

TRANSPORT, INFRASTRUCTURE AND CLIMATE CHANGE COMMITTEE

Tuesday 3 March 2009

Session 3

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CONTENTS

Tuesday 3 March 2009

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CLIMATE CHANGE (SCOTLAND) BILL: STAGE 1	1591
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TRANSPORT, INFRASTRUCTURE AND CLIMATE CHANGE COMMITTEE 8th Meeting 2009, Session 3

CONVENER

*Patrick Harvie (Glasgow) (Green)

DEPUTY CONVENER

*Cathy Peattie (Falkirk East) (Lab)

COMMITTEE MEMBERS

*Rob Gibson (Highlands and Islands) (SNP)

*Charlie Gordon (Glasgow Cathcart) (Lab)

Alex Johnstone (North East Scotland) (Con)

*Alison McInnes (North East Scotland) (LD)

*Des McNulty (Clydebank and Milngavie) (Lab)

*Shirley-Anne Somerville (Lothians) (SNP)

COMMITTEE SUBSTITUTES

Alasdair Allan (Western Isles) (SNP)

Gavin Brown (Lothians) (Con)

David Stewart (Highlands and Islands) (Lab)

Jim Tolson (Dunfermline West) (LD)

*attended

THE FOLLOWING GAVE EVIDENCE:

Geoff Aitkenhead (Scottish Water)

Brendan Dick (Climate Change Business Delivery Group)

Matthew Farrow (Confederation of British Industry)

Professor Colin Galbraith (Scottish Natural Heritage)

Dave Gorman (Scottish Environment Protection Agency)

Grant Hodges (Climate Change Business Delivery Group)

Clive Mitchell (Scottish Natural Heritage)

Jason Ormiston (Scottish Renewables)

Dr Chris Spray (Scottish Environment Protection Agency)

Mark Williams (Scottish Water)

CLERK TO THE COMMITTEE

Steve Farrell

SENIOR ASSISTANT CLERK

Alastair Macfie

ASSISTANT CLERK

Clare O'Neill

LOCATION

Committee Room 4

Scottish Parliament

Transport, Infrastructure and Climate Change Committee

Tuesday 3 March 2009

[THE CONVENER opened the meeting at 14:00]

Climate Change (Scotland) Bill: Stage 1

The Convener (Patrick Harvie): Good afternoon and welcome to the eighth meeting in 2009 of the Transport, Infrastructure and Climate Change Committee. I remind members and everybody else present that all mobile devices should be switched off. We have received apologies from Alex Johnstone and from Shirley-Anne Somerville, who expects to arrive a little late.

The first and only item on the agenda is continuation of our consideration of the Climate Change (Scotland) Bill at stage 1. This is the penultimate evidence session. Next week, we will take evidence from the Minister for Transport, Infrastructure and Climate Change. Today we have our last two panels of external witnesses, so to speak. First, we will hear from the Confederation of British Industry Scotland, the climate change business delivery group and Scottish Renewables. After that, we will hear from Scottish Natural Heritage, the Scottish Environment Protection Agency and Scottish Water.

I welcome the first panel: Matthew Farrow, head of the environment group at CBI Scotland; Brendan Dick, director of BT Scotland, and Grant Hodges, of PricewaterhouseCoopers, who are both here to represent the climate change business delivery group; and Jason Ormiston, chief executive of Scottish Renewables. I am aware that Brendan Dick might have to leave before we finish questioning the first panel.

Brendan Dick (Climate Change Business Delivery Group): I have to leave around 3 o'clock.

The Convener: That is understood.

First, I thank you all for the written evidence that you have submitted. Today is an opportunity to explore some issues beyond that and to develop further the points that you raised.

CBI Scotland has taken an interest in climate change, for example by creating a website and holding regional and national events. What is CBI Scotland doing to educate its members on climate change and to develop that agenda?

Matthew Farrow (Confederation of British Industry): Just to clarify, I am based at the CBI offices in London. I am head of the United Kingdom-wide environment team and work closely with colleagues and members in Scotland.

Climate change is a huge issue for British and Scottish business. We are committed to working with the Government, at both Scotland and UK level, to meet the very ambitious targets that we have. Although meeting those targets is a challenge for us all, it can be done at an achievable cost and there are real business opportunities in it.

We raise awareness among our members in two or three ways. We run a series of climate change forums throughout the UK, whereby we look to work with particular companies on particular issues. We will be running a forum on energy efficiency fairly soon. Our website has a climate change section—a sort of microsite that updates members on the reports that we are putting out and on the issues with which they can engage. E-mail communications go to members to update them on policy lines that we are working on, or things that the UK Government or the Scottish Government is doing.

In working with companies, I tend to find that there is broad support for the line that we have taken, which is that, despite the financial turmoil and recession, climate change is a key issue that Governments and business have to ensure remains a priority. There is a desire among businesses to understand what climate change means for them. They hear about the overall targets and measures such as the bill that we are discussing, but they want to know what they can do on the energy efficiency of their operations, or to understand what support there is for innovation from Europe or the UK Government and the Scottish Government.

The Convener: Some businesses that are involved in marketing green products tend to break down their potential customers into groups, depending on how easy they are to bring on to the agenda, and whether they are true believers or sceptics. Do you take the same approach to educating the business community and your members? Do you have a sense of the balance between those who are keen to sign up to the climate change agenda and learn more, and those who are a bit more resistant?

Matthew Farrow: Some companies are in the thick of the agenda and have been for some years; I am thinking, for example, of the big energy companies—climate change has been a huge issue for them—and companies that manufacture environmental technology, such as insulation products. Then there are the companies that use a lot of energy, such as heavy industry and big

retailers. They are interested in understanding how they can improve their energy efficiency; increasingly, they are also getting pressure from customers and shareholders about their carbon liabilities and policies.

We find that some companies, although they are not opposed to acting on climate change, find it much harder to relate it to their business. I am thinking of a small media company or a small tourism company. It can take longer to connect a small tourism company to the issues relating to tourism, such as moving people differently—adaptation is a huge issue. With media companies, there are issues around information technology and energy efficiency. Inevitably, though, some companies find it harder to relate the debates in the media or among the broad business community to their operations.

Rob Gibson (Highlands and Islands) (SNP):

Are any of the more reluctant companies members of the group that Brendan Dick is a member of?

Brendan Dick: The climate change business delivery group?

Rob Gibson: Yes.

Brendan Dick: I do not detect any sense of reluctance in any of the members of my group. First, it is fundamentally a group of people who, on a personal and a corporate level, understand that doing nothing is not an option. The group's members must have a commitment to doing something. Secondly, however, there is the challenge—the hard bit—which is twofold. First, how do we, as organisations and as companies, achieve the objective of changing our environmental impact in a way that is economically sensible? Secondly, one of the fundamentals that we are about, as a group and as individuals, is trying to champion the cause. In effect, we are all giving up free time because there is no serious infrastructure behind the group. In many respects—this relates to what Matthew Farrow said—that can be the hard part.

I do not detect many organisations or individuals who do not believe that we need to do something—the challenge is what. That is quite complex. Large organisations have some capacity to deal with it. In BT we are trying our best, but one of the big challenges for the group is promulgating the messages and the ease of use going forward. That is, arguably, a challenge for Government as well.

Des McNulty (Clydebank and Milngavie) (Lab): A tension seems to exist in the business responses between, on the one hand, concerns about impacts and risks of legislation and, on the other hand, a sense that there are some significant opportunities to be had. In that context, do you think that we need to have an analysis of

the impacts, risks and opportunities, prior to the introduction of the legislation? If you do, what would be the best role for business in conducting such an analysis?

Brendan Dick: I can certainly give a view; I am sure that others can, too. The idea has merit. By coincidence, the reason that I have to dash off is that I am going to Inverness to jointly host a dinner this evening with Highlands and Islands Enterprise, for businesses in the Highlands that are trying to engage in the business of delivering green services, in the UK and abroad. There are clear opportunities.

A number of businesses that are engaged in the issue, including BT, are learning from what we have been doing in Scotland, the UK and abroad, and turning it into physical products or services such as consultancy that we think will have a market. There is merit in their doing that. Business can play a role, because many of us have experience of looking at the risks and challenges. If we start from the premise that doing nothing is not an option, the question is not just how we can identify the risks but, critically, how we can find ways of dealing with them. That is the key thing that business can bring to help the Government and the committee to take the debate forward.

The Convener: I want to explore a little bit further the various activities that are happening at the moment. Brendan Dick is the Prince of Wales's ambassador for corporate responsibility in Scotland. What does that role involve in relation to climate change, and has it given any additional weight to the work that the business delivery group is doing?

Brendan Dick: Each year, the Prince of Wales has an ambassador for corporate responsibility in Scotland. That individual can pick a theme, and I chose the environment. Being in the role has been interesting and in some respects quite challenging.

As you can see from the membership base, the climate change business delivery group comprises mostly large organisations that are already engaged in the challenge, although there are some exceptions. I have learned from what I am doing as Prince Charles's ambassador that there is a challenge in getting smaller businesses involved. I am sure that many of you are familiar with the May day network, which he set up and which operates here in Scotland and in the UK. Both the business delivery group and Scottish Business in the Community are using that network as a tool to engage organisations in the agenda. Within the May day network, there are steps that businesses can sign up to, or commit to. Network members can be local authorities, voluntary sector organisations, or others.

To be honest, the frustration has been not in getting big businesses engaged—that is doable, and I think they are all engaged—but in getting the mass of smaller businesses in Scotland engaged. Organisations that are at the leading edge of the challenge—either because of the industry that they are in, as Matthew Farrow mentioned, or because they are large—are doing things, but how can we get the mass of small and medium-sized enterprises in Scotland engaged, and indeed how can we get the mass of consumers at home engaged? That is the big challenge in the short term.

When we examine the targets that have been set and what can be done, our experience at BT is that we can begin by going for the low-hanging fruit. We can start to get people and businesses engaged in better, more efficient uses of energy by encouraging people to do simple things such as changing their travel patterns and buying low-energy light bulbs. The frustration in my year as ambassador has been that more people have not become engaged in the May day network. However, with some help from the Government, we managed to find funding for a post to drive that forward next year.

The Convener: It has been suggested that Scotland is well placed to respond to the climate change agenda and maximise the benefits that can come from the transformation that climate change requires of us. Does Jason Ormiston agree with that, and if so, why?

Jason Ormiston (Scottish Renewables): I represent the renewable energy industry in Scotland. We have 240 members who are keen for renewables to be successful in Scotland, the UK, Europe, and more widely. It is clear that Scotland enjoys the natural resources that are necessary for us commercially and economically to exploit the potential with a range of different technologies in all three energy sectors—heat, electricity and transport. We know from the historical legacy of our hydro stations that affordable and reliable green electricity can be supplied from those power stations.

We know from our experience since 2000 that the renewable electricity sector has been able to step up to the plate. There has been significant investment in the development of renewable energy technologies, especially onshore wind, and we are now getting signals about the significant potential of offshore wind, and similarly of wave and tidal power.

14:15

Although the desire and the aspiration exist to provide heat as sustainably as we possibly can—that means reducing our demand for heat and

then supplying the heat that is needed from as green a source as possible—it is fair to say that we are not there yet. An awful lot of work needs to be done to create the framework, which—to repeat a phrase that Brendan Dick used—needs to make economic sense for SMEs and others, so that they can make the case to themselves for installing those technologies and promoting energy efficiency. The UK Government has a long way to go before it can put that framework in place.

However, if the framework is put in place, we are talking about a green industry that could employ tens of thousands of people, if not more, by 2050. It would be a major sector that could show some world leadership. On that basis, we are talking about jobs and significant economic benefits, and about businesses reducing their own energy bills.

We have published case studies of businesses that are off the gas grid. Previously, they had to use petrol and oil for heating purposes, but they have now switched to biodiesel and biogas—and to anaerobic digestion, ground-source heat pumps and other such technologies—and have subsequently saved tens of thousands of pounds a year, based on last year's high oil price. People are making that switch because it makes economic sense, and the frameworks that we put in place must make economic sense for such action to take place.

The Convener: The committee will spend some time over the coming weeks on getting the legislative side of the framework—the bill—right, but even if the bill is perfect, Government action is required to ensure that we meet the targets. Would you care to say anything about the Government action on, for example, investment in marine, in relation to investment by Government or incentives for business to invest in that sector?

Jason Ormiston: There is a missed opportunity in part 5, chapter 3 of the bill. There is—rightly—a focus on energy efficiency and a strong commitment to action, but the chapter is a little weak on renewable heat, and it could be strengthened to promote determined activity from the Scottish Government. There is nothing on electricity or transport, but there is an argument for trying to deliver through the bill a commitment from the Scottish Government to have action plans for all three energy sectors.

On a wider scale, I do not expect the bill to pinpoint financial support for things such as wave and tidal, but the Scottish Government, the UK Government and Europe could do more to support fledgling technologies in that sector. The level of finance is not sufficient to build an industry quickly. There are opportunities through the renewables obligation—the financial support mechanism—to bring forward wave and tidal, and it might provide a strong market pull, but that would require a great

deal of capital investment up front, which the RO might not deliver. More could be done by the Scottish Government, the UK Government and in Europe.

Charlie Gordon (Glasgow Cathcart) (Lab): Should—or could—the bill have considered the skills that will be required to move to a low-carbon economy?

Grant Hodges (Climate Change Business Delivery Group): Throughout the process, business needs—according to our group—some clear signals about the areas in which Government believes the targets should be met. We need a road map that tells businesses which targets will be met from heat, and which will be met from renewables technology, and which gives them a steer on where the Government wants effort to be focused.

That would naturally lead to the question whether we have the skills now, or whether we need to consider different sorts of training. We need to think about the skills that are needed, but first we need to work out the road map for meeting the targets so that we can find the skills gap.

Charlie Gordon: It is clear that certain skills might be needed to take advantage of what, presumably, might be opportunities for expansion in some of the technologies that are associated with new types of energy, but is there a potential downside? Could it lead to loss of jobs in the real economy?

Grant Hodges: The potential exists for the creation of green jobs to result in a net positive. Many more jobs will arise from a sensible and well-thought-through programme that meets the targets. We are going through tricky economic times. The challenge is to ease the switch of jobs from the old economy to the new economy. There is a risk but, to go back to what Jason Ormiston said, I would argue that Government can do more to encourage investment in renewables, particularly in heat. If Government does that and those industries flourish, that will greatly ease the employment risk that the current financial problems have created.

Charlie Gordon: Can the CBI provide us with some data that points to a net increase in the number of jobs? Other witnesses have criticised the fact that there is no net job impact evaluation associated with the bill.

Matthew Farrow: There are a number of points that I would like to make on skills. Whether the bill should address the issue is an open question. It might be a risk to include everything in the bill; often, we just want to get on and do things.

Skills are a huge issue. You are right to point out that the picture is not all positive. I agree with what

Grant Hodges said. There will be just as many jobs in a low-carbon economy as there were in the old economy but, as we all know, transitions are often painful. Specific measures need to be, and are being, taken at European level on the emission trading scheme to ensure that while we reduce emissions across Europe as a whole, we do not put the sectors that are competing internationally in an impossible position by making them pay a carbon price that their competitors in China and India do not have to pay. The result of that will be that they simply cannot compete and those jobs will be lost. The emissions will not reduce; they will just migrate. There are risks, which having the right policy—at the European and UK levels, as well as the Scottish level—will allow us to address.

As regards upskilling, it is important to ensure that Scotland and the UK get the skills benefit. If we set ambitious targets and pull through the technology to deliver on the targets, there is a risk that the supply chains might be overseas—wind power is often given as an example of that. We cannot avoid that happening. Our view is that we need to do as much as we can to meet the targets across all the technologies. It is impossible to say that we will be able to source everything that we need from within the UK. It is important that the Scottish Government and the UK Government think quite hard about the areas in which the UK and Scotland have a particular advantage. The marine sector is a good example, as is carbon capture and storage. As Grant Hodges said, we need to have a road map for the development of those sectors. Specific measures can be taken on skills, but I am not sure whether they should be included in the bill.

When it comes to job numbers, there are many estimates floating around, from President Obama and the Prime Minister, as well as from particular sectors. My view is that one could spend a long time trying to come up with a big number. We know that the opportunities and the jobs are there, so let us just get on with taking action. However, there are data that can be examined. The UK Government is to bring out a low-carbon industrial strategy, which will have a lot of numbers in it.

Jason Ormiston: I would like to provide some perspective. To answer your question, it would be possible to deliver a skills action plan through a renewable heat action plan. To deliver on the 11 per cent target that the Scottish Government is committing to, we will need to increase the number of installations of renewable heat technology—solar panels and so on—from 1,500 a year to 25,000 a year. We do not have the skilled workforce to deliver that number of installations. We need to reach that installation capacity quickly. I view the development of a renewable heat action plan as an important subset of action on skills. I

would prefer delivery on that front, instead of skills being dealt with in a distinct part of the bill.

Grant Hodges: I have another point on job numbers. Last week, I was at a meeting that Patrick Harvie chaired and at which there was an interesting presentation that said that the flow-through of jobs from the proportion of the American fiscal stimulus that was spent on green industries was much higher than it was from the stimulus in other areas. You could take that as an indication that there are more jobs to come from spending money on green infrastructure than from other areas of the fiscal stimulus.

Rob Gibson: Matthew Farrow made a point about certain industries being exempted from the ETS. What industries?

Matthew Farrow: I was not saying that some industries should be exempted from a European Union ETS. The way we think that an EU ETS should work—this is broadly how the new deal that was done with the European Commission in December has taken it forward—is by setting an overall cap on emissions for all sectors within the scheme, and then having a debate about whether those allowances should be auctioned or issued free. Our view is that sectors that have evidence that they are subject to carbon leakage and cannot compete on paying a carbon price should get a free allocation on the basis of a benchmark.

I am afraid that this will get quite technical. The European Commission's approach is that the benchmark should be set for the most efficient 10 per cent of installations throughout Europe. An installation that was in that 10 per cent band would get free, not all but most of, the allowances that it needs. That would allow it to compete internationally and it would not have to buy additional allowances. If an installation was below that top 10 per cent—if it used older or less efficient plant, or whatever—it would get only enough free allowances to enable it to operate as if it had the most efficient plant. Therefore, there is a massive incentive to invest in more carbon-efficient technology.

It is important to recognise that a free allocation against a benchmark for particular sectors is not a get-out-of-jail-free card—the task that is faced is still very difficult—but it would allow them to compete internationally until we have some breathing space. The sectors that we are talking about include the cement sector, the steel sector and parts of the chemicals sector.

Rob Gibson: Those sectors are not noticeably represented on the climate change business delivery group.

Brendan Dick: No.

Matthew Farrow: The CBI had a climate change task force that was made up of about 15 chief executives of UK-wide companies who put together our climate change report about two years ago. It included Philippe Varin from Corus and Tom Crotty from INEOS Chlor. The CBI's advantage is that, because we are a cross-sectoral body, our work on climate change must be informed by—as the convener said—the whole range of companies at the leading edge and in different sectors. If we are to make the low-carbon economy a reality, we must transform the whole economy; therefore, we must have a debate that includes the wider business community. That is what we tried to do.

The Convener: I think Rob Gibson's point is understood.

Charlie Gordon: Can the CBI give some examples of best practice in businesses encouraging behavioural changes in this area of policy, in terms of both their staff and their customers?

Matthew Farrow: I will kick off, but I am sure that others will want to come in.

There are some good examples of that. One company—I think that it is General Electric—has a personal carbon calculator on its company intranet. Its employees are encouraged to calculate their own carbon footprints, including from their lives outside work. Other companies send energy efficiency information to their employees' home addresses to reinforce the fact that energy efficiency should happen not just in the workplace, but outside it as well. There are some good examples around, but I do not have a list of them with me.

When I talk to the big employers, they recognise that, as major employers in Scotland and throughout the UK, they have an important role to play in trying to enthuse large parts of the population. Car fleets are another example. Some companies whose employees have company cars incentivise employees to choose cars that produce lower emissions. Videoconferencing is also encouraged.

I am sure that my colleagues will want to provide some more examples.

14:30

Brendan Dick: There are two aspects to the issue, and the mention of employees is important.

BT and, I am sure, other large organisations have done a lot in recent years to drive the climate change agenda in a way that makes sense for us. We have saved a lot of money by doing that, but there are many other side benefits. Matthew Farrow referred to flexible working, of which we do

a lot—it is how we live. Flexible working saves money and, significantly, an awful lot of carbon.

There are a lot of other examples. In Glasgow, which is Charlie Gordon's home patch, we have successfully trialled an electronic van for Openreach field engineers. Recycling and other initiatives have helped us to make a massive step change since we started measuring emissions in 1996: we have not yet touched on the key issue of measurements.

Employee involvement is critical. We have a number of initiatives, but our main focus internally is on carbon clubs. Using carbon calculators as a basis, we encourage colleagues—wherever and wherever they are—to set up clubs on a variety of issues that deliver environmental benefits. Those include cycling clubs, clubs that are active in the community and clubs with green agendas. That approach has two or three benefits: first, it benefits the company; secondly, it changes behaviours at home—people in carbon clubs at work are more likely to think about environmental issues when they are at home with their families; and thirdly, if people in large organisations such as BT are more aware of environmental issues, they are more likely to talk about them to friends who work in small businesses. That drives change and also relates to the issue of broader business engagement. Our carbon clubs are internal, but we are exploring whether we can externalise them in a city or geography, so that everyone can take part. We have not done it yet, but larger organisations could help in that regard.

Grant Hodges: I will offer the committee a couple more examples of best practice. Reflecting the fact that people are competitive by nature, we have extended the idea of carbon clubs to competitions between different offices and business units, which are challenged to come up with and implement the best ideas. That approach has the benefits that Brendan Dick outlined, in that it gets people to take changes in behaviour home with them.

Nearly every partner in PWC has been through a three-day programme on the sustainability agenda at Cambridge University. The aim is to increase every partner's awareness of environmental and sustainability issues, so that the environment becomes a mainstream topic of conversation when they talk to their clients. An audit partner who, historically, has had no interest in the environment can facilitate change by raising awareness of the issue with the finance director of their FTSE 100 company.

Charlie Gordon: What is your view of how the Scottish Government engaged the business community during development of the bill? Do you have any views on the consultation processes that were employed?

Brendan Dick: From our point of view, the processes were successful. I cannot say much more than that.

Jason Ormiston: We have had every opportunity to engage—we are sitting in front of the committee engaging. The renewables industry does not think that it has been left out in any way. The industry is seen as being key to delivery of the bill's objectives, so we have deliberately engaged with the process in a proactive and positive manner.

Matthew Farrow: I have nothing to add. We responded to the consultation and were involved in discussions about particular concerns.

Cathy Peattie (Falkirk East) (Lab): The bill proposes cuts in emissions of 80 per cent by 2050 and 50 per cent by 2030. Does the panel think that those targets are ambitious enough?

Matthew Farrow: Broadly, yes. The fundamental point is that the targets must be led by the science. The value of the Committee on Climate Change is that it provides advice on that. When the UK Climate Change Bill was being debated, there was a lot of discussion about raising the 2050 target for the UK from 60 per cent to 80 per cent—it had already been raised to 80 per cent for Scotland. The CBI's view was that we should consider what the Committee on Climate Change said: if its analysis of the science suggested a target of 70, 80 or 90 per cent, that would be what the target should be. From that point of view, the 80 per cent target for the Scottish bill mirrors the UK target, which seems appropriate. As Adair Turner has pointed out, there is an issue about international aviation and how its emissions are counted. If it continues to grow, it will be necessary to cut by 90 per cent emissions in the rest of the economy. Broadly, the 2050 target is ambitious enough.

In a sense, the 2030 target feels a little bit arbitrary, although it is broadly on the trajectory towards 2050, which feels right. I guess that the value of having a target for 2030 is that it emphasises to people that there is a lot to do by 2020, which is where the UK act interim target is focused. However, the following decade is pretty important, too, particularly in relation to energy. Some of the big-ticket items, such as carbon capture and storage, and nuclear power—which I know is a controversial issue, particularly in Scotland—will not come into play until the 2020s.

As the bill emphasises, 2020 is a tough staging post, but in the following decade you have to at least keep up the pace. The 2050 target is extremely challenging and it is science led. Rather than have a long debate about whether the target should have been to reduce emissions from the

1990 level by 82, 85, or 78 per cent, we just need to get on and do some of this stuff.

Brendan Dick: I agree with Matthew Farrow. To start with the getting-on bit, the Government's role is to work hard and facilitate the creation of a way of measuring everything. That is where a lot of people struggle; it is very difficult to hit a target if you do not know where you are starting from. If an individual or business can measure different causes of climate change, they can start to do something about it. My company has done that and—trying to get early wins is key. Grant Hodges and I were talking about this earlier.

Although using credits might be in the mix on the journey, at the key staging points of 2030 and 2050, the ambition for the country ought to be genuinely to hit the 80 per cent target, not to hit 70 per cent and have bought 10 per cent. That is important, but it is going to be pretty challenging.

We are a nation of 5 million people and we should take a common approach. Some parts of the country—certain towns and cities—are starting to say that they will achieve a 100 per cent reduction. That is perfectly understandable, but we are not in favour of that approach. It is hard enough to get a system and methodology to achieve the 80 per cent target collectively, so distractions, such as I have just described, are probably not helpful.

Grant Hodges: I totally agree that we should ensure that trading exists only to help soothe the pain of the journey, not to mitigate the result at the end point. We have to ensure that we are consistent and honest about what we measure as Scottish emissions, and that we do not run into the danger of, in effect, offshoring our emissions by importing carbon that is being produced elsewhere. The definition of emissions must be purely what we make, plus aviation emissions. We must ensure that we do not offshore our emissions. I cite the example of Ravenscraig.

Cathy Peattie: Do you think that it might be worth considering an earlier interim target? I was interested in Brendan Dick's suggestion that we should consider how we measure things. Do you have any views on how we should do that?

Grant Hodges: I am very much in favour of a 2020 target. A route map was mentioned earlier. I am really keen on our turning things around and working out what we are going to do and where it should get us for 2020. We could have a sense check of whether the things we think that we could realistically do between now and 2020 will really put us on the trajectory to achieve the 2030 target. That way, we would have a realistic map—we would know what we are doing. We should have a target for 2020, but I do not think that we should

just set a top-down number; we should try to work out how we will realistically achieve the target.

Brendan Dick: I am not an expert in the methodology; plenty of people are more expert in it than I am. My primary observation is that a standard process should be created as quickly as possible. What we have tried to do in the May day network, and in other initiatives to encourage smaller businesses to get started, is to make some of the basic stuff simple. That can be refined.

It is important that the experts whom the Scottish and UK Governments can call in come up with something that all of us can sign up to and move forward with and the key is to do that quickly. Things might become more complex and sophisticated as time goes on, but if most people have something that is relatively simple to work to—at work or at home—they will at least know what to aim at.

Jason Ormiston: Cathy Peattie's original question was whether the targets of 50 per cent and 80 per cent are ambitious enough. We must see those targets as being ambitious, because we are unlikely to achieve them from where we are now. An awful lot of things must happen—in renewable heat, for example, which I talked about—before we are likely to achieve the targets. We are cutting carbon emissions by 1.5 per cent per year, but we need to cut them by 3 per cent per year.

Another issue is the trajectory of carbon cuts. It is important to cut as much as we can, as soon as we can. If we do not do that now, more expensive and more politically difficult action might have to be taken later, if members follow my logic. Early and effective action needs to be promoted.

Flexibility on the science is needed. Many commentators say that a cut of 80 per cent is needed by 2030. If the science says that in the next few years, will the Scottish Government be ready to set the target of an 80 per cent cut by 2030? How on earth would that be achieved?

The Convener: Given those comments, I will ask about something that Brendan Dick said. Some of the news about the science is increasingly shocking, week on week. We know that global emissions have been higher than the Intergovernmental Panel on Climate Change's worst expectation when it published its assessment report, so the situation is urgent. Brendan Dick talked about community work. I was not clear what you were referring to—did you mean the idea of carbon-neutral communities or transition towns? In my experience, such activity turns the agenda into something positive for people to participate in.

Brendan Dick: My observation is based on my experience. The ambition to be carbon neutral by

2050 is fine if how it is to be measured and attained is clear locally. The challenge in a nation of our size, where people are broadly starting to pull together to achieve the 80 per cent objective, is to avoid the danger of being diverted. Edinburgh says that it wants to be 100 per cent clean by 2050. That will be fine as long as we apply to that the methodology that we apply nationally—a standard to which everyone is working. If we can squeeze that further in Edinburgh, Biggar or wherever, that is good. However, to run a completely separate process in parallel would be unhelpful because people would have to be engaged in two or three ways.

The Convener: I do not understand why that would be any more of a distraction than the concept of carbon-neutral buildings or housing is, when other parts of the economy do not think that they can achieve that level.

Brendan Dick: From a business perspective, if we focus all our efforts on the 80 per cent target and the process to reach it, having resources diverted to a different process will be challenging. There is nothing wrong with the aspiration, but I question the practicalities—the resources, to be frank—for dealing with it.

The Convener: If the result of various strategies is early, quick and deep cuts, that is what we are looking for.

Brendan Dick: If we can implement some of that—with a different hat on, I am engaged in that in Edinburgh—we can make early cuts. If a city in Scotland was to come up with a process to which we could subscribe for hitting 100 per cent, why not use it throughout Scotland?

Matthew Farrow: Can I just add a point on measurement?

The Convener: Briefly.

Matthew Farrow: We found that companies want, in order to measure their carbon footprints, a user-friendly tool that is uniform and applicable to all sectors, so the CBI is working with companies to produce that. We also work closely with the UK Department of Energy and Climate Change because the UK Climate Change Act 2008 requires the Secretary of State for Energy and Climate Change to implement that sort of approach. We hope that within three or four months we will produce a draft that will at least give all companies a standard method of measuring their carbon footprint.

14:45

Cathy Peattie: I am interested in what the witnesses believe the level of annual emissions cuts needs to be between 2010 and 2019. Do you believe that a 3 per cent year-on-year cut from

2010 is achievable in the business sector? Do you throw your arms up in horror at that proposal?

Brendan Dick: The important thing is that at least we have targets. Obviously, we can debate whether there should be annual targets or another process for getting to our ultimate objective by 2020, 2030 or 2050. Different people will have different views, but what is most important is to have targets to aim at so that people can get on with delivery.

Grant Hodges: Many of the available initiatives do not even have up-front capital costs, but are not being undertaken because businesses are busy doing other things. However, there is a lot of low-hanging fruit that would allow businesses to cut their carbon footprint radically and quickly. As we have just discussed, early action is important because of the chilling statistic that a bit of carbon that goes up in the air this year will stay there for 100 years. It is therefore much better to take carbon out of the environment this year than next year. I believe that it is possible for all businesses and all parts of Government to reduce their footprint quickly.

Jason Ormiston: That is more likely to happen in the business sector than in the domestic sector. It makes economic sense for a business to cut its energy bill at the moment, but it is much more difficult for householders to respond to such pressures because they are not incentivised to do so and some homes are difficult to insulate. Retrofitting 2.2 million homes in Scotland will be tough because we do not yet have in place the framework to deliver that. However, it is true that businesses are responding.

Matthew Farrow: The bill's approach to the target for 2020 is, in a sense, a bit clumsy. I am not a big fan of annual targets because it is difficult to guarantee year-on-year falls. The yearly figure can bounce around and particular factors can affect it; for example, generators burn more coal if there is a particularly harsh winter, so the emissions rate moves up. The short-term trend is what matters—I think we all agree that we need early cuts. The bill says that we must have annual targets, but because it recognises that it is hard to guarantee immediate and steady cuts year on year until 2020, it says that emissions just have to be less than they were the year before. In theory, that requirement could be met by making only a small reduction in emissions between now and 2020, which is clearly not the way to go.

Our view is that the UK 2008 act takes a good approach. It has five-year carbon budgets that will not lock people into achieving precise reduction levels every year, which are hard to guarantee. However, there is a guarantee that a slice will be taken off emissions over each five-year period. There was a big debate during the progress of the

UK Climate Change Bill about whether there should be annual targets. In the end, the Government approached the matter in a way that works reasonably well. A trajectory must be published for each five-year carbon budget that will show how emissions will fall year on year. Those are not formal targets, but part of a trajectory. If there is a deviation from the trajectory, it must be justified.

That approach makes sense from a Scottish point of view because figures can bounce around one year due to circumstances that are not policy or business failures and which no one in Scotland can affect easily. We would want to note that but not change policy. However, if the figures were off course because the policy was not working, something would have to be done about that. MSPs, for example, would need to hold the Government to account for that.

I feel that the 2008 UK act's approach is reasonable, but that of the Climate Change (Scotland) Bill is a bit clumsy because it wants annual targets while not locking itself into them too much.

Jason Ormiston: Whether to have annual or five-year targets is an interesting debate. However, it would be a big mistake to use weather patterns as a justification for missing a target. The problem is that we have poor-quality, badly insulated homes. That problem does not exist in Scandinavia. If we had high-quality, 100 per cent perfectly energy-efficient homes—zero-energy homes—weather patterns would not be a problem in the context of cutting carbon emissions. There is a problem only because of the poor quality of the housing stock. Heating accounts for 50 per cent of our energy use. That is a key point. I would hate to hear weather patterns being used as an excuse for targets being missed.

The Convener: We must move on. I ask people to be brief.

Matthew Farrow: The question is how we get from where we are to Scandinavian levels of housing-stock quality. The UK commitment on zero-carbon homes must be achieved in Scotland, but the real problem is the existing housing stock. Scotland has worse housing stock than the rest of the UK, in the context of energy efficiency rating.

Dramatic action is needed, but there is so much inertia in the system. There is an issue to do with skills, as Charlie Gordon said, and people do not want people to come into their houses and rip out the walls. It will take pretty powerful incentives, such as council tax rebates, to get action beyond that of the few per cent of people who go out and find grants to put energy efficiency measures in place. I agree with what has been said, but the issue is how quickly we can get to where we want

to be. That brings us back to the road maps—I think that that has been a common message for the committee from witnesses.

Cathy Peattie: We need to start somewhere. I will not be around in 2050, but I hope that my grandkids will be. How soon can we start measuring what we do, so that we can say, "That worked, but that didn't work"? Can we start doing that in five or 10 years? Is it realistic to start measuring progress in 2010, or should we put off doing that for another five years or until we have got the infrastructure right?

Jason Ormiston: The target should be based on 1990 figures. We should think retrospectively about how we have performed—we have performed poorly—and then consider the trajectory from now, based on a 3 per cent annual cut, as long as the science justifies that. That is the benchmark that we require.

A few weeks ago, the Scottish Parliament had an opportunity to support Patrick Harvie's call for increased spending on energy efficiency. Although more money is going into the energy efficiency pot, we need to do an awful lot more. Careful thinking about that is needed.

The Convener: I must ask that questions and answers be kept brief and to the point, so that we can make progress.

Des McNulty: I am interested in action between now and 2020. Would it be reasonable and appropriate for Scotland to set the higher of the two targets that will be discussed at Copenhagen, whatever happens at that conference?

Matthew Farrow: We need to work towards the higher target. That is the advice of the Committee on Climate Change, although it acknowledges that it will almost certainly be necessary for the UK to buy credits, because the higher target is simply not achievable through domestic action. The right approach in principle is to aim for the higher target and get as close as we can to it, even though we will need to buy some credits and even if nothing happens at Copenhagen. I suspect that a deal will be reached at Copenhagen, but I do not know how robust it will be. We must hope that whatever happens we will get closer to achieving a robust deal in succeeding years. If the whole system falls apart, there will be a different debate, but our not getting what we want at Copenhagen should not be used as a justification for dropping the higher target altogether.

Des McNulty: Can Scotland achieve the higher target? You said that the UK probably cannot do so.

Matthew Farrow: I do not know. I would seek advice from the Committee on Climate Change, which does good analysis of what different sectors

can do—it will do more for the autumn report. The Scottish Government partly funds the CCC, whose purpose is to provide such advice.

Jason Ormiston: If the question is whether Scotland can meet the target—as opposed to whether we will do so—the answer is that we absolutely can deliver an 80 per cent cut by 2050. We have expressed a desire to show leadership, so even if Copenhagen decides against the higher target, we should remain committed to it, because we have the resources to do so—others can soon catch up.

Rob Gibson: We heard about route maps for businesses and we need action plans for different sectors. Have the witnesses calculated the contributions that different types of business will have to make to help Scotland to reach its emissions reduction targets?

Matthew Farrow: We have done some work on that at a UK level, although the results of one of the two pieces of work have not yet been published. We have done a cost curve for the UK as a whole, which shows what each technology and policy option needs to deliver in terms of tonnes of carbon, and in about two months' time we will publish a series of road maps that spell out what needs to happen in various sectors—buildings, industry, energy and transport.

Those pieces of work are at a UK level. We are considering whether we can produce the data at the Scottish level, but it is sometimes difficult to disaggregate them. However, the Committee on Climate Change is doing a similar analysis, so it might be a source of specific advice.

Rob Gibson: Has it, too, not had a problem with disaggregating the data for Scotland? We are trying to find out what the Scottish emissions are. How can we do that if the UK Committee on Climate Change is unable to be precise?

Grant Hodges: That is a difficult question. I suspect that all four of us will say that we do not know the answer. However, I will make a couple of points. First, you asked about different sectors of industry, but I would turn that matrix round and say that it is clear that we should focus on the major area of heat. My statistic will be slightly wrong, but heat accounts for roughly 50 per cent of carbon emissions. A huge amount of the efforts that have been made so far have been in other areas and have not touched on heat, so if we focus on heat, we can achieve a lot quickly.

Secondly, we should focus on demand. We have talked a lot about energy efficiency, which is great, because we should certainly focus on insulation and the energy efficiency of buildings, but we also need to change people's behaviour. We should try to do that quickly, because there is a risk that people will consume energy efficiently

but in large quantities, whereas what we need is for them to consume less energy.

I accept that I have not answered your question about different sectors of the economy, but if we focus on heat and demand, we can make huge strides.

Rob Gibson: I am sure that some businesses will be unhappy that they are unable to provide their services in order that people can consume all that electricity or heat or whatever, but other businesses can benefit from that. That is why I asked the question. Are there businesses of different types that we know have done the calculations?

Brendan Dick: Grant Hodges is right to say that the area has been challenging. We have been at the game for quite some time—we have been measuring components for years—and it is only now that we are getting granular. We are now focusing on the figures for individual locations—not just the offices that we populate but exchanges and so on in our network.

We are probably getting to a stage where UK and global businesses that already have measures at a high level are becoming quite granular. I am sure that the same is true of many public sector organisations, such as local authorities that have properties all over the place. They are facing the same challenges.

Rob Gibson: Indeed. I am sure that you want support from the Government and other agencies, but how should they offer assistance? Surely it is not just through targets. It must be more than that.

Jason Ormiston: Initially, we would prefer incentives for people to respond to the problem in sensible ways. That will require some money, but things such as the UK Government's initiatives on renewable heat and the feed-in tariffs that it proposes to promote for the installation of microgeneration, especially in retrofit, will make a difference. We hope that the UK Government will set the incentives at the right level so that a significant difference is made.

It is important to promote cultural change. People sometimes hold up their hands in despair and say that, although people talk a good game on climate change and their own activities, how that translates into day-to-day activity is another matter. We are probably all guilty of that from time to time. Trying to get that kind of cultural shift among people is probably the biggest challenge that we face. It comes back to the need to incentivise people to do what makes economic sense.

That shift will eventually occur, especially given the ways in which schools are tackling the issue. Kids are getting it, but people from the older

generations generally do not get it as much, which is an issue that needs to be addressed. There need to be financial incentives for action.

15:00

Rob Gibson: The Carbon Trust has done a good job in calculating carbon management for some businesses, as John Stocks reminded us last week, but it does not have the resources to roll that out for all businesses. Is that the kind of thing that needs to happen?

Brendan Dick: Jason Ormiston was right to mention incentives, but I think that there are two things that the Government can do in the short term. It must somehow find a way—the Carbon Trust is a good example—to get every business, public sector organisation and voluntary sector organisation to understand how to start the journey. A basic capability has to exist in relation even to simple measures, and that extends into the home too.

To extend that forward, one thing that Government can do that is relatively unique is to enable cultural change, working with other organisations but acting as a catalyst itself. Individual organisations are less capable of doing that, and even for big organisations it is difficult to pull things together. People need to be given the capability to understand and measure, and to see the way forward. There are some simple technologies—as I am sure you know better than I do—that can be deployed in the home to help with that. The big thing is just to get us started on that journey.

Jason Ormiston: In the longer term, pricing environmental impact into people's activity will be useful. I am talking about the cost of climate change and carbon. Everything that we buy may have a carbon impact and, if that is the case, we have to pay for it. That will perhaps lead people to take a more sensible route.

Rob Gibson: That is what the Office of Gas and Electricity Markets would say that it is doing to you at the moment.

Jason Ormiston: That is another debate.

In the longer term, we have to move towards that type of carbon marketplace. There are many different ways to do that, but carbon needs to be priced into people's activity. That does not happen yet with regard to the externalities of climate change.

Matthew Farrow: Given that public resources are limited in Scotland and throughout the UK, there is a risk that every lobby group will say that they want incentives for their particular activity.

You need to do two things. You need to look at where you can get most bang for the buck. You should also consider schemes that are revenue neutral but which provide incentives or disincentives. We have looked quite hard at whether it is possible to have green business rates, for example. That is complicated and it is not clear that it is possible—the carbon reduction scheme, which might achieve similar effects, is coming in anyway—but the idea is that very energy efficient buildings get a cut in business rates, while the least energy efficient get an uplift. The Italians have a scheme for buying appliances in which people get a grant if they buy a very energy efficient appliance and pay extra if they buy the least efficient one. At a time when public authorities do not have a lot of cash to spend on some of this stuff, it is worth considering those issues.

Alison McInnes (North East Scotland) (LD): Matthew Farrow mentioned aviation earlier. Can you give us a clear view on whether aviation and shipping are correctly identified in the bill and on how they are tackled?

Matthew Farrow: I will kick off, as I mentioned the issue. There is not a huge amount of disagreement. As I understand it, the bill says—as the UK act does—that Scotland's share of international aviation and shipping is a legitimate part of what we are trying to cut and has to be included in a target in some way. There are complex issues to do with how that is done methodologically, particularly with regard to shipping and how we account for the ships that come to our ports, for example in terms of a proportion of their journey.

The bill says that we will seek to include aviation and shipping in formal targets as quickly as possible once the methodology has been sorted out. In the meantime, we will carry on doing everything that we can to address aviation and shipping emissions, and to ensure that the rest of the economy is doing as much as it can. As Adair Turner said—and as I mentioned before—if we find that aviation and shipping cannot or do not reduce very much, it must be recognised that, as a society, we have to do more elsewhere. That seems to be a rational way to approach the issue.

Grant Hodges: This goes back to Jason Ormiston's earlier comments about pricing and externalities. The price of aviation has to reflect fully the carbon cost and there have to be viable alternatives. There will always be a sensible rationale for taking long-distance flights, but what about flying to and from London? We need the carbon—the externality—to be priced and we need good, viable alternatives, so that people can make rational decisions. That should reduce the carbon impact of that mode of transport.

Des McNulty: The Scottish Government has said that it wants to take advice from the UK Committee on Climate Change in the first instance, but there is a mechanism in the bill that would allow it to set up a separate Scottish committee in due course, if that were needed. Is that the right approach? Is there an argument for having a Scottish committee now, or should we suck it and see, as the Scottish Government suggests?

Brendan Dick: I think that the current approach is right. The UK committee seems to be doing the right things. Keeping the option of filling in the gaps, whether via a Scottish committee or through some other body, is the best thing to do at this stage.

Jason Ormiston: This is not a huge issue for the renewables sector, but my experience of engagement with some institutions that are based down south is that they do not have as much exposure to Scottish issues as they should and that their analysis and decision making can therefore be a problem. Given that we represent only 10 per cent of the population and impact, I am concerned that we might get lost in the bigger picture for the UK committee. That would be a mistake, because we reckon that about a third of the renewable electricity that is required to deliver the 2020 target is going to come from Scotland. As we move towards 2050, that proportion is likely to increase, so it would be a mistake for the UK committee to ignore Scotland. The suck-it-and-see approach might be the most sensible. If there are signs that we cannot count Scotland's impact, because the UK committee is not able to focus its resources on that, there should be a quick switch to an independent committee.

Matthew Farrow: I think that that is the right approach. In my experience, the UK committee's work is of a very high quality. The report that it has put out is independent and is sobering stuff. It is there for politicians, business and the whole population. As Jason Ormiston said, there might be a capacity issue. If there are specific issues that have a Scottish dimension that is not captured by the UK work and the UK committee does not have the resources to look into them, I guess that you in Edinburgh would want to commission particular research. I am not sure that recreating the UK committee at a Scottish level would be the best use of your resources, so it is probably right to take a suck-it-and-see approach.

Des McNulty: We heard last week from the Scottish Trades Union Congress that, although it had some doubts about whether we should try to replicate the scientific expertise role of the UK Climate Change Committee, there might be some scope for taking a specifically Scottish approach to the application of the recommendations in a

Scottish context, given the specific circumstances of the Scottish business and regulatory landscape. Do you foresee that we will end up with a different division of the committee's functions in Scotland compared to the rest of the UK?

Brendan Dick: A different Scottish approach to application might well evolve. If we get knowledge at a UK level, why not use it? However, if, over time, the application in Scotland seems different, a different approach to that is fine. My industry, telecommunications—I know that Rob Gibson looks at this—has unique challenges in Scotland. We have managed to work on those in a Scottish context but within an overall UK regulatory framework and using UK understanding and knowledge.

Rob Gibson: The bill sets out annual reporting duties to Parliament on progress towards emissions targets and on proposals and policies to meet future targets. Do you have a view on the proposed reporting arrangements and can you identify any potential issues relating to collating information from the business sector and small and medium-sized enterprises in particular?

Grant Hodges: There will always be difficulties in collecting the data. The issue of consistency has been raised a few times. You must give a clear signal on how you want data to be collected and must provide clear methodologies, so that there is consistency. The bill includes provisions on waste, for example, that should lead to consistent data. Inconsistency of data was one of the big problems that we faced three or four years ago, when we were trying to put together area waste plans. Collecting the data will be a problem, but it needs to be tackled head on.

The other big problem that I foresee is the "So what?" question. If reporting shows that targets are not being achieved, what is the sanction? Who is the policeman—is it the Transport, Infrastructure and Climate Change Committee or Audit Scotland? At the moment, it is not clear to me that we can be confident of delivery against the targets. That goes hand in hand with reporting, because it does not matter what we report if there is no one to take that on.

Jason Ormiston: We must have some faith in the ability of the Scottish Parliament to scrutinise performance and to put pressure on the Scottish Government if it is not delivering—that is members' role. What will you do to ensure that the Scottish Government delivers on its targets?

The quality of statistics in the energy sector is not great; much more work needs to be done on the issue, especially in Scotland. I hope that the Scottish Government energy team is thinking about how it can tackle the issue of statistics,

because we struggle to get a handle on the situation, especially in the heat sector.

Rob Gibson: You are asking us to scrutinise performance, but we need to have good data. We are asking how you will collect data. Through your involvement in carbon management, surely you are evolving methods that will allow data to be more accurate.

Grant Hodges: Yes.

Brendan Dick: We are putting a vast amount of effort into examining how we capture data; as I said earlier, we are now getting down to a granular level. Grant Hodges is right. For various reasons—because we are bigger and have been collecting data for longer—we are probably a bit ahead of other organisations. During the early stages of the process, data capture requirements need to be relatively straightforward, or it will be really tough for all organisations—not just businesses—to meet them.

Jason Ormiston: The accountancy profession may shoot me for this, but the annual audit process for a business could include assessment of its carbon impact over the year. If we could find a way of measuring that, it could be included in general accepted accounting practice—I think that that is what it is called, but I am not an accountant. In the longer term, that would allow us to measure how businesses are responding to similar pressures.

Grant Hodges: As an accountant, I think that that is what we need. Another factor that will be an ally in data collection when it is implemented is the carbon reduction commitment, which requires records to be kept and systems to be in place by spring 2010 and starts to have financial bite in spring 2011. Every business with a utility bill of about £1 million and more will be captured by the CRC, which will provide a good chunk—although not all—of the data that members will need.

Rob Gibson: Can we re-educate accountants to deal in carbon as well as pounds or euros?

Grant Hodges: Yes.

Rob Gibson: Good.

The Convener: That is the kind of answer that we rarely get.

Matthew Farrow: We must distinguish between two issues. The first is monitoring of the absolute amount of emissions from the economy. I am not sure that we want a bottom-up way of doing that—the main concern is timeliness of data, on which we have already touched. The second is monitoring of why emissions are not being reduced fast enough. That is where bottom-up evidence from business is beneficial. We see our role in that as crucial, and we publish an annual

document on UK-wide policies on climate change in which we specify what is working, what is not working and what should be done to fix that. That is different from trying to count every unit of carbon that comes out of Scotland. There are ways in which to do that already.

15:15

Cathy Peattie: There has been some discussion about what can be done locally and the importance of that. Do you think that the placing of duties on public bodies is an appropriate mechanism for driving change in the public sector? How might such duties have a knock-on effect on the business sector?

Jason Ormiston: I can answer your first question, on the duties on local authorities. Some local authorities have tried to undermine some of the national policies on the delivery of renewable energy that have come out of the Scottish Executive and the Scottish Government over the past few years. It is important that the bill gives the Scottish Government the powers—if it does not already have them—to impose a way of thinking or decision making on local authorities, so that they support the effort rather than undermine it. That has been a problem, but the bill could have a big impact there. I was therefore pleased to see the duties in part 4. That part of the bill is very important. A third of the budget is given to local authorities, and if they do not play ball, that causes a problem.

Brendan Dick: Local authorities are key to this. It comes back to the need to engage the broad base of small organisations and, critically, consumers. The Government can set the juggernaut running, but it cannot drive the juggernaut everywhere. Maybe I should not use the word “juggernaut”—it should be something smaller, such as an electric van, perhaps. Local authorities are a key channel for delivery, but there is a need for action across society—it is not just about local authorities or other public sector bodies.

My understanding, from talking to people offline, is that the Convention of Scottish Local Authorities is starting to look at the issue pretty hard. It is possible to achieve consensus and, at a local level, you will find that local authorities and businesses are at one in trying to make it happen. Some local authorities deliver services through local offices. That certainly happens in Edinburgh, where I live. Therefore, there may be a role for local authorities' local offices to play in securing a street-by-street culture change by telling people what they can do, which we have not quite cracked yet.

Grant Hodges: There is another role for local bodies in dragging through technologies by being a purchaser of those technologies. Local authorities should be early adopters of new heating technologies, for example, which generate off grid. Through their buying power, they can help to bring such technologies through.

Cathy Peattie: Do you believe that the duties on public bodies should be stated in the bill? Are there any examples from the business experience to suggest what such duties might incorporate?

Brendan Dick: I do not have a strong view on that.

Cathy Peattie: Are there any examples from the business sector that it might be helpful to consider in deciding how the duties should be applied?

Brendan Dick: In terms of just getting to the baseline measures?

Cathy Peattie: Yes.

Brendan Dick: Having been through the journey ourselves—we are not the only organisation to have done so—we are now offering a consultancy service to any external body, whether in the private or the public sector, on how to get baseline measures started. That tends to be for large organisations—we have not worked with the SME sector yet, but it is possible to do that. I had a conversation with a local authority in Scotland about that but, by extension, it is about how business can work in partnership with local authorities to start to have an impact through culture change in broader society. There are things that can be done.

In terms of the particulars in the bill and so on, it is maybe not quite that structured.

Alison McInnes: As you know, the bill requires the development of a climate change adaptation plan. What are you doing to increase the resilience of business to changes in the climate? Do you think that the Scottish Government is leading in that area? Is there anything else, in relation to adaptation, that we need to define in the bill?

Jason Ormiston: Adaptation is not a core area of focus for Scottish Renewables, as we try to prevent the problem in the first place. I am speculating a bit here, but I wonder whether our ability to invest in our housing stock to respond to climate change is well enough understood. That might well be associated with some of the energy efficiency measures that we are making. If we are going to get damper in the decades to come, there could be health issues and housing problems. If we bring in energy efficiency, we could also adapt to some of the problems that climate change might bring.

Matthew Farrow: Adaptation has been the Cinderella of the climate change debate for a long time, and politicians and business groups are all guilty of that. We are trying to redress the balance in the CBI. We have a cross-business working group looking at adaptation and we will produce some thinking on that later this year.

The bill contains a requirement to produce a report for Scotland. I am not sure that the bill can go much further than that, but I guess that the question is about how good the report is when you are scrutinising it. Should a timescale be set for the report? I do not know whether the bill has such a requirement, but such reports tend to be delayed. The basic point is that it is important that the Scottish Government puts adaptation further up the agenda.

Businesses such as utilities are thinking very hard about this, because they have to when they are making 30-year investments. They are often looking for a better framework from Government. The bill is probably okay, but you need to make sure that you get that report, that it is good quality, and that you challenge it when it comes out. I am sure that businesses will do likewise.

Grant Hodges: Matthew Farrow is absolutely right. Adaptation has been overlooked and needs to be taken more seriously. Business premises will be taken care of through the carbon reduction commitment, which will provide businesses with an incentive. Utilities companies which are looking at generation will be driven by another agenda to do with renewables obligation certificates and so forth. That leaves domestic dwellings, which is the area that Jason Ormiston touched on. Scotland has a phenomenal proportion of old housing stock. Whatever we can do on energy efficiency and reducing demand in the existing domestic housing stock is an obvious area on which to focus adaptation.

Shirley-Anne Somerville (Lothians) (SNP): As the witnesses will be aware, the Economy, Energy and Tourism Committee is taking most of the evidence on renewable heat and energy performance in domestic buildings. However, as you have not had the opportunity to give oral evidence to that committee, would you like to make any comment on those parts of the bill while you are here today?

Jason Ormiston: I have had three opportunities to give evidence to that committee, so that question is probably not directed at me.

Grant Hodges: I cannot really add to what I have just said about heat efficiency.

Matthew Farrow: We have all made brief comments on that this afternoon. I was going to say that heat is an undercooked element of the bill, but that would be an appalling pun. Heat is the

part of the bill on which more could be done. It produces a big chunk of emissions and there is not much policy around on it. At the UK level, the Government has recognised that it needs to do a lot more on heat, and it is talking about a renewable heat incentive. The question is whether Scotland wants to do something in addition to and more quickly than that, but we certainly need to make much more progress on heat.

On energy efficiency, we have all made points about the desperate urgency to improve the quality of the housing stock. Domestic housing is going to need some sort of dramatic incentive such as council tax rebates or something like that to get the thing moving.

For business premises, I mentioned earlier that you could consider business rates. At the moment, only public buildings have to display an energy performance certificate. We think that there is a case for requiring private commercial buildings of a certain scale to do that as well, just to raise the profile a bit. There are things that can be done.

Jason Ormiston: I made a comment earlier about the bill being a little bit lopsided in its desire for action plans and energy efficiency. Perhaps that is a good model to follow, but it is not followed in the heat section, and there is nothing on electricity or transport. We would like to see some commitment to action planning in all three energy sectors.

It will be interesting to see what comes out of the action plan on energy efficiency. We did some work a couple of years ago on delivering 60 per cent carbon cuts by 2050—at that point, that was considered the target to go for. Scotland would need to reduce its energy demand by 36 per cent by 2050 to achieve that target. The level of roll-out of generating technologies that would be necessary to fulfil the usual energy demand, which has increased significantly, would be politically unacceptable. It would be more politically acceptable to reduce energy demand by 36 per cent by 2050.

I would like the energy efficiency action plan to consider what trajectory we want that curve to be on, how to achieve it and how to do it as quickly as possible. At the minute, energy demand is probably creeping up year by year, as opposed to flatlining and then falling, which is a concern.

Shirley-Anne Somerville: Do the witnesses have any comments on the forestry, waste or muirburn provisions, which Rural Affairs and Environment Committee is considering?

Jason Ormiston: I have no comment on the muirburn provisions. We submitted a consultation response on the Forestry Commission measures, but we do not have a clear view on the leasing proposals. Our members are more interested in

joint ventures with the Forestry Commission: they have worked with it on a number of significant projects in the past, but the joint venture approach would be more formalised. We support a move towards joint ventures between our industry and the Forestry Commission.

Matthew Farrow: I will comment on the waste proposals. The power to require the procurement of recycle-based materials is important because, although recycle markets have not collapsed, they have been badly hit by the recession, which has affected the economics of many recycling processes. I hope and imagine that the consistent public sector procurement of recycle-based materials would prop up that market.

The carrier bag issue is endlessly rehearsed and is a symbolic issue, and to be honest I would say that the proposal for carrier bag charges is probably not the best way to increase diversion from landfill. The effort that would be put into that policy could be better expended elsewhere.

Grant Hodges: The idea that we will get better standardised waste data is a positive, and overdue, step forward. The reduction of packaging is important, and the provisions on that are valuable but will need huge co-operative work with the EU. I am not sure what stand-alone measures we can take in Scotland, but we should certainly do everything that we can to, for example, thin down the amount of metal that is used in Coca-Cola cans.

I suggest that the debate on carrier bags has moved on. A few years ago, the introduction of a tax on carrier bags would have been good, but many retailers have now come up with their own solutions. I wonder about the costs of enforcement and whether the tax is necessary now.

The Convener: Do you have any comments on the financial aspects of the bill—either the costs of setting up the framework and achieving the targets or the cost of not meeting the targets—in addition to the written evidence that you have submitted?

Grant Hodges: Businesses need clear signals. That brings me back to the route map, which we have often mentioned. We need really clear signals of the behaviour that the Government wants to incentivise so that we can all get on that bus. It will be costly to us, so we will not make the investment unless we have clear signals and know which way to go.

Another cost is the cost of compliance. We have touched a couple of times on the carbon reduction commitment that will come into force in a year or so, and I make a plea to ensure that any obligations that are imposed under the bill are consistent with that commitment. There is no reason why they should not be, but we need to ensure that we do not have two different measures

that are intended to achieve the same objective but duplicate work and achieve only one reduction in carbon. That would be pointless.

A possible cost, which we touched on earlier, is to Scotland's reputation. We must ensure that we do not achieve the targets by offshoring our production and using trading schemes. We need to protect Scotland's clean, green reputation.

15:30

Matthew Farrow: It is important that people recognise—I think that they do—that the recession has not changed the Stern report's basic point, which is that it is cheaper to tackle climate change than not to tackle it. The message that I get from CBI members is that that remains true, despite the huge problems and distractions right now.

The recession makes some things easier and some things harder: Governments are willing to think more radically—for example, the debate about fiscal stimuli opens up opportunities to make progress on some agendas—but it is much more difficult and expensive for business to raise funds for investment. Ernst and Young published a report last week that indicated that decarbonising the whole UK electricity system, which we have to do, will cost the UK about £274 billion. There is no alternative to that, but it has to be paid for.

The message from us all is that we need a clear policy framework, as is broadly the case in the UK bill, and we need road maps for delivery to reduce uncertainty, make it a bit easier for business to get on and do things and, I hope, cut out some of the risk capital element.

Jason Ormiston: We have something like 93 months to get on the pathway to radical cuts in carbon emissions. The bill will be enacted towards the end of the year, so we have to wait eight months for it to be enacted, but how long will it be after that until it has an impact? The issue is urgent, so we must keep going. The bill must be as tough as it can be because we are looking for transformational change throughout Scotland—a big cultural shift is required and the bill will underline that.

The Convener: That is a positive note on which to end. I thank you all for the time that you have spent answering questions.

We will suspend the meeting briefly and resume with the second panel at 15:35.

15:31

Meeting suspended.

15:35

On resuming—

The Convener: We will crack on with panel 2. I welcome Colin Galbraith, the director of policy and advice, and Clive Mitchell, the strategy and communications manager, from Scottish Natural Heritage; Dr Chris Spray, the director of environmental science, and David Gorman, the head of environmental strategy, from SEPA; and Geoff Aitkenhead, the asset management director, and Mark Williams, the business strategy and climate change manager, from Scottish Water.

Dr Spray must leave early to catch a train, so I am sorry that we are starting to take your evidence a little late. We will crack on with general questions. What role have your organisations played in helping Scotland to combat and adapt to climate change? We will start with whoever would like to kick off.

Professor Colin Galbraith (Scottish Natural Heritage): SNH has worked for a number of years on climate change and, in particular, on its possible impact on the natural heritage. We are picking up definite signs of that impact now.

We have also begun to examine how the natural heritage can help with adaptation to climate change. It is quite exciting to consider how we can manage our woodland, peatland and coastal areas to help us to adapt to any changes that might occur. I am sure that that sounds nice, but when we think about where all our communities are—especially in the west and the north—and where our road system is in relation to the coast, we can see that managing coastal areas might be important for the economy as well as the natural heritage.

We have worked with the Government and other agencies in the past year or two to develop our plans, and we are developing an action plan that we hope to launch later this spring and which will fit alongside the wider adaptation framework and the bill.

Dr Chris Spray (Scottish Environment Protection Agency): Similarly, SEPA has worked closely with the Scottish Government on climate change. In December, we published our climate change action plan, which focuses on several key elements that we can bring to the party. We have been heavily involved in flooding and flood risk management. We have thought long and hard about that and the ramifications of climate change for flooding with other parliamentary committees.

We are keen to develop ideas on the science, the data from monitoring, regulatory aspects in which we can help, advice to business and communication. We have a climate change plan, which we are happy to send to committee

members if they have not seen it and which is available on the web.

Geoff Aitkenhead (Scottish Water): Scottish Water has worked on adaptation and mitigation for some time. On adaptation, we have developed a 25-year water resource plan that considers the security of supplies for all our customers throughout Scotland, and we have also worked on and given evidence on the Flood Risk Management (Scotland) Bill. We are working on flooding issues with other agencies, particularly local authorities—I single out the work that we are doing with Glasgow City Council on the Glasgow strategic drainage plan, which concerns adaptation and coping with future rainfall.

On mitigation, as a big energy user, we are considering various ways of reducing our energy consumption and contributing more to renewable energy.

The Convener: As fairly high-profile bodies, how have your organisations tried to improve their records on emissions? By what level have your organisations' emissions reduced in recent years?

Professor Galbraith: Two issues come to mind. First, I think that our relatively new corporate building in Inverness still has the lowest carbon emissions of any office building in Scotland, if not in the UK. The emissions level is about 8kg per square metre per year, so it is well below the 40kg per square metre per year that is regarded as normal. That was achieved within an economic costing done by Government, and we are very proud of the building.

Secondly, we are closely considering the overall carbon budget. We have an annual reduction target of 4 per cent, on which we want to build year on year and which will quickly become serious for us. We have introduced videoconferencing as a routine way of holding meetings: we have many staff on the islands and in remoter parts of the country, so videoconferencing achieves huge savings in staff time, cost and carbon. We are making a start, but there is a big job to be done and it will take a year or two to pick up pace.

Dave Gorman (Scottish Environment Protection Agency): We think that we must lead by example, and I will give a few examples of what we are trying to do. We initially set a target to reduce our CO₂ emissions by about 10 per cent. We joined the local authority carbon management programme, which the Carbon Trust runs, because we thought that it would provide a good, structured approach. On advice from the programme, we set a target to reduce our emissions by 25 per cent. The target is proving to be a challenge, but it is the right way to go.

We have a general internal environmental policy, as part of which we try to maximise biodiversity around our estate. Another significant thing that we have done is to cut the number of UK flights that we take by 50 per cent—there are pretty draconian rules on what staff are allowed to do.

We think that we have made a good start, but we do not own all our buildings, and persuading landlords to let us do as much as we would like to do is an issue. It is not straightforward, but we think that we are doing okay.

Dr Spray: SEPA and SNH are promoting a new joint laboratory in Aberdeen, which is being built as we speak. We hope that the new building will be even greener than the SNH headquarters.

The Convener: It is nice to see some healthy competition.

Geoff Aitkenhead: Scottish Water, in common with the rest of the UK water industry, is on a rising emissions trend. For a number of years we have been improving the quality of our product and the quality of discharges to the environment, and each four-year regulatory period—2002 to 2006 and 2006 to 2010—will add approximately 10 per cent to our energy consumption.

We are doing a variety of things inside the business—we are trying to drive down travel and energy use as much as we can do, and we purchase energy-efficient equipment and build energy-efficient features into the design of new plants—but the bottom line is that we are on a rising trend.

The Convener: What can be done about that?

Geoff Aitkenhead: We take every opportunity that we identify. When equipment reaches the end of its life we replace it with energy-efficient equipment, and new facilities are designed to be energy efficient. For example, the new water treatment works for Edinburgh—just north of Penicuik—has turbines built into the raw water mains and will generate up to 65 per cent of its own energy requirements. We take opportunities to build efficient plants whenever we can, but we have a huge stock of long-life assets, and in recent decades we have invested in order to comply with European directives and regulations, which have driven up energy consumption. That situation is common to the water industry throughout the UK.

The Convener: Is that experience common to the water industry throughout Europe, or is it to do with how directives have been transposed?

Geoff Aitkenhead: I think that it is common to the water industry throughout Europe. We are all endeavouring to comply with the same directives,

and by and large we use the same technology to do so.

Mark Williams (Scottish Water): For a number of years, the industry has acknowledged that it must get to grips with the issue. We have been proactive in trying to ascribe where emissions come from throughout our processes, and I would describe the industry as being quite well advanced in carbon management and in the context of understanding where, among all our activities and technological processes, there might be opportunities to reduce emissions.

Scottish Water has been proactive and up front. We will publish our carbon footprint every year, and the information will be clearer and more open to scrutiny: it will show where we are going, why emissions have been rising, and what we are doing about it.

At present, our figure is around 470,000 tonnes of carbon dioxide equivalent a year, which covers the power that we use in all our activities, such as pumping and treating water, providing the public service and protecting the environment. However, we have to get to grips with the process emissions from our asset base—the methanes, the nitrous oxides and all the other emissions that can sometimes be neglected. As I say, Scottish Water is being up front: we will publish our figures so that we can be open to scrutiny.

15:45

Shirley-Anne Somerville: I have a question for the witnesses from Scottish Water. You mentioned your Edinburgh plant. I have heard that work on energy efficiency was not ingrained in the planning process—questions on energy efficiency and microgeneration were not considered right at the start. Will you assure us that, in any new capital projects, decisions that are taken at the start of the planning process will be based on your work to address climate change?

Geoff Aitkenhead: I can assure you of that absolutely. I am not sure of the background to your comment, but the Edinburgh plant was designed with sustainability in mind. We are very conscious of the plant's location in the green belt, and in energy use and other ways it is designed to be sustainable. Such principles are being applied to our other projects and, as I said earlier, we take every opportunity to adhere to the principles of sustainable development.

Alison McInnes: Both SEPA and SNH have talked about improvements in their buildings and organisations. How effective have you been in managing change and influencing your supply chain? Could we learn from any of your procurement practices?

Dr Spray: We have certainly started incorporating into our procurement practices many of the ideas that we have discussed.

Dave Gorman: It is a difficult issue, but we try to buy equipment that is energy efficient, we use recycled paper, and we send out a questionnaire when we buy goods from suppliers to push them hard on the issue. When Chris Spray considers his laboratories, he tries to buy efficient equipment. As others have suggested, many such measures are simply what you would always do when considering something new. It is natural that things improve as time goes by.

Something that we have been trying to do—something that we thought would be more influential—is help the Scottish Government with better procurement from a sustainable point of view. I would not say that it is easy, but every time we look at things we see steady progress.

Professor Galbraith: SNH has similar programmes for the sustainability and traceability of any equipment that we buy. When working on a scale such as ours, it can be difficult to be crystal clear that we are buying the best option for cost effectiveness and low-carbon use. Work will have to be done in the years ahead so that we can focus more clearly on what we are purchasing, but we have moved in that direction.

Alison McInnes: Is there anything that we could put in the bill to speed up the progress?

Professor Galbraith: Whether measures go in the bill or the adaptation plan that will accompany it, leadership will be required if we are to change behaviour in SNH and SEPA and in organisations more widely. The adaptation plan might allow for more focus; without a steer, things can become quite difficult.

Dr Spray: The procurement process for the two buildings that we have referred to has gone through detailed climate change consideration.

The Convener: This issue might come up again during our questions on public sector duties.

Rob Gibson: The SNH building used Scottish timber instead of Russian timber. The Russian timber would have been cheaper but, when carbon is taken into account, the picture looks very different. We would like to see more such decisions. Does Scottish Water use products from Scotland, or are there large carbon accounts for the bits and pieces of equipment that you bring here?

Geoff Aitkenhead: We have a wide supplier base, and we run a supplier development programme so that we get a full understanding of the performance and behaviours of all our suppliers. There are performance indicators in that

programme, part of which relates to the carbon-reduction agenda.

Mark Williams: The procurement and supply chain is tremendously important for us as an industry, and we are trying to understand what we need to be looking for within the supply chain, such as the pumps and the various bits of kit that we buy. The industry in the UK has tremendous buying power to influence the right behaviours and innovation of the right technology. There is quite a lot of collaboration at UK level—in which Scottish Water is just one player—that will I hope incentivise the right behaviour among a number of suppliers. The process of sharing data on equipment reliability and efficiency is quite strong at UK level.

Scottish Water's standards and specifications for the kit that we want to buy are subject to rigorous scrutiny and are reviewed regularly. The most recent review focused on the energy performance of the kit that we buy. As Geoff Aitkenhead said earlier, we have long-lived assets. The best way that we can continue the evolution towards a more efficient asset base is to ensure that, as and when pieces of kit come to the end of their life, we procure the right pieces to replace them.

The Convener: I turn to the development of the bill and the process of consultation—both the formal consultation and the dialogue that the Government might or might not have had with you during that period. How was SNH's and SEPA's expertise, on the policy or science side, incorporated into the development of the bill? Do you feel that your organisations were involved in that sufficiently?

Dr Spray: We were delighted with the amount of work that we did with the Scottish Government. At various times, we had people working in Government areas and the Government came to ask us for information. We were more than delighted with the content, quality and extent of our work with the Government.

Professor Galbraith: Our experience was similar. We were heavily involved in the development of the thinking behind the bill and in the science in particular, and we are very comfortable with that. It is worth saying that the science is still evolving: we have heard increasingly doom-laden scenarios from various international bodies, but the reality is that the science is moving and being refined. We are happy with our involvement in the process.

The Convener: Do any members of the panel have anything to say about the strategic environmental assessment that has been carried out on the bill?

Clive Mitchell (Scottish Natural Heritage): We were involved from the pre-discussions on the

scoping report all the way through the process. We found it to be a very engaging process. We worked closely with the Scottish Government and we feel that the process has added value to the bill. A clear report was produced in December that indicated how the comments from the various consultation authorities had been taken on board. Where necessary, those points have been reflected in the bill as it has been introduced to Parliament. We thought that the process was useful and very well done.

Dave Gorman: I reiterate what Clive Mitchell has just said. As a competent authority, SEPA sees plenty examples of bad SEAs, but the SEA on this bill was good. It was clear, it covered the issues and it seemed to respond when SNH and SEPA raised issues. We were very happy with it.

Cathy Peattie: Do you think that the 2050 target and the interim targets are achievable? If so, do you have any evidence for that?

Professor Galbraith: Given that I am an optimist by nature, I think that the targets are achievable. However, we as a country have a big job to do. We have the potential to deliver. We are small enough for the various sectors to be reasonably well integrated and we can deliver. My take is that we have to deliver, because climate change is an all-embracing threat. It is a threat not just to natural heritage and wildlife nationally and internationally: it will also impact on our lives in ways that we have not thought of. If we deliver the targets, Scotland will have the opportunity to play a leading role by example internationally not just in mitigation but in adaptation. The reality for us is that climate change is here, now. We are at the early stages, but it is here. We have to adapt as well as mitigate.

Dave Gorman: SEPA views the targets as being absolutely achievable, but the question of exactly how they are to be achieved is more difficult to answer. There is ample evidence to enable us to answer "Yes" when we are asked whether there is a pathway to the targets—we would simply point to the 500-page UK Committee on Climate Change report. Similarly, when we are asked whether the targets are achievable, we can point either to that report again or to the Stern report. A mountain of material has been published in the past few years.

The targets are achievable, but there are questions around the acceptability and feasibility of the pathways and the costs for various sectors of the economy. In sectors such as the electricity and power sectors, there are answers to those questions at the moment, but areas such as aviation and replacements for the fuel that aeroplanes use are more problematic.

In conclusion, we agree with Colin Galbraith that the targets had better be achievable and the solutions workable, because we do not seem to have much choice, in any case.

Mark Williams: Scottish Water believes that the targets are achievable, but we need a lot more clarity about the road map for achieving our aims. We need to understand exactly where we can most effectively spend our money in order to achieve the desired outcomes. However, that clarity is not there yet.

Geoff Aitkenhead: I should add that Scottish Water is determined to play its part in achieving the targets. Even from our position of being quite a high consumer of energy, we can see ways of becoming self sufficient through renewable energy generation on our sites.

Cathy Peattie: A few minutes ago, Colin Galbraith talked about science moving on and developing. Is Scottish science robust enough to enable the targets to be met and to report against them?

Colin Galbraith: We are enormously lucky in having the resource that is our universities. We have the potential to play a leading role in global thinking in relation not only to adaptation and mitigation, but to measurement of that. As we heard earlier, we cannot measure accurately the whole carbon budget for the country at this point, but if we ensure that the universities, institutes and agencies across our country make a collective effort to do that, we will be able to do it. However, we would probably need to come up with a mechanism that would bring us together to measure progress on the targets. It sounds a little anoraky, but measuring is really important, as it will allow us to provide positive feedback as well as the doom and gloom. We have the potential to do what I describe, but it might need a bit of new thinking to ensure that the effort is appropriately gathered together.

Dr Spray: I fully agree. There are a number of elements to the issue. One is the importance of the quality of the data that we get, and our ability to audit those data and to challenge people in a positive way to prove them. Another element is the need to improve the evidence base relating solely to Scotland. Instead of sending the message that Scotland will be like the Maldives in 50 years, we must use our data effectively, as we have done with the flooding data about individual rivers around the country. I have talked to strategic co-ordinating groups, town councils and so on and said, for example, "Did you realise that, in the past 40 years, the Nith has increased its winter-peak flow by between 60 per cent and 90 per cent?" The winter-peak flows for rivers across Scotland are much higher than they were in the 1960s. Similarly, we have very good science that can

show that the variability in flows is increasing dramatically. I have found that data of that quality can be a powerful tool for getting people to act.

Geoff Aitkenhead: We are already on the journey. Climate change is the most important long-term issue that the water industry faces, and we are working with the rest of the water industry in the UK and North America on research programmes on the matter. On measurements, the UK water industry has agreed a common way of measuring a range of sustainability indicators, which picks up the carbon reduction issues.

16:00

Cathy Peattie: Do you have a view on annual targets and the Scottish Government's suggested emissions tracks?

Mark Williams: Scottish Water is a long-term business. We have eight-year cycles for setting objectives and four-year regulatory investment periods, so annual targets probably have less relevance for us. They are useful as a tool for seeing what a trajectory might be, but the longer-term budgetary period with which we work is more important to us. Rather than try to react to annual targets that have been set, can we have a clearer budgetary period over which we can plan so that we can phase our investment to contribute properly to meeting targets?

Professor Galbraith: I can see merit in having annual targets, but work and efforts need to begin now. One of our concerns is that things may come very late in the cycle. It is important to achieve culture change and get changes in industries now, so some form of targeting early on is important. I take the point that there may be good reasons for annual variations, but the main thrust of the message must be to get on with things. It is encouraging that the CBI said a lot about that. We agree that there must be certainty and that we must get on with things.

Dave Gorman: The previous panel made many interesting points. I think that the targets serve a purpose. An 80 per cent emissions reduction target will tell us that people need to transform the nature of what they do and that every sector needs to do something. Some people from whom the committee has received evidence have said that they accept that every sector needs to transform, except their sector for certain reasons. The existence of an 80 per cent target means that everybody should understand that we will be in a very different place in 2050. However, 2050 is a long way off, and we tried to say in our evidence that we do not know at the moment what the right pathway is. Others, such as the UK Committee on Climate Change, have more expertise than SEPA on that.

I understand that the Scottish Government will ask about the right pathway. We know the wrong answer to its question: annual emissions reductions of 1 per cent would be no use. A 26 per cent reduction in the UK level by 2020 looks like a minimum now, and a 34 per cent reduction looks more sensible. There is enough to say that we need to get on with things, as others have said.

We have said in our evidence that the long period from 2010 to 2020 seems to be key—we want to get things right during that period. The Government must take its time and not pluck numbers out of the sky. The judgment that is to be made is between having a very stretching target and a target that we will fail to reach because it is too stretching, in which case the bill and the process that would be put in place would lack credibility for stakeholders. We do not know exactly what the pathway should be, but we recognise what it should not be.

Clive Mitchell: I think that a previous witness likened the situation to paying off a mortgage; the sooner the process is started, the easier things will be. We endorse all the messages that you have heard about the steep early reductions that are required in order to meet the challenge.

The Convener: Mortgages tend to be a bad model for pretty much anything at the moment.

I would like to follow up on what Dave Gorman said about reductions of 1 per cent a year not being enough—he used the phrase “no use”—and the period from 2010 to 2020 being key. Can you be a little bit more explicit? You said that you recognise what is not the right track. Were you referring to what is currently in the bill?

Dave Gorman: I was thinking particularly about the Scottish Government’s technical note, which gives a variety of scenarios. I gave a personal view. We have not done enough work on the subject to give a credible answer, but I think that the tracks to consider are the scenarios that push towards 2, 2.5 and 3 per cent reductions, not those involving 1, 1.25 and 1.5 per cent reductions. It was said earlier that it is a leadership thing. Stern made a point about getting on with things now, because doing so will be cheaper. That is what I had in mind.

Dr Spray: I would like to make a final personal point, which I realise is out of position—I apologise to the committee for having to go. I make a plea that when you discuss muirburn you consider our need for a national carbon strategy for soils in Scotland in particular. Scotland is in a unique place in the UK and globally in respect of the amount of carbon that is stored in its peatlands. The issue is not so much that one should look at muirburn; it is how we manage it.

Many other things damage peatlands, of which drainage is one. I think that my colleagues in Scottish Water will agree that the impact of the loss of dissolved organic carbons in autumn across virtually every upland in the UK is huge—and there is a fantastic cost to the water industry of stripping it out to give us good-quality water. In Scotland’s case, the peatland carbon stock is extremely important. I appeal to the committee that managing it accurately and stopping its loss is one of the most important of all the things that will be considered.

The Convener: I am sorry that we did not have time to explore the issue with you in more depth. Thank you for your time.

Alison McInnes: The committee has heard a good deal of evidence that international aviation and shipping emissions should be included in the bill rather than dealt with subsequently by order. Do you agree? Why should those sectors be singled out? I realise that that is not a policy area for the witnesses, but we are interested in your views.

Professor Galbraith: The more holistic the bill is, the better. It is important that we get a proper carbon account in due course, and that we consider our international responsibilities. Clive Mitchell might want to add something.

Clive Mitchell: I echo what Professor Galbraith said. All emissions end up in the same atmosphere, so all sectors must play their full role in reducing them.

Dave Gorman: I will sit on the fence. We do not have a strong view on whether the matter is dealt with by order or in the bill, as long as it is dealt with, as long as methodologies are developed quickly and as long as we start to see what will be done about such emissions. If the Scottish Government thinks that it is necessary to take a particular approach, we do not have a strong view on that.

Geoff Aitkenhead: Our focus is entirely on making our own contribution. However, everyone must make an equal effort.

The Convener: SNH and SEPA already have an advisory function to Government—that is less the case for Scottish Water, although the witnesses from Scottish Water might have views on the matter. Will you talk about your advisory functions in relation to climate change and whether they are linked in with the advisory functions of the UK Committee on Climate Change? How do you expect the situation to develop? Might it change if a distinct Scottish committee is established?

Professor Galbraith: SNH’s role relates to the natural heritage and enjoyment of it, which takes

us clearly into areas such as habitat and species management and how people enjoy the natural heritage in the areas around their homes, or as tourists and visitors to the country.

In the past year or two I have been struck by how relevant our work, in particular on habitat management, is to mainstream Government. Chris Spray talked about the carbon store in peatlands. We have been considering the synergy between our traditional core natural heritage remit and carbon management. If we look after our peatlands and woodlands we get not only natural heritage benefits for local people and visitors but a carbon store—in the case of peatland we also get water retention, which can link with flood mitigation. We talk to Government departments regularly about climate change and our traditional areas, and the relationship is good.

On the UK Committee on Climate Change, we certainly need to link into its route map. We have not done that very clearly in the past. It is hard to say what would change if there were a Scottish committee. What I have taken from this meeting is that the relevance of the UK committee is perhaps greater than we have taken on board.

Dave Gorman: SEPA has much involvement with the Scottish Government and we hope that we give useful advice on many areas, from flooding to waste provisions and the design of good regulations, for example on the carbon reduction commitment.

Like SNH, we have tracked the UK committee, but we have no formal relationship with it. Our relationship is with the Scottish Government, although we would expect to attend UK committee events that are held in Scotland. It is difficult to see how the situation would change if there were a Scottish committee—I think that we would input to such a committee's processes while remaining slightly at arm's length from it. I do not think that our overall advice-giving role would change.

The Convener: Is there any danger that separate organisations, which would keep appropriate distance between themselves, might be seen to give conflicting advice?

Dave Gorman: The key to addressing that is their roles. I found it helpful that last year's Scottish Government consultation on the bill defined three roles. One role, which is for the UK Committee on Climate Change, is concerned with setting the right level of target, based on economics, feasibility, need and science. The third role—which we think is perhaps a role for Audit Scotland, rather than SEPA—involves auditing and performance. The role in the middle involves some of the science of monitoring validation, data gathering and so on, in which our agency and SNH see ourselves playing a part. We talk about

those sorts of issues with SNH all the time, so there would not be a big danger as long as we are clear about who performs which role.

The Convener: Do you have any views yet on whether a separate Scottish committee, or a separate advisory function that is given to an existing Scottish body, would be appropriate, or are you all, like the previous panel, saying, "Let's wait and see"?

Professor Galbraith: We probably are still in that position, although we can make the obvious statement that we have to use the best available science on climate change. In my personal view, it does not matter whether that is in London, Brussels or Scotland: we need to use that expertise.

There may be a second level in relation to how we take that expertise and implement it in any part of the UK. There are particularly Scottish issues—even within SNH there are purely Scottish dimensions in relation to coastal management and woodland and peatland management—and we might need to consider how advice from that committee could be applied to our operational focus. I would certainly like us to link to the UK committee much more clearly than is the case with our other links.

Clive Mitchell: If we consider the distribution of reserved and devolved powers and the challenge of climate change, it is clear that a dedicated Scottish committee would have to work very closely with the UK committee. We need to see how the current arrangements work before we try to invent something new.

Geoff Aitkenhead: I have two observations. First, we strongly favour the multi-agency approach to dealing with the issues that relate to climate change, as we do for flooding and the other areas in which we are involved. We work at UK level with UK Water Industry Research and Water UK.

Mark Williams has personal experience of attending the UK Committee on Climate Change to report on what the water industry—and Scottish Water—is doing. It might be worth hearing his view on that.

Mark Williams: Scottish Water covers the whole of Scotland. We represent critical national infrastructure and we have real front-line experience of how climate change might impact on our business. It was useful to have the opportunity in the consultation exercise to advise and to share our experience. As an industry, and as Scottish Water, we have a voice and an input.

To pick up on the advisory roles that others have mentioned and the multi-agency way forward, I am encouraged by the Scottish Government's

approach over the past few months to seeking advice on the way forward for adaptation and mitigation. Through a proper integrated partnership, we can cover the bases—which we do not all perhaps fully understand at the moment—so that we can arrive at the best solution. Scottish Water has to get more involved and we need to follow through on some of the understanding that we already have.

Rob Gibson: On reporting duties, which follows on from that, you have made it clear that we need accurate data. SEPA's submission suggests that we need to move rapidly towards that, and Colin Galbraith talked about the universities and excellent scientific institutions in Scotland. How do we draw all that together? Is the proposed reporting mechanism robust enough? How can it be improved?

16:15

Dave Gorman: We wanted to say something reasonably firm about that. We have no particular issue with the Scottish ministers reporting to Parliament. We made our point through analogy with the waste sector, which I understand. In producing information on waste for the Scottish government 15 or so years ago, one got round to it as part of the list of things that one had to do. The information was reasonably accurate for the purpose of providing a notional account of what was happening with waste—sending waste to landfill cost £3 a tonne. Suddenly, waste cost more like £45 a tonne to send to landfill, so it became important to know what was going on and to have the data quickly and to verify and publish them quickly.

That is strongly analogous to dealing with climate change, when we are relying on top-down models, estimates and extrapolations of limited information. That will not continue when statutory duties to report are adopted and when we need to know more quickly how we are doing. We have tried to major on that by saying that somebody should be charged with gathering that information more quickly and with verifying and publishing it more quickly. Jason Ormiston made the same comment about energy; I would bet that it could also be made about agricultural emissions, aviation and several other sectors.

Professor Galbraith: SNH agrees with David Gorman. There must be a reporting mechanism, which must be seen as part of the culture change that we must put in place. If targets are set without a requirement to report effectively, it becomes difficult to measure whether progress has been made. A mechanism to draw the information together must be established. When a statutory approach is taken, the game will change a bit from where we are now—in the realms of modelling and

so on, which I agree will be insufficient in three, five and 10 years.

Clive Mitchell: One of our practical difficulties when trying to understand Scotland's emissions and when trying to marry the various UK and Scottish reports to energy reports is that comparing like with like quickly becomes difficult. Data are often presented slightly differently—they are aggregated or disaggregated differently—which makes some comparisons difficult. We would like the presentation of data to be standardised quite quickly.

As Dave Gorman said, we gather and present data for particular reasons—a one-size-fits-all approach is not taken. One word of caution is that we must avoid becoming lost in a data black hole because we are trying to find the perfect solution to quantifying and measuring greenhouse gas emissions and so on before we take action. We have enough data to know what we should do in the short term. We know that improvements to the presentation and content of the data need to be made, but we should not necessarily let that stop action.

Rob Gibson: Indeed. Reporting to Parliament allows the scrutiny that results in our saying that more action is needed, or whatever.

On standardisation, one argument is about collecting data in Scotland, but another issue is the ability to measure progress against British and European targets and, eventually, worldwide targets—we will deal with the emissions trading scheme in a moment. Do you agree that we should make efforts to ensure that the data that people collect in Scotland can be compared with those from other countries as well as with those from London?

Clive Mitchell: Yes.

Mark Williams: It is not easy to standardise reporting, but we are on a journey towards it. At UK level, water companies have agreed reporting protocols. We are trying to share those globally and to share our knowledge with North Americans and Europeans. There is much enthusiasm for not reinventing the wheel and for going with what seems to work. However, we should not become confused. Accuracy and precision are needed. We have some precision on our operational emissions, but we need to do much more on that.

As I said, our operational footprint is about 470,000 tonnes CO₂ equivalent. We have assessed the capital programme that we deliver, which contains much more—a ballpark figure for that is 1.4 million tonnes CO₂ equivalent over four years. However, more granularity is needed as we drill down into that, so that we understand what we need to examine. That touches on cross-sectoral boundaries. We all use the same types of concrete

and steel, so it is really important that we have the same standardised ways of reporting. We must recognise that we are at the start of a journey of standardisation. We must be prepared to take some measures now, but we must look to develop a common understanding in the future.

Rob Gibson: I should have thought that that would be quite easy for some of the water companies that are owned by the Compagnie Générale des Eaux.

Mark Williams: We are talking about the embedded footprints of capital infrastructure. Many different grades of steel and concrete are used, so we need to find a standardised way of working out the whole-life costs of the decisions of that we make. That standardisation involves identifying models that drive the right behaviours in the long term.

Rob Gibson: I mentioned the EU emission trading scheme. SEPA is already involved in administering some of that scheme and measuring emissions from many installations. What expertise in measuring and reporting has SEPA built up, and how could that be developed further to deliver the bill's requirements? That is a major practical exercise that could help us enormously.

Dave Gorman: Others may disagree, but we think that some of our core expertise lies in the activities that you have described. We do such work not just for the emission trading scheme but for the Scottish pollutant release inventory, which is required by another European directive, and when reporting on waste data. The work comes down to persuading companies to make their submissions on time and checking those submissions for sense. If a company in West Lothian claims to have sent 1 billion tonnes to landfill in the previous year, we may suspect that there has been an error.

We also need to check that the assumptions that are made in processes are standardised, as we discussed earlier. Usually carbon dioxide is measured not directly but using a proxy such as fuel. Trying to understand the assumptions that should be made in complicated processes such as those at Grangemouth is meat and drink for certain of my expert colleagues, whose aim is to piece together the actual picture. We have expertise both in that work and in gathering and publishing data. We hinted in our evidence that SEPA might be one candidate for taking on more of that activity because we understand it.

Rob Gibson: A recurrent theme for the committee is the interval between the times when emissions occur and when data are presented. Has SEPA's involvement in collecting data both under the pollution directorate and for the ETS

helped people to speed up the use of data after their collection?

Dave Gorman: We aspire to publish all our information quickly. The SPRI data appear within eight months of the end of the calendar year to which they relate, which means that the data are much timelier and, we hope, people will take more interest in them and companies will react more quickly to their position in the league table of emissions. That is a bottom-up process—we gather and aggregate figures from individual sites—but much of the climate change information that we get comes from top-down disaggregation, which is more complicated and takes longer. The quicker information is published, the more interest and policy relevance it will have.

Rob Gibson: What is SPRI?

Dave Gorman: It is the Scottish pollutant release inventory. Under a European directive, larger companies are required to report emissions.

Rob Gibson: Can you imagine our using the bottom-up approach that you have described to build up a picture of the situation in Scotland that could inform a future Scottish committee on climate change more accurately on what we are emitting?

Dave Gorman: Absolutely.

Cathy Peattie: The bill allows for duties to be placed on public bodies via secondary legislation. What do you think climate change duties on public bodies might look like? What discussions have you had with the Scottish Government on the issue?

Professor Galbraith: We have not had many discussions about such duties with other bodies, but they seem sensible in principle. In other cases, such as biodiversity, duties have led in part to enhanced interest and activity. We therefore support the principle but, as with any new responsibility, we need to consider the impact that a duty might have. Our particular issue is how management for climate change would impact on or relate to the management of the natural heritage, although, as I said, we see great potential synergies in that. In many cases, on local authority land, management for biodiversity—the wildlife and habitat—would go hand in hand with tackling climate change. We support such public duties.

Dave Gorman: We have discussed that with people, although I am not sure whether we said what they wanted to hear. Basically, we think that there should be duties now and that we should not have a voluntary approach. In business, there are many voluntary approaches on environmental matters, but they are usually an assemblage of what was already going to happen.

We agree with Colin Galbraith that a duty would mean that the environmental folk in organisations could get the attention of the senior folk on what that duty means or might imply. If, as we have said, tackling climate change is urgent and we need to take action in the period 2010 to 2020, why wait to see whether the voluntary approach works? Some organisations will say that pound signs will be attached and that there will be difficulties, but let us face those issues later. We are happy to have a duty placed on us, and we think that a duty should be placed on every other body in the public sector.

I am sure that Cathy Peattie will ask what the duty should be. That can be discussed, but at least it should be clear and everybody should know that they have a part to play. Our simple view is, "Let's do it now."

Geoff Aitkenhead: We are content for duties to be placed on public sector bodies. We have a duty to adhere to the principles of sustainable development, which was enshrined in the act that set up Scottish Water. We might discuss further the detail of what the duties might be, but I believe that they should fall into two categories. One should be on direct emissions from public sector bodies, and the other should be on emissions from another body as a consequence of policies or regulation that a public sector body promotes. We all need to be encouraged to step back and take a holistic view.

Clive Mitchell: A third component of the duty should be on sustainable adaptation to climate change, to avoid the risk that one part of the climate change agenda might conflict with another.

Cathy Peattie: I am interested in what the duty should be, but I am more interested in how compliance would be measured. Public bodies can have the best intentions but, as Dave Gorman said, delivering might be a different question.

Dave Gorman: I agree with the points that Geoff Aitkenhead and Clive Mitchell made—this is a question of horses for courses.

Direct emissions reporting should be straightforward. The single outcome agreements could be used for local authorities, and there are other processes for other bodies, such as the Scottish Government's greener leadership programme. A duty relating to policy decisions would be less straightforward, but statutory guidance could be issued to require bodies to design a framework that shows how they will take account of climate change. The framework could then be checked.

The key is that the process should be testable in court as that always sharpens the mind. People should be able to take a decision to judicial review if they think that a body has not taken account of

climate change. As a regulator, SEPA is always aware of whether we have taken into account the issues that our founding statute says that we should take into account. For example, we must take account of economic impact and rural issues and, if we do not, a citizen is within their rights to test our decision in the courts.

On the point about policy impact, Government guidance that bodies are required to follow is the way forward. That is less easy to test, but it is still visible.

The Convener: Before we move on, I have a supplementary question on duties on public bodies. We have discussed procurement. Is it achievable to have a substantial public duty that relates to green or sustainable procurement? Anything that was done would have to be permitted under the relevant EU directive, but that is broader than it was a couple of years ago. Is there scope for a stand-alone duty?

Geoff Aitkenhead: There is. It is incumbent on us, duty or not, to pursue a sustainable development strategy. It would be subject to definitions and consideration of the details, but the concept is right.

16:30

Clive Mitchell: I agree. We spoke earlier about measuring emissions on our estate and about procurement. We have recently discussed approaches to the carbon management plan with Carbon Trust. Such work is generally designed for local authorities or organisations with more than 1,000 people, which is somewhat bigger than Scottish Natural Heritage, but we are volunteering to take up the new carbonlite programme to validate the work that we have been doing to reduce our emissions. The programme will also cover procurement, and we hope that it will enable us to meet the target of a carbon reduction of 4 per cent that Colin Galbraith mentioned earlier.

Cathy Peattie: The bill requires the development of a climate change adaptation plan. What are the witnesses doing to increase the resilience of Scotland to changes in the climate, and what else could the bill do?

Geoff Aitkenhead: Adaptation is of primary importance to Scottish Water in the short term. We are experiencing the effects of climate change now, and we must be sure that we can safeguard public water supplies and deal with flooding and the run-off of surface water.

We have developed and published a 25-year water resource strategy. We finalised it after hearing comments on it, and we will refresh it annually as new data come to light. The strategy has led to investment proposals, which are in our

business plan for 2010 to 2014, to augment supplies in various parts of Scotland and to deal with compensation flows in rivers in certain areas. Those well-laid investment plans for between now and 2014 will see us investing tens of millions of pounds.

We have worked with a number of local authorities on the production of surface water management plans. Scotland has an extensive network of sewers—more than 40,000km—and we cannot renew all of them in our efforts to deal with the storms and rapid run-off that we get now. The run-off is partly a consequence of climate change and partly a consequence of surfacing in the built environment.

If we cannot renew the sewers, how do we deal with surface water? The answer is: on the surface. The Flood Risk Management (Scotland) Bill picks up a lot of issues in flood risk and surface water management plans, and we were really pleased that they were included. There will be a multi-agency approach involving Scottish Water, local authorities, SEPA and private developers, as we try to achieve the right specifications for porous surfacing and sustainable urban drainage systems. We are doing a lot on the adaptation front.

Professor Galbraith: The adaptation plan will be fundamental to the implementation of the bill. It is good to see that there is one, as it is unusual in the European context to see such a bill and plan together. That is an encouraging development.

I have mentioned our action plan, which will be divided into two parts. The first part will cover action that we at SNH will take on the running of our organisation on our own estate, in nature reserves for example. The second part will be more aspirational when it comes to adaptations and will consider habitats in various parts of Scotland. We acknowledge the importance of natural heritage in coastal management, but we also acknowledge the wider importance. How can we manage the coasts over the next 50 to 70 years when the reality of climate change will be more intense than it is at the minute?

I echo what Chris Spray said about the importance of Scotland's peatland. We reckon that something between 170 and 200 years' worth of Scottish emissions are locked up in our peatland. Part of the adaptation strategy is to look after the existing peatland resource in terms of drainage, overall exploitation and management. We must do that, and we are optimistic about what we are doing, including through landowner buy-in.

That wider, more holistic look at how we manage all our habitats needs to be linked to getting people involved in the issues at the local level. That is important as part of the wider culture

change, and we are doing a lot, but we have a lot still to do to get the message out and make it more widely known than has been the case thus far.

Cathy Peattie: How do you get people involved? Other partners clearly need to become involved but, as we know, people can be dismissive of some of your plans. For my part, I agree with them, but people tell me, as the local MSP, that the plans are absolute nonsense and ask me why this or that is not happening. Who are your partners? How can you get over to people at the local level and elsewhere that things need to change and that your important plans need to be put in place?

Professor Galbraith: One of my fears is that we manage by disaster. There was a big change in public opinion in America after hurricane Katrina. It is unfortunate that we need a disaster of that nature before opinion changes.

It would be good to build partnerships with local authorities and, indeed, local non-governmental organisations. NGOs have a major role in tackling climate change and are articulate—they are good at putting out the message. We have to look at how we can build wider partnerships and, in getting out the message, we must take opportunities when they arise. The Parliament has a key role to play in doing that: politicians can tell people about the significance of the threat and the importance of the adaptation plan.

Dave Gorman: It is unfortunate that my expert colleague had to get up and walk out half an hour ago—as you know, he had to leave the meeting early.

We think that we have got off to a good start but know that we have more to do. We have published our climate change plan, in which we set out some of our actions. Flooding is clearly a big issue for SEPA, as is trying to point out its consequences. We are working with SNH and others to improve the data and get the information out to people—Chris Spray talked about that earlier—and we need to make things real for people by talking about floods not in Asia but in Scotland. Together with SNH and others, we have done some of that work. For example, in 2006 we published "A handbook of climate trends across Scotland" in which we set out the evidence that climate change is happening. It is probably time for us to look at producing another version of that publication.

We are keen that account is taken of adaptations in the river basin management planning process, which has been put in place to deliver the water framework directive objectives. We are considering how that might happen.

The key point for SEPA is that the science that Chris Spray's folk do needs to be robust enough to take account of future climate change. If they

achieve that, the data can be used to underpin our regulatory assumptions. It is useless for us to ask Scottish Water to do things that are based on old models of how rivers behave or how much flooding and rainfall will occur. A large part of what we are trying to do is an assessment of whether the models that we use are fit for purpose. We are trying to put information that is currently available in paper form—historic old spreadsheets, ancient documents and the like—into a format that can be made more easily available to the public. We want to enable people to see the trends and understand them better. That is the stage that we are at.

Cathy Peattie also asked what more the bill could do. It could be used to amend the Water Environment and Water Services (Scotland) Act 2003, which requires the WFD implementation. In making that point, I should make it clear that adaptation needs to be reported on and built into the process.

Charlie Gordon: The bill includes a requirement for an energy efficiency action plan to be drawn up. Could or should the bill do more on energy efficiency and using renewables in heating?

Professor Galbraith: Energy efficiency should be the start point. We should be trying to save and reduce what we have at present—that is a useful wider environment principle—and anything that can be built into the bill to encourage that should be put forward.

Clive Mitchell: One recommendation in our submission was on the need to recognise the partial nature of part 5 of the bill. I refer to what needs to be done on heat, transport, renewable electricity and so forth, which the previous panel mentioned, too. The comprehensive Scottish climate change programme should be renewed in line with the provisions in the bill. We need to decide how to go about meeting targets up to 2022, in line with the first three budget periods and as recommended by the UK Committee on Climate Change.

It might be useful to develop energy hierarchies for transport and electricity along the lines of the well-established waste hierarchy, which prioritises avoiding use, efficient use, low-carbon use and so on, as the basis of the interventions that are required. The Scottish climate change programme should include the comprehensive package of mitigation and adaptation measures that is required across the board.

Dave Gorman: We do not have a particular role on energy efficiency apart from in process engineering, but we think that what is in the bill seems sensible and, as others have said, it will be nice to see the plan when it is eventually published.

We cannot help but contrast the provisions on energy efficiency with the ones on waste heat, and we believe that there should be a requirement for a similar renewable heat plan with a waste heat component. The European targets are for 20 per cent of energy production to come from renewable energy, with waste heat forming about 14 per cent of that. We are currently at about 1 per cent or less than 1 per cent, which means that we need to grow 1,000 per cent in 10 years. From that perspective, it is obvious to see that, as a minimum, there must be a commitment to a renewable heat plan with a waste heat component.

A lot of heat that is produced from fossil fuels is simply thrown away, and the UK's performance on combined heat and power is not inspiring. We firmly believe that, if it is possible within devolved powers, we should examine waste heat as well as renewable heat. The two technologies should be developed in tandem because they both address the same issue.

Geoff Aitkenhead: Energy efficiency action plans are clearly important to us given our position but, as the previous panel said, we must consider total demand as well as energy efficiency and drive energy use down wherever we can.

On the point about public duties and the impact of policy on various areas in the public sector, the impact assessment of any new policy or regulation must take into account the demand for energy that it will create. In a sense, the water industry is a victim of that, as we are still implementing directives that were written in the 1980s, before the carbon reduction agenda was even thought of. Nobody at a European or global level has stood back and asked whether those directives should be rewritten or whether we should think about finding new ways of promoting energy-efficient and carbon-efficient ways of working.

Dave Gorman: We strongly agree with what Geoff Aitkenhead has just said. As a regulatory organisation, SEPA encounters difficulties in trying to protect local environmental quality without driving up the use of chemicals and energy as we do so. We have discussed that matter with Scottish Water, but the issue involves not only water but air and other aspects of the environment.

In addition to a duty on the public sector in general, there should at least be discussions about putting a duty on regulators. Many of the things that will drive the work of Scottish Water will come from the Water Industry Commission for Scotland and SEPA, and who knows what the conflicts are between, say, the need to protect food and the need to protect the environment? It is challenging to make regulators think about carbon. An obvious way of ensuring that they do would be

to get Europe to issue directives, but that would involve years of discussions and we might get faster results if we explored the matter in Scotland.

The Convener: That is a helpful suggestion.

Shirley-Anne Somerville: The Rural Affairs and Environment Committee is examining the forestry and muirburn sections of the bill. Dr Spray, who wanted to talk about that, has left. Does anyone else want to talk about that or anything that is not in their written evidence?

16:45

Professor Galbraith: Muirburn is an important management tool for large areas of the uplands of Scotland. It has a long tradition behind it, and there is an issue in that tradition moving with the changing climate.

We support the inclusion of the concept of muirburn in the bill. In particular, given that spring is happening earlier in the uplands every year, it would be helpful if there were some flexibility to allow burning to take place in the autumn as well as in spring. Many land managers have difficulty getting all of the necessary burning done in a reasonable time, so some ability to allow burning at the end of the summer and into the autumn would be useful—I believe that it is intended that that will be included in the bill.

It might surprise members to hear someone from a conservation organisation talk about muirburn in that way, but we think that that technique—when it is done properly and conducted within the law—is an important part of the management of the uplands. Of course, that practice has to be well defined in the muirburn code.

The Convener: I want to ask about the financial resources that might be available or required to enable your organisations to meet the duties that might be imposed and to help Scotland achieve the targets. Is Government taking those resources into account sufficiently?

Geoff Aitkenhead: There is an opportunity to get that right. Anything that Scottish Water invests in or pursues comes as a consequence of objectives that are set for the business by the Scottish ministers. Once those objectives are set, the Water Industry Commission for Scotland determines the charges that Scottish Water can apply to finance whatever is required. The mechanisms are in place, and all that we need to know are the objectives that ministers wish to set.

Professor Galbraith: The science has moved on enormously in the past two or three years, and we have kept up with it. As the argument moves on, there is a great need for a clearer evidence base—that is one of the key messages that I will

take away from today's discussion. Resources will be needed for that, and they will need to come from Scotland, the UK and the European Union.

Some of the things that we have spoken about in discussing climate change adaptation have obvious resource implications. I do not think that the country is yet in a position to assess the need fully, but it is hard to see how we will be able to adapt to climate change without resources being clearly targeted in future years.

Dave Gorman: A couple of weeks ago, when I gave evidence to the Finance Committee about the bill's financial memorandum, we said that it was a reasonable document given the uncertainties about exactly which direction we should go in. However, we were talking about the financial implications of the provisions rather than of the time and effort that need to be invested in persuading people to change. Jason Ormiston and others touched on that issue earlier. It is great to have incentives for microgeneration and waste heat, but what other incentives will there be and how quickly will they drive change? Those are not necessarily questions for the bill, but they are certainly questions that must be answered.

The Convener: And they are certainly among the many questions that we will have the opportunity to put to the minister next week.

I thank our witnesses for their attendance.

Meeting closed at 16:48.

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