** It might sound simplistic, but what you might call the tell, show and involve approach is really important. SEPA, as the regulator, telling people what to do is probably the least effective way to work. Instead, we need to show, involve and engage the community. That takes time and it is complicated, but it is the way to produce the long-term sustainable solutions that we are after.

**Graeme Dey:** That was useful.

**Jim Hume:** On that point, I have had a lot of casework from land users about SEPA, so I know that there is quite a lot of frustration about cleaning out traditional open ditches. Under the licence conditions, people are not permitted to take any vegetation from either side, which is almost impossible. Is there any chance that that might be reviewed?

**Dr Pirie:** We have been reviewing that and have recently been working with landowners on it. We have clarified general binding rules, registrations and where farmers can do that through a management arrangement over a larger—though not quite catchment—scale. Our aim is to make things easier for land managers while ensuring that the ecology is not altered and wider flood management is protected.

I believe that we have been doing an awful lot to make the process clearer and easier, but simply issuing things to do and telling people about them is not the way to do this. Instead, we need the demonstration projects in pilot catchments that we

have been talking about, and we need to get our staff out on the ground and engaging with farmers. The statistics show that that is far more effective.

**Jim Hume:** Is anything coming out of that review?

**Dr Pirie:** I believe that we have clarified some areas; the information is on our website.

**Philip McKay:** I point out that from Aberdeenshire Council's experience, predominantly as a roads authority, some of the issues are caused not by flow into watercourses but by modern practices that encourage overland flows from agriculture.

Just to back up some of the points that have been made about watercourse management, I note that we have carried out extensive study work on the River Carron in Stonehaven as a result of a perception in the local community that before dredging of the burn was stopped in the distant past, everything was hunky-dory. Our hydromorphological study suggested that a dredging scheme would have a minimal impact on the watercourse's capacity and that, during the throes of a significant storm, a significant amount of material is washed down the burn before the floodwaters arrive. In other words, the burn is as efficient as it can be by the time the floodwater gets there. In such cases, we have to strike a balance between perceptions and reality.

Coming back to Lisa Webb's point, I should say that the real danger of not considering the whole catchment is that you move a problem from A and make a bigger problem at B. As a local authority and, indeed, the lead local authority for the north-east local flood plan district, Aberdeenshire Council is keen to ensure that nothing we do has a negative impact on anyone, but sometimes that means that we do not have an answer for the person who is experiencing a particular difficulty.

**The Convener:** We know what projects are funded just now, but as far as other projects are concerned, is it just that people are living in places that will experience more flooding and that the viability of such places—particular roads or bits of railway line—need to be looked at? Have your organisations taken such matters into account?

12:45

**Philip McKay:** We certainly have, through SCOTS—the Society of Chief Officers of Transportation in Scotland—which includes all 32 local authorities and Transport Scotland colleagues. We are looking at the climate change impacts. It is not just about flooding; a wetter climate means landslips and we all know that landslips can affect certain railway lines and roads. There is also a potential impact on

electricity substations in areas that are susceptible to flooding. Work is being done on how we will mitigate the wider climate change impacts.

We have not really spoken about coastal flooding today, but we must consider that as well. As we develop coastal zone management, there might well be areas in which managed retreat is the best long-term option. Other countries that have significantly more experience in coastal flooding than we do might have taken that route.

The convener is right to highlight the fact that there will be areas in which we will have to make difficult choices.

**The Convener:** You talked about pilot studies and so on for certain aspects of flood management. Should there be pilot studies for some of the issues that we are discussing just now, such as coastal zone management?

**Lisa Webb:** Some work is being done at the moment with the inner Forth futurescape, which is an RSPB Scotland-led project that has a multitude of partners including SEPA and the local authorities. The inner Forth is a highly developed industrial area; the project will look at how options such as coastal realignment might help to protect the communities there as the climate changes. A lot of work is being done in that area at the moment.

**Philip McKay:** On the pilot studies, I was recently invited to go and hear the outcomes from work that Transport Scotland has been involved in with the European Space Agency to manage and predict landslip occurrences. That all sounds very interesting and exciting. There are many things on the go in various sectors that are looking at mitigating the impacts of climate change.

**The Convener:** It sounds as if you are saying that under this budget we have to stick with the kinds of projects that we have. We have to rely on other partners to bring their expertise to bear on widening the whole question. From our point of view, the budget is what has been allocated and we are trying to make best use of it. That is why we are asking you whether there is any particular way of deploying the budget that will mean it is best used.

**Philip McKay:** We rely heavily on the information that we get from the flood forecasting service and the flood early warning system that models a number of the major rivers in Aberdeenshire. That ties in with the Met Office weather forecasting to give a prediction of the likely river levels. Although that information has been very useful, it needs to keep improving. We seek more resilience in that information, as we have more events.

The certainty of the information that we pass on and the decisions that we take—to evacuate the care home in Huntly, for example—are based on the best available information. If that information had been slightly better, we might not have evacuated that care home twice when there was no actual flood. However, with the information that we have and the multi-agency approach, that was the right decision. If we keep advancing that methodology, and SEPA plays a key role in that, all agencies will be in a better position to inform the public and to take the necessary action when an event is predicted.

**Lisa Webb:** I would like to make a specific comment on a line in the breakdown of the natural assets and flooding part of the budget, about the water framework directive. The funding is for addressing historical impacts on the water environment, so it is directly relevant to flooding because we are talking about where sections of rivers have been straightened in the past. The funding is to go towards restoring the natural shape of a river by re-meandering it. In the past, the money has funded, for example, the Rottal burn restoration, which I know Graeme Dey has had the good fortune to visit. That was really good work; it cost about £160,000 to restore an 800m section. We do not have to do many sums to realise that the £0.5 million in the budget is not going to bring us too many Rottal burn restoration projects. The amount needs to be increased if we are going to hit the targets of the water framework directive, which link in to some of our flood risk management objectives.

**The Convener:** If we make such recommendations, we also have to suggest where the money should come from. We hear what you are saying.

**Dr Pirie:** I used a couple of acronyms earlier. I mentioned LWEC, which is living with environmental change, and CREW, which is the Centre of Expertise for Waters.

The one thing that could make a difference with funding is future certainty. That would make the biggest difference to SEPA's understanding of how funds will be allocated in the future.

**Jim Hume:** Lisa Webb mentioned re-meandering rivers; part of that is about making sure that those rivers stay re-meandered. A lot of work was done in the 1800s and 1900s to stabilise banks throughout Scotland to stop flooding, and ash was the most common tree that was used for that. Of course, we recently had the threat of sudden ash dieback, so I wonder whether the witnesses have a view on that situation and its implications for Scotland.

**Lisa Webb:** I do not have any comments right now, but I would be happy to pass any comments

back after the meeting, if my forestry colleagues have any points to make.

**Jim Hume:** Thank you.

**The Convener:** Thank you for your contributions. We have covered quite a range of what is going on with flood management, and we have looked ahead to what might be needed in the future. That is a great help to our budget deliberations.

We thank you all for coming here because each contribution helps us when we ask the ministers what they will do to deliver the certainty that David Pirie talked about.

At its next meeting, the committee will hear from the cabinet secretary on the draft budget, and from stakeholders on climate change adaptation.

*Meeting closed at 12:53.*



---

Available in e-format only. Printed Scottish Parliament documentation is published in Edinburgh by APS Group Scotland.

All documents are available on  
the Scottish Parliament website at:

[www.scottish.parliament.uk](http://www.scottish.parliament.uk)

For details of documents available to  
order in hard copy format, please contact:  
APS Scottish Parliament Publications on 0131 629 9941.

For information on the Scottish Parliament contact  
Public Information on:

Telephone: 0131 348 5000  
Textphone: 0800 092 7100  
Email: [sp.info@scottish.parliament.uk](mailto:sp.info@scottish.parliament.uk)

e-format first available  
ISBN 978-1-78351-802-9

Revised e-format available  
ISBN 978-1-78351-820-3