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ECONOMY, ENERGY AND TOURISM COMMITTEE

Wednesday 20 February 2013

Session 4

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ECONOMY, ENERGY AND TOURISM COMMITTEE
6th Meeting 2013, Session 4

CONVENER

*Murdo Fraser (Mid Scotland and Fife) (Con)

DEPUTY CONVENER

Dennis Robertson (Aberdeenshire West) (SNP)

COMMITTEE MEMBERS

*Marco Biagi (Edinburgh Central) (SNP)
*Chic Brodie (South Scotland) (SNP)
*Rhoda Grant (Highlands and Islands) (Lab)
*Alison Johnstone (Lothian) (Green)
*Mike MacKenzie (Highlands and Islands) (SNP)
*Margaret McDougall (West Scotland) (Lab)
*David Torrance (Kirkcaldy) (SNP)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Richard Atkins (Royal Incorporation of Architects in Scotland)
Andrew Faulk (Consumer Focus Scotland)
Dr Sam Gardner (WWF Scotland)
Norman Kerr (Energy Action Scotland)
Professor Sean Smith (Edinburgh Napier University)
Niall Stuart (Scottish Renewables)
Dr Mark Winskel (University of Edinburgh)

CLERK TO THE COMMITTEE

Jane Williams

LOCATION

Committee Room 4

Scottish Parliament

Economy, Energy and Tourism Committee

Wednesday 20 February 2013

[The Convener *opened the meeting at 09:32*]

"Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027"

The Convener (Murdo Fraser): Good morning, ladies and gentlemen, and welcome to the sixth meeting in 2013 of the Economy, Energy and Tourism Committee. I ask everyone to turn off their mobile phones and other devices that might interfere with the sound equipment, please.

We have received apologies from the deputy convener, Dennis Robertson. I think that Joan McAlpine, who is his substitute, is running a little bit late—as a number of other committee members appear to be. Perhaps they have been wrong-footed by the 9.30 start. I am sure that they will appear shortly.

Agenda item 1 is the Scottish Government's "Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027—the Draft Second Report on Proposals and Policies". Two panels of witnesses will give evidence.

I will introduce the first panel from the left. Norman Kerr is director of Energy Action Scotland; Andrew Faulk is policy manager for energy at Consumer Focus Scotland; Dr Mark Winskel is a research co-ordinator at the UK energy research centre at the University of Edinburgh; and Niall Stuart is chief executive of Scottish Renewables. Welcome to you all.

Before we ask questions, does anybody want to make a brief introductory statement? Does Niall Stuart want to do so?

Niall Stuart (Scottish Renewables): No.

The Convener: You were smiling.

Niall Stuart: I am happy to go straight to questions.

The Convener: Fine. I will get the ball rolling. Members can catch my eye if they want to come in with questions.

One of the issues that has arisen as a result of the publication of RPP2 is the shortfall in meeting the emissions reduction target following the proposals in RPP1. Does RPP2 adequately set out proposals and policies that will in future years compensate for the missed target in 2010?

Niall Stuart: Obviously, I am here to represent the organisation that represents the renewable energy industry in Scotland. I will focus my remarks on that particular sector.

I do not think that people can argue about the success of the growth of renewables in Scotland. There was an increase of around 80 per cent in the renewable electricity capacity installed between 2007 and 2011, and the figures that we have already provided to the committee on the decline in carbon emissions from Scotland's three fossil fuel power stations show a 35 per cent decrease in carbon emissions from the stations between 2006 and 2011. Therefore, I do not think that anyone can argue about the fairly dramatic shift and decline in emissions from the power sector. The reasons for the missed target lie with other parts of the economy or other parts of the Scottish Government's strategy relating to the wider climate change targets.

The Convener: Okay. I am not quite sure that that answered my question. Do you think that what is proposed in RPP2 will make up for the shortfall after RPP1?

Niall Stuart: It is difficult for me to answer the question about the broader climate change targets, because there is in the document an awful lot about which I could not pretend to have any great expertise, or on which Scottish Renewables does not have a particular focus. On the parts of the RPP that talk about renewables, our members see enough development in the pipeline to meet the 100 per cent renewable electricity target. With the extension of the renewables obligation for biomass to 15MW, the introduction of the renewable heat incentive and the Scottish Government's work to map out barriers to district heating with the expert commission on district heating, there is enough to ensure that we hit the 11 per cent renewable heat target. In terms of our part of the challenge, there is enough in RPP2 to meet those targets.

The Convener: Thank you. Would anyone else like to comment on that?

Norman Kerr (Energy Action Scotland): There is a fair amount of detail in the proposals. The technical annexes talk about the national retrofit programme achieving 59 kilotonnes of carbon reduction in 2013. For 2017, the number increases to 207 kilotonnes, but the budget line for the programme remains flat. I struggle to understand how we can almost quadruple the carbon abatement in that programme when the budget line is flat. The aspiration is there, but the document does not contain the detail around how that reduction will be achieved.

Dr Mark Winskel (University of Edinburgh): The business climate for delivery of energy policy has become more difficult. I do not find it particularly surprising that we are, at a high level, struggling year by year to meet ambitious targets.

You asked about the level of detail in RPP2 and whether it can correct the trajectory. I do not know a huge amount about some of the details, but I found the document to be rather vague in places. Although the overall envelope out to 2020 is convincing and there are statements to the effect that it is not a serious concern, after 2020 there are lots of uncertainties about the details and the overall trajectory relative to the European Union emissions trading system. I am not especially concerned about annual fluctuations, but there are lots of questions about the overall shape of the trajectory, particularly post-2020.

Andrew Faulk (Consumer Focus Scotland): I would echo Norrie Kerr's comments about the detail, and I would echo Mark Winskel's comments. Like Scottish Renewables, Consumer Focus is unable to comment on the trajectory and the overall emissions. It is difficult to equate what happens at the policy end with what gets delivered, as we read the document from our perspective of not being experts.

The Convener: There is quite a lot in what you have said that we need to pursue. I am sure that other members will come in, so I will ask just one more specific question.

I was interested by the submission from Consumer Focus Scotland. You talk about the need for comparative costs and benefits of different measures to be integrated into the report so that the balance between the different actions can be seen. You also say that the balance of costs to consumers, to the public sector and to industry needs to be fair and transparent. Will you expand on that a little bit and explain why you think that it is important? I will then invite the other witnesses to say whether they agree.

Andrew Faulk: I start from the position that climate change is not yet an immediate and pressing concern for the majority of consumers in their daily lives, regardless of their views as citizens. Public climate change policy will still affect people, particularly in the context of rising energy costs and the energy generation mix. There is pretty good evidence that when consumers understand this stuff, they sympathise with it to some extent, but they also want to see a balance between what they are paying, what energy companies are paying and what the Government is putting in. That goes back to some of the work that my colleagues in London have done under the general "who pays?" banner, which showed that it is more difficult to engage consumers in the debate when the context is of energy costs rising while energy profits are also rising.

Equally, we need to ensure that the wider public sector is seen to be delivering across all areas, because consumers are very good at spotting inconsistencies.

The Convener: Does anyone else agree with Consumer Focus Scotland's comment about the need for greater transparency about cost?

Norman Kerr: I very much agree. Consumers struggle to understand their energy bills—the Office of the Gas and Electricity Markets is trying to do something about that through the liquidity view of the wholesale market, for example. That is a big part of the market that consumers do not understand. The fuel-poor consumer is not particularly interested in where their energy comes from—whether it is from a low-carbon energy provider or whatever. They are interested in whether they can afford to use it.

We need to engage consumers—we do not do that just now. The Government and campaigners say one thing, but our actions are often entirely different. We talk a lot about helping consumers, but consumers pay for the help that they get: Energy Action Scotland has banged on about that for a long time. We hear energy companies saying that they are giving consumers rebates, but those rebates do not come from the energy company's profits but from the consumers themselves. It is therefore hard for consumers to become engaged in this type of discussion when they are unable to see the full picture, and I do not think that they will be able to enjoy the full picture until we get some clarity into it.

Dr Winskel: The broad comment about climate change being a minor part of the average consumer's concerns is important for all those of us who are much more preoccupied with it.

The other thing is that the benign context has changed—it has gone. Household incomes are flat and fuel poverty is an increasing problem. Energy has become a more visible aspect of household spending. What does that mean for carbon and climate policy? It is important to counter some of the myths about the causes of the recent increases in energy bills. We know that carbon policies make up a fraction of the overall increases and that the major contributor to cost increases has been internationally traded gas prices. That is not always the perception. Carbon policy is often conflated with increases in bills.

We know that the price of carbon policy will mean moderate increases in consumers' bills after 2020 and beyond. Yesterday, Alistair Buchanan said that there will be pressure on gas prices in the short term towards 2020.

The other version of the future that has been quite prominent recently is that unconventional gas will cause a rapid decrease in gas prices and that all the Scottish Government and DECC assumptions about gas price escalation will make carbon reduction measures relatively more expensive. There is actually little evidence for that. The UK energy research centre has conducted work on gas price scenarios and the dynamics of gas markets. There are huge amounts of uncertainty, but the balance of evidence is that we will not see a dramatic reduction in gas prices based on unconventional gas in Europe—at least over the next several years. That perception of the drivers of cost increases again shows that we need evidence-based statements to counter a few of the myths out there.

09:45

Cost transparency is difficult on the supply side, because there are still huge amounts of uncertainty about which cost we are talking about and for whom. With a lot of the work that we do on supply-side costs, the picture is difficult. A few years ago, we made assumptions about carbon capture and storage being brought into the system and making a significant impact by around 2020, about the cost trajectory of offshore wind and, in the wider UK context, about the cost estimates on nuclear power, but all those have gone in difficult directions. There are huge ambitions for 2020 on cost reduction for things such as offshore wind.

Niall Stuart might be able to say more about this, but the track record of projects coming on board shows a pattern of pressures on supply chains and a tendency towards cost increases rather than decreases. It is a difficult issue, and the situation is highly uncertain. The transparency that we would like is not always there.

Niall Stuart: How could anybody argue against greater amounts of information and greater transparency? That can only be a good thing. I guess that Consumer Focus's statement implicitly alludes to the debate on whether we should spend more money to promote renewable and other low-carbon forms of generation or to save energy and reduce energy use. I will highlight a couple of points on that question.

First, we should not overlook the ambitious nature of the Scottish Government's energy efficiency commitment to reduce energy use by 12 per cent by 2020. Energy efficiency and energy reduction have long been talked about, but it has proved to be difficult for Government and the wider public sector to engender and foster behaviour change on that. Likewise, there is a commitment in the next two years in the spending period to spend something like £70 million—I cannot remember the exact figure—on domestic energy efficiency measures, which I guess will be far in excess of the Scottish Government's direct spend on promotion of electricity or other energy generation from renewables.

Secondly, one area where there is a massive need for more information and proper study is fuel poverty, which has been mentioned. Are the rising costs of energy putting people into fuel poverty? Is it really the additional costs that are required to support investment in renewable energy that are resulting in increased fuel poverty, or is it pressure on household incomes or the quality and poor energy efficiency of our housing stock? My guess is that, if we were to compare Scotland with other parts of the UK and Europe, we would find that the main drivers of fuel poverty in Scotland are pressure on household incomes and the poor quality of our housing stock, and not rising energy costs.

In Alistair Buchanan's interview on Radio 4 yesterday, he said clearly that compared with the rest of Europe, the cost of gas in the UK is low and the cost of electricity is decidedly average. That is why we need to do more to understand exactly the dynamics of fuel poverty and what drives it. Is it household income, the cost of energy or the quality of our housing stock?

The Convener: A lot of issues came up there, and I am sure that members will want to pursue them. A couple of members have caught my eye. I will bring in Rhoda Grant first.

Rhoda Grant (Highlands and Islands) (Lab): Following on from the convener's questions, I wonder what you think is missing from RPP2 that you would have put in had you designed it.

Norman Kerr: Detail. [*Laughter*.] It is as simple as that—RPP2 contains a lot of statements with no detail around them. For example, it refers to further technical advancements in 2018, but I do not know what they might be. Whoever wrote that must have a crystal ball, because I see nothing on the horizon that will deliver the carbon reductions that we are talking about in 2018. We are simply pushing away the evil day—which is a bit like what happened with the fuel poverty targets and the responsibility to eradicate fuel poverty by 2016. When that target was set in 2002, 2016 was a long way off, and we are only just waking up to that fact.

The RPP2 document is very similar. It says that we are going to do a lot of things, but we are just pushing the evil day when they need to get done further and further away and there is little detail about anything. If I was going to do anything with the document, I would expand on the detail. I am sorry if that seems a bit of a non-answer, but it is the best that I can give you.

Rhoda Grant: You say that the document lacks detail, but your comments suggest that it almost lacks substance. You seem to be saying that, although the Government says that it is still committed to meeting the target, it has no pathway other than a wing and a prayer.

Norman Kerr: That would be a fair assessment.

Dr Winskel: Stepping back a little bit, I want to look first of all at the read-across from RPP1 to RPP2. I know that other submissions have picked up on this point, but, speaking as someone who has not been involved in the evidence with regard to either RPP1 or RPP2, I found it quite difficult to read across from one document to the other because the information in the different sectors has not been presented consistently. For a start, there are different levels of aggregation for different policies and proposals; for example, RPP2 aggregates information about UK, Scottish and European measures that was disaggregated in RPP1. Moreover, some of the costing tables are different. The technical annex contains a lot of detail about the annual costs and impacts of policies, but again it is not presented in a consistent way that allows easy read-across. As a result, I found it difficult to understand things.

The chapter introductions contain general statements about where we have got to at sectoral level, but when I looked at the detail and compared the tables and data I found it difficult to assess the levels of ambition and firmness about the policies or proposals. I am sure that other witnesses in this and perhaps the second panel will make the same points about detail.

One thing that we in the UK energy research centre have learned in putting together projections, scenarios and model runs over the past couple of years is that things are a bit more uncertain than we had imagined a few years ago. The cost of technology in these scenarios has not been as predictable as we thought it might be; we cannot get cost reductions as easily; and undertaking big projects is difficult at the moment because of capital availability.

On the demand side, although we can often assume that these things are fairly low-hanging fruit, there has been less traction than we had thoughught in certain areas. Over the next few weeks and months, for example, we will see a lot more detail at both UK and Scottish levels about heat—

Rhoda Grant: I am sorry to interrupt, but are you saying that the document is so impenetrable that you cannot really tell me whether anything is missing or whether there is anything you would add to it other than a degree of clarity?

Dr Winskel: It is not just about clarity; it is about the areas in which you can predict and be firm about things. Over the period to 2020, we are looking for quite a high level of detail on policy, on investment and on where the investment will come from, such as whether it will be at UK or Scottish level and whether it will be from the public sector or the private sector. We also want a consistent read-across to RPP1.

Beyond 2020, in a document of this kind I would be looking for a series of what-if exercises. We do not know what will happen to gas prices in the 2020s—anyone who predicts those is probably underestimating uncertainty—or to levels of demand. For example, there are important interactions on the heat side: if we get domestic conservation and efficiency right, levels of heat demand should decrease substantially in the 2020s. That means that we need to look at alternative assumptions about demand, because that affects things such as markets for district heating.

A particular issue is the interaction with the EU ETS for the traded sector. At the moment, because there is a lot of uncertainty about what will happen to the EU ETS post 2020, RPP2 assumes a default position that essentially takes a Scottish trajectory for traded sector emissions that is based on Scottish targets for decarbonisation. The problem with that is that the Scottish targets on electricity are very ambitious. In the EU ETS context, that is likely to overburden the traded sector, which will let off the non-traded sector post 2020, given what we think might happen.

The EU ETS is likely to continue in some form post 2020, but we do not know what its level of ambition will be—getting Europe to sign up for a target of 30 per cent by 2030 has proved difficult—so this is another area in which we need some what-if thinking. If the EU ETS establishes an 80 per cent target, what will the implications be for the non-traded sector in Scotland? That is crucial. If the target is set at 60 per cent, there will be a higher level of burden for the non-traded sector in Scotland. If the EU ETS disappears altogether, we will be into the realm of the current position in RPP2.

That issue is not resolvable at this stage in Scotland—clearly, it is one of those exogenous things—but it has serious implications for the delivery of policy. For those longer-term implications going out to 2027, we really need explicit treatment of the different possible forks in the road. That is missing.

Uncertainties are discussed in the technical annex, but in a very qualitative and descriptive way. The assumptions in the table give no sense of what confidence should be placed in them. It would be interesting to see how much confidence there is in the data and whether we could have a range of alternatives—low, medium and high—to

see just how sensitive policy delivery is to some of those uncertainties. The uncertainties will not go away in a hurry over that longer period.

Niall Stuart: The first obvious thing that is missing is the chart that we had to produce in our written evidence to show that the broad package of European, UK and Scottish Government measures has already had a massive impact on emissions from the power sector in Scotland. I mentioned that earlier.

On electricity, we all know that the 100 per cent target is demanding and ambitious, but we believe that the broad package of measures is in place to give us the best possible chance of meeting that target. However, as I said to the committee during its inquiry into the Scottish Government's targets, renewable heat is a much more difficult area. The blocks and barriers to investment in renewable heat are less well understood. There are more constraints on things such as fuel stock. The economic intervention of the renewable heat incentive has only recently been introduced and is not well understood, so it is not clear whether that will transform investment in renewable heat in the way that the renewables obligation has done for the electricity sector.

What we really want to see, which is not here, is a clear commitment from the Government to go back to basics and first principles in putting in place a package of measures that promote renewable heat and do not just get us up to the 11 per cent renewable heat target by 2020, but get us on the trajectory to meet the commitment in RPP2 to largely decarbonise energy for heat by 2050.

10:00

Andrew Faulk: What is missing is something that says in fairly simple language what things will look like for householders in Scotland 10 years from now. That will involve a degree of energy efficiency and renewable heat, and it will probably involve a wider series of actions and adaptations. However, it is difficult to take the RPP2 as it stands and translate it back to the level of an individual household. We need something a bit simpler in order to get wider engagement and buy-in from people.

Rhoda Grant: Your written evidence referred to different schemes that are available to householders and how they join together, but you indicated that people found that almost impenetrable. Are you saying that there should be something else that tells individuals what their contribution could be and how they could go about making that contribution and accessing funding for it?

Andrew Faulk: Yes. As we said in our submission, the front end of RPP2 expresses enthusiasm for how a low-carbon Scotland will be better—for example, by creating job opportunities in areas that clearly did not exist in the past but will in the future. There ought to be more of the attitude of pulling towards a golden future rather than stating that climate change will damn us to eternal night. The RPP2 document does not use positive language about what it all means at household level. The debate remains at an extremely high level, rather than at one that means something to people.

Marco Biagi (Edinburgh Central) (SNP): My question is on just one little point. You said previously that the projections on gas price by the Scottish Government and DECC included a plunge on the basis of unconventional gas. That is not in the RPP document, so what is the source for it?

Dr Winskel: No. The DECC and Scottish Government assumptions are about gas price inflation. It is more that in the policy debate, some of the think tanks and research groups have published material recently about the need—

Marco Biagi: I was aware that the issue had crept into the debate. I just thought, from what you said, that it had got into the realm of official projections.

Dr Winskel: I think that my point was that there are some uncertainties about the longer-term impact of some of these things. There are all kinds of global knock-on effects—for example, there is the question of what is happening in the States with unconventional gas. There is less confidence than there was about medium and longer-term projections around gas.

Marco Biagi: One of the points in the RPP is about the decarbonisation of the electricity supply and a roll-out of partially functioning CCS by 2020. How realistic do you think that is?

Dr Winskel: I had meant to mention CCS as one of the uncertainties. Countries around the world are doing CCS—for example, Canada and Australia are doing interesting things in that regard. However, generally, CCS is not where we expected it to be internationally when we looked at the issue four or five years ago. The International Energy Agency is very concerned about lack of progress on CCS.

The need to do CCS has not gone away; if anything, it has become stronger because of global emissions from fossil fuels. In the UK, we have had lots of false starts. The assumptions in RPP2 are quite reasonable. It is still at the level of setting the ambition rather than the means of delivery, but I do not think that that is bad. It is not saying that there will be huge amounts of CCS in the system before 2020; it is saying that there will be a gradual step up in the 2020s, but that it will

be quite dramatic around 2025 to 2027. I am always suspicious about those kinks in the curve. I think that, in reality, things generally happen a bit more gradually. We still do not know how to get CCS off the ground in the UK context, but it will not go away and we need to get it right.

Marco Biagi: Do you see any levers that are open to the Scottish Government, within the frameworks in which it operates, that could be used to accelerate CCS in Scotland, or would that be dependent on UK, EU and non-governmental factors?

Dr Winskel: The problems that we have experienced have been largely at European and UK level. In Scotland, we have a huge research capacity. We have had lots of industry support and proposals. We are still struggling at EU and UK levels. I am happy to get back to you on whether there is more that could be done at the Scotland level.

Marco Biagi: Does anybody else want to speak about CCS?

Niall Stuart: As Dr Winskel has said, at best we will have an extremely limited CCS capacity by 2020. The aspirations are more likely to be met by 2030. If people are concerned about the costs of renewables, they need to be even more concerned about the costs of CCS. On most cost projections, CCS comes out as being more expensive than nuclear and significantly more expensive than onshore wind and biomass.

Marco Biagi: Stakeholders have emphasised the importance of compulsion in energy efficiency retrofitting in order to get to the hard-to-reach households. Do you think that that is necessary? What would be the strengths and weaknesses of any compulsion-based approach to retrofitting in households?

Norman Kerr: It is a difficult route to go down, but there undoubtedly needs to be compulsion. We have compelled the social rented sector, the housing associations and local authorities to meet the Scottish housing quality standard by 2015, and we are talking about increasing that standard, which involves a level of energy efficiency. We have compelled new build to a higher level of energy efficiency, and houses that are built today use 70 per cent less energy than those that were built in the 1990s.

We have a particular problem with the private rented sector, which has a disproportionately higher number of fuel-poor households than any of the other housing sectors. It has the poorest-performing stock—the Scottish house condition survey shows that private rented stock is significantly behind other stock. It has stock that is classed as the poorest-performing stock under the national home energy rating scheme. We have dangled carrots in front of that group of stakeholders since 1994, but they still trail significantly behind. Unfortunately, the time has come when we need to say that there must be an element of compulsion and that the private rented sector must be brought up to the standard of the social rented sector.

Through the housing strategy group, the Scottish Government is considering the introduction of legislation around 2018. Of course, there would need to be a lead-in period if we were going to set a target, and it would not be unreasonable to expect that period to be two or three years, which means that we would be talking about raising the level of energy efficiency to the required levels by 2020 or 2021. There is no ambition in that. I honestly think that we need compulsion in the private rented sector much sooner. I do not think that there is anything to stop us introducing regulation by 2015 that would mean that by 2018 houses were of a standard that reduced demand for energy and made them affordable to live in.

Andrew Faulk: I echo that. We should consider the circumstances of the people who live in F and G-rated houses—the poorest-performing homes. Official Scottish Government figures show that the rate of fuel poverty in such houses is around 60 to 65 per cent, which is more than twice the average rate for Scotland as a whole. There are not many houses in that position, but there has been no change in their number during the past two or three years, despite the incentives having been available to people for some time, as Norrie Kerr said. The incentives-based approach is clearly not working, so we need to do something for the sake of the people who live in those houses.

Alison Johnstone (Lothian) (Green): Norrie Kerr said that there was nothing on the horizon, let alone early action. How does RPP2 deal with dates around a national retrofit programme? Does it need to be far more robust?

Norman Kerr: The line for the national retrofit programme in the carbon abatement targets in annex A shows an expectation that the programme's impact on reducing carbon will quadruple over the next four years. However, the budget line is flat, so I struggle to see how we get to that. I understand that the national retrofit programme will attract other funding, for example from the green deal and the energy company obligation, but the green deal and the energy company obligation are in a separate line, so that aspect has not been factored into the expected reduction. I struggle to see how we will deliver the increased carbon reduction on a flat budget line.

Alison Johnstone: Do you think that there is a mismatch between the proposal and how we can achieve the target?

Norman Kerr: I think that there is a lack of clarity.

Alison Johnstone: Does anyone else want to pick up on the issue, before I move on to renewable heat?

Dr Winskel: I know less about the issue, but I agree with what has been said. The work that we have done on the relative costs of supply side versus demand reduction has consistently shown that demand reduction is a very attractive approach, if we can get it right. I have not looked in detail at the case for stronger regulation, but if the current approach is not working the case seems to be compelling.

Projects that we have done have demonstrated the importance of understanding that the challenges of demand reduction are different from the challenges to do with the supply side. We need to understand the context for people's decision making about retrofit and so on. What is driving people's decisions? How much trust do they have in the people who come into their homes? It is all about accreditation, getting the training right and getting the word out that a reliable service is offered. The issue has not yet been tackled.

An issue that the UK energy research centre has been looking at is the imbalance that arises because of the nature of electricity market reform and the contracts for difference, which basically provide guaranteed investment opportunities—if they get the levels right; there are difficulties there. Because of the nature of the market, there is a skewing of the incentives in relation to supply investment versus demand reduction. There was an opportunity through EMR to incentivise demand reduction through, for example, efficiency feed-in tariffs. DECC is consulting on demand reduction, but it is a follow-on and it is not part of the mainstream EMR process. Such skewing of incentives towards supply investment rather than demand reduction makes no sense from an overall system-level view.

10:15

Alison Johnstone: I will ask about renewable heat, which Scottish Renewables touched on in its submission; Dr Winskel has mentioned it, too. In the evidence that was taken as part of the committee's inquiry into the Government's renewable energy targets, a risk was identified that the renewable heat target would not be met. In November, the Government's expert commission on district heating came back with 18 recommendations. I understand that this is an area that we will hear more about—the heat generation policy statement is to be produced by the end of this year.

Is the panel concerned that the topic does not feature much in RPP2? What is your view on how RPP2 deals with the renewable heat target? Is enough ambition shown? Is enough detail provided? In its submission, Scottish Renewables says that the Scottish Government needs to "play a transformative role" here. Does that mean that you want to see more projects such as the council-run Aberdeen Heat and Power Company? Is that the kind of thing that you are talking about, or are there other models that we can look at to boost a much-needed initiative?

Niall Stuart: As I said earlier, there is a sense that there are lots of small initiatives or initiatives that, of themselves, will not transform the roll-out of renewable heat, so there is a need for a more coherent, overarching strategy. I will try to make my remarks on the subject a bit more strategic and coherent.

I think that there is a parallel with the public sector pathfinder projects for broadband in rural areas, of which there was some talk a few years ago. The idea was that health and education services would provide the critical mass that would result in investment in higher speed broadband in rural areas. I think that the same principle applies to renewable heat. If we can get the public estate—schools, hospitals and other public institutions—to invest in renewable heat technology, that will increase demand. Potentially, there will be spare capacity that could be rolled out to local housing nearby. The increase in demand should impact on costs and create a virtuous cycle whereby, as costs come down, such technology becomes more affordable and a more attractive option for more consumers.

I think that you are right about the RPP setting out lots of little initiatives that, by themselves, will not transform the roll-out of renewable heat. Therefore, there is a need for the Government to do some work in this area, to consult with the industry, to consult more with consumers on the blocks and barriers to the take-up of renewable heat, and to look at how it can do more to help companies such as Diageo, which is investing massively—it is investing about £150 million—in renewable heat in its Cameronbridge facility. I know that other distilleries and businesses such as Tullis Russell are doing the same. The Government needs to consider how it can get other big industrial facilities to invest in renewable heat, because that will ensure the most rapid progress towards the target.

There is also a need to look at how we do more to encourage renewable heat facilities to be built as part of new housing schemes. Social landlords are looking at that as a way of protecting their residents from increased bills in the future. We

need to consider how we get more private sector landlords to do the same.

One of the big challenges on fuel poverty—this shows the linkages between the themes that we are discussing—is the significant number of people in Scotland who live off the gas grid and who therefore have to look to other, more expensive heating solutions. We need to think about how we can help to open up renewable heat solutions to those households because, by doing so, we will achieve the greatest win from the point of view of carbon emissions and of the impact on those households' fuel bills and, therefore, the rates of fuel poverty in those areas.

That does not really answer your question. The broad answer is that we welcome the Government's commitment to gather together all the individual pieces of work that are being done into a more coherent and cohesive strategy.

Andrew Faulk: I echo and follow on from that. We have researched the experience of social landlords that use renewable heat. Once they have gone through the learning curve, it is very positive. I am struck by the number of social landlords and tenants whom we interviewed who said that they were warmer at lower cost. In that context, being warmer at lower cost involved significantly fewer carbon emissions as well. It works, but it is not commonplace yet.

As Niall Stuart says, we need an awful lot more experience of doing this in the industry so that it is better able to get it right and provide a supply chain and support network. Also, we need a wider awareness among members of the public. One of my bugbears in this is that we frequently do projects on the technical side and do not promote them enough. For example, I believe that this building has solar-thermal water heating, but there are no signs in the toilets saying that the hot water that people are using is heated by the sun. We need something that demystifies this stuff and makes it relevant. If people see it in action in a building such as this, they can equally use it at home.

Alison Johnstone: Thank you. That is a very good point.

Norman Kerr: I declare an interest as a trustee of the Aberdeen Heat and Power Company. This year, Aberdeen Heat and Power celebrates 10 years in operation. It is now connected to not only domestic consumers, but a range of commercial consumers. It provides hot water to the athletes' village and it is working closely with NHS Grampian. It is able to do those things in combination. However, if you were to ask those involved whether they could start Aberdeen Heat and Power today, the answer would be "No" because of the financial climate that we are in. Pulling together that mix of funding to get it off the ground or to replicate it in other cities—I echo Niall Stuart's point that it takes a certain density of population for a scheme of that size to be workable—would be very difficult.

I will encourage the general manager and others at Aberdeen Heat and Power to send some information to the committee on the challenges that others might face at this time in starting up a similar business. If any member of the committee would like to see Aberdeen Heat and Power in operation, they should feel free to get in touch and I will gladly arrange a visit to Aberdeen for them to view the very good work that it is doing in the city of Aberdeen to reduce fuel poverty and to provide additional heat to commercial users around the city.

Dr Winskel: Where are we on heat, compared with where, two or three years ago, we thought that we would be now? I think that there has been less progress than we hoped. The policies are still rather immature, relative to those on power, so the renewable heat incentive has been delayed. However, DECC will publish a heat policy next month and it is much more interested in renewable heat than it was. It understands it better and has got better tools to see the economic case. Renewable heat has been poorly understood and poorly incentivised and much of the emphasis has been on electrification, but they are moving away from that. What is still missing, however, is a convincing business case that DECC is signed up to for things such as district heating.

District heating has become more difficult because of the state of public sector finances. There is a strong role for local authorities in district heating, but that is informed by the availability of capital and investment, so the question is how to get around that. We need to rethink how the infrastructure for community and district heating is paid for. We should think about district heating as partly an infrastructure-class investment, for which the investment risk is lower. It is a case of treating some of that as an infrastructure problem like other infrastructure problems. There are infrastructure funds out there, so there are roles for infrastructure investment, public infrastructure investment and the Green Investment Bank.

With colleagues at Edinburgh I am tangentially involved in feeding into the Scottish Government's thinking on the heat generation policy statement. The heat hierarchy, which has already been published, sets out the broad options for heating, emphasising demand reduction and then going into renewable heating. That makes a lot of sense, but it is still lacking detail. At the moment, specific options for Scotland are being worked up. There will be discussions about community-level solutions versus more individual householder

solutions, and the relative cost of those for different types of housing stock. I am happy to pass that on. It is very much a work in progress at the moment. It is, perhaps, unfortunate that it is not as developed as we hoped that it would be by now.

Chic Brodie (South Scotland) (SNP): The submission from Consumer Focus said that we need more leadership and consistency of approach on the part of Government.

Two weeks ago, I attended a meeting about an information and communications technology system for public sector buildings. I was appalled at what was going on in terms of the maintenance of the buildings and, primarily, their energy efficiency. Is there enough focus on what we can do with regard to public sector buildings?

Andrew Faulk: People are influenced by what they see around them. The Government messages about the development of renewables and the need for energy efficiency are quite clear, but an inconsistency is evident when a member of the public visits a public building and sees that the heating is cranked up and the windows are open. That completely undermines the message.

I spent a weekend in Edinburgh as a visitor, during which I went to the national museum of Scotland. It is a great museum, but the building has a G rating for energy efficiency. It should be better than that, given the footfall. The Scottish Parliament building is considerably better than that in terms of energy efficiency, but more could be made of that in the visitor experience.

Every time that someone goes to a building that undermines rather than reinforces the Government's message, we start to lose the battle.

The Convener: Before you pursue this line of questioning much further, Chic, I should point out that four parliamentary committees are scrutinising RPP2, and I am advised that the Local Government and Regeneration Committee is thinking about having a focus on public buildings. I do not want our work to overlap its work. Some of the witnesses who are here today might also be speaking to it. It would be helpful if you could pursue a different line of questioning.

Chic Brodie: There is a danger of having too many cooks, but let me try.

The submission from Consumer Focus mentions Scottish Water—I do not know whether any other committee is looking at that issue.

The Convener: That is us.

Chic Brodie: Consumer Focus said that it was surprising that RPP2 contained so little about Scottish Water. Scottish Water can reach every building and every consumer. I strongly believe that, state aid notwithstanding, Scottish Water should consider the creation of a subsidiary in order to enter the utilities retail market. That might upset the other six companies, but it certainly has the customer base to do so.

Why, given the consumer clout that Scottish Water has, is it not being encouraged to play a bigger role in the decarbonisation agenda?

Andrew Faulk: I will respond briefly, as we raised the issue, but, in essence, our question is your question. You need perhaps to be asking Scottish Water or various parts of Government—

Chic Brodie: Do you have a view about what should be done?

Andrew Faulk: We now have the consumer representation role in respect of water, which is why we touched on the issue. It seems to me that there are links with water efficiency. Given the amount of energy that Scottish Water uses, there is potential for more to be done in the context of the RPP. I do not know why it is not mentioned more. I would welcome your asking Government that question.

10:30

Chic Brodie: Okay. I am sure that we will.

I recently had a meeting with the British Geological Survey about geothermal energy. There does not seem to be an awful lot of focus on that. Of course, last week we saw the article about Glasgow streets. I will be having conversations with East Ayrshire Council about the amount of warm water that is flowing through disused coal mines. Why is that not getting the focus that it perhaps should?

Dr Winskel: Geothermal has been around for a long time, so there have been investigations into its role in the UK for more than 30 years. It has come back on to the agenda more recently. I have not gone into the economics of it, but I know that there are some interesting demonstration schemes. The questions are around its scaleability and the overall impact relative to policy timelines. I would be happy to ask a few colleagues and get back to you, but I suspect that it is one of those things that is not seen as mainstream.

Chic Brodie: It might be if you were in parts of Dalmellington or Cumnock.

Dr Winskel: Yes. Locally, it is very interesting. The questions are around how applicable the local case is nationally and its scaleability. That is all that I can point to.

Niall Stuart: There are specific circumstances in Glasgow and parts of Ayrshire that would make it possible. I do not know whether it is a new

technology, but it is the first time that it has been applied in Scotland. Other landlords are looking at whether they can develop shallow geothermal schemes in their area.

For deep geothermal, there are still barriers around technology and cost, but I know that in academia there is significant interest in looking at how we can make deep geothermal practicable and economic. It is not being rolled out at the moment because the technology is not there and it cannot be done in an economic fashion.

Chic Brodie: The Existing Homes Alliance Scotland submission states:

"Funding for the National Retrofit Programme should be doubled to £130m per annum, in order to maximise impact and lever in private investment."

Where is the evidence that private investment will belly up to the bar?

Norman Kerr: There is no evidence that private sector investment will belly up to the bar, as you put it.

The Convener: That is not the most attractive of metaphors.

Norman Kerr: It has kind of thrown me.

I turn to the budget for the financial year 2013-14. The Scottish Government has said that it will put £65 million into the national retrofit and energy efficiency programmes—there will be some stuff around the edges of that as well. It is hoping that it will get £165 million from the energy companies. That is more than it has ever had from the energy companies before. The go-early projects for the national retrofit programme showed that for every £1 you put in you could get somewhere in the region of £3 back from the energy companies. The Existing Homes Alliance is saying that that is fine for go-early projects, but in the longer term we cannot be reliant on the energy companies still having the ability to fund our aspirations. The funding from the energy companies comes from the general public, so to ensure that Scottish consumers are not left at the mercy of the funding from the energy companies, the Scottish Government needs to take a greater lead. It is fair to say that if the Scottish Government doubled its funding, the achievement of the 200mm or more target would be a far easier ask than it is just now.

Joan McAlpine (South Scotland) (SNP): What are your views on the recent calls by some parties for a moratorium on the building of onshore wind farms? What effect would that have on our emissions?

Niall Stuart: A moratorium on onshore wind would be a moratorium on all forms of renewables, because the revenue stream that onshore wind provides is what allows Siemens, Vestas and others to invest in and develop the offshore wind that is required to get that industry up to scale. It also finances the Beauly to Denny connection and other grid connections in the north of Scotland. Without those connections, there would be no offshore wind industry in the north of Scotland and the Beatrice and Moray Firth schemes could not go ahead, and there quite simply would be no future for the wave and tidal industry.

I can put it no more simply than this: a moratorium on onshore wind is a moratorium on all forms of renewable energy and an end to the trajectory that we have seen in our power sector emissions over the past five or six years.

Dr Winskel: It is noticeable in the public debates and in the workshops that I have attended on policy issues that there is a backlash against onshore wind, north and south of the border.

What is the basis for that and how widely are those attitudes shared across society? We do work on public attitudes, using large randomised and representative samples. The message that we get from doing that is that people are more positive towards renewables than they are towards other energy technologies, leaving aside some of the cost issues—of course, the answers depend very much on how the questions are presented.

Some of the stakeholder workshops would give you a misleading impression of the extent of the backlash against onshore wind. The scientific evidence shows that there is still a lot of support for wind power. Siting the wind farms has become more difficult as the ambitions have increased, but that is the nature of the targets. Onshore wind has a large burden to carry in terms of the delivery of the renewables directive and the Climate Change (Scotland) Act 2009.

If you are looking to create a low-carbon electricity supply, onshore wind is the cheapest large-scale solution. It has been done for decades and decades. The technology and the supply chains have matured. Offshore generation is interesting, and there is a lot of capacity there, but the technology is still relatively immature, which can lead to cost increases at times. The same applies to CCS and other large-scale, low-carbon electricity generation. There are lots of reasons to say that a lot of the impact in terms of policy delivery over the next decade must be in the area of onshore wind.

The idea of a moratorium is unhelpful in terms of the impact on policy delivery.

What can be done in terms of spatial planning, community engagement and incentives? The UK has been lagging behind for years and years. We have talked about stakeholder community ownership of the schemes, which the evidence suggests would make things less problematic.

There are some myths out there about the reaction against onshore wind. There is no reason to have a moratorium on public opinion grounds or economic grounds.

The Convener: For the record, I should gently point out that the demand for the moratorium has come from local authorities, whose planning departments are struggling to cope with the level of applications.

Dr Winskel: Yes, that is problematic. There are a lot of project-by-project submissions, and there is a problem about the capacity in the system to deal with that and to deliver sensible spatial planning.

Joan McAlpine: Various pseudo-scientific organisations argue that onshore wind does not contribute much to the energy mix. I represent the south of Scotland, and I regularly see those people being quoted by anti-wind farm campaigners in the newspapers and by politicians looking to make a bit of political capital out of the issue. Would any of you care to reflect on any of the scientific arguments that have been put forward by some of the anti-wind farm groups, which have titles such as the Renewable Energy Foundation, which could mislead people into thinking that their views have a basis in evidence?

The Convener: That is a little bit off topic. I ask for brief responses.

Niall Stuart: I am happy to bring it back on topic.

With regard to the subject of today's session, one of the most important pieces of research that have come out in this area is the communication from the National Grid to the committee, which shows that, despite claims to the contrary and protestations about the ineffectiveness of onshore wind, there is an almost perfect relationship between every megawatt hour of wind and the displacement of the emissions that would have been associated with the generation of a megawatt hour of electricity from gas or coal. Output from wind is variable and there are small fluctuations and differences between forecast and output, but those aspects eat into something like 0.08 per cent of the carbon savings from wind.

The model that is used by the National Grid shows clearly the efficacy of wind in terms of displacing carbon emissions from fossil fuel power generation.

I agree with Dr Winskel that the opposition to onshore wind is often overstated, and the limited amount of people who oppose onshore wind often do so because they are unaware of the full facts around the cost of onshore wind. The support for onshore wind through the renewables obligation added £6 or £7 to the bill of the average consumer last year, not the hundreds of pounds that are often claimed.

If wind power does not work, as we often hear, how did it manage to contribute around 20 per cent of Scotland's electricity demand last year? It will meet a greater amount this year, of course.

A lot of the opposition is due to the fact that people are not aware of the facts of the displacement of carbon emissions and the limited impact that onshore wind is having on people's bills.

Dr Winskel: Colleagues of mine at Imperial College London considered some of the studies that you are referring to and came out with quite different findings. The devil is in the detail. A lot of the assumptions about carbon impacts depend on what you think the displacement effects are and what you think the knock-on effects of increased wind are. We found that some of the assumptions in the studies around added cost to the system and added need for gas generation do not reflect how the system operates. There is a lot more flexibility in the system than some of the studies assume, which is why they come out with quite negative results.

I can pass to the committee the work that has been done by Imperial College on that issue.

The Convener: This issue is interesting, but it is slightly off the topic of RPP2. Joan McAlpine, do you have another question that you want to ask?

Joan McAlpine: No, but I think that Mr Faulk wanted to speak.

Andrew Faulk: I just wanted to follow up briefly on your original question.

We have seen—and done—some of the public attitude work that has been referred to, and I echo what has been said. There is broad support for renewables, and for wind in particular. It is stronger where the local benefits are seen to be stronger. We did some work on the use of community benefit funds associated with wind farms, which also touched on the community ownership of wind. Not surprisingly, where those are present at local level, there is more enthusiasm for wind farms.

Particularly in your area, the south of Scotland, community benefit funds represent a sizeable stream of funding. We have suggested that you can tie that back in and start reusing some of that money for energy efficiency, particularly in rural areas where the level of fuel poverty is highest.

10:45

Margaret McDougall (West Scotland) (Lab): Good morning, gentlemen. The Scottish Government published an energy efficiency action

plan alongside RPP1, but it has not done so with RPP2. How could the Scottish Government contribute to the successful implementation of the green deal? Also, can national schemes tackle the specific needs of different areas of Scotland? For example, in Orkney there is extreme fuel poverty, which is different from in the central belt.

Norman Kerr: I will start off. We could spend a considerable amount of time speaking about the green deal. The jury is still out on whether it will deliver the benefits that it suggests that it might. The Scottish Government needs to look carefully at the promotion of the green deal to particular groups of consumers. The green deal is not a programme that has been designed to support low-income households or houses in fuel poverty, given the financial payback and the period of time over which the finance must be paid back. For example, in the case of a green deal loan of £10,000 for external wall insulation, the householder who took out the loan or whoever is in the house, if it changes hands, will repay somewhere in the region of £22,000—that is another mortgage that we are talking about. We therefore need to be careful about who we promote the green deal to and how we see it actively contributing to the wider programmes that we want to run.

We need to recognise that delivering energy efficiency in rural areas is more expensive and has particular challenges, especially in somewhere such as Orkney. A number of years ago, Keep Orkney Warm, the local energy efficiency company in Orkney, had to apply to the roads department when it wanted to bring material into the islands because the material that it used came in containers that were too heavy to take along normal roads and it needed a special route. There are particular challenges in rural areas, and we need to recognise that there will be additional costs associated with those challenges. Also, we will not always receive the reduction in carbon emissions that we think, as people will be able to heat their homes more effectively for longer periods of time and may actually increase the amount of energy that they use because they feel they are getting benefit from the programme.

We must recognise that there are a number of programmes going on. It would have been useful to have had an update to the energy efficiency action plan alongside RPP2, just as we had such a plan alongside RPP1, to give us the route map going forward. What is the perceived mix of energy company obligation, our new national retrofit programme—whatever that might be called—boiler scrappage and renewable heat? Those make up a plan, and it would be useful, in engaging further with members of the public, local authorities and housing providers, to have that explained in more detail than we have in the document.

Andrew Faulk: I echo all of that. It is important that the development of an energy efficiency scheme takes account of local circumstances and that it works with the trusted local delivery bodies. We are publishing today a report that reviews the take-up of the Scottish Government schemes. Essentially, it is very positive about the consumers who have benefited. However, focus group research among the consumers who took part suggested ways in which the marketing and promotion end could be more effective. Those involve working with the trusted local bodies and being very clear about what is on offer and what the costs and benefits are, not least because the Scottish Government schemes tend to be free at the point of delivery and people do not believe that something is free. The schemes are undermined by the fact that people see so many offers that turn out to have small print. There is therefore a point about the delivery side.

There are also two issues on the technical side. In urban areas with more modern housing, we know what we are doing technically—loft and cavity wall insulation—but there are challenges particularly with tenement buildings where we need to get communal agreement for measures to be installed. That is quite different from the challenges in somewhere more rural such as Orkney, Shetland or the Western Isles, where we have to think in terms of what the most appropriate technical measure is—for example, solid wall insulation—and how that is paid for as well as how we engage people to take up the measures.

The Scottish Government has done a great deal of work and has made a great deal of progress on the issue since the original energy efficiency action plan was published. Through the engagement that we and others have via the Scottish fuel poverty forum, we see the Government taking on board the suggestions that we make for improving the programmes. As I said earlier, we have not done enough—there is far more to do—but we are moving in the correct direction.

Dr Winskel: I can comment only from the outside, as it is not an area that I know closely. There are constrained public sector finances and local authorities are struggling to prioritise the expectations around their role in renewable heat and energy efficiency. I would have liked to see in RPP2 a statement of where the priorities lie in a fiscally constrained context. There is lots of evidence to suggest that the work has been done, and it is very much a priority in a time of limited resource spending. What has been learned during the change from RPP1 to RPP2 about some of the demonstration programmes and the limited roll-out

that has happened and how is that focusing policy thinking and policy delivery?

Margaret McDougall: I believe that the updated plan is going to be published later this year. On 5 October 2011, the Cabinet Secretary for Infrastructure and Capital Investment commissioned a review of the Scottish Government's fuel poverty strategy. When will the forum publish its final response to that?

Norman Kerr: The final response may be some time away, as there are other bits of work that the forum wishes to undertake. For example, the committee will be aware that, in England, DECC engaged Professor John Hills to examine the definition of fuel poverty. Professor Hills has produced a range of suggestions that Scottish ministers and the fuel poverty forum do not believe are in the best interests of consumers in Scotland. The Scottish Government has, quite rightly, set aside Professor Hills's findings and has said that it will not adopt his definition of fuel poverty.

However, the fuel poverty forum recognises that we should give some consideration to the definition, which has been in use since 1980 or 1982. The forum has asked that some research be undertaken in Scotland into the parts of the definition. For example, in Scotland the definition has a higher threshold for its heating regime. We talk about providing 23°C to elderly people for a longer period of time than the English definition provides 21°C. We need to consider whether the constituent parts of our definition are fit for purpose. I cannot say when that research will be undertaken, but I know that the forum has some frustration around the issue and wants to move on quickly to produce a final report as soon as we can.

Margaret McDougall: Are we talking years?

Norman Kerr: I would hope that it would be months rather than years.

Margaret McDougall: Can I ask a question on a different subject?

The Convener: Briefly, as we are getting behind the clock.

Margaret McDougall: Is the draft RPP2 sufficiently clear on where the financial costs of RPP2 will be incurred, and by whom?

Dr Winskel: It lacks that level of detail. One of the accusations that are being made by some think tanks is that energy policy is suffering from targetism—everything is specified and there are endless calls for policies to be delivered in a context that is quite uncertain in fiscal and investment terms and in which there are uncertainties about the performance of technologies. There are lots of uncertainties in the system. I am slightly averse to highly prescribed targets over the medium and longer term. We need to get away from that, because we know that those things will change.

A valid criticism that I have seen in some of the written submissions is that the level of detail that we saw in RPP1 and the commitments around specific policies seem to have become a little more aggregated, with budgets being attached to quite broad policy statements rather than to specific mechanisms. Part of the problem is that the material does not decompose by Scottish, UK and EU measures, which means that it is difficult to find out who is accountable for what when reading RPP2. It is less transparent in that respect than RPP1.

Niall Stuart: With regard to energy costs, a huge amount of work has been done by the UK Committee on Climate Change and DECC. Rather than redoing that analysis for the purposes of the RPP, given that heat and electricity are very much Great Britain-wide markets, there might only need to be a clearer reference line to the existing work that has been done by arms of Government elsewhere.

Mike MacKenzie (Highlands and Islands) (SNP): This has been a fascinating discussion. What is emerging is a picture of immense complexity, with a large degree of uncertainty and a number of factors that are absolutely beyond the control of the Scottish Government. However, there are calls from some quarters for RPP2 to be detailed down to the nearest watt. Given the circumstances in which we are operating, are calls for that level of detail a bit unrealistic?

Niall Stuart: From the point of view of the companies and organisations that I represent, we have a clearly worked-out strategy to hit our electricity targets, and I think that people are comfortable that the Scottish Government is going to go away and develop a new vision and policy statement for renewable heat. It has clearly and emphatically stated that it will. That is where the detail will be.

Norman Kerr: I understand where Mr MacKenzie is coming from, but I draw your attention to the fact that RPP2 talks about the Scottish Government's national retrofit programme, fuel poverty programme and energy efficiency programme. Those are areas that the Scottish Government has at its hand. We are told that the carbon abatement from those policies will be 59 kilotonnes in 2013, and that that will rise to 207 kilotonnes in 2017. There is no detail about that and, as I have suggested, it is fair to ask the Scottish Government how, if its budget has flatlined, it will be able to quadruple savings. What is it going to do differently? What is it not going to do? What is it going to drop in order to quadruple energy savings with the same budget line? I do

not think it unreasonable to ask how the Scottish Government can achieve that, given that this is within its gift and remit and part of its devolved powers.

11:00

Mike MacKenzie: Norrie Kerr's reference to the uncertainty over the energy company obligation and the investment that will happen on the ground takes me into another interesting area. It has been suggested that we missed the 2010 target because of the use of domestic heating, the cold winter and so on, and no one seems to be challenging what I think is a reasonable assumption. Domestic heating seems to offer a significant opportunity for demand reduction. Earlier, the private rented sector was singled out as the bad boy in the playground or the donkey that is refusing to accept the carrots that are being generously waved in front of its nose. What is wrong with these landlords? Are they nasty, stupid or perverse? What is the reason for their attitude to demand reduction in the private rented sector?

The Convener: Perhaps they do not have the money.

Mike MacKenzie: That is an interesting thought, but I would be interested to hear the panel's views. What is wrong with these people?

Norman Kerr: Perhaps I can give you an example. Local community groups in Govanhill in Glasgow tell us that, in one particular square mile, there are in the region of 2,000 private sector landlords. That is a huge number of people. They might own one or two homes, and they will change only if regulation forces them to do so. Often they are under the radar: they are not well known and sometimes the authorities know about them only when someone comes forward to claim housing benefit. We need to examine the problem more closely; if we do not tell people what they need to do through regulation, they will simply not do it. Why would I, as a private sector landlord, invest £8,000 or £10,000 in one of my houses to make it more energy efficient for my tenant's benefit when I could do absolutely nothing and still get the same rent? I will not do anything unless there is a very good reason.

We have tried to offer these people reasons by saying, for example, that this is the right thing to do to support tenants and to make their houses places that people would want to rent. None of that has worked, and we now need to tell them, "If you want to rent out your property, it will have to conform to the following standards." There are some landlords who might well be a combination of all the expressions that you used, but I am sure that the Scottish Association of Landlords or any other landlords group will tell you that there are many good landlords who deliver high-quality homes and look after their tenants.

Mike MacKenzie: In the interests of brevity, I will stop you there. I am very grateful to you, because I think that you have touched on a profound issue. If the landlord is not going to spend £10,000—and if, as you suggested earlier, the green deal does not make it attractive for people who are in fuel poverty to spend the same amount on interventions in their homes and to repay the sum over a long period—could we make progress if market forces were more genuinely aligned with the move that we are trying to make towards lowering carbon emissions?

Norman Kerr: Probably, yes. For example, the Nationwide Building Society has just launched its version of the green deal, which offers loans at 3 per cent. We could say that the green deal is the vehicle that has started to allow lenders to say that there is money to be made and that they can offer something. In some respects, the green deal has sparked that off, but it has taken Government intervention. I very much doubt that the Nationwide Building Society would have done that without the green deal because there was no need. It is a combination of a lead by Government and the market forces that follow, although that is not always the case.

Mike MacKenzie: A couple of months ago, a community organisation from Fintry came to the cross-party group on renewable energy. The community has, I think, a couple of wind turbines and it spends the profits on energy efficiency measures such as retrofitting insulation in homes in the area. It is a terrific project. However, the representatives described how some families that were successfully lifted out of fuel poverty four or five years ago through the installation of loft insulation and cavity wall insulation are now back in fuel poverty. Do you agree that there are some profound technological challenges in going much further than the fairly minimal insulation that is afforded by accessible loft insulation and cavity wall insulation?

Norman Kerr: Undoubtedly there are still technical challenges, but we should look at the fuel poverty trajectory of the past few years. Niall Stuart talked about examining the reasons for fuel poverty. Between 2002 and 2012, average fuel bills have risen by £600 to £1,300. Energy costs have taken a huge leap. Despite the good work that has been done in insulating people's homes, there is still a challenge in ensuring that people have the income to support the rise in fuel bills.

We are now talking about an annual energy bill of £1,300. Organisations such as the Poverty Alliance and Child Poverty Action Group say that, because of the welfare reforms that will come into force in the coming year, they believe that many

families in Scotland will lose approximately £1,000 in benefits, which is almost the cost of the average energy bill, and it is being taken away from the most vulnerable in society.

As Mike MacKenzie said, there are technical challenges, but they are not insurmountable. We have a growing industry that is fitting more solar panels and solar thermal energy collectors, and more solid wall insulation is being done than ever before, but we need to scale that work up.

Niall Stuart: I come back to the need for more analysis of what is driving fuel poverty. Recently on the radio, the convener made a big play of how the onshore wind industry is driving up fuel poverty. Onshore wind adds £6 or £7 a year to the average consumer's bills, and, as a whole, renewables will add £20 to £21.

I was about to make the same point that Norrie Kerr made. Yesterday, I was speaking to a family who lost not £20 a year but £20 a week from the changes to the working family tax credit. Is it the £1,000 a year tax credit that the family has lost or the £20 a year that the renewables obligation adds to its fuel bill that is more likely to put it into fuel poverty?

Early adopters have already invested in energy efficiency measures by going for the technologies that give the quickest payback. Mike MacKenzie's question is right: do we need to look at other new technologies? Some points have been made about who the early adopters are and where the next difficult challenges for Government will come from.

Mike MacKenzie: That leads me on very nicely to my final question. If we focus unduly on demand reduction or housing insulation, we will not focus enough on energy generation as a way of getting to grips with some of these problems. For instance, it strikes me as absurd that Scotland's islands are in areas that have the greatest renewable energy capability, yet we find the greatest fuel poverty there. In many of our islands, more than 50 per cent of people are in fuel poverty. Would any of the witnesses care to comment on potential ways—perhaps quite simple ones—in which we could deal with fuel poverty on our islands through generation rather than just insulation?

Norman Kerr: The cost of a unit of energy is GB-wide. Even if the islands became 100 per cent renewable, bills there would not necessarily reduce.

Mike MacKenzie: Why not?

Norman Kerr: If an island is 100 per cent renewable, that renewable energy is sold into the mix. As we have heard, Scotland is meeting 20 per cent of its requirement through renewable energy, but the cost of energy has not gone down. The unit cost of energy has not gone down because it is tied to the price of a barrel of oil in the global trading markets. As long as we continue to have that match, Scotland could be 150 per cent—

Mike MacKenzie: Can I interrupt you there and say what I was getting at? I am aware of a lot of community halls that have wee wind turbines. They get the feed-in tariff and then can choose to pump the energy into the grid or use it to heat the building. However, we do not seem to be doing that much in domestic situations. If the electricity is not used, people get, I think, 3p a unit if they pump it into the grid. I just want to clarify that, because I think that there is scope to tick a few boxes.

Niall Stuart: Mike MacKenzie is talking about an opportunity and a challenge. In Orkney, no new electricity projects can connect to the grid, because it is at full capacity. People are therefore looking at ways in which to break the link between generation and the national market and create a much stronger link between local generation and local demand to allow more capacity to come on to the system. Generators would be interested in selling electricity locally at a discounted price, rather than being told that they cannot generate at all.

I am not clear what the barriers to achieving that are, but there is clearly a role for the Office of the Gas and Electricity Markets, National Grid and SSE's distribution arm to sit down and work out a way to turn that challenge into an opportunity that results in more renewable electricity generation, less fuel poverty and lower energy bills in Orkney, Shetland and the Western Isles. However, personally, I am not entirely clear what the barriers to doing that are.

The Convener: We have representatives of the energy companies in next week, so we can ask them some of those questions.

I want to ask one final question, on the issue of consultation on RPP2, which we have not yet touched on. The Scottish Government held two formal stakeholder workshops rather than a public consultation on the draft report. Was that an adequate approach to consulting?

Norman Kerr: There has to be a mix. Stakeholder events are to be welcomed, and I have seen the benefit of them for things such as RIIO—revenue=incentives+innovation+outputs—for which SSE and Scottish Power brought stakeholders together. That is a valuable process, but it does not replace ordinary consumer ability to respond individually, because not all the stakeholders will get to such meetings.

Andrew Faulk: It would be helpful if there were specific questions. It is our job to do this kind of

thing, but I certainly struggled to read the entire document and respond to a call for views. I have to decide what my views are. Therefore, it would be helpful to have guiding questions that set out the areas that the Government is particularly interested in.

11:15

Dr Winskel: One danger of stakeholder engagement in the area is that the usual suspects turn up, and we get positions from certain interest groups that then shape policy thinking. The issue depends a bit on what we expect RPP2 to deliver. To my mind, it is a benchmarking exercise about reporting on progress and policy formation in the context of uncertainty. Therefore, it is not going to be an easy read; it has to be a digest of fairly detailed measures and how they add up. I do not think that it is going to do the job of selling the policy approach and setting out why we are doing it.

By the way, I would like to say that the Scottish Government should be applauded for its broad ambitions on the issue. We do a lot of work with Westminster, where we have seen a fracturing of the consensus to an extent. In Scotland, it is striking how quickly the electricity decarbonisation target was set, and the all-party consensus on the issue has been encouraging in the longer-term context. All the messages about longer-term change and the pathways to get there have not really changed and will not go away. We do not have the same levels of financial appetite for some of the measures in the shorter term, but the system needs transforming. In the coming decades, we need to get to a point at which we have a highly transformed system that looks different from the current one. The question that we are grappling with is about how much of that we can take on in different time periods.

Over several years, there has been a lack of wider societal engagement on the issue, but RPP2 is probably not the vehicle for doing that. Let us make it easy to find the evidence base, the benchmarks on progress from RPP1 and the read-across between it and RPP2. We need short-term transparency and clarity of policy mechanisms and budgets. In the longer term, we need treatment of the big uncertainties post-2020, which I have mentioned, and of how policy delivery is resilient to those.

Niall Stuart: I would not underestimate the huge amount of consultation and engagement that there has been on the individual parts of the strategy, whether that is land use, waste, transport, electricity or heat. We do not have any concerns about the process of consultation on the document.

The Convener: We have had a long session and covered a lot of ground. I am grateful to the witnesses for coming.

11:17

Meeting suspended.

11:25

On resuming—

The Convener: I reconvene the meeting and apologise for being a little bit behind the clock.

We welcome our second panel to look at RPP2. From the left, we have Professor Sean Smith, who is director of the institute for sustainable construction at Edinburgh Napier University; Dr Sam Gardner, who is a senior climate and energy policy officer at WWF Scotland; and Richard Atkins, who is from the Royal Incorporation of Architects in Scotland. Before we get into questions, does anybody want to say anything by way of a brief introduction?

Dr Sam Gardner (WWF Scotland): No.

Richard Atkins (Royal Incorporation of Architects in Scotland): No.

Professor Sean Smith (Edinburgh Napier University): No.

The Convener: Okay. I will start off by picking up a theme that came through in the previous evidence session. Do you agree that there appears to be a lack of clarity in RPP2 about how exactly we will meet the various climate change targets, or do you think that there is enough clarity in the document around actions, costs and who is responsible?

Dr Gardner: That is a pertinent question. The one area in which the RPP could be substantively improved to the benefit of all—both the Parliament and external stakeholders—relates to transparency, to allow for scrutiny of its implementation. I am conscious that it is very difficult to read across between RPP1 and RPP2 and to assess the extent to which RPP2 is taking steps to account for the missed target in 2010. There are a few paragraphs on that, but there is very little detail on what specifically is going to happen. At times, there is a combination of vague language around proposals and a lack of information that would allow the reader to understand when certain things are going to happen. For instance, the national retrofit programme is introduced both as a policy and as a proposal—it is given slightly different names in the technical appendix and comes in at different times. The document does not help the reader to understand what is expected to happen at a particular time, and they are left with questions.

I think that significant improvements could be made to the transparency of the information in the RPP.

Professor Smith: I agree. I compared the document with RPP1 and, as other people have commented, by comparison there was certainly a lack of transition information about where we were and where we are going. That said, the Government's ambitions should be encouraged. Given the new technologies, it is a difficult area in which to focus on specific details, as was said earlier. External variations happen outwith the Scottish Government's control. It would have been useful if there had been more outlines of scenarios A, B and C, the short, medium and long term, and low, medium and high risk. That would at least have given some weighting to the different sectors' viewpoints and the different areas in the document.

Some examples of case studies would have been extremely useful. For instance, the document could have given before and after data when it talks about homes and communities, an element of housing stock, a group of types of buildings or commercial stock. The 2020 built environment group, on which I serve, raised in sub-committee meetings some time ago the issue that, in engaging with the general public, with businesses or across the public sector, we must ensure that we provide information that is helpful to them. The document mentions the housing expo in Inverness, at which energy bills of £100 a year were predicted, but the expo finished some years ago. Did we need predictions or could we have been shown the real data?

Those are small things but they build up to create a lack of clarity, which we can see when we compare the two documents.

11:30

Richard Atkins: I will build on Sean Smith's point. Obviously, in the RIAS we deal predominantly with the built environment and, to a large extent, I think that the big issue is the existing built environment, which we are not replacing or refurbishing at anything like the rate that is necessary.

In any overarching document such as RPP2, part of the problem is that as soon as you drill down from the aspirations and policies into the technical details, the issues become enormously communityplex. Buildings are incredibly subtle things in how they work and in how energy is used in them. We have a range of different building types and different assessment methodologies—which do subtly different and sometimes quite weird things—and users have different operational impacts. We also have a culture that, in general, lacks a focus on optimising the performance of existing built assets. At one level, the technical issues are quite easy to understand, and they are well understood, but they layer up together to create a very complex picture, which, by definition, policy struggles to deal with.

The Convener: On that last point about buildings, the written submission from the Scottish Council for Development and Industry points out that the total cost of moving all commercial property in Scotland towards meeting the required standards will be £12.5 billion. The SCDI also points out that 97 per cent of the non-domestic built environment is owned or occupied by small and medium-sized enterprises. How on earth will SMEs find the money to meet those requirements?

Richard Atkins: That is a huge question in the context of building costs and the trigger points for refurbishment and improvement. Whereas an intervention that is dictated by improving the energy efficiency of a building is difficult to make cost effective, making a consequential improvement to a building's energy efficiency when making some other change—or even a replacement—that is driven by a change in the business or by demographics can be much more cost effective. However, the current regulations provide very few triggers for those consequential improvements. Although building standards have moved a long way towards making new buildings far more efficient than such buildings were even a few years ago, the vast majority of new build is on top of the Plimsoll line, and there is a relatively small rate of replacement.

We also have a financial culture in which everyone assumes that a building is of quite high financial value. Even if the building is a tumbledown shed in a corner somewhere, its owner thinks, "At some point, this will be my pension." We need to find a mechanism that recognises that buildings become less valuable over time unless they are improved, and we need regulation that says that, when something is being changed, the building needs to go from being the worst to being the best. The payback period for that extra overcost will probably be 10 to 12 years.

The Convener: So we need to improve incrementally rather than try to do everything in one big leap.

Richard Atkins: We need to improve the existing stock incrementally. The problem is that, for understandable reasons, the drive in legislation and regulation is towards small incremental improvements across all the stock—to make it a bit better and then a bit better again—but that is not cost effective. It may be difficult to accept, but we almost need a mechanism to ration improvement and to say, "For a variety of reasons,

you do not need to refurbish this building yet, but when you do in 10 or 20 years' time, you will need to spend extra cash on doing it extremely well." The cost effectiveness of the extra overcost will then stack up financially.

The Convener: So we are expecting businesses to have that cash to make those improvements at that time.

Richard Atkins: As Norman Kerr pointed out in the earlier evidence session, in a high proportion of our built stock the person paying the fuel bill is not the person who owns the building. Although fuel bills are going up and energy is becoming more expensive, for most businesses that cost is relatively small when it is set against the rest of their business costs. They are more likely to be concerned about how they ensure that their business is profitable and that they have continuity of business. If we asked a business to close its factory for a week while we insulated it because that would pay back over 15 years, it would say, "Not a chance."

Professor Smith: I agree with that point, and I am pleased that we have brought up the non-domestic sector. The RPP document covers the commercial sector, outlining the expenditure—a small amount—that the Scottish Government would provide or support for public and commercial buildings. However, we feel that the SME sector is a critical area that needs more support. Again, benchmark data would help SMEs, given how many hairdressing salons, bakeries and so on are out there. There is no centralised point against which people can benchmark to see how they are doing versus other business sectors, but it would help if there was. As you say, 99.3 per cent of all private sector businesses in Scotland are SMEs, and they have 55 per cent of private sector employment, so they are very important.

I want to touch on the economic downturn. The downturn and the redundancies that sadly followed have resulted in a positive, which is the establishment of new businesses. People have decided to establish and invest in their own business rather than become unemployed. Of the 30,800 new businesses that were formed between 2011 and 2012 in Scotland, 25,000 were microbusinesses, which is a staggering number. Many of those businesses will involve people working from home or in small premises.

There would be some easy wins if we could help that sector, because we could reduce their emissions without touching the building fabric. Part of that is about addressing building-occupant behaviour. The committee may have heard of the Scottish company Ewgeco, or of Tayeco Ltd, which owns Ewgeco. It produces monitors for electricity, water and gas consumption that have a real-time display. Quite a lot of studies have been going on around that in which Edinburgh Napier University has been involved and we recently got some commercial and public sector data from some of the studies. For example, seven of the businesses involved in the studies are based around Perth and include bed and breakfasts, a nursing home, an accountancy company, a small office, a small industrial building and a business park. The savings across those businesses just from people being able to monitor their energy costs was £41,000, and the average pay-back period was four and a half months. They did not touch the fabric of buildings; they just understood in real time exactly how they were using energy in the building. To ratchet that up, there are 330,000 SMEs in Scotland and if one in 10 of them achieved savings like those in the study, they would generate one or perhaps two apprentice jobs, or they could start to invest in the fabric of their buildings.

Moving away from non-domestic elements, RPP2 does not cite change of occupant behaviour in households as a resource that can be achieved through having monitors with real-time displays; smart meters are referred to, but a smart meter buried in a cupboard under the stair does not tell the occupant of the building how they are using their energy. Can we please therefore clarify that smart meters do not equal changes to occupant behaviour? The smart meter has to be linked to a real-time display.

Next, we would suggest that we need to energy rate the real-time displays. Many utility companies are giving devices for that away for free just now. The annual average running cost of some of them could be up to £80 a year. The best and most efficient one, which is manufactured by a Scottish-based company, costs £4 a year, and the company has invested in the technology to ensure that that is all that it costs. However, we do not energy rate the real-time displays that monitor energy.

The Convener: Surely you are not suggesting that energy companies cynically give those away to customers knowing that they will cost them more in energy bills.

Professor Smith: I am just saying that the company that has the device with the lowest running cost has invested in higher technology components to ensure that it costs only £4 a year, as opposed to £40, £50 or £80 a year.

The Convener: That is interesting. Thank you. Sam, do you want to say anything about that?

Dr Gardner: Not on that particular point, no.

Rhoda Grant: I ask the same question that I asked the previous panel. What proposals and policies do you feel are missing from RPP2?

Dr Gardner: First, we find RPP2 overreliant on proposals. As it stands, the only way in which we will hit our 2020 target is under the final scenario that is set out in the document, where the European Union moves its target to 30 per cent, all the proposals are delivered and all the policies are delivered to the fullness of their expected emissions abatement.

Currently, there is a huge reliance on proposals, which, as they are defined in RPP2, may or may not happen some way down the line. There is a need to shift some of those proposals into policy status. The introduction of minimum standards in the private housing market is a specific example of one such area. It has come a long way in its development and it is good to see it acknowledged in RPP2, but it could be given greater certainty and its introduction could be brought forward not only to reflect its urgency, but to match it better with the green deal and the ECO. In that way, regulation and the incentives will work in combination and we will drive uptake.

I know that the Infrastructure and Capital Investment Committee is considering the transport aspects, but I hope that you will allow me to say one thing on transport. There is not a single policy in RPP2 on the transport sector that the Scottish Government recognises is delivering sufficient effort to contribute to meeting the targets. We all know that work is going on in the transport sector. There is support for cycling and walking, albeit that it is not sufficient, but RPP2 acknowledges that that work is not at a level to warrant its getting policy status. Currently, we do not have a single policy operating in the transport sector to deliver emissions abatement. We have lots of proposals, and we are delivering those. We know how to do them and we have them being rolled out. All that is missing is sufficient support to get them into a status that will deliver emissions abatement. The transport sector in particular is ripe for proposals moving into policy status.

On renewable heat, which we might come to later and which I know the previous panel spoke about, the expert commission on district heating has brought forward a package of 18 recommendations. It would have been welcome if some of those measures had found their way into RPP2 because they would have been afforded parliamentary scrutiny, proper consideration and the certainty that I think RPP2 affords. Specifically on district heating, RPP2 would have been significantly improved if those examples had been included.

Professor Smith: I touched on some of the elements and examples that I would have liked to have seen that would have supported some of the information that is given in RPP2. I do not know whether members have it in front of them, but I draw the committee's attention to page 163. I and my colleagues at the institute—I also have the Scottish energy centre team within the institute—went through the document. It is not often that everyone round the table suddenly gasps when they look at something, but there was a gasp of surprise when we saw page 163, which covers the proposals and policies on homes and communities.

We could understand everything there except for one thing—the additional technical potential in fabric and energy efficiency. I know that this has been raised in some of the written submissions. The Scottish Parliament information centre has kindly graphed the figures up for everybody, because they are not presented as a graph in RPP2. Looking at the graph, we can see all the typical measures and policies that we are focusing on and which will carry on for a period of time, but other lines represent the additional technical potential. Somewhere out there, there is a wonder product or a series of wonder products that will deliver the staggering reduction in emissions. As soon as an academic sees that, they want to burrow down and get the detail. Apparently, it is going to be published in RPP3.

It would have been better if the information had not been in RPP2, because it has raised a lot of questions for people about what additional technologies and fabric improvements there will be. They are going to supersede the national retrofit programme, the green deal and the ECO in terms of emissions reduction and fabric efficiency through technologies.

We are working with various universities just now, particularly the BRE Trust fellows. That initiative brings together 12 universities—including the University of Cambridge, Edinburgh Napier University, the University of Edinburgh and the University of Strathclyde—to work in that specific area, and we meet regularly.

11:45

The University of Cambridge has developed some new devices that will be manufactured in the UK. They will come on to the market shortly and will dramatically improve lighting over and above LEDs. Some other technologies are happening, but we have seen nothing on our radar that will match the projections in the RPP.

That led us to think that someone must have got the information from somewhere, but it is not referenced. Then we found chapter 5 of the Committee on Climate Change's document "The Fourth Carbon Budget: Reducing emissions through the 2020s", which talks about the reduction in emissions and the 2030 improvements.

In figure 5.12 in the carbon budget, there is a graph that shows that there will be a staggering reduction in emissions between 2020 and 2030. If we then examine what new technology is supposed to deliver that reduction, we find that it will be in the residential sector and that it will be air-source heat pumps. We have some good experts at Edinburgh Napier University, but no one has yet seen the technology that will deliver that. Again, we question the projection, given the mix of our stock—our residential sector in Scotland is 40 per cent flats, whereas in England it is only 18 per cent flats—and where we are.

It is useful to intimate in a policy or strategy document what we intend to do and to provide some information but, if we withdrew that line from the graph, we would not meet the 2030 targets by any means—we would not even come close.

The Convener: So it is all pie in the sky.

Professor Smith: Well, we need more detail. That is the view of this panel of witnesses and the previous panel.

Rhoda Grant: I do not know how to respond to that. I used the phrase "a wing and a prayer" in a question to the previous panel, but you have said that there is no wing and no prayer.

Professor Smith: For any Government, it is incredibly important to set out in any policy a strategy, a direction and an ambition. Without ambition, the code for sustainable homes or section 7 sustainability requirement, we would not be doing the innovation that we are doing now. I do not want to take anything away from what RPP2 says about where we are trying to get to; the issue is the detail.

Rhoda Grant: Our targets are set out in legislation, so it is not about ambition. Everybody is ambitious to cut carbon emissions, but we have a legal obligation to do so. However, if—as you say—the main building block for achieving the target does not exist and nobody knows what it could be, is there any chance that we will fulfil our legal obligations?

Professor Smith: Whether it involves new technologies or other measures, it will be difficult.

When I was at the committee about a year ago, the very last question I was asked was to give a yes-or-no answer to the committee on whether we would hit the target. I was there with a built environment hat on—perhaps we can get into the green deal shortly—and I was concerned that it might be a slow car crash waiting to happen. My concern was not about the carbon target, but the nuts and bolts that come together to make us achieve it.

To refine that point, I do not regard RPP2 as a slow car crash, but it will be a real challenge to realise some of the elements within it. It will be very difficult. The one sector that could really deliver for us is renewables, both offshore and onshore. I am encouraged by the progress that has been made in the renewables sector to date.

Dr Gardner: I wanted to touch on this issue because it reflects the balance of contribution that is expected from different sectors.

A significant expectation has been placed on reductions in emissions from homes and communities in the chapter on that sector in the RPP. We can see that that line of hoped-for abatement has been introduced without an awful lot of evidence to support it. However, it relieves a pressure from some other sectors within the RPP. As I said, there is a modest level of ambition for the transport sector, which is allowed for by the hoped-for abatement from the homes and communities sector.

That is by no means to say that we cannot hit our targets. However, we must look at the whole economy in the round, to ensure that every part is making its full contribution to meeting the targets and we are not putting unreasonable expectations on some hoped-for product that will deliver abatement to the homes sector, although no one can actually put their finger on what that is.

On the debate about the contrast between the abatement that is expected to kick in from 2023 or 2025—certainly beyond the 2020 target—and the level of ambition for the coming years, the figures are stark. I should commend the Scottish Government for presenting a level of information that we do not see in Westminster documents; the level of transparency is encouraging, although it could go further. The information allows the reader to see that in many instances the balance of effort falls on the other side of 2020. That is particularly stark in the transport sector, but it is also apparent in the land use and homes sectors.

Therefore, an awful lot of reliance is being placed on a period about which there is a great deal of uncertainty. WWF has always acknowledged that it would be a challenge for the RPP to offer specific prescriptions for 2027, which is too far away for there to be accuracy. Instead of placing such huge reliance on that period for meeting targets in future, we should take immediate action, for example by bringing forward to 2015 the proposed introduction of minimum standards or by ensuring that we do not roll back on new-build standards for homes and non-domestic buildings. In both examples, a little urgency would deliver abatement now, so that we did not have to place such reliance on a period in the future around which there is great uncertainty.

Richard Atkins: The built environment has the potential to deliver the level of energy demand

reduction that is envisaged, but not in the timescales that are suggested and certainly not in the current fiscal regulatory climate. As Sean Smith said, there is no magic bullet. There is no piece of technology out there that will come off the shelf and do what is required; in a sense, we have to do everything.

The RIAS is concerned that a lot of initiatives are being brought forward that are fundamental design interventions in the built environment. The headline might be about saving energy, but, as I said, such interventions have all sorts of consequences in a building and can cause or exacerbate other problems. Many of the initiatives that are coming forward do not demonstrate a depth of understanding that would enable people to anticipate all those issues.

In summary, the built environment can deliver a lot of demand reduction, but we are probably looking at a 25, 30 or 40-year programme rather than a short-term programme, because it comes back to what is driving the intervention.

Rhoda Grant: Can I ask a question on a different subject?

The Convener: Did Mike MacKenzie want to respond first?

Mike MacKenzie: I am interested in the heat pump angle, if Rhoda Grant does not mind—

Rhoda Grant: As long as I can come back in later.

Mike MacKenzie: Rhoda, I will give you an air-source heat pump free of charge. It has a minor technical problem and has resisted all efforts to fix it—[*Laughter*.]

Rhoda Grant: It does not work.

Mike MacKenzie: It is otherwise brand new, and it had a price tag of about £6,000. I am still smarting about that.

The witnesses identified a problem when they suggested that RPP2 does not contain the detail that they want to drill down into. I do not think that it is disingenuous to say that we will achieve targets by using better technology or through greater uptake of technology. You talked about the savings for business that come simply from the ability to use technology to monitor energy usage. My concern is that we sometimes get into a political bun fight, which does not help and indeed detracts from our ability to take the direction that we want to take.

I will come to the point. Do you think that we could solve the problem right now by putting a wee 3KW or 4KW wind turbine on every house in Scotland next year?

Professor Smith: No. [*Laughter*.]

Mike MacKenzie: That would produce the demand reduction that we are talking about.

Professor Smith: By mentioning demand reduction you have hit the nail on the head. The average saving that I talked about earlier was 18 per cent. Believe it or not, the accountancy firm got a 52 per cent saving—you would think that accountancy firms would want to be more careful about how they spend their money. That is an example of what we are missing in the data. Demand-side management and demand reduction are what is important.

Richard Atkins: Before the meeting, I sketched out some of the current impediments to demand reduction. There are three or four simple factors. One involves control systems. The cost of control systems for new buildings has come down astonishingly. They no longer have to be hard wired, and proper control packages are much more affordable. They are seldom fitted in existing buildings, unless a retrofit is being done.

Across the UK, there is a huge problem with how buildings and services are commissioned. A friend of mine manages 60 or 70 buildings. They used to manage one that I was involved in, 10 or 15 years ago, when we experienced a few commissioning problems. Recently, I naively said to them, "I presume the commissioning process has got better," expecting the answer, "Yes, it has," but the answer was, "No, it's got worse."

The commissioning process for buildings tends to involve checking that the sensors work, in that they are sensing things, and that the control systems work, in that the system can be made to do stuff. However, after that, the heating engineer and the installer leave the system in a set-up that ensures that the client will not be cold. In the vast majority of buildings, there is no one who is responsible for running the control system or who has been given the knowledge and training to run it.

In most small buildings—and even the medium-sized buildings that Sean Smith is talking about—someone will have been given the instruction booklet and told where the time clock is and will simply think, "Well, I'm not going to touch that because, if I turn the boiler off or set the boiler to come on at 8 o'clock instead of 7 o'clock and the boss turns up early and is cold, it will be my fault. I will just leave it alone. It's working fine." If those systems were handled properly, you could take 10 or 20 per cent off the energy bills of most buildings. I expect that the Parliament will be an exception, because it is big enough to have a team of people dealing with these matters, but that is not the case with most buildings.

Mike MacKenzie: In a way, you have given us an answer. Surely one of the ways forward is the

intelligent building and the intelligent house. That is a potential solution that we have not yet scratched the surface of. The technology is not rocket science—we have it already; we have just not taken it up.

Professor Smith: In the buildings that I referred to, all that is happening is that the information is being displayed. The company nominates someone to be the energy champion and they can walk around the office with the monitor, or it can sit on the wall where people can see it. It has a flashing traffic light system.

The important point in terms of energy management and control is that the savings—averaging 18 per cent—were achieved without any additional controls; there was just a device that told people how much energy they were using. Of course, there are issues around skills upgrades, the question of who becomes responsible for the issue when the energy champion leaves, and so on.

I agree that there are a lot of new technologies that will reduce energy usage through the use of control systems, and that more are on their way. We understand that a couple of companies are looking to invest in setting up businesses in Scotland, which would be great for employment, because of the skills base that we have in this particular area.

The issue is not touched on to a great extent in RPP2 but, to be fair, what level of detail can you get down to? If you put something in the plan, you have to provide some evidence. If you cannot, you should not put it in, because people will ask you questions about it if you do.

12:00

Dr Gardner: With regard to evidence, one thing that is strikingly absent in RPP2 and which we think, if addressed, would go a long way towards giving people greater confidence in the projected abatement is a more rigorous evaluation and monitoring programme that presents a real empirical description of the efficacy of the policies that we are committed to and examines whether they are delivering the emissions reductions that have been attributed to them and whether they are likely to deliver the emissions reductions that have been projected. It is a notable absence from the document.

Although there is something called the emissions reduction board, the minutes of which are published on the Scottish Government website, it does not give you an awfully strong insight into the assessment. We all accept that the RPP has to be a live document, that things will change and that policies will be more or less effective than predicted, but we will have the necessary information and be able to flex our effectiveness only if we have that assessment of what is and what is not working. That key aspect is missing.

Mike MacKenzie: I could make one final point—but I won't. [*Laughter*.]

Rhoda Grant: You might be aware that we are also looking at the legislative consent motion to the UK Energy Bill. In its submission, WWF Scotland talks about the Scottish Government handing emissions performance standards back to the UK Government and where such standards will be set. What impact will that have on our ability to meet our carbon reduction targets?

Dr Gardner: The RPP contains an interesting bit on the introduction and expected roll-out of CCS. Indeed, it has its own little box; I could find the page for you, but I am sure that you have all seen it. That expectation must be contrasted with the likely introduction of a UK emissions performance standard of 450g of CO_2 per kWh, which will have no impact whatever on a new-build gas-fired power station—under the current UK Energy Bill, such a power station could be built and operate completely unabated until 2045. In other words, we have a UK Energy Bill that is likely to sanction the building of new gas-fired power stations, a small number of which functioning in a particular way will be needed across the UK.

Although Scotland has a very welcome and specific target of 50g of carbon intensity by 2030, it stands in contradiction to support for an EPS of 450g of CO_2 per kWh. The RPP makes some statements about the expected roll-out of CCS by 2025 with another step change in 2027 but does not indicate how that might be compelled or why, say, a power generator or company operating a gas-fired power station in Scotland would fit CCS if there is no emissions performance standard to require that to happen.

The Scottish Government might well be able to introduce certain measures that, in effect, would work alongside the EPS or would supersede it through planning controls or planning consents, and we hope that the Scottish ministers will make some statements that will give confidence about the aspiration for the roll-out of CCS. At the moment, however, it all seems hopeful at best.

It is a fundamental issue, because if we do not decarbonise our power sector by 2030 the projected emissions reductions in our heat and transport sector from the roll-out of electric vehicles, air-source heat pumps and so on will be significantly undermined. Coming back to the little box in the early section of the energy chapter that talks about the roll-out of CCS, I have to say that, if that does not happen and if new gas-fired power

stations come on to the grid, we will be locking ourselves into some high-carbon infrastructure that will prevent us from hitting our targets in future.

Rhoda Grant: Might there be any benefit in our having a different emissions target from the rest of the UK or is there some other way in which we could try to bring in CCS?

Dr Gardner: I know that amendments to this effect have been proposed to the Energy Bill but it would be great if in the first instance the UK could pursue an EPS that is fit for a decarbonised power sector by 2030 and which follows the advice of the UK Committee on Climate Change. In the absence of that and given that the Scottish Government has previously made it very clear that an EPS should incentivise CCS—which this particular standard will not; it will do nothing to support the development of CCS—we should have an EPS that impacts on and reduces emissions from gas and coal and which is in line with the 2030 decarb target. Given its very welcome commitment to a decarbonised power sector, the onus is on the Scottish Government to make some statements about how it intends to achieve that in the context of a UK performance standard that does not support it.

Alison Johnstone: I would like a bit more clarity on that. You obviously do not agree that a Scottish EPS is the only tool that can help. What do we need to push the Scottish Government to do now?

Dr Gardner: In the first instance, it would be good to get clarity on whether or not the Scottish Government is able to set an emissions performance standard. The situation is a bit blurred. During the passage of the Climate Change (Scotland) Bill, there was a debate about the introduction of an emissions performance standard, and there was a suggestion that it was not within the Scottish Parliament's gift to set a legislative EPS. However, there may well be measures that it could take through planning guidance and regulations.

There is a statement for coal, which is that any new coal-fired power station that is built in Scotland has to have 300MW of CCS from the outset. That only applies to coal. A gas-fired power station just has to be CCR—carbon-capture ready. Typically, that means having a car park to one side, on which it might be hoped to build a carbon-capture unit—which is clearly not adequate. A policy statement could be made to establish a requirement for gas that is similar to that for coal, setting out a trajectory of CCS roll-out from the word go and increasing the contribution of CCS at gas-fired power stations over their lifetime. It is not a matter of getting 100 per cent CCS at the outset, but there is a need to reduce emissions from coal-fired and gas-fired power stations so that they hit a decarbonised power sector target in 2030.

Alison Johnstone: I will move on to another topic. We missed the climate change target in 2010, and there are concerns about that from various groups. Our own parliamentary researchers have mentioned that the RPP2 includes only five paragraphs—in what is a large document—on the missed target, and that there is no detail on what policies or proposals have changed to respond to missing the target. Is there the increased ambition in RPP2 that you would have expected to see? I ask all panel members that question.

Professor Smith: Let us consider the present economic situation, and let us take the new-build sector as an example. The Government recently announced section 6 energy consultation requirements on new-build housing. The aspiration had been to go for a 60 per cent improvement target, as was developed by the Sullivan committee some time ago, but it looks like 45 per cent will be achieved. Partly, that is a balance based on measuring where we are in the economy and what we can achieve during the present period. I would not expect the Government to try and recover the missed element at this stage. Equally, some of the trajectory was not bad. We cannot fault the Government for all years—there is just an element to it.

Looking forward, England will achieve an 8 per cent improvement on its energy new build; Scotland will achieve 45 per cent. That involves similar companies operating north and south of the border. Given the measures of the economic situation, and taking that example, we can take a balanced view. Perhaps, as technologies develop and as further information and case studies come in, RPP3 or the report after that, in three years' time, might contain an element of re-reviewing the matter and asking whether we could do better.

Richard Atkins: I will pick up on Sean Smith's point to some extent. I should declare an interest, as I sat on the working group for the revisions to section 6. Those revisions and the appropriate next steps for the regulations were debated long and hard. It is probably no surprise that RIAS's line was to stick with the targets in the Sullivan report, but there were strong arguments from industry, as Sean Smith has outlined. As I said before, I wanted there to be a strengthening under section 6 of the consequential improvements that would start to deal with the existing building stock, which is where the vast majority of energy use lies.

I add a cautionary note. The targets that have been set are based on a specific methodology, whether it is the standard assessment procedure for the domestic sector, simplified building energy

modelling or even dynamic simulation for the non-domestic sector. Those methodologies need to be taken with a pinch of salt. They demonstrate a trend—you can see, by assessing building A against an improved building B, which will be better—but how closely the methodologies reflect the energy performance of the buildings is dependent on a number of criteria: first, the calibration in the methodologies; and secondly, the operational use of the buildings.

In Scotland, we still lack display energy certificates for buildings, which would give not just the theoretical, "This is how this building should perform," but, "This is how it performs." It is another piece of information like smart metering, which gives the people who run a building some information and the ability to say, "If we are using that amount of energy, is it because we are open 24 hours a day and not the eight hours that is assumed or is it because we have the heating on and the windows open?"

You need those pieces of information for someone to then be able to answer the question, "Have we optimised this building?"

Dr Gardner: Specifically on whether WWF feels that RPP2 reflects an increased ambition in light of the fact that we missed the 2010 target, the answer is no. RPP2 was an awful long time in development and there is good reason for that: it is a substantive document and it is a big effort to collate the information from across Government. However, as far as we can see, it does not reflect either the advice of the UK Committee on Climate Change, which is calling for a step change in ambition, or the introduction of additional policy effort, which you can see in communications from that committee to the Scottish Government.

It is concerning that there is a statement on the missed targets to the effect that, "We will make up for this shortfall over the duration of this period." That means either that we continue to miss targets until such time as we have made up the shortfall or that we are reliant on exogenous factors changing our emissions abatement to ensure that we hit the targets. For example, future mild winters would ensure that our emissions in the power sector are not so significant—therefore we can be confident that we are likely to hit those targets for 2011 and 2012.

There is a real concern that the failure to hit the very first target has not resulted in a step change in effort. Unfortunately, it is perhaps the reverse. There were milestones in RPP1; it is unfortunate that in many cases those milestones have been removed from RPP2. I urge the committee to recommend that such milestones are reinstated because they offer a clear way to monitor implementation. It is not about carbon emissions reduction figures; it is about insulation of loft cavities and the provision of renewable heat technologies.

For instance, one milestone said that 100,000 homes would have renewable heat technologies by 2020. If you look in the technical annex of RPP2, it says that 20,000 homes will have renewable heat technologies by the same date. Similarly, the rolling back of the proposed new build standards suggests a reduction in ambition and a lack of a sense of urgency. That sends a poor signal to the market, slows our emissions reduction and puts the onus elsewhere. It does nothing to help give a signal that we are building the supply chain and investing in the technologies—it does not give the construction industry certainty that we are set on this trajectory. There is a concerning picture with regard to the absence of any urgency and any step change in ambition.

Alison Johnstone: The earlier panel of witnesses and other previous witnesses have raised concerns as regards the disaggregation of information. RPP2 features only five budget line proposals whereas there were 13 in RPP1. That makes it challenging to compare and contrast. Obviously there will be changes from year to year, but how important is it that we have a standardised, easily accessible document that we all get used to? After all, it will come back year after year. What impact will that lack of clarity have on the targets? Only the 2013 target is met with proposals. Is that something that we need to build in? You mentioned milestones—are they essential to meeting the targets at the end of the day?

12:15

Dr Gardner: I think that milestones are extremely important in helping to guide committees such as this one and the wider interested stakeholder community on how things are being implemented, to provide a direction of travel and to give certainty to those industries that are expected to play a particular role.

It is important that the final RPP provides as clear a presentation of information as possible, because it is the document that will be referred to and against which future budgets and spending reviews will be measured. The process of making comparisons must be as easy as possible.

It is a challenging exercise to compare a budget with the RPP—I know as I have tried to do it—and the draft RPP2 does not help with that. Although it is still a good effort, RPP2 has, in part, gone backwards from RPP1 in that it aggregates information and captures a number of different proposals under a single heading. For example, the "Sustainable communities" heading—which is included in the transport section—brings together

a suite of proposals that were disaggregated in RPP1 and which will have different budget lines come the budget.

It becomes harder and harder to judge to what extent the RPP is being funded to the tune that it describes as being necessary. It is extremely important that we have transparency in the presentation of information.

Alison Johnstone: Does anyone else want to comment?

Professor Smith: I agree. Transparency would be very useful, particularly from a policy perspective and from the point of view of being able to cross-reference with the expenditure budget.

Chic Brodie: Good afternoon. In its submission, WWF says:

"we believe a step change is needed to improve the energy efficiency of our housing stock. We believe RPP2 falls short of reflecting this 'step change'".

I spoke at the opening of the ZEMCH—zero-energy mass custom homes—conference, at which there was a presentation by Professor Avi Friedman about zero-energy houses, one of which he has built in the grounds of McGill University. Do you think that we are progressing along that line quickly enough, notwithstanding the sustainable housing strategy and the retrofit programme? How are we progressing with such housing, which is modular and can be bought from the equivalent of a B&Q for about 80,000 Canadian dollars?

Dr Gardner: I am sure that the technical experts on the panel will be able to speak much more confidently and accurately about the extent to which we are realising and fully supporting the opportunities that are presented by new-build technologies. I just flag up WWF's view that the reduction in the new-build standards for the domestic sector sends the perverse signal to the industry that its products and homes are not part of the immediate vision of the Scottish Government when it comes to new build.

Therefore, we encourage the Scottish Government to stick with the Sullivan recommendations in its consultation on the new-build standards, because if we do not, we will lock in a retrofit demand in future years, which it will be far more expensive to meet than it would be to build higher-standard houses in the first place. In addition, sticking to the Sullivan recommendations would send a strong signal to supply chains to engage in bulk purchasing and bulk construction, which would go a long way towards reducing some of the initial additional construction costs. An equally strong signal will be sent if the Sullivan recommendations are eroded, which is what is currently proposed.

Richard Atkins: I was at the same conference as Chic Brodie and I remember the presentation to which he referred.

From a technical point of view, there is no reason why the industry cannot belly up to the bar when it comes to new-build houses—

Chic Brodie: Touché.

Richard Atkins: —but we must put the issue in context. Given the current rate of demolition of existing dwellings—in mid-2010-11, it was about 4,500 in Scotland—replacement of the whole housing stock would take 540 years. The vast majority is historical housing that, for very good cultural reasons, we would not want to replace. I am not just emphasising the scale of the task and the fact that the majority of new build is on top of that Plimsoll line; I am saying that we should think about what the barriers are to the industry building such housing at the moment.

One is that the regulations do not require zero energy. As we have talked about, it does not even look like they will require the next step change that is set out in the Sullivan report.

The construction industry is incredibly risk averse. Even though there are fairly large contractors, the industry is still very fragmented and builds relatively small amounts of small product in small locations where the market is dictated by existing house or property prices. That situation drives the economics of the construction sector. There is a fixed value at the end of the process. The way that development economics works is that the value is washed out until it gets to a land value. Therefore, there is very little free play within the calculation or process to allow consideration of methods and technologies that will increase cost and might put off the buyer or, more important, the estate agent or property valuer.

So there are no regulations driving the process and there is very little incentive for the developer or house builder to drive down energy costs. I am sorry to say that, because I am a naturally optimistic person, but all that architects see are the barriers that prevent that from happening in the way that, technically, we know it could.

Professor Smith: I declare an interest, because we run the low-carbon building technologies gateway, which is sponsored by Scottish Enterprise, the Scottish Further and Higher Education Funding Council and the European regional development fund. We have been running it for more than three years during which we have supported more than 290 products from Scottish SMEs into the supply chain for low-carbon housing, from external walls to insulation and new renewables technologies. We assess the products and help companies to bring them to market, or

we do some of the early research and development.

We must be careful about comparing with the Sullivan report, because it is based on an assessment of X percentage of reduction. There are seven different definitions of "zero carbon", but the one that everybody pays attention to is the Treasury's, because it affects the stamp duty on a property when it is sold. The average dual-fuel energy bill in Scotland is £1,400. The energy costs of the new housing that we build, which are not zero carbon, are £200 to £300, although the costs for some of them are less than that. Therefore, we have already hit a 70 per cent reduction based primarily on energy consumption in the property. That is the main focus of the zero-carbon approach—it is not about zero carbon by material; it is about zero carbon by energy usage.

House builders such as CCG in Glasgow or Stewart Milne in Aberdeen could produce 3,500 homes a year. There is an issue if they put in a new technology that has not been tried and tested because someone says that we need to go to zero carbon earlier or to do X to achieve a 60 per cent reduction, based on an assessment methodology that Sullivan looked at and which has actually been proven to be incorrect. We should come back to the green deal, because that is where it all started and where the information came from. The issue is that, if a house builder puts in a new technology in 3,500 homes that costs £10,000 to repair if something goes wrong, that is a huge risk. Therefore, the industry is understandably risk averse.

I should point out that some of the best technology developments in the area are happening in Scotland, with UK partners. Some of the architects that are involved, such as Gökay Devici at the Robert Gordon University, are fantastic. So let us not do down the industry and what we are currently doing. We will hit the Sullivan report, but indirectly, as we will find through the post-occupancy evaluation of what we build that will no doubt follow In 2014-15.

I come back to the point that we do not have enough case study information on full-scale buildings. In September 2009, at the close of play before the change of regulations in the United Kingdom in October 2010, 175,000 new homes were registered under the old building regulations. That is an important statistic. Certainly in the short term, we will not really start to see the flow of activity in new build that we want in order to get the data.

The key answer and solution will lie with the registered social landlords such as housing associations. RSLs did not register their properties at that time, so they will build to the new standards. For example, Kingdom Housing Association is undertaking a fantastic post-occupancy evaluation as part of the housing innovation showcase. Those data will come forward.

However, we need to get down into the nuts and bolts of the what ifs, which are not mentioned in the RPP2 document. What are the blockages? As was touched on earlier, how will the policy or strategy in RPP2 bring ECO and the green deal forward?

Chic Brodie: That is very helpful. I must admit that I was afraid when you mentioned building hundreds of houses without being fully risk averse about new products. We might need to go back and look at the implications of that. No other industry would adopt a new product without putting it through alpha and beta testing or being sure that what would be put in place was absolutely correct.

On the hurdles that Sean Smith mentioned, I do not know whether the convener will think that this transgresses the remit of another committee—

The Convener: I will tell you if it does.

Chic Brodie: I am sure that you will.

When local authority planners are looking at housing plans, how au fait are they with the demands of decarbonisation?

Professor Smith: Let me start from the policy. To help the planners, Scotland introduced into the building regulations guidance document a new section 7, on sustainability. That was a follow-on from what England did in the "Code for Sustainable Homes", but in Scotland we took a different approach in setting bronze, silver and gold standards—we do not yet have a platinum. Basically, to achieve silver standard in Scotland, every element of the house, including energy and water, is required to achieve silver, whereas under the code in England people can pick and choose. In England, that created a complication for the building control body that deals with the planners because people might choose to build homes at, for example, code level 4 in Norwich but code level 5 in Northampton. In Scotland, we have a level playing field because the Government requires public housing to achieve silver section 7 sustainability. That helps the planners in what they are asking for.

However, I think that those involved in building control would probably appreciate further information and training, particularly on some of the new technologies that are coming in. I do not want to get into the green deal now, but all this interlinks with the issue of how we introduce test products. Planning-wise, we have section 7; building control-wise, some further assistance is probably required.

The Convener: We are straying into the arena of the Local Government and Regeneration Committee, which is also looking at these issues. However, I will allow Dr Gardner to make a brief comment.

Dr Gardner: Briefly, I think that local authorities will have a critical role to play in district heating. As is recommended in the expert commission's summary report, local authorities will need to be supported not only in doing the heat mapping but in targeting the roll-out of district heating in such a way that it makes the best use of the heat density in the local area and brings the whole network together. In that co-ordination role, local authorities need to be able to champion district heating, but that will involve a steep learning curve for many local authorities.

Joan McAlpine: My question is on forestry, but before asking about that I want to follow up the issue of zero-carbon houses that my colleague raised. In the south of Scotland, we have a development on the Dormont estate in Dalton that is built to passive house standards. That is run by a private landlord so, notwithstanding what was said in the earlier evidence session, not all private landlords are completely uncaring about the energy bills of their tenants. Where do those passive house standards—I understand that they are set in Germany—fit in, given what Professor Smith said about the different definitions of zero carbon? As that development is now up and working, does that perhaps provide a template for other developments?

12:30

Professor Smith: The passive house standard is a German model that drives a very high level of airtightness in the building, which means that a very low value of air leakage is recorded. For example, such houses typically have a leakage value of about 0.5—the measurement involves cubic metres, but I will not go into all the details.

Typically we would have built a home with an airtightness value of 5 or 6, and the lower that value, the less leakage it would have. However, once that value goes below 5, we need to introduce mechanical ventilation and heat recovery systems, and so on. There are additional costs when we go to that passive level. The air quality in premises that have a value of below 4 or 3 and so on leads to additional costs.

There is also the Scottish version of the passive house that CCG has been involved with in Glasgow, which, along with others, has been successful. The housing innovation showcase has built three houses in Dunfermline to 2010, 2013 and 2016 standards, and Edinburgh Napier University Scottish energy centre is monitoring in real time the information that is coming from the 27 houses that are on the Dunfermline site.

Can we achieve passive housing? Yes, we can. It took Austria and Germany 15 to 16 years to produce 8,000 units a year. Typically, Scotland produces 25,000 units a year, and in a good year, such as 2007, the UK produces 200,000 new homes. We are nowhere near the level we need to be to rapidly pull in passive housing. Also, the technology is not entirely ready for Scotland. The jury is out on some of the issues with the Scottish climate as opposed to the German climate, and we must be cautious about that. I am not an expert in the area but I can refer the committee to other experts if required.

Joan McAlpine: Mr Atkins, are you an expert in the subject?

Richard Atkins: I have certainly spent a lot of time looking at passive housing, and Sean Smith has identified a lot of the issues.

It is quite interesting to look at where it has come from in Austria, Germany and Switzerland. The Swiss have a standard label called Minergie, which is a similar standard and is all about lower air infiltration levels and mechanical vents. It is partly predicated on the fact that the carbon balance of Switzerland's energy generation is very different because most of its energy is generated by hydro and nuclear. Therefore, it is driven towards making buildings work on electricity, and we do not have that driver at the moment because electricity has the highest carbon footprint according to the UK calculation methodologies.

I am also concerned that, if we build a completely sealed building, we will have to rely on a mechanical filtration system. I was at an interesting conference last week that was looking at some of the impacts on filters within such systems and how quickly they can clog up. If someone is a smoker or they have pets, the indoor air quality means that those systems can become clogged up quite quickly. I was astonished to find out that replacing a set of filters in a mechanical ventilation heat recovery unit every two to three months would cost the client £200 a year. In effect, that is part of the client's fuel bill; the cost is just being displaced. Who knows what happens when there is a power cut? Scotland also has a very different climate.

We can learn a lot from passive house standards, especially about the quality of workmanship on site and the quality of some of the components. On moving that into Scotland wholesale and saying that we should do it that way, I am unconvinced that it is suited to the Scottish climate.

Joan McAlpine: Can I ask my question about forestry?

The Convener: Well, you are in danger of straying into the Rural Affairs, Climate Change and Environment Committee's territory.

Joan McAlpine: Am I?

The Convener: You could tweak your question to ask about building materials.

Joan McAlpine: I will tweak it. Someone mentioned how house builders are incredibly risk averse. I recently visited the James Jones & Sons Ltd's timber sawmill in Lockerbie, and they made exactly the same point. Their clients are extremely cost conscious. What can policy makers do to encourage the use of timber as a building material, especially as house builders are so risk averse?

Professor Smith: To be fair to James Jones and the house builders, the problem is not with the price of timber but with the costs of the masonry sector and the laying of blocks and bricks, which have gone through the floor. Down south, in England, timber was becoming more attractive. With the current economic downturn, the necessity for speed and building on older registered sites under older building regulations, house builders do not need the same sustainability drivers that timber provides to them, so they have gone back to masonry. Irrespective of that, we need to build 290,000 homes across the UK every year until 2031, although I am not sure where the funding is going to come from. The only way for that to happen is to use off-site construction, which as was said earlier has good quality, improved performance and better thermal performance as well. Scotland leads in off-site construction, and we undertook a study in that area for the Scottish Government. Timber will come back and be much more to the fore through off-site construction.

Things are difficult for house builders in the short term. However, we are starting to see changes with some of the RSLs. The housing associations are looking at and building to the new standards, which means that they will predominantly use timber, which is good. However, house builders must think about the bottom line just now. If they have existing older land, they will use that because it will not be under the newer regulations.

Richard Atkins: Another big issue is the use of indigenous Scottish timber. The vast majority of construction timber used in Scotland is imported, and there is a perception that Scottish timber is of a lower grade because it grows quicker. I think that every other tree in Scotland is a Sitka spruce, but its wood is seldom used. I have used Sitka spruce, and if someone knows how to use it and it is used in the right place and in the right way, it is perfectly fit for function and incredibly economical, because nobody else is using it.

Again, it comes back to a lack of knowledge throughout the industry and the level of risk averseness, with questions such as "Does it come with the right certification? Have we seen someone else do it? If it all goes wrong, what are the implications if we have built the structure of a building out of something that we do not know about? What does the National House-Building Council guarantee require us to do before we can sell the house?" In that regard, the industry can see all the reasons for not doing anything different from what it has done before. Notwithstanding the fact that all the products and the technology exist and that many of them have been proven, all those things stop the mainstream part of the construction industry from changing from one methodology to another one, even on a slight scale.

Professor Smith: We predict that within 10 years, 50 per cent of all timber-frame housing, which is 75 per cent of all new house build, will use home-grown timber.

Joan McAlpine: Are you talking about the Scottish or the UK context?

Professor Smith: Scotland has about 45 to 50 per cent of the UK timber supply, and there are 40,000 jobs in Scotland linked to the forestry sector.

Joan McAlpine: So what you said about home-grown timber is good news for the industry in Scotland.

Professor Smith: It is happening now, but we cannot tell you where. However, we will tell you as soon as we can. Things are being built in Scotland right now using home-grown timber that are yet to be assessed, but some great work is going on in that area.

Marco Biagi: I have a brief, follow-on question on the points that Alison Johnstone raised earlier about CCS. The question is probably better directed to Dr Gardner. You proposed a policy for some kind of CCS requirement on new gas to ensure that what is set out in the RPP transpires. I note that the RPP projects 2GW of gas capacity coming on line in 2020 and 500MW of CCS being operational, so I assume that we would be looking at something like a 25 per cent requirement on any new plant. However, if Scotland did that unilaterally—I am a noted unilateralist in other areas—I am keen to know what would stop a power company putting its power plant next to Berwick or Carlisle and turning it into a Tijuana of electricity, especially since we are going to have upgraded interconnectors to send renewable energy south. What would stop an unabated plant being built or, indeed, a nuclear plant being built and it sending energy in the other direction? Is that not where we need some kind of synchronicity?

Dr Gardner: WWF does not think that there is a need for new coal or gas plants in Scotland—in fact, the evidence shows that. The work that we commissioned from Garrad Hassan has shown that we can have a completely secure electricity supply entirely from renewables, albeit with greater interconnection to the rest of the UK and with a greater emphasis on demand-side measures. The Scottish Government's presumption of the need for a minimum of 2.5GW of gas is therefore not one that we would support. However, if it is going to make a commitment to that level of thermal power, it must come with some assurances about how it will also achieve its decarbonised target. That is a product of the fact that Scotland is following through on its commitments under its climate change obligations and following the advice of the UK CCC, so it must match its policy to that.

Specifically on whether there would be a gas-fired power station in Berwick, I think that that is entirely unlikely. Typically, a thermal power base happens in a location that has already had one. In all likelihood, if we get new gas-fired power stations in Scotland, one will be built in Cockenzie, which is consented but not under construction, and one will possibly be built at Longannet, if that transition was to happen. So, one will not shift south of the border in that sense.

Marco Biagi: Even with the multibillion-pound up-front cost of installing CCS at, for example, Cockenzie?

Dr Gardner: We do not have that as yet and I suggest that we do not need to have the additional cost burden on the industry and the consumer of building such a gas-fired power station when we can invest in interconnection renewables and give far greater priority to energy-demand reduction at both the home-owner level and the industrial level. That is why the Energy Bill, which is going through the UK Parliament, is a welcome opportunity, but it looks like it might be missed because of a lack of emphasis on demand-side reduction measures.

The onus is very much on the Scottish Government to follow through on its description of a decarbonised power sector by 2030, with much greater clarity on how it intends to achieve it. The renewables road map is very clear and the energy efficiency contribution is set out in the energy efficiency action plan, but we are still waiting for the final electricity generation policy statement, which is in its second draft and will be published at some stage this year. However, that must provide some assurance that, if there is to be a gas-fired power station in Scotland, it will operate in a way that is consistent with our decarbonised power sector.

The Convener: On that point, we can draw matters to a close. I thank our witnesses for coming along. I am sorry that we are a little bit behind the clock, but I am grateful to you for your answers, which have given us a lot of food for thought.

12:42

Meeting continued in private until 12:54.

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