ENTERPRISE AND CULTURE COMMITTEE

Tuesday 2 March 2004
(*Afternoon*)

Session 2

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ENTERPRISE AND CULTURE COMMITTEE
7th Meeting 2004, Session 2

CONVENER

*Alasdair Morgan (South of Scotland) (SNP)

DEPUTY CONVENER

*Mike Watson (Glasgow Cathcart) (Lab)

COMMITTEE MEMBERS

*Brian Adam (Aberdeen North) (SNP)
*Mr Richard Baker (North East Scotland) (Lab)
*Chris Ballance (South of Scotland) (Green)
*Susan Deacon (Edinburgh East and Musselburgh) (Lab)
*Murdo Fraser (Mid Scotland and Fife) (Con)
*Christine May (Central Fife) (Lab)
Mr Jamie Stone (Caithness, Sutherland and Easter Ross) (LD)

COMMITTEE SUBSTITUTES

Mark Ballard (Lothians) (Green)
Rhona Brankin (Midlothian) (Lab)
Mr David Davidson (North East Scotland) (Con)
Fiona Hyslop (Lothians) (SNP)
George Lyon (Argyll and Bute) (LD)

*attended

THE FOLLOWING ALSO ATTENDED:

Nora Radcliffe (Gordon) (LD)

THE FOLLOWING GAVE EVIDENCE:

Professor Ian Bryden (Robert Gordon University)
Alistair Buchanan (Office of Gas and Electricity Markets)
Charles Gallacher (Office of Gas and Electricity Markets)
David Halldearn (Office of Gas and Electricity Markets)
Elaine Hanton (Highlands and Islands Enterprise)
Jim Hunter (Highlands and Islands Enterprise)
Fergus Tickell (Ormsary Farmers)
Iain Todd (Department of Trade and Industry)
Dr Richard Yemm (Scottish Renewables Forum)

CLERK TO THE COMMITTEE

Judith Evans

ASSISTANT CLERK

Seán Wixted

LOCATION

The Chamber

Scottish Parliament

Enterprise and Culture Committee

Tuesday 2 March 2004

(*Afternoon*)

[THE CONVENER *opened the meeting at 14:02*]

Renewable Energy Inquiry

The Convener (Alasdair Morgan): Good afternoon, ladies and gentlemen, and welcome to the seventh meeting of the Enterprise and Culture Committee in 2004. We have one item on today's agenda, which is to continue to hear evidence for our inquiry into renewable energy in Scotland.

We have four panels of witnesses today: the first consists of representatives of the Office of Gas and Electricity Markets. With us are Alistair Buchanan, chief executive of Ofgem; David Halldearn, Ofgem's director for Scotland and Europe—I do not know whether or not that includes the rest of the United Kingdom; and Charles Gallacher, Ofgem's deputy director for Scotland. Mr Buchanan will make a short statement.

Alistair Buchanan (Office of Gas and Electricity Markets): I thank the convener and committee members for the invitation to discuss the future of renewable energy in Scotland. I can see from the list of submissions to date and from the remaining meetings that the committee is to hold on the subject that you are undertaking a thorough investigation. Sadly, and with the greatest respect to my colleagues, I doubt that our evidence will be as interesting as your trip to Campbeltown to see wind farms.

I would like to introduce my colleagues. David Halldearn, to my immediate left, is in charge of European and Scottish matters for Ofgem. As many members will know, Charles Gallacher is the deputy director in charge of Scottish affairs. In particular, he is a member of the Highlands and Islands transmission working group. I hope that the presence of my colleagues at today's meeting underscores the importance of Scotland and Scottish energy issues to Ofgem.

Members might recently have read in *The Herald* and other papers that Ofgem has put itself through a reorganisation. I want to highlight a few relevant factors; members should be assured that I will not bore them with the details of the corporate reorganisation, but several issues of note come out of it. First, we want to reaffirm our commitment to having a Scottish office. That is reflected in the fact that in the future the person who is appointed to run that office will have a more senior rank within Ofgem. Secondly, we are delineating more clearly the internal responsibility for renewable energy transmission, so that it gets the attention that it warrants. The new managing director in charge of renewable energy transmission, David Gray, will also have direct responsibility for onshore wind power. Ofgem is giving a clear focus to the issue. Thirdly, we have placed the environment department in our corporate strategy division, so that we can develop greater strategic focus on environmental issues.

Finally, to give the committee comfort that we are being careful with customers' money, we are doing two things. First, from April next year, we will place ourselves under a retail price index minus X regulated-cost formula. The timing of that measure is no coincidence. Currently, we are examining the price reviews of Scottish Hydro-Electric, Scottish Power plc and the English network companies, which will run from 2005 to 2010. We are also committed to prioritising our work streams. In a submission to the committee, Scottish Power commented:

> "We would welcome Ofgem's work being better focused on areas that will help deliver the white paper's targets."

Through better prioritisation, we intend to do that.

The challenges that I have outlined reflect not only the terms of better regulation, but our awareness of the challenge of rising prices for consumers in 2004. The reason why I have mentioned the consumer a great deal is simple—our number 1 duty at Ofgem is to protect the consumer, especially through promoting competition. For that reason, we welcome renewable generation—just like any other form of generation—from the perspective of the customer. The Government has a wider remit and may choose to promote or protect a particular form of generation. Members may recall that in the early 1990s, post-privatisation, the form of generation that it chose was coal. Today it is renewables.

Ofgem can assist the debate by showing how best to meet Government targets. In particular, we have endorsed carbon trading as a means of giving the market the freedom to deliver at the lowest cost. Apart from our providing an opinion on the best methods for attaining a goal, we play a vital administrative role. We administer the renewables obligation certificates—known as ROCs or Scottish ROCs—and the climate change levy exemption certificates. Members may think that this is an extremely dry subject—to be frank, it is—but in doing the job successfully and smoothly we give confidence to the market, which in turn

gives confidence to investors and industry. We take our administrative role very seriously.

As the committee knows, we are working with the Department of Trade and Industry on the British electricity transmission and trading arrangements project. April 2005 is still our deadline. We expect Scottish customers to benefit from competitive prices and greater choice and Scottish generators to gain from wider access to wider markets. We estimate that Scottish customers should gain about £13 per customer. That is a further encouraging sign to those who are fuel poor, an issue that I know has been taken very seriously in Scotland. In November, I spoke at an excellent conference in Falkirk on fuel poverty.

BETTA is interlinked with expansion of the Scottish transmission network—although the issues in relation to both are not one and the same—which will lead to costs' being shared across Great Britain, rather than their being carried by Scotland alone. I assure members that we are working actively on how to facilitate further investment in both the Scottish transmission network and the Scottish distribution network. In the latter case, we are engaged in initial discussions with Scottish Hydro-Electric and Scottish Power about their investment requirements from 2005 to 2010.

The Scottish Executive's and the UK Government's policy is to seek a low-carbon economy at the lowest extra cost. Ofgem has been consistent in its view that that should be based on cost-reflective charging. In the past few weeks, as committee members will have noticed in their briefing papers or the newspapers, there has been a spat between Ofgem and the DTI on the issue. That spat is because of a subsidy that has been suggested for the north of Scotland. Ofgem does not like that idea on economic grounds but, on practical grounds too, we see limited evidence to suggest that that small subsidy will either promote investment in the region or benefit customers. However, we will be interested to see whether the provision has a practical impact over time.

I will conclude with five brief points. First, Ofgem's number 1 duty is towards the customer. Secondly, we want to work actively with the Scottish Executive on assisting it to meet its environmental targets at the lowest possible cost. Thirdly, we are committed to administering the renewables schemes to the best of our ability, which will provide confidence to markets and investors and will therefore help the Scottish Executive to meet its targets. Fourthly, we remain committed to the BETTA project, which we believe will give Scottish customers a net benefit. Finally, we are fully engaged with Scottish and Southern Energy plc, Scottish Power and the National Grid Company plc to ensure network owners and operators have correct incentives for investments.

We would welcome any questions from committee members.

The Convener: Thank you. Towards the end of your comments, you said that your

"number 1 duty is to the customer."

In your written submission, you say:

"market based arrangements are best placed to deliver security of supply."

I suggest to you that to say that your number 1 duty is to the customer is not necessarily a clear objective, because you must consider the customer today and tomorrow and the customer in 10 years' time. What might benefit the customer today might not benefit him or her in 10 years' time. Also, given that new power stations or new means of generating power can take five or 10 years from their inception to actually producing electricity and given that, as far as we are aware, no new plants are being considered at the moment, is the market situation really good enough to allow signals to be sent out? Investment has to be considered far in advance of any actual production. Things are difficult enough in static situations such as that with Scotch whisky, in which at least the product tends to remain the same; but with electricity and the changing marketplace, do you really think that market-based arrangements are best?

Alistair Buchanan: Thank you for that question. I will focus on England and Wales separately from Scotland. In England and Wales, we can consider how the new electricity trading arrangements—NETA—are operating, bearing in mind your comments on security of supply.

To pick up on your first point, we are responsible for customers today but, within our statutory duties, we must as part of our remit also consider tomorrow's customers. That is part of what we do when we consider any particular situation.

Now is a particularly good time to consider security of supply, as we come out of winter. I will consider England and Wales first. In my first day in my office, on 1 October, we hit a 16 per cent reserve margin, which was 11 per cent down on the figure from two years previously. One would really not want to go below a 15 per cent reserve margin. Since October, the reserve margin has recovered; it is now over 21 per cent. In effect, the pricing message from the market has led to plant's coming out of mothballs or to its being operated more dynamically. In NETA's first real test since being introduced four years ago, the market appears to have operated confidently and competently.

To answer your question about looking forward, I would say that there is clearly a time lag when new plant is built. Only a couple of new stations are being developed in England at present. Within the next 10 years, it might be expected that Magnox and nuclear plants will close. The advanced gas-cooled reactors will almost certainly start to close, too. Moreover, the coal-fired plant, much of which is 40 years old, will simply come to the end of its useful life. In fact, a European directive might well kill off such plant around 2008 anyway. In that light, the market appears currently to be working like a proper market and we are confident that it will work properly next winter.

14:15

However, if we find that the forward price curve is above the new entry price, but bankers, engineers and industrialists are still unwilling to build plant—which, although it might go against the laws of economics, might be a sign that the laws of practicalities are at work—we will have to work out over the next couple of years whether the market is giving out the right signals. As for the question whether we are concerned that the lights might go out because we will not have enough power plants, I think that we will have enough time to change the market signal if necessary. At the moment, the market appears to be responding healthily to market messages.

My real message for the committee is that we are not complacent. We are not saying simply that this is the model and we cannot change it. Instead, we are saying that the model is working very well, but if the economic indicators are being ignored in 2006, we might have to reconsider whether the market is the correct shape.

The Convener: I imagine that that is an entirely different kind of commercial decision from the decision whether to take some plant out of reserve and bring it up to speed. I presume that that does not involve a huge amount of—if any—capital expenditure compared with a decision to invest millions of pounds in a new plant. That said, I do not know whether the fact that we have coped with a year's potential shortfall through use of existing plant tells us anything about what might happen when much of that plant cannot be run any more.

If, in two years' time, you decide that the market is not going to build a power station or whatever we might need in 10 years' time, what mechanisms and options are open to you?

Alistair Buchanan: If we reach that stage, we will have to consider whether the marketplace has a dynamic in which, for example, National Grid could operate or whether there is any dynamic within the pricing message that would be more appropriately used. However, I do not want to cross the river until we reach it, because at the moment the market appears to be working confidently and well.

I should take this opportunity to mention Scotland, which is in a somewhat different position from England and Wales in that it operates with a 40 per cent reserve margin. I have focused on the example of England and Wales because, under BETTA, the Great British market and supply and demand relationship will be important and because I want to give the committee a flavour of the market dynamic.

The Convener: Will you define the term "reserve"?

Alistair Buchanan: In England and Wales, demand on the coldest winter day can reach about 55GW; we have 60GW to 65GW of available plant. That represents our reserve margin.

The Convener: Am I right that that plant is available within a certain period of time, but is not actually spinning?

Alistair Buchanan: I am talking about available plant. You are right: we have available another 3GW or 4GW of mothballed plant.

Brian Adam (Aberdeen North) (SNP): In paragraph 1.1 of your submission, you say:

"Ofgem has a range of general duties to which it must also have regard, including: the interests of certain priority"

consumer

"groups".

What are those groups?

You also mentioned the market approach. However, I think that there is a certain dichotomy in your position with regard to the extent to which renewables are economic and the extent of the subsidy that they receive from consumers. How are those aspects compatible? Later in your submission you talk about a cost of £1.3 billion, which I presume is per annum. What does that mean per customer? You spoke about potential savings of £13 a year. If there is a subsidy from the consumer of £1.3 billion per annum, I would have thought that the £13 that might be saved through market mechanisms could be considered to be tiny in comparison. If the real cost of wind generation is several hundred pounds per annum per consumer—and that is a fairly large several hundred pounds—then I do not know how it all stacks up. Could you comment on that?

Alistair Buchanan: I will make a brief comment before handing over to Charles Gallacher. Ofgem's focus and remit are on competition and on examining market mechanisms. As I mentioned in my introductory comments, if the Government decides to insert an element of subsidy into the

marketplace—for renewables in this instance, with the ROC running at £40 to £50—that is really the Government's remit, rather than ours.

Charles Gallacher (Office of Gas and Electricity Markets): I will pick up the point about the priority service register. The register is operated by the energy supply companies, and is designed to provide additional services to people with special needs and to people who require, for example, adaptations to the equipment in their homes so as to be able to operate them properly. In some situations, special arrangements for billing are made for deaf people. That is operated under a licence requirement, which we police.

Brian Adam: That clarifies that point, but could you give us some idea how much the £1.3 billion to which you refer in paragraph 2.5 of your written submission comes to per consumer?

David Halldearn (Office of Gas and Electricity Markets): In Britain, there are about 26 million consumers. I am not sure how good my mental arithmetic is, but—

Brian Adam: That is about £500 a head.

David Halldearn: Yes—it is about £500. One important point that we would like to make, and one of the reasons why we talk about cost-reflective pricing and market-based mechanisms, is that the costs of the electricity industry are actually quite large overall. The improvements that one can make in terms of savings to consumers, through ensuring that people on the ground make efficient decisions, are quite great. As we move forward into a world in which people are investing in the networks for renewables in Scotland in particular, the figures suggest that to connect 6GW of renewables would need investment approaching £1.5 billion, which is a lot of money. If Scottish consumers were to pick up that cost, it would come to about £700 per customer, which would be something more than twice their annual electricity bill.

The sums of money are really very large, so inefficient investment could mean that consumers would be paying out money that they would otherwise not have to pay. That is why we are focused on trying to ensure that, taking into account the arrangements that exist in the marketplace, all individuals making their individual decisions do so with their minds focused on getting the most efficient outcome.

Christine May (Central Fife) (Lab): I would like to ask about your overriding duty to the customer, and I refer to comments that have just been made about efficient investment versus inefficient investment, and to the possible timescales involved. What might represent efficient investment over the short or medium term might be inefficient investment over the longer term, in that there might be no environmental benefit and the ultimate cost to the consumer of putting that right might prove to be high.

What are your views on how the duty to the customer—which the customer would define as keeping costs as low as possible—can be reconciled with what is often said to us, which is that costs must go up if we are to meet environmental obligations, which means that the price to the customer of each unit of electricity will be greater? I would like, after you have answered to go on to talk about transmission issues, if I may.

Alistair Buchanan: I will start and then hand over to my colleagues. One of our key statutory duties—the customer is our primary duty—is to link our duty to the customer to competition. One of the big differences between an independent regulator and a politician, which in a way makes our role easier through our statutory duty, is that we do not determine the efficiency of the investment. That is done by the market and competition.

On your second question, on the cost to the environment, to a certain extent putting in place a subsidy for the greater good of the people is a decision for you and for people at Westminster—it is not the economic independent regulator's decision. To take that a step further, we state in our submission that in terms of the lowest-cost approach to a low-carbon economy, our preference is for carbon trading or emissions schemes trading, because they run at a tenth of the cost of renewables obligation certificates. Although that is our suggestion for keeping the cost down, we really do not want to move into territory into which it is not proper for us to move.

David Halldearn: I will pick up on the point that was made about the extent to which Ofgem should attempt to guess the outcome of a major change in the marketplace, which has been challenging us over the past year or so. That came to light through investment in the renewable energy transmission study and the transmission infrastructure, and the extent to which we should second-guess where new wind farms are going to be built. When you think about it, that question asks us to take a risk on behalf of customers and to invest their money where new wind farms will be built. Nevertheless, we see the marketplace changing, and we know that difficult decisions have to be made. We tried to tackle that by not focusing so much on our being the people who try to make those decisions, because we do not think that we are particularly well placed to make decisions about where networks are built—it is for the companies to undertake that.

One of our proposals in the distribution price control review is to give a financial incentive to distribution network operators to invest in and

encourage new connections. If they get that decision right they get a premium—so they have an incentive to get it right—and if they do not get the decision right, they make slightly less of a return. In that way, we encourage companies to be a bit more forward looking, and to look further ahead to where new investment needs to be made. We are still developing our thinking in respect of financial instruments and incentives, but they are the right way to go.

Christine May: You will forgive me if I suggest that you seem to want the best of all possible worlds. All the nice decisions are for you folk, but the nasty, horrible ones about taxation, levels of subsidy or increases in prices are for people like us. That is fair enough—it is a valid view, I suppose.

Paragraph 3.8 of your submission states:

"Post BETTA generators will not face separate charges".

I accept that, but do you accept that most renewables companies at the moment do not face those charges in Scotland, because they do not export to England?

David Halldearn: Transmission charging raises a difficult set of issues, and is particularly emotive at the moment. We are going through a process to establish the correct level of charging in Great Britain. The major impacts and changes are likely to be felt in Scotland. However, it is important to consider the question in the round because to look at transmission charges in isolation does not help. The fact is that there is a surplus of generation in Scotland. Every extra kilowatt of electricity that is produced in Scotland needs to find a market in England and Wales, because demand in Scotland is already saturated. In order for that energy to get to England and Wales, certain charges need to be paid today.

Generators in the north of Scotland pay for use of the Scottish Power network, they pay for use of the interconnector and they pay for entry into the England and Wales network. Even if an individual generator is not exporting directly to the England and Wales market, the costs affect the price of energy that they can obtain here in Scotland. It is not all a one-way street. We think that when BETTA is introduced there will be overall benefits to Scottish generation in terms of access to a British marketplace, to the benefits in the NETA arrangements and to reinforced networks. The cost of that will be reflected in transmission charges and the net effect of the charges on Scottish generation should be neutral, or should make it slightly better off.

14:30

Christine May: Although we have an excess of generation capacity in Scotland with thermal, hydro and whatever renewables we have, we will quickly have to reach a stage—Alistair Buchanan said this in his opening remarks on coal and gas, and on stations coming to the end of their lives—at which other generation sources are ready for market. From what you are saying, it seems to me that the barriers to the smaller generators are such that they will never be able to break in to any large extent, unless there is a mechanism that allows them to do so prior to the other generators coming off line.

David Halldearn: Smaller generators have a number of sources of income. Part of that income is from the sale of energy in the marketplace. Alistair Buchanan explained how the NETA market works in terms of providing forward price signals. There is, of course, also the ROC mechanism, which encourages small renewables generators into the marketplace. We have seen a large amount of interest in new generation in Scotland. There is the question whether we would see new flexible thermal plant coming into the marketplace to provide systems stability and such services.

Christine May: Will you explain what you mean by flexible thermal plant?

David Halldearn: Wind blows for 30 or 35 per cent of the time and demand goes up and down, but the people operating the networks need to ensure that every electron that is taken off the network is matched by an electron going on. There is a need for plant in which generation can be turned up and turned down and which can follow demand patterns and fill in the gaps when other generators are not generating. That is what I mean by flexible thermal plant.

Christine May: Right. So you are not defining what type of plant that might be.

David Halldearn: It could be any type of plant that has the technical capability to be flexible. Typically, we are talking about thermal plant; gas or coal is used for that purpose today and sometimes hydro or pump storage can be used. We would expect to see market signals in the marketplace, through prices, that would encourage people to develop such plant. If that proves not to be the case, we will have to think about whether the market is working properly. At the moment, we believe that the market can deliver that.

Christine May: Thank you. I will leave it at that for the moment.

Murdo Fraser (Mid Scotland and Fife) (Con): I want to link two separate but related comments that you made in your submission. The first, which relates to the security of supply question, is in paragraph 4.2. You refer to the output of wind generation compared with a conventional generation plant and state how much excess capacity is needed in wind generation to make up

the differential. I link that to the comment in paragraph 3.1, in which you refer to the renewables obligation and say:

"a higher level of support could be given to less mature technologies".

That would help to bring such technologies to the market. I invite you to expand on paragraph 3.1. Do you have in mind trying to encourage wave or tidal power, or possibly biomass, at the expense of onshore wind, which seems to be the technology of choice for most of the power companies at the moment?

Charles Gallacher: That issue came up when the renewables obligations were being designed. What happened was exactly as you suggest. A number of groups proposed that some of the less mature technologies, such as wave and tidal, should be prompted with an additional premium. There were several suggestions, but one was that multiple ROCs could be awarded to that technology. The idea was not picked up and it did not form part of the renewables obligations.

Murdo Fraser: Do you believe that the subsidies should apply through the ROCs?

Charles Gallacher: That happened before the implementation of the scheme, during its design period.

Murdo Fraser: We have heard evidence elsewhere about the situation in Portugal, where the Government has incentivised development of offshore technologies. Can you provide any more information about that and how it was achieved?

Charles Gallacher: I do not have any information on that.

David Halldearn: I am afraid that I do not know about that.

Mike Watson (Glasgow Cathcart) (Lab): My first point is on the same issues as Murdo Fraser talked about. I know that it is not Ofgem's role to signify a preference for any kind of renewable energy over any other. However, paragraph 4.1 of the Ofgem submission mentions the impact on security of supply. Reading between the lines of paragraph 4.2—I note that the submission is suitably spaced for us to be able to write between the lines—it seems to me that you are almost denigrating new wind capacity by suggesting that the apparent benefit is much less because of the reduction in the need for conventional generation. Is that the case? I do not want to push you too hard to specify one form of energy over another, but do you think that wind generation is likely to make a significant difference to the amount of electricity supplied from Scotland that could be sold south of the border?

Alistair Buchanan: We do not seek to denigrate or praise any particular fuel form. If a fuel form can have access to the ROCs, which wind clearly has, it can take advantage of that and become a competitive fuel.

The committee will have seen the same figures as I have. The Scottish and Southern Energy submission openly mentions an onshore wind farm being substantially more expensive than a modern combined cycle gas turbine, which would cost between £25 and £30 per kilowatt. Scottish and Southern Energy's submission mentions a figure of £40 per kilowatt for onshore energy, and more for offshore. There is a clear difference in value and that difference is met through the ROCs.

You will also have noticed, in the many submissions that you have had, the anticipation that the value of wind will go down, in terms of the construction and running costs, as the capacity of wind goes up. It is difficult to take an exact view on how those costs will develop in, say, 2020. Wind is currently a competitive fuel source in the market because of the ROCs.

We keep wandering around the issue of security of supply. As we consider that issue, we take a view on renewables. If, in a few years, we were to find that the 15 per cent reserve margin was becoming the norm, that there was tightness in the market, and that there was a lack of new capacity being built—either in the renewables market because the subsidy was not enough, or in the conventional market because the economic signal was not seen as correct—we would have to consider what was going wrong with the subsidy signal or the market signal. By that, I mean that Ofgem would have to consider the market signal; the subsidy signal would be for the Government to review.

Mike Watson: Paragraph 4.1 of your submission says, in relation to the security of supply:

"Ofgem has an important role to identify and seek to reduce any barriers to the market delivery of secure supplies."

If we bear in mind the comments that Mr Gallacher made in response to Mr Fraser's question, do you think that there are sufficient safeguards and incentives, such as ROCs, for would-be suppliers of renewable energy—whatever the source?

Alistair Buchanan: I was talking to people from Scottish Power and Scottish and Southern Energy on Friday, who clearly intimated that there is a substantial appetite for the development of wind power in Scotland, as you well know. The direct answer to your question is that investors simply would not back that development unless they were going to get a return.

Mike Watson: I move on to another issue that is mentioned in your submission. At paragraph 2.1,

at the top of page 3, you say that the development of renewable resources depends on the extent to which they are economic and on a number of other factors, of which it is perhaps significant that you mention the planning process first. Of course, the planning process impacts on other forms of energy supply as well as on renewables. You might be aware that we have received a number of submissions about the planning process and I know that the process in the United States of America, for example, is greatly simplified compared with the system that operates here. How might the planning process be improved to allow new developments to come on stream more quickly and easily than is happening currently?

David Halldearn: I am afraid that that is again one of those questions to which Ofgem can give the easy answer and say that the planning process is a matter for others and certainly falls outside its statutory remit. However, having said that, one matter that concerns us in relation to the security of supply is that if the planning laws are insufficiently flexible and people cannot obtain permission to build plants or lines, supply security could be threatened in an extreme case. We want to flag that up quite strongly.

You mentioned the US experience. In California, planning was found to be a problem that caused some difficulty.

Chris Ballance (South of Scotland) (Green): I want to pursue Christine May's point. The witnesses will no doubt be aware that we have received submissions from Scottish Power, Scottish and Southern Energy and the Scottish Renewables Forum, all of which say that BETTA will be disadvantageous to the development of renewables in Scotland.

In relation to the classification of the 132kV network as a transmission network, Ofgem has proposed a £2 per kilowatt rebate for small generators. The Scottish Renewables Forum, however, reckoned that a minimum rebate of £4 per kilowatt would be required, although it also thought that to offer a rebate would not be the right approach, because a rebate in itself would not encourage investor confidence. Can you comment on that?

David Halldearn: I would be delighted to do so. We have spent a lot of time focusing on whether the 132kV network should be classified as transmission or distribution and on the associated charging arrangements. We believe that the 132kV network in Scotland is a transmission network and should be treated as such because it deals with the bulk transfer of energy and is already classified as transmission in legislation.

The proportion of the current Scottish transmission networks that is taken up by 132kV lines is as high as 70 per cent in the north of Scotland and about 40 per cent in the south of Scotland. Such lines tend to be quite long and they are used for transferring energy from power stations to distribution networks, which is classically the purpose of transmission lines. In a sense, we ought to have one eye on the future in debating whether such lines are transmission lines or distribution lines. In the proposals that have come out of the RET studies for upgrading networks in Scotland, one finds that much of the investment is aimed at upgrading those 132kV lines to 275kV lines or 400kV lines, which are squarely in the ball park of transmission.

14:45

However, the underlying problem does not relate simply to the classification of lines as distribution lines or transmission lines. I will outline the issues with which we are currently grappling. The underlying problem is whether the charging arrangements for the lines are correct and, indeed, whether the rules that apply to people who are connected at such voltages take account of the fact that some of them are small generators. Those rules are really the trading rules in the wholesale market.

A couple of weeks ago, we had a seminar in Glasgow at which we focused on issues relating to small generators. There was a good response from the audience and, since then, we have had discussions with representatives of small generators, which focused on trading issues. For the time being, we think that our approach in offering a discount is still probably broadly right, although we must still reach a firm conclusion on that. We are committed to looking hard at the trading rules and we think that the differences between the charging arrangements for distribution and transmission are of growing importance. Ofgem must take a long, cold look at that matter to ensure that we get the rules right. However, the hard fact is that the issue is complicated and we will not get everything absolutely right by the time that BETTA goes live. We must find a slightly pragmatic way forward that ensures that small generators in Scotland get a fair deal.

Chris Ballance: Do you foresee Ofgem reaching agreement with the Scottish Renewables Forum before BETTA goes online? Do you think that it will welcome BETTA in entirety on 1 April next year?

David Halldearn: I certainly hope so. We have done quite a lot of work in considering the potential benefits of BETTA for small generators, as well as BETTA's potential detriments. There are real benefits and we must ensure that the costs that small generators face are appropriate

and that they get a fair deal and are not discriminated against. That is our job—we must do that. We must also ensure that the advantages are well understood by small generators and that they can cash in on them.

Chris Ballance: Do you accept the advantages to you of small generation? Small generation is used relatively locally, and it means that one can get away with not upgrading transmission lines.

David Halldearn: There is a wide debate about how small embedded generation should be used in the future. Certainly, moving to a world in which generation is small and located very close to demand would result in less need for transmission lines. However, we are not there yet, and—as I said earlier—our job is not to put all our eggs in one basket in respect of guessing the future.

The Convener: Will you explain paragraph 2.2 of your submission to the committee, so that members are clear about what you mean? You have referred to carbon trading. The paragraph compares the cost per tonne of carbon saved by the renewables obligations with the estimate from the Department for Environment, Food and Rural Affairs of

"the cost of carbon abatement".

Will you explain exactly what that means and how the European Union emission trading scheme works?

Alistair Buchanan: The context that lies behind the paragraph is the creation of the carbon trading scheme or emissions trading scheme across Europe. March is a critical month for the scheme, because by that time member Governments are meant to have had a first cut at allocating the allowances amongst the various players in their countries. For example, Scottish Power will have its allowances, as will Scottish and Southern Energy.

The scheme has not been addressed uniformly across Europe. The idea is that incumbent companies will be awarded allowances from 1 January 2005 to 2008. One anticipates that the allowances will become liquid and highly tradeable over time; indeed, that is what we would like them to become. In effect, a company can meet its obligations through trading its certificates, which means that the certificates will take on a value.

Our argument on seeking to reduce carbon is that, if the scheme is successful in promoting the development of a market in allowances, it will be possible to do that on the current traded price in Europe of €12 to €14 per tonne. Our argument on ROCs is that they are a perfectly valid way to seek to promote renewables and, by the same token, to reduce carbon. At the same time, however, ROCs are an expensive way to do that when a contrast is made with what the European initiative seeks to do, the effect of which is to provide an allowance mechanism. It is arguable that incumbent generators might use the allowance mechanism to seek to develop renewable power.

David Halldearn: The point of paragraph 2.2 is to highlight some of the figures that we have seen.

The Convener: Just so that I am clear about the paragraph, do the allowances work by setting an arbitrary figure as to where a neutral level would be? If a company produces less carbon per megawatt than the arbitrary figure, they will get an allowance; if they produce more carbon per megawatt, they will be penalised. In effect, two lots of people will trade with each other.

David Halldearn: That is broadly right. The result of the initiative is that a value is attached to the cost of carbon.

The Convener: Right. Is the DEFRA estimate of the cost to the UK of carbon abatement based on the figure that the European Union has proposed as the floor price?

David Halldearn: Yes, I believe so. In that part of our submission, we tried to flag up the fact that it looks as if different mechanisms could be used to try to achieve the Kyoto targets. One of those mechanisms is a route that involves investment in renewables, and another is carbon trading. Superficially, the costs look to be quite different. Our interest lies in flagging up the potential costs to electricity and gas customers.

The Convener: I assume that the European Union figure was based on a figure that it hopes will get EU countries to meet the Kyoto target within the time limits that were laid down.

David Halldearn: An issue is involved in respect of the numbers. Clearly, the time limit that is attached to the targets will affect the value of the allowances and the number of allowances that are given at the beginning will also affect their traded value. The convener used the word "arbitrary", and it is plain that there is an element of arbitrariness in the numbers that are used. All that we are saying is that there would appear to be a choice of instruments in the superficial information that we see coming from DEFRA. Our own back-of-an-envelope calculations on the cost of carbon from pursuing renewables, however, seem to be very different.

The Convener: We are talking about the differences between £29, £212 and £447, which are huge; whoever has got it wrong has got it badly wrong. If the European figure is right, we are paying up to 15 times too much to meet our Kyoto obligations. Is that a reasonable supposition on my part?

David Halldearn: It is a pretty reasonable supposition. All that we suggest is that, in determining the right policy instrument, it is a good idea to do some serious work to understand which is the cheapest route.

The Convener: Presumably, if the amount of money that was being handed out under the renewables obligation was reduced by a factor of 10 or 15, we would not see quite so many wind farms.

David Halldearn: That is probably true, but the instruments work in different ways. The renewables obligation is there to promote the construction of new, renewable sources of energy, whereas the carbon trading permits allow people to change their industrial processes and allow consumers to reduce their emissions. Different parts of the marketplace are brought in.

Christine May: Is there an argument for simplifying the area to make it easier for consumers to appreciate how the matters interlink and easier for renewables providers who might be considering combined heat and power, for example, to break into the market?

David Halldearn: I am sorry, I am not quite sure what point you are making.

Christine May: In terms of looking at all the carrots and sticks, some of the sticks can be traded as well as some of the carrots. They are all separate, albeit interrelated, and they are not particularly easy to understand for the consumer or the small operator; in particular, they are not easy to understand for the small renewables operator, who aims to break into the market. Generally speaking, they are aimed at the bigger players.

David Halldearn: There is clearly an interaction between the instruments. The more instruments there are that aim at the same goal, the more the inevitable element of confusion in the marketplace. There is a role for the Government in ensuring that the instruments are properly explained.

Brian Adam: On a related area, in paragraph 3.3 of your submission, you discuss the value of ROCs and SROCs and the potential to have a Northern Ireland renewables obligation. The actual value of ROCs and SROCs appears to differ, and you query that. Are you trying to interfere with the market? Why do you think that we should have a single buyout fund and a single value? If we truly want to have market mechanisms, and if there is a market for a local renewable, presumably you could deal with that?

Charles Gallacher: That issue arose at the time of the design of the renewables obligation and the renewables obligation (Scotland), which have been reviewed constantly during the past year and a half. Several commentators have said recently that it would be an improvement to have a single buyout market, so that suppliers would have a clearer view of how to trade the ROCs. The Scottish Executive is considering the issue.

The Convener: I should have welcomed a visiting member, Nora Radcliffe, at the beginning of the meeting.

Nora Radcliffe (Gordon) (LD): I want to return to paragraph 2.2 of the submission from Ofgem. In your argument, you are talking about two different instruments and two different markets, so are you comparing apples and pears?

David Halldearn: We are talking about two different instruments, which operate in different ways but appear to try to achieve the same policy goal. There seems to be a choice of policy instruments available to the Government to achieve the policy goal that it has stated. However, they seem to have different costs to customers—it is our role to point that out, and to suggest that there may be a more efficient way to achieve the same goal. That is all that we were trying to say.

The Convener: We could probably pursue some of these topics for considerably longer, but we have other witnesses to hear from. I thank the witnesses from Ofgem for appearing before us.

15:00

I see that our next witness is ready—sorry about the pause. I am used to seeing several bodies at the witness table, so when I saw only one person, I thought something was wrong. Our second, one-man panel is Iain Todd, who is the director of renewable energy industry development in the Department of Trade and Industry in London. I ask him to make his opening statement brief, given that we have his submission in front of us. He should make any points that he wishes to highlight.

Iain Todd (Department of Trade and Industry): As director of renewable energy at the DTI, I cover three principal areas of responsibility. The first is policy and legislation, which includes the renewables obligation. We will introduce technical amendments to that obligation in April, but we are leading up to a fundamental review of it next year—we will carry out preliminary work on that in the summer.

As we have heard, the renewables obligation provides uniform assistance to all technologies. Our strategy is to supplement that with additional financial support to other technologies when they are still not commercial after having received that assistance. That is my second principal area of responsibility. We have a series of financial

programmes to assist such technologies, which have totalled £350 million in a four-year period. We will shortly enter into discussions with the Treasury about the level of support for the next period—as will everyone else in Whitehall—but that is the level that we have reached in recent years. The third area that I cover is our active support for the development of UK jobs in the sector. A small team in our Aberdeen office runs that part of our work.

As our submission states, we believe that, although the targets that have been set are challenging, we are making good progress towards them. Since the renewables obligation came into force, 1,500MW of capacity has been consented and 2,000MW are in the pipeline. Just last week, the British Wind Energy Association announced that its members have firm plans for construction that will provide 450MW this year. That figure is significant because, to get on track for our targets in the later years, we need to build 1,000MW per year. That is good and steady progress, although, of course, a lot more is still to be done. Our plans for round 2 offshore wind farms, which involve a capacity of 7,000MW, are going well. Those plans will mean large steps of progress further down the track in this decade. Confidence is growing in our progress. Evidence of that is that the company RWE Innogy recently secured £400 million of private sector finance over and above internal finance that has been secured to make progress.

I do not want the committee to feel that we are totally focused on wind power, although that will be a major part of the work to achieve the target in this decade. We actively support marine renewables. Biomass energy is another sector with great potential, although it has great challenges.

I listened to the discussion with the previous panel about grid issues. We work closely with colleagues in Ofgem. We are delighted about the announcement of the Beauly to Denny upgrade, which will involve an expenditure of £200 million and allow at least an extra 1,000MW to flow north to south.

What a previous witness referred to as a spat was an issue in which we took a close interest, on the transmission charging point. I am delighted to advise the committee that this morning the DTI published its conclusions on the consultation and that it recommends that we seek a power in the Energy Bill to introduce a discount on transmission charging in certain geographical areas where there could be an adverse impact on renewable energy development.

The final point that I want to make is that there is the closest of working relationships between the DTI and the Scottish Executive, at both ministerial and official level, on the range of renewable energy issues. There are many examples of our working together on renewable energy projects.

The Convener: My question relates to a matter that you have just discussed. In the paragraphs in your submission that relate to the new electricity trading arrangements, you say:

"Any final scheme … will retain efficient locational signals for renewable generators".

What exactly does that mean? With certain renewable technologies, it does not matter how efficient the locational signals are. Like King Canute, tidal generators can go only where there is tide, which is not necessarily the same place where there are consumers. The situation is similar with wind generation and so on. How do you get over an efficient locational signal? Later in the same paragraph, you say that investment may be deterred because the location of these technologies cannot be close to the market.

Iain Todd: Are you referring specifically to the transmission charging issue?

The Convener: I am referring to anything that makes companies locate power plants near to consumers, rather than in the place where power can be produced most efficiently.

Iain Todd: That reflects the balance of the debate that we have had with Ofgem. In the autumn we will issue a consultation document on transmission charging. That will determine the geographical extent of the area to which the discount will apply and the tightness or generosity of the discount that is made available. We must strike a balance between the philosophy of cost-reflectivity and, as you rightly say, the practicalities of meeting our renewable energy targets. Those issues will be thrashed out during the consultation.

The Convener: How flexible will the figures be? If you see that the arrangements are not working and that investment in certain geographical areas is being deterred, under this regime will you be able to move quickly to increase the discount?

Iain Todd: Yes. The Energy Bill will create a power for the secretary of state to introduce discounts and to specify the geographical areas to which they apply. The secretary of state will have the administrative flexibility to do that. Changes could be made relatively quickly. Further primary legislation would not be required to vary either the geographical areas or the extent of the discount. I am sure that the issue will be well and truly debated in the autumn. However, in reaching a conclusion we will take account of the needs of the renewable energy sector.

Richard Baker (North East Scotland) (Lab): We have heard some pessimism about the prospects of developing the offshore wind

industry. From the investment that you have made in capital grant schemes for offshore wind, it seems that you do not share that pessimism. What are your thoughts about the prospects for developing the offshore wind industry? Roughly what percentage of the capital grants that you have awarded have gone to marine technology?

Iain Todd: Good progress is being made in offshore wind. The first station, at north Hoyle off the Welsh coast, is already producing electricity. Of the first 18 sites, 12 are consented and a number of others are under construction. Just before Christmas, we announced the 7,000MW award that we have made in round 2. The developers involved are busily developing their designs and plans and are seeking financial support for those projects. Wind, split equally between onshore and offshore wind, will provide a good three quarters of the generation capacity that is needed for us to meet our 10 per cent target for renewables by 2010. The development of offshore wind is central to the delivery of our UK targets.

On marine support, we currently have four capital grants schemes—covering offshore wind, biomass, photovoltaics and community and household schemes—but we have no capital grants scheme for marine renewables at this time. However, marine renewable energy is supported through our research and development fund. As the addendum to our submission shows, that fund has awarded a total of over £6 million so far to Scottish companies that are active in marine renewables. We are absolutely delighted to be supporting those companies. Again, we work closely with the Scottish Executive on that.

Richard Baker: I was interested to hear that there might be a 50:50 split between offshore and onshore wind by 2007. I think that that is a development on what we have heard before.

The investment that has been made so far in marine technologies is obviously welcome, but is there any potential for further investment in order to develop those technologies? How could we do more to stimulate that market in Scotland? You mentioned that the DTI's Aberdeen office tries to develop jobs in the renewable energy market. We are ahead of the game in our development of marine energy technology, but the technology is not ahead of the game in terms of market share. Would targeting an increase in the number of marine energy renewables obligation certificates be an appropriate way in which we might help to stimulate the market for that type of energy?

Iain Todd: We have just completed a major piece of work, which we called our innovation review, which looked across the technologies to inform our thinking as we move into the bidding process for the level of support that we will receive from the Treasury in the next period. As of last Friday, that report and all its supporting references have been publicly available on our website. Among the report's conclusions are that we should continue to provide strong support for both onshore and offshore wind power and that we should provide continued and increasing support for marine renewables. If I may be permitted a bit of personal speculation, I think that it will not be long before we see people beating a path to our door to request capital grant support for small farms of marine devices.

The report also deals with biomass. Because of the various difficulties that have been experienced so far in establishing fuel chains, our strategy for biomass will probably look towards smaller power stations than we have previously considered. Those might be about 2MW in size. We will try to establish more localised fuel chains that can be aggregated once they are up and running in order to move to larger, dedicated biomass plants.

On solar power, the document directs us towards what we call a building-integrated renewables approach. That involves using a mix of technologies and energy efficiency and looking at the building as a whole. We think that helping to embed renewables at that level will be a more efficient way of directing our resources.

Christine May: It is good news that the biomass industry is now represented on the forum for renewable energy development in Scotland—FREDS—or one of its subcommittees.

You mentioned that biomass has great challenges, such as traceability and the supply-chain issues that you mentioned a moment ago. Are those the only challenges that you foresee? If we had an energy crop grant that was set at a level similar to that south of the border, would that help stimulate the energy crop industry in Scotland? Would that give us the smaller power generation units that you mentioned? Will you also talk about the role of co-firing and of carbon reduction? There is a debate about whether growing energy crops, which generate additional carbon, is a good or bad thing.

15:15

Iain Todd: I mentioned the challenges that are faced by the biomass sector, and there are a number of them. The economics of biomass are marginal at best; a scheme has to be pretty well optimised to make the economics work. Connectivity is also a challenge. We are trying to get two industries to work together—agriculture and forestry on the one hand and power on the other. In the past, those industries have perhaps not worked together a lot. A chicken-and-egg situation can arise. Who invests first? Do the farmers plant first before they know that they have

a contract with a power station; or do the power generators invest first before they know that they have a secure fuel route? That challenge is real.

It was because of that challenge that we introduced our policy of co-firing, as has been mentioned. That policy was to allow biomass to provide up to 10 per cent of the fuel route for existing coal-fired stations. That would allow fuel routes to grow around the power stations so that, in time, we could move to having dedicated biomass plant. As I am sure members know, in the amendments to the obligation that we are introducing in April, we extend the period of co-firing without energy crops by three years—2006 to 2009—and we extend the final duration of co-firing including energy crops from 2011 to 2016. That will be done simply to give the policy more time to work.

We see signs of a number of the large coal-fired power stations now actively taking up co-firing of biomass—although that is happening more in England than in Scotland. Some of those stations started co-firing with imported fuel, but we are in discussions with them in order to have United Kingdom sources of biomass. A number of interesting initiatives are emerging in which people are developing UK sources in fuel chains around those stations. Our policy will be to use co-fired stations to generate UK fuel routes. That will then lead on to dedicated biomass plant.

Christine May: In your capital grants and your innovations grants, have you done anything on carbon sequestration and storage?

Iain Todd: That would come under a different budget line in the DTI. We have a budget line for cleaner-coal research, which is running at about £8 million a year. A group is looking into carbon sequestration. Members will have seen in our white paper the recommendation for a study into precisely that subject. The group is working on that recommendation.

Brian Adam: I want to go back to the convener's line of questioning. In paragraph 17 of your submission, you refer to the transmission issues working group. In Scotland, there are concerns about transmission charges. What kinds of concerns have been raised by interest groups, and what steps does the DTI recommend to resolve those concerns?

The Convener: Before you answer, Mr Todd, somebody in the chamber has either a mobile phone or a paging device that is interfering with our sound system. I ask people to check any electronic equipment that they may have to ensure that it is off.

Iain Todd: None of us in the sector is under any illusion; we know that the grid is central to delivering our targets. We worked hard on securing the confidence of the financial community when we extended the obligation from 2010 to 2015, but the accompanying issues of grid and planning must also be delivered because all three are required before a project can go forward. The transmission issues working group is central to delivering the grid component. We know that that group has to move urgently. We have all the correct players round the table—the industry, the DTI, Ofgem and Scottish public sector interests.

I mentioned in my introduction how welcome the sanction from Ofgem was on the Beauly to Denny reinforcement at the central spine of Scotland. We will maintain pressure in those discussions for further rapid action to develop that, because that could emerge as a critical path for renewable energy development. We have to take into account the time that might be taken for planning applications that are associated with the grid reinforcements. No one is under any illusions about how important and urgent all that is.

Brian Adam: I hoped that you would focus not on planning issues, but on financial arrangements. Generators in Scotland already export a significant proportion of their output south of the border. We are discussing the introduction of charges that did not exist before. The most likely sites for generation from renewables are in the more remote parts of Scotland and charges for the interconnector are likely to militate against development.

Iain Todd: It is because of those financial concerns that the Government has acted to introduce a power to limit transmission charges when they could impede renewables development. That is a key victory for renewable energy interests. As I said, the debate about that scheme's detail is yet to be had, but the Government will do its best to take on board the evidence that all the interests that you mentioned submit to that discussion.

Brian Adam: We have been through the dash for gas and now we have the rush to wind. Could the wave and tidal options, which might provide a slightly more secure supply than wind power, have the same fiscal and planning encouragement as other options have had? As others have said, this country has a lead over other countries on those energies, so should we take positive steps now to change the incentives for wave and tidal options, to achieve a proper balance in our future electricity supply?

Iain Todd: I agree with everything that you said. That is a promising matter on which the UK has a lead. The UK has the best resources to develop in Europe. That calls for rapid action. As I said, the message from our innovation review is that those energies should be strongly supported. We will seek that support in our discussions with the Treasury about the next award.

Chris Ballance: Good afternoon. Will you briefly clarify paragraph 2 of your submission, which is on statutory responsibility? The paragraph says:

"Responsibility for all other matters,"

that is, energy matters,

"including renewables R&D … remains with the Westminster Parliament."

I understand that energy efficiency and conservation, and distribution of money from renewables obligation certificates, are wholly devolved. Highlands and Islands Enterprise's submission says that it has just spent £30 million on renewables research and development. How does that fit in with the definition in your submission?

Iain Todd: The renewables items that you mentioned probably fall under the devolved activity of renewables promotion. You said that energy efficiency is devolved. If that is an omission from paragraph 2, we will correct it.

Chris Ballance: Later this afternoon, we are to hear from the Scottish Renewables Forum about taking wave and tidal technologies from research and development to commercialisation stages. The forum tells us that we need a financial mechanism that includes grant funding for establishing manufacturing facilities and tariff funding for installation; strategic environmental assessments to show where such devices should be put around the Scottish coastline; and clarification of the process for receiving consents for offshore energy sites. Are those three items likely to be in place soon enough to enable Scotland to lead the world—in particular to lead Portugal—in the development of offshore tidal marine energies?

Iain Todd: The first of those items, which relates to capital grant support, is a very good fit with the model that we have used with other technologies so far. I could see that it would certainly be feasible for that to be delivered. We will have to wait and see what our level of award is under the spending review 2004 process.

The third point, on SEAs and consents, is a matter for the Scottish Executive so I should not enter that area.

On the point about further financial support for tariffs, members will be aware that within Europe there is a fair old debate about the two principal forms of supporting renewable energy: one is the obligation-type system that we have here in the United Kingdom and in certain other countries, such as Sweden; and the other is the feed-in tariff approach that is available in, for example, Spain and Germany. The forum's second request mixes approaches. Our approach so far in the UK has been a combination of ROC support, as the fundamental mechanism, topped up by supplementary capital grant support to individual technologies.

Having said that about particular mechanisms, I come back to my point that support for marine energy is a main finding of our innovation review. We are committed to moving that sector forward as rapidly as we can to pre-commercialisation and then commercialisation.

The Convener: I have two final points.

One of the areas on which we have concentrated is the intermittency of wind generation, in particular, which means that if we are successful in bringing a large tranche of such generation forward there will be problems for the grid. Paragraph 22 of your submission states:

"it will be necessary to ensure that future electricity market and trading arrangements include incentives to bring sufficient plant capacity forward in order for reliability of supply to be maintained."

Have you any idea what those arrangements might be?

Iain Todd: Wind intermittency was studied in some detail at the time of the energy white paper. One of the supporting references that was published addresses the issue. All the advice was that at the levels of wind generation up to the target of 10 per cent by 2010, the grid could cope with intermittency. At the levels that we aspire to in the second decade, some additional costs would come through in order to deal with intermittency in respect of keeping the grid more stable and so on. The costs have been quantified and they are given in that reference.

The study did not identify fundamental obstacles that would prevent us from moving forward in the second decade; it simply stated that some additional costs would be involved in coping with the situation.

The Convener: How would that transpire in practice? The costs, apart from strengthening the grid, would be incurred in building a couple of thermal stations here or there. How will you get somebody to do that?

Iain Todd: It is probably more to do with active management of the grid. We are supporting a number of technologies in this area. Last week we launched the centre for distributed generation; it is a collaboration between two leading universities in the area—the University of Manchester Institute of Science and Technology and the University of Strathclyde—that is investigating smarter ways of managing grids to cope with issues such as intermittency. We have a fund of £4 million out of the sum that I mentioned earlier that is used to examine grid management issues, storage issues and so on.

We have allocated the centre for distributed generation a budget of £1.6 million over the next five years to carry out research in those areas. When one talks about additional costs, the costs are not necessarily in relation to building different kinds of power stations—there are smarter ways of addressing the matter.

The Convener: The final point that I want clarification on relates to Ofgem's evidence on carbon trading. Paragraph 2.2 of its submission compares the cost per tonne of carbon saved under the ROCs—between £200 and £450 per tonne—with DEFRA's estimate of the cost of carbon abatement in the UK of £29 a tonne. We realise that those are different mechanisms, but they are trying to achieve the same thing and the difference in cost seems to be substantial. Can you shed light on why the difference between the figures is so large?

15:30

Iain Todd: I am not an expert on those figures, so I will not comment on them. However, I can say that the white paper starts from the premise of setting UK targets for saving carbon and sets out a number of mechanisms for doing that. The white paper includes action on energy efficiency, combined heat and power, renewables and emissions trading. It is obvious that, of those, energy efficiency—not using energy—is the cheapest option in pounds per tonne of carbon saved. There are limits to what can be achieved under each of the other mechanisms because they relate to changing behaviours. The Government has taken us in the direction of establishing a significant renewable energy component in the energy mix to contribute towards the carbon targets.

Other benefits flow from the move to renewable energy. Those include having a more diverse energy supply, which assists with energy security, and the employment consequences that flow from the switch to renewables, which is not solely about carbon. I could undertake to provide more information on the cost of carbon, if that would be of assistance to the committee.

The Convener: Yes. That would be useful. Several members of the committee felt that paragraph 2.2 of Ofgem's submission was not totally clear to us. We realise that it is a technical matter.

As there are no further questions, I thank Mr Todd for his evidence. We look forward to hearing from him again.

Iain Todd: Thank you for your time.

The Convener: Given that we have two further panels of witnesses, we will have a short suspension.

15:31

Meeting suspended.

15:44

On resuming—

The Convener: I welcome everyone back after that short break. Our third panel of witnesses consists of Jim Hunter, chairman of Highlands and Islands Enterprise, and Elaine Hanton, senior development manager for renewables with Highlands and Islands Enterprise. We have received your written evidence, which there is no need to repeat, but I invite you to say a few words—briefly, please—if there are any points that you wish to highlight.

Jim Hunter (Highlands and Islands Enterprise): In the context of renewables, the Highlands and Islands is a very significant part of the UK. Renewable resources have been tapped in the form of hydroelectricity over a long period, and there is scope for more hydro. Wind power has huge potential, wave and tidal power could be even bigger, and we also have an interest in biomass. If the renewables targets that have been set by the Scottish Executive and the UK Government are to be met, the Highlands and Islands will have to be at the centre of a lot of the action. We welcome that.

Much of our area is on the up and up economically, and we believe that renewables can help to sustain and accelerate that momentum. That is why we are investing so heavily in developments such as the Vestas-Celtic Wind Technology plant that members saw in Kintyre. When the Vestas development came on stream less than two years ago, we were looking for 80 jobs in three years; we have now secured more than 200 first-class jobs there in under two years. That is an absolutely excellent development, and we are undertaking many more initiatives, such as the European Marine Energy Centre in Orkney.

We are very positive about renewables, but we have issues that we believe the committee can help to resolve. I will mention two of those by way of introduction. The first relates to infrastructure—principally, the grid. The second concerns the steps that need to be taken to ensure that Highlands and Islands communities have a long-term stake in the development of the renewable resource.

If the potential of renewables is to be tapped, and if targets are to be met, the necessary grid connections must be in place sooner rather than later. Previous witnesses referred to the critical line between Denny and Beauly, which must be expedited, and similar links must be brought into Beauly from localities such as the Western Isles and Orkney. We need further grid connections

from Argyll and Shetland. Over and above that, there is a need for a widespread strengthening of the local distribution system. We need to move quickly in all those areas.

We worry that regulatory issues and further planning issues could get in the way. That should not and must not happen. So far, in places such as Lewis, the planning record is anything but reassuring. Many developments are simply taking far too long to come through the planning system.

My second introductory point relates to the community dimension. We have never lacked resources in the Highlands and Islands; our problem has been that, all too often, we have lost control of them to others. The fate of fisheries is a fairly obvious current example. We do not want the same thing to happen with renewables, and that is why HIE is devoting a lot of effort to working up proposals for how local interests—community interests, local business interests and so on—can be helped to take ownership of generating capacity in renewables.

As members know, a community energy unit is already operating. It has helped with more than 100 renewables ventures across the Highlands and Islands. Those are all small-scale ventures, however, and we are focusing on the need to get local involvement in much bigger projects—ideally, in lots of them. That might be by way of local ownership, pure and simple, or by way of joint ventures, whereby ownership is shared between local interests and larger commercial operators. In April, we will be making detailed proposals as to how that might be done. Generally, it will involve the formation of a community energy company that will marshal the necessary finance, help with technical issues and so on.

So far, our ideas have had a most encouraging reception when we have discussed them with everyone involved—the banks, the manufacturers and the big commercial operators. It will not be easy to implement them, but we are sure that it is doable and that the dividends—including a greater public buy-in and help towards meeting national targets in renewables—will be immense. From a more local perspective, we believe that our ideas have real mileage in enhancing entrepreneurial effort in rural communities. Most of all, we are hoping to create revenue streams that can be used to diversify and expand the rural economy further.

We feel that the matter is critical. I have already mentioned Vestas; renewables are providing the Highlands and Islands with hundreds of good jobs, and many more such jobs will be available through manufacturing, grid construction and so on. However, we believe that, in the long run, the revenues from renewable energy—from wind power in the first instance and from wave and tidal power a little way down the track—are fundamental. It is essential that a worthwhile proportion of those revenues is available for local investment and enterprise, which is why we are so committed to getting localities, local communities and local business interests involved in renewables on their own account as urgently as possible.

The Convener: Thank you.

I begin by taking a slightly different tack. Much of the evidence that we have received on renewables has centred on wind power, on which the technology is obviously focused. However, Scotland makes a substantial renewable energy contribution in the form of hydroelectricity from the former North of Scotland Hydro-Electric Board area and, of course, from the old South of Scotland Electricity Board area. I am interested in your comment that opportunities further to develop hydroelectricity still exist, because that message certainly has not come across to any great extent from most witnesses. Will you expand on that comment? How big are those opportunities?

Jim Hunter: Although the bulk of the hydroelectric resources has been tapped, there are still opportunities for small-scale, local development. We should also not lose sight of one or two opportunities to introduce very large-scale hydroelectric schemes. I ask Elaine Hanton to provide some detail on that, particularly in relation to Scottish and Southern Energy's scheme at Glen Doe.

Elaine Hanton (Highlands and Islands Enterprise): Scottish and Southern Energy's scheme will provide up to 100MW, which will make it the largest hydro scheme to be developed in Scotland for many years. As Jim Hunter said, there are a number of community-scale projects—

The Convener: I am sorry—where is the Scottish and Southern Energy scheme based?

Elaine Hanton: It is in Glen Doe, which is on Loch Ness-side, near Fort Augustus.

As I was saying, a number of community-scale projects are being developed through the work of our community energy unit. As a result, there are more hydroelectric projects under way than one might expect at first glance.

The Convener: I notice that Jim Hunter said that we should not lose sight of the opportunities for one or two large-scale hydroelectric schemes. Are you being deliberately coy about the second scheme?

Jim Hunter: That might have been a pardonable exaggeration on my part.

The Convener: I see. So a couple is shorthand for one, then.

Jim Hunter: Yes. It is shorthand for one, with lots of little ones as well.

Mike Watson: I want to raise two or three points. In your submission, you say:

"Regulation of the electricity industry is undergoing a period of change … It is … essential that electricity users in the Highlands and Islands do not incur higher prices because of the cost of investment required to deliver renewable electricity to areas where demand is greater."

Do you have any suggestions about how that might be achieved, given that, as you might have heard, Ofgem was very clear about its commitment to market forces and a competitive market?

Elaine Hanton: We are concerned about the cost of upgrading the infrastructure, by which I mean the transmission and distribution lines. Under BETTA, Ofgem will ensure that those costs are shared across the UK. It is very important that that principle is maintained as proposals to develop BETTA and other regulatory changes are introduced.

As members know, the population of the Highlands and Islands is relatively small for the size of the area. As a result, it would be quite unfair for consumers in the Highlands and Islands alone to meet the costs of investing in infrastructure in the area when such investment relates to national and international targets.

Mike Watson: Are you confident that, given the dispersed nature of the Highlands and Islands, BETTA will address the problem that you have raised of meeting the cost of investing in the infrastructure?

Elaine Hanton: We certainly support the principles of BETTA. We welcome the fact that it will bring further competition and transparency to the Scottish market. However, like other witnesses to the inquiry, we have concerns about transmission charges, distribution charges and the inequality between generators connecting to the 132kV system in Scotland and those in England and Wales. We are concerned to ensure that generators are not dissuaded from developing in the north of Scotland because it is more expensive for them to transmit their electricity from the area. As Dr Hunter said, the substantial renewables resource in the Highlands and Islands must be exploited if the Government is to meet long-term targets. We do not want developers to be scared away because it will be expensive to transmit their electricity to the centres of population.

Jim Hunter: One of our concerns for the medium to long term is that if we do not get the infrastructure in place in the short term—when it will be servicing wind power, for the most part—it will not be in place to allow us to capitalise on the enormous potential for wave and tidal power. As was said earlier, those technologies are not yet at the commercial stage, but we believe that they will get to that stage eventually and there will then be huge potential for the Highlands and Islands in the generation of power from those sources. If we do not put the infrastructure in place on the back of wind power, we will be at a huge disadvantage when it comes to capitalising on other technologies. Our interest in the infrastructure is geared to wind power in the short term, but getting it in place is also a prerequisite for developing the much bigger marine resource out there.

Mike Watson: So getting it right at this stage is important.

The second point that I want to raise relates to another of the key issues that you mention in your submission. On planning, you say:

"strengthening the local supply chain and securing local benefit is dependant on unblocking the consent process to ensure sufficient projects proceed to meet Government targets."

What did you mean by "unblocking"? What blockages need to be overcome?

Jim Hunter: In general, we are concerned about the time that elapses between the beginning and end of the process. For example, the proposed large wind farms in Lewis, which in principle are still forthcoming, have been under active consideration for a couple of years, or even longer. The developers and others have spent many hundreds of thousands of pounds on environmental impact studies and the like. I am not saying that those are irrelevant and should be disregarded—that would be quite wrong—but it seems to be taking far too long to proceed with developments. In the case of Lewis, despite two years of work, we are still many months away from the point at which the developer can lodge a formal planning application, and beyond that will come the whole planning process. That seems to be making more of a meal of things than is necessary, given the national interest in getting the resource tapped and meeting national targets.

In a sense, we have even greater concerns in relation to the grid. The Beauly to Denny grid link, which has been mentioned, is now in active preparation. In the Highlands and Islands, the grid has reached its capacity. Scottish and Southern Energy will not provide any further grid connections for renewables. That link is necessary if we are to tap any further capacity; even then, we would be opening up only a relatively small proportion of the total potential. Given the nature of the terrain that the link has to cross between Beauly and Denny and the environmental interests that will be taken into account in the process, the link could take an extraordinarily long time to finalise.

I am not necessarily saying that things should be done in this way, but, looking back to the 1970s, when the UK Government felt that there was an urgent need to develop the offshore oil resource, it is interesting to note that major developments in the way of platform fabrication yards in the east of Scotland and the Highlands and Islands were given planning permission in a matter of weeks or, in some cases, in a matter of days. When there is a national will to do such things, they can be done. The Executive should think seriously about how it might expedite the planning process in respect of renewable energy developments and the grid connections.

Mike Watson: Thank you for that thorough explanation. I was interested in your use of the terminology "unblocking", rather than reforming, the consent process. Do you believe that legislation is required? Is the current planning system being abused or slowed down in a way that you think should be addressed?

16:00

Jim Hunter: I would not want to say that it is being abused. The system is there and people have legitimate concerns from their point of view. Clearly, they are seeking to utilise to the full the planning regime that is available. One can hardly say that they should not be permitted to do that, but it might be necessary to consider the planning regime.

In this context, which is a matter for you, your colleagues and the Scottish Executive, there is a proposal to reform the planning system. If, as has been widely predicted, there is to be a third-party right of appeal under the new regime, things will get much worse from the point of view of expediting the sort of developments that we were are talking about.

Mike Watson: You have anticipated my next question so I will not dwell on that any longer.

My final question is slightly related to planning. In your paper, you make quite a bit of community involvement in renewables and the benefits for communities. We heard evidence from Argyll and Bute Council about what it is doing, but we also heard objections from one person who lives in that area on the environmental impact of wind farms. What is HIE's view of that impact? Tourism is a major economic earner as far as that area is concerned, and it has been suggested that tourism could be hit by wind farm developments, although the evidence is far from clear—even VisitScotland's survey is not clear. In relation to the development of renewables, could there be there a conflict between what HIE wants and the importance of tourism, either at any point or in particular places?

Jim Hunter: Tourism is obviously a vital industry to the Highlands and Islands and, indeed, to Scotland. However, I am not persuaded that renewables will have a hugely adverse impact. Practically every development that has ever happened in the Highlands and Islands was said to have had a hugely adverse impact on tourism, either when such developments were proposed or when they were implemented. We would not have hydro generation if we had listened to all the Jeremiahs who said that no one would ever visit the Highlands and Islands again once the place was covered in hydro dams—so it has gone on. Fish farming is another example. We were told that once there were fish-farming cages in a lot of west coast sea lochs, tourism would have had it. All such predictions err hugely on the pessimistic side.

That is not to argue that we should cover the entire west Highland landscape with wind farms or the sea lochs with fish farms. We have no doubt that there can be a really worthwhile and substantial development of wind farms, wave power and the like in future. All that can happen without impacting adversely on tourism.

As I seem to be obsessed with fish farms, I might as well use them as an example. It has been the experience in areas where there have been many such developments that a lot of visitors respond positively to them. They are curious about and interested in fish farms.

Open days at the longest established wind farm in our area, in Novar in Easter Ross, have been hugely oversubscribed of late. People want to go and look at wind farms in very large numbers. There are real concerns and issues—it would be silly to say that there are none—but it would be completely wrong to take the view that renewables will have a major, adverse impact on tourism. They will not.

Murdo Fraser: I have a point of clarification about something that you said in response to Mike Watson about the Beauly to Denny transmission upgrade. As I recall, you said that, if the upgrade did not go ahead, that would make it impossible for any new renewables projects in the Highlands to continue. Would that include the Glen Doe hydro scheme? Would that scheme not be possible without the upgrade?

Jim Hunter: It would have to feed into that line as well.

Elaine Hanton: A number of projects—I am not sure whether Glen Doe is among them—have sought grid connection quotes before receiving planning consent, so it may be that some of the projects with a connection offer will fall by the wayside. Such offers can then be offered elsewhere. Some new projects may be able to

come on stream, but, in the main, capacity is now full, and no entirely new offers will be made by Scottish and Southern Energy.

Jim Hunter: Given the timescale of the proposed Glen Doe scheme, which has not even started yet, and taking the more optimistic view in relation to getting planning consents and constructing the line, which will not be a simple matter, I guess that if Scottish and Southern Energy's more optimistic forecasts for the connecting line between Denny and Beauly are met, it would be available by the time Glen Doe comes on stream. However, you would have to ask Scottish and Southern Energy for the detail on that.

Murdo Fraser: I have a substantive question on the completely different subject of the development of wave and tidal energy, which you mention in your paper. I will ask you what I call the Portuguese question. I have put that question to various witnesses, and nobody has yet given me the answer. However, as you mentioned Portugal in your written submission, I hope that you will have the answer. What mechanisms did the Portuguese Government use to encourage the extension in wave energy deployment that you mention in your paper?

Elaine Hanton: As we understand it, the Portuguese Government is offering a price incentive for wave energy, which is worth around 15p per unit—the price of ROCs in Scotland is substantially more than that. The Portuguese price incentive will be offered to the first tranche of wave development. Initially, the incentive was being offered for the first 20MW, but we understand that it has now been extended to the first 50MW. That is a pretty good incentive to encourage a new industry in Portugal.

Our concern is to ensure that Scotland and the UK do a good job of bringing forward R and D in wave energy. We hope that the European Marine Energy Centre in Orkney, for example, will help to test and prove devices. However, once that has been done, if sufficient incentives are not in place here, the devices will go straight to Portugal or elsewhere in the world, where they will be commercially deployed, with all the associated benefits that that brings, and we will have lost that opportunity.

Jim Hunter: As members will be well aware, there is a sense in which we have been here before with wind power. We had the technological lead in wind power at one stage, but most of the large-scale commercial development, such as the manufacturing and so on, was concentrated in places such as Denmark. From that point of view, it was heartening to hear what the witness from the DTI had to say about that, because the Government seems much more seized of the issue than may have been the case in the past. We hope that Scotland and the UK can become a Denmark, in respect of wave and tidal power.

Murdo Fraser: In other words, you are calling for an amendment to the ROC system to try to favour wave and tidal power.

Jim Hunter: Yes. In general, we would support any incentives that could be given under that heading.

Elaine Hanton: That could be achieved either through a differential price for wave energy or through a mixture of differential price and capital grants. The forum for renewable energy development in Scotland has set up a marine sub-group specifically to consider what should and can be done to promote wave and tidal energy in Scotland. The sub-group will report back to the Scottish Executive relatively soon.

Chris Ballance: Your submission mentions the work of the community energy unit in helping geothermal heat pump technologies. I think that that is the first time geothermal power has been mentioned during the inquiry. Do you have any idea about the potential of such power as a source of heating, either in the Highlands or in Scotland generally? The technology is relatively small, but what stage is it at and what is its potential?

Elaine Hanton: Through the work of the community energy unit, a range of small-scale technologies are beginning to be developed at community level. As Chris Ballance rightly pointed out, there are examples of geothermal projects, although they are relatively few at present. However, we hope that the number will increase as the work of the community energy unit progresses. I cannot say what the potential is for geothermal power throughout the north of Scotland, but we can provide more information on the projects that we have supported to date, if that would be helpful.

Jim Hunter: I guess that this has something to do with the fact that Highlands and Islands Enterprise has a long-standing commitment and responsibility to engage actively with community development and community regeneration, but it is interesting that, as the work of our community energy unit demonstrates, we are seeing a remarkable interest and enthusiasm in communities throughout the Highlands and Islands for that sort of project. A range of such projects have emerged, been financed and made progress. It is not for me to canvass on what should happen south of the Highland line, but it would be nice if more effort was put into instigating such take-up of similar opportunities in other rural parts of Scotland.

Chris Ballance: I am interested in seeing any information that you have on the issue, particularly

as I have a friend who stays in the Highlands who has just decided that to install a geothermal plant in the house that he is building will not be financially worth it.

I have another question on an unrelated issue. Your submission mentions achieving Government targets through energy efficiency improvements. Will you outline what action you are taking to achieve that end? What could central Government do to help you that it is not doing at present?

Elaine Hanton: We have run a scheme to offer businesses in the area advice on energy efficiency. Those businesses can come to us if they require capital assistance. That scheme is run nationally by the Scottish Executive and Whitehall. We have perhaps made more of a difference through our work with communities. Through the work of the community energy unit, for every community project that we support, we consider what energy efficiency measures can be introduced or implemented. That work is beginning to have more of an impact on energy conservation than we might otherwise have achieved.

Chris Ballance: Is there anything extra that the Executive could do to support you in that work?

Elaine Hanton: The Scottish Executive has been supportive of our work to encourage communities to adopt energy conservation measures. It would be wrong to suggest that the Scottish Executive could do more, because it is already supportive in that respect.

Jim Hunter: It is worth stressing that there is a difference between the sort of community effort that is already happening through our community energy unit and the involvement of communities and local business interests in much larger-scale generation projects.

However, it is worth putting on record and stressing the fact that both the Scottish Executive and the DTI have been very supportive of, and are very interested in, the work that we are doing to develop the project. Just before Christmas, we met Stephen Timms, who evinced considerable interest in our work. We have some way to go before we will able to go public with the financial and other details of the project, but we are convinced that it has real potential. A number of communities and interest groups in the Highlands and Islands would like to become involved in this level of generation. We hope and think that if we can make a go of it in the context of the Highlands and Islands it will be applicable elsewhere in Scotland and the UK.

16:15

Chris Ballance: Friends of the Earth has given us figures with the papers for this meeting that show that the Highlands is one of the worst regions as regards energy efficiency improvements by local authorities under the Home Energy Conservation Act 1995. I suppose that that is outwith your remit.

Jim Hunter: For better or worse, we are not here to speak for the Highland Council.

The Convener: I want to pursue the issue of community ownership for commercial reasons, rather than to generate local electricity. Why are communities particularly interested in that and why are you interested in pursuing it? Is it just a way of getting around the planning problem? In other words, if a project belongs to people, they will not object to it. Intrinsically, there seems to be no better reason for having a community wind farm run commercially than there is for having community distilleries or other community enterprises situated locally.

Jim Hunter: If the potential of the resource is developed to anything like the extent that is conceivably possible, we are talking about annual revenues from renewable energy that would be worth an enormous amount of money.

Let me take the almost parallel case—the parallel is by no means exact—of offshore oil. It was extremely beneficial to Shetland, for example, that it was able to capture a share of the revenues from offshore oil. The way in which that was done was entirely different from what we propose; it was, in effect, done by means of a levy on throughput at Sullom Voe. Nevertheless, that meant that through the local authority—Shetland Islands Council—the Shetland community received a share of the revenue, which has had beneficial consequences for the wider Shetland economy over the past 20 or 30 years, of which we are all aware.

Community benefit is a fundamental aspect of the issue that we are discussing. There have been benefits from renewables—at Vestas, for example—which we very much welcome. It is superb if inward investors such as Vestas set up plant and create very good jobs in large numbers. We are absolutely behind that.

However, we also want a long term on-going legacy from renewables. The day will come when we will have exhausted the potential for creating new wind farms and the like, although the revenue will continue. If all that revenue simply benefits large corporations that are headquartered and located elsewhere, it will not automatically or necessarily be available for investment in the economy of the areas from which the resource comes.

Control of exploitation of natural resources by interests that are located elsewhere is a long-standing problem of the economies of areas such

as the Highlands and Islands. We are endeavouring to create a mechanism that allows not just communities in the sense of community councils, community groups and so on but, more fundamentally, local business interests and people who are involved in commerce, industry and business locally in the Highlands to get into renewables and to capture a share of the revenue potential of such developments. That is why we are interested in and committed to the notion that we can capture a share of that revenue for local benefit through the mechanisms that we are trying to develop.

It is worth stressing to the committee that what is true of the Highlands and Islands in this context is true of the rest of Scotland. We should welcome the involvement of bigger operators from elsewhere and we should smooth their way, but we should also give local interests opportunities in the industry that they would otherwise not have. By creating an overarching community company that helps to finance and takes an interest in such local development, we can go some way towards cracking the problem.

We are trying to buck a long-standing trend in areas such as the Highlands and Islands, where resources have been developed for the benefit of other localities. It is worth mentioning that we have regard to what happened with hydroelectricity. As a result of the North of Scotland Hydro-Electric Board's development of hydroelectricity in the post-war period, the Highlands and Islands had the huge benefit of a complete rural electricity distribution network. However, the area had no share of the revenue. People who live in localities that generate large amounts of hydroelectricity have no way of accessing the revenue that that provides. We are trying to break through that.

Brian Adam: Some financial arrangements have not recognised hydroelectricity as a renewable energy source. Is there any hope of redressing that in the Energy Bill? Hydroelectricity is a renewable source, but I understand that it is not being treated as such in relation to the climate change levy, for example. Hydroelectricity is still being taxed when it should be exempt.

Elaine Hanton: I am aware of the point that Brian Adam makes. The greater renewables incentive is the ROC system. All new hydroelectricity build will be eligible for ROCs, which are worth an awful lot more than the climate change levy exemption. However, we take your point that hydroelectricity is a renewable resource and should be treated as such in all legislation.

Brian Adam: That anomaly should be addressed as part of the changes.

Your submission refers to significant strengthening of the grid and the distribution system, and to concern that the benefits of development should be spread widely to mitigate the effects of concentrated clusters of development. Why do you have a problem with concentrated clusters of development?

Elaine Hanton: Our concern is more about going through the planning process. If several projects follow a 132kV line spur, more and more planning concern will arise about the cumulative impact. We suggest that if that development pattern could be spread more evenly, an easier or less strenuous way through the planning process would be created.

Brian Adam: Is your concern solely that the planning regime would make it more difficult to have concentrated development clusters?

Elaine Hanton: We are seeing evidence throughout the Highlands and Islands that planning authorities are concerned about the cumulative impact of wind farms, for example, which they struggle to deal with. Our concern is that if developments continue to cluster around places where connecting to the grid is easier, that problem will continue.

The other issue is that by spreading development, a greater chance of becoming involved is offered to communities throughout the Highlands and Islands, not just to those that are situated around the cluster.

Brian Adam: How should the delivery of significant infrastructure change be financed? How should that be achieved? What should Ofgem take into account in its regulatory role? What should current generators do? Who should have the responsibility?

Elaine Hanton: As we say in our written evidence, we believe firmly that the cost of upgrading the infrastructure to meet national and international targets should not be borne solely by consumers in the Highlands and Islands. The population there is very small for quite a large area. We agree with the principle in BETTA that the costs should be spread across the UK. We are keen to ensure that that principle remains intact as proposals develop.

Susan Deacon (Edinburgh East and Musselburgh) (Lab): I would like to ask about a couple of matters. Many of my questions have been covered in questions by Chris Ballance and the convener, but I am still left wondering how we can increase the delivery of small-scale developments. I suspect that, of necessity, people in the Highlands and Islands have a better sense than most about such things. HIE's paper mentions a number of islands that are not connected to the grid and where some form of renewable supply has been developed. Can you explain in simple terms—or, for my benefit,

simplistic terms—the range of methods that are being used? Are local companies coming into the market to offer small-scale support? Are the bigger power companies becoming more active in this area, when small communities want to develop renewable capacity? Can you give us more of a feel of how things are developing? The committee has spent a great deal of time talking about large-scale developments, so it would be useful to get a sense of the opportunities and practicalities at the other end of the spectrum.

Elaine Hanton: There are examples of such developments throughout the Highlands and Islands. In the past year, the level of community interest in developing renewables has been astounding. More than 100 projects are now being supported. Some very small communities have come up with ideas themselves; others are responding to, for example, commercial developments and are looking for opportunities to work with commercial developers. Some groups of local businesses have come together to look for opportunities to develop projects as joint business and community projects.

Schools and community centres are also involved in activities. A range of technologies are being worked on, too—from small-scale wind-power developments to geothermal heat pumps and photovoltaic or solar energy projects. There are also combinations of those technologies and we even have some solar-powered streetlights and public toilets. The bulk of the ideas have come from the communities themselves, where people have a genuine interest in making progress with local opportunities.

Susan Deacon: And on the supply side?

Elaine Hanton: A growing number of local businesses are involved in supplying the sector. Obviously, there are the larger companies such as Vestas and the Isleburn Group on the manufacturing side. We have a leading civil contractor and a number of electrical installers and plumbers who are considering opportunities for installing solar panels, for example. We recently saw the demise of Torren Energy Ltd in the Lochaber, Skye and Argyll areas; but the demise of that company has led to the emergence of several new local companies to fill the gap by supplying wood for small-scale boilers, for example. There is a huge range of businesses out there. A recent study of ours into the number of businesses in the Highlands and Islands that were able to supply the renewables sector identified close to 500 such companies. Of those, 130 are of reasonable size and are in a position to service the sector, if they are not already doing so.

Jim Hunter: At the small-scale end of the spectrum, it would be helpful if there were more joined-up government, if I can use that phrase. I will give a specific example. A new secondary school opened recently in Strontian in Morvern, in the Lochaber area of the west Highlands. There is an absolutely excellent project in that area called the Sunart oakwoods project, which includes Forest Enterprise, Scottish Natural Heritage and others and there was a proposal at one stage to connect the school to the project through a scheme that would see the school being heated by wood fuel. I think that I am right in saying that the scheme foundered because the private bit of the public-private partnership that was building the school did not want to take financial risks with what was perceived to be a novel and unproven technology. That meant a return to heat being provided through electricity, gas or whatever, which costs a fortune in the Highland context.

16:30

Susan Deacon: Thank you for that interesting insight. I have a linked question about skills development. Your submission refers to wider work that is being done on that subject. Will you tell us about the stage of development of that work, what your thinking is at this stage about where skills gaps exist and on which areas most attention needs to be focused?

Your submission makes reference to diversification. I am also interested to know in what areas there has been diversification into renewables. I am conscious of the fact that you might have tomes of hard-edged statistics on the subject, but for the purposes of today's meeting, it would be helpful if you could give us an overview.

Jim Hunter: Elaine Hanton will talk about diversification in more detail. By way of background, I can say that the issue is one of particular importance to us. The situation with which we are dealing across much of the Highlands and Islands is that there is a fairly acute labour shortage—there is not only a skills shortage, but an absolute labour shortage. We have low unemployment rates; the rate for the region at the moment is well below that of Scotland as a whole, which is unprecedented historically.

Although that is welcome—we much prefer to have that problem than the previous one—we are concerned about where we will get the labour that we need. To take one example, Vestas has swept up—so to speak—the available unemployed people in the Campbeltown area and is now importing people from elsewhere. We will see that happen throughout the area.

Elaine Hanton: In terms of skills research, the work that we mention in our submission was started recently. As Jim Hunter mentioned, we have undertaken a review of companies in the

Highlands and Islands that are involved in renewables to find out the needs of those companies, whether they have skills gaps now and whether, if they are to continue to be able to service the renewables sector, they expect to have them in the foreseeable future or in the longer-term.

The last thing that we want is for companies from outwith the Highlands and Islands to come in and build the wind farms, high-voltage connections or whatever in our area without local companies having the opportunity to win some of that work. We want to be proactive in identifying what the issues are for those companies at present in order that we can put in place a work-force development plan in which we set out our strategy for helping to address skills gaps and skills shortages.

The shortages that we have identified to date include shortages on the engineering side. We understand that more engineers are now coming through the university system, but there is a gap between the entry of those new engineers and the engineers who have been institute members for many years and who are now reaching retirement age. We also expect to see a shortage of high-voltage electrical engineers, who are absolutely necessary and required if infrastructure investment is to proceed. That is a matter on which we also have an eye to the future.

We see opportunities for diversification in the oil and gas sector. The Nigg yard, which was an oil and gas fabrication yard in Easter Ross, has been in care and maintenance for a couple of years. In the past year, the Isleburn Group, a local engineering company, moved on to the site to produce monopiles for the offshore oil industry. The Isleburn Group is between orders at the moment, but it has shown that a company that worked almost purely in the oil and gas sector in the past can make the step across to the renewables sector and that it can do so quite successfully.

Jim Hunter: In connection with our obvious interest in promoting the university of the Highlands and Islands project, we would like some significant research and development to be undertaken in the Highlands, particularly on marine renewables—wave and tidal power.

The Convener: If there are no further questions, I thank Jim Hunter and Elaine Hanton for their evidence, which has been very helpful.

Jim Hunter: Thank you, convener—and if you want to talk about fish farming at any time, I am obviously your man.

The Convener: I will let the convener of the relevant committee know.

We now move on to our fourth and final panel of witnesses. I am sorry that you have been kept waiting a bit longer than anticipated. With us are Dr Richard Yemm, chairman of the Scottish Renewables Forum and chief executive of Ocean Power Delivery Ltd; Fergus Tickell, of Ormsary Farmers; and Professor Ian Bryden, dean of postgraduate studies and leader of the sustainable energy research group in the centre for environmental engineering and sustainable energy at the Robert Gordon University. We have your written evidence, but I believe that Dr Yemm wishes to say a few words to start with. In view of the hour, I ask you to keep your remarks as brief as possible.

Dr Richard Yemm (Scottish Renewables Forum): On behalf of the Scottish Renewables Forum, I thank you very much for this further opportunity to speak on a number of issues. The core of our submission was on emerging technologies and emerging issues, with a focus on wave, tidal and biomass power and small-scale initiatives.

As we move towards the aspirational target of 40 per cent of electricity coming from renewable sources by 2020, we will require a range of technologies to be utilised. The success of our electricity system to date has been based on a mixture of technologies giving security of supply. The other issue that needs to be recognised, and which is being picked up on in other initiatives—although it needs more focus—is the fact that the target of 40 per cent covers only about 20 per cent of the country's total energy usage. We would like an extension of the initiatives that have already been set out to overall energy targets.

We need to focus on breaking down the existing barriers to emerging technologies, while ensuring that we are not introducing any new ones. One topical one is locational charging in BETTA. The SRF's own figures show that if locational charging were applied now in the form that is proposed, it would cost Scotland £128 million more than at the moment. To put that in context, that means that a region that is supplying around 13 per cent of the UK's generation would be covering about 54 per cent of the cost. If there is an urge and a requirement here, it is to clarify the costs of the various proposals. The information that the renewables obligation costs between £250 and £400 per tonne of carbon is so far out of kilter with what are generally accepted to be the costs that there needs to be an inquiry into the breakdown of those costs.

I will turn to the specific technologies. We are at a very exciting time in the industry as far as wave and tidal power are concerned. New technology is coming forward, and we have the interest of commercial parties and the ear of Government. If things are taken forward correctly from here, we have a real chance to maximise the opportunities

that are presented. Clarity on targets and aspirations is required. We need to build the business case for the country as it starts out along what may be a fairly bumpy road.

The role of the marine energy group in FREDS is to lay out the requirements for the new industry. The group will report in May, when it will make a series of recommendations on how the industry should move forward. Those recommendations will concentrate on a number of elements. They will consider market pull and how a mixture of revenues and grants can be used. They will also consider costs and how to strike the right balance there for the country.

A key issue will be strategic environmental assessments. Contrary to common belief, commercial developments in Scotland will be blocked completely from April unless an SEA has been carried out. However, the current SEA process has some omissions. For example, although SEA 4, which deals with Orkney and Shetland, was completed by the DTI only recently, it did not include marine energy. That is a vital area for the Scottish Executive to get involved in.

The grid is another key barrier that affects all renewables. It is particularly topical at the moment because we have no new connection applications in precisely the target areas for initial marine projects. At present, we need provision for several 10MW-scale demos and we will obviously need larger-scale deployments in the future.

There are also issues with permissions. The SRF's proposal is that we should smooth out the process by adapting the existing system of consents under section 36 of the Electricity Act 1989.

Another vital requirement is to develop Scotland's existing research base. Much of our expertise in the oil and gas sector is as applicable on the academic and research side as it is on the industrial side.

For biomass, joined-up policies are required. Earlier today, we heard references to chickens and eggs—although the references to chicken were not the usual ones that are made in the context of biomass. However, the technology requires a supply chain and a market for both the fuel and, ultimately, the electricity. We will achieve that only if we set targets. We need to recognise the different benefits, such as rural jobs, that biomass brings and put in place appropriate mechanisms to develop the industry.

Although it is often forgotten, there are also small-scale things that can be done. We need to ensure that we have the appropriate planning regulations. We need to establish a large market by educating and encouraging individuals to play their part in energy efficiency. There is also a need to encourage small-scale generation.

That is a summary of the key issues in our proposal. We are happy to answer questions on any of the specifics.

The Convener: I notice that one section of your written submission states:

"It is our estimate that wave and tidal technologies could meet up to 10% of Scotland's electricity needs by 2020".

The Executive's target is that 40 per cent of Scotland's electricity should come from renewables. Hydro power already accounts for about, I think, 8 per cent of Scotland's electricity. If we assume that there will not be a huge increase in the amount of hydro power—let us say that it reaches 10 per cent—that leaves a gap of 20 per cent. Where will that 20 per cent come from? If all the remainder were to come from wind power, I suspect that that would take us over what most people recognise as the sustainable level of wind generation.

Dr Yemm: Installed wave and tidal capacity will be limited by the rate of technical progress and by aspiration, so we would not say that the 10 per cent level could not be higher. To achieve 10 per cent of Scotland's generation by 2020 would require installation of 100MW per year from 2010. To put that in context, Germany installed 3GW in one year and Spain averaged an extra 1GW per year in installed wind capacity for three years in a row. We are not talking about an enormous programme to achieve that. The proportion of the target that can be met from marine energy sources is more likely to be constrained by aspiration, finance and the grid.

The Convener: I would have thought that your organisation would have been more bullish than most about the targets or predictions that it makes. If you are correct in saying that only 10 per cent of electricity generation can come from wave and tidal power, does that imply that the 40 per cent target cannot be met?

Dr Yemm: Absolutely not. That estimate in our submission was based on a realistic programme that was consistent with dealing with all the issues that we face. Grid connection is a key issue. There is a big mismatch between the location of the resource and the current format of the grid. The first round of upgrades is already almost fully spoken for and the next round that will be required to bring forward those technologies must be set in a realistic context. We must realise that we will be competing against established technology, for example the Lewis onshore wind farm, if the new upgrades come forward.

We will be limited only by aspiration, as I said. If we were able to equal the Spanish wind energy installation rate of 1GW per year, we could be producing 20GW of capacity—a third of UK capacity—by 2010. That is an unrealistic

aspiration, but through SRF and the marine energy group of FREDS, we have striven to come up with a programme that is realistic and deliverable and that could be financed, which will act as a springboard, so that we can deliver the promised exports, establish the industrial base in Scotland and take advantage of our resources, our skills and the industrial opportunity that the new technologies present, without breaking the Scottish purse in terms of a national programme. We need a secure home market to use as a springboard for exports, but that needs to be in the context of what is possible within the current framework.

16:45

The Convener: I press you to say whether you think that your 10 per cent estimate for wave and tidal power is realistic.

Dr Yemm: I think that it is absolutely achievable. It assumes a flat installation rate of 100MW per year, which is very low in view of the installation rates that are currently being proposed for wind. We will be limited only by aspiration.

The Convener: Are you saying that your estimate, as opposed to the Executive's target, is distinctly unambitious?

Dr Yemm: I am saying that it is deliverable and realistic. If there were an aspiration to achieve a 20 per cent target—half of the aspirational target for 2020, we would consider that and try to help you out.

Richard Baker: In the section in your submission on wave and tidal technologies, you also say:

"It is our estimate that with the right support wave and tidal could be providing up to 24,000 jobs in Scotland by 2015."

How did you arrive at that estimate?

Dr Yemm: The figure was arrived at purely by analogy with the current wind industry. A programme that would deliver 10 per cent of Scotland's electricity by 2020 would provide about half that number of jobs in the Scottish industry. However, if the wave energy sector were now to start to grow in the way that the wind sector did in Denmark and Germany and if Scotland were to secure 50 per cent of that market, 24,000 jobs would be provided. That demonstrates what a large success and what a missed opportunity wind energy represents. In just 15 years in Denmark, the number of jobs that are directly supported by the industry has risen from just a couple of thousand to 25,000 and the industry now has an annual turnover of between £3 billion and £4 billion. The figure of 24,000 jobs demonstrates the opportunity; if wave delivers as wind has done, the numbers of jobs that are created will be comparable with the number of jobs that are expected to be lost from the offshore industry in a similar period.

Richard Baker: I have a question about the readiness of the technologies, which I address to Professor Bryden. We have heard about the developing marketplace in Portugal, but I understand that the technology that is being used there is not as reliable or robust as the technology that we are developing in Scotland. Will you comment on that? How far is our technology from being able to be used in a marine energy plant or farm?

Professor Ian Bryden (Robert Gordon University): It is fair to say that the wave and tidal technology that is under development in Scotland is second to none in the world. The issue in Portugal is not technology development, engineering or research, but the incentives for early-stage installation. The concern of course is about what will happen next.

Richard Baker: What needs to be done in Scotland to create a situation in which there is a marketplace for the technology and marine energy can be economically viable? Would there be a role for increased, targeted ROCs, for example, or for other, additional, Government support? What is the best way to stimulate the market for marine energy?

Professor Bryden: At the moment, the unit cost of wave and tidal technology is too high to be truly economic in comparison with, say, onshore wind. The belief of many people in the wave and tidal community—I am sure that Richard Yemm would support me on this—is that when we have sufficient installed capacity of both wave and tidal current, the unit cost will come down so that we can compete with onshore wind. The question is how the funding gap will be met to take us up to the installed capacity that is required for economies of scale to come in.

Dr Yemm: It would be virtually unprecedented if wave energy technology were to be different from any other industrialised product to date. Generally, a process called technology learning occurs, which means that for every increase in numbers of a manufactured product there is a corresponding decrease in its unit cost and an increase in performance. To give the committee a context for that, wind power has consistently achieved a technology factor or learning factor of 0.8 during the past 20 years. That means that for every doubling of installed capacity, those who are involved have managed to reduce the cost of delivered energy by 20 per cent—that is a staggering achievement. It is also encouraging from the perspective of wave energy, for which we are looking at opening generation costs of 10 to

15p per kilowatt hour for small schemes. That represents the cost of wind power when it was a long way along its learning curve; we are starting from a point that is about half the cost of wind power when it started. That is a good place to start, and it is wholly unreasonable to expect that we will not go along a similar learning curve to that which has been achieved by everything from the microchip to the Ford car to the wind turbine.

The market mechanisms need to address the initial steep part of the learning curve, during which one undergoes a doubling of capacity frequently because there is only a small amount of capacity there. When we get to the large rungs at the top of the ladder, we get into the renewables obligation and we can begin to compete with existing sources. We can also address the credibility gap with respect to the people who will carry out the projects; we can bring in the stakeholders who are developing wind projects, other power projects, offshore oil projects and so on, to make them feel comfortable with the economics and the risks that are associated with putting the early schemes in the water. That is the role of Government—to take us along the initial bumpy road and down the commercialisation path in order to deliver industrial opportunity and put in place the stakeholders that are required to secure long-term opportunity for the country.

Mike Watson: You talked about the credibility gap and the role of Government, which relate to the area that I want to cover. On the first page of your submission, you talk of

"the lack of targets for heating technologies"

and about the ability of wind and tidal technologies to generate

"10% of Scotland's electricity needs by 2020",

which relates to the convener's question. It seems to me that you should be putting those arguments to the Executive—that also applies to the eight points that you list under the heading "To achieve success in wave and tidal we need to see the following". Do you have the opportunity to meet the Executive energy officials and put those points to them? If so, do you think that they have not been taken on board?

Dr Yemm: We have a tremendous initiative under way, chaired by Lewis Macdonald, called the forum for renewable energy development in Scotland. It is a committee or think-tank to take forward the issues that are raised in our submission and to make recommendations to the Parliament and the Department of Trade and Industry for adoption, in order to meet the objectives relating to those issues and to secure opportunities for Scotland and for the United Kingdom as a whole. Its first sub-group is the marine energy group.

That group has had a vigorous programme to address those issues and will deliver its report in May. This is an opportunity to brief MSPs, the Parliament and officials about that process and all the issues that will have to be tackled and which will be addressed in that marine energy group report. It would be wrong to pre-empt that report because the conclusions and recommendations are still being formed. However, this is a good opportunity for us to present the issues so that they will be fresh in people's minds when the report comes out.

Mike Watson: Point g in your submission talks about a strong research base. It says:

"We are also concerned about the low status accorded to Marine Energy research by the Scottish Higher Education Funding Council."

No doubt that issue will be addressed in the report to which you have just referred. However, it is surprising that there is no mention of the energy intermediary technology institute. I would have thought that it would have figured in some way. Perhaps Professor Bryden has an involvement through his Aberdeen connection. I did not see the ITI mentioned in the submissions and I wondered what role it could play in making up for what you describe as the "low status" accorded by SHEFC.

Professor Bryden: It is not mentioned in the submission because the submission refers to the research infrastructure. We could probably number on the fingers of one hand the academics who are actively involved in marine renewable energy in Scotland. That is largely the result of a lack of academic excitement about marine renewables during the past 20 years. Twenty years ago, wave power was a very exciting area for universities to be involved in. It went through the doldrums for a good 10 to 15 years when universities did not really invest in research infrastructure in this area, and SHEFC reflected that. At a recent meeting of the Scottish Parliament cross-party renewable energy group, I looked up and I reckoned that all but one member of the Scottish academic marine energy research community were present in that room. That is slightly worrying, if you think about what could have happened to us then.

Mike Watson: Or the fact that they could all be contained in one room.

Professor Bryden: Yes. It was not a big group. Four out of the five of us were within those four walls.

The ITI's remit does not include the development of infrastructure—both human infrastructure and the bricks and mortar—which is what we are short of. The small group of researchers spread over several universities in Scotland has been very successful in securing

research funding. I would say that, at the moment, 75 per cent of all the marine energy research projects in the UK are in Scottish universities.

The research is being conducted by that very small group and has been driven by individual rather than institutional enthusiasm. That has to be built up if we are to support the developing industry. I reckon that probably 40 times as many academics are involved in the oil and gas industry as are involved in marine renewables research. That is rather worrying and I hope that we can get the message through to the funding council that we should be taking a more proactive role to encourage vice-chancellors throughout the country to consider marine renewables research as a new area that is important to them and to the nation.

Mike Watson: Hopefully, the forum's report will play a role in that.

Professor Bryden: Yes. It is within the remit of the report.

Chris Ballance: You recommend that we should be setting heating targets. What might be a reasonable or achievable heating target?

Fergus Tickell (Ormsary Farmers): It would be difficult to set a target in the context of where we are now. There is a biomass group that works in parallel to the FREDS marine energy group that Richard Yemm mentioned. That is a key issue that has to be considered in the context of the development of biomass as part of a suite of renewable energy technologies that we want in Scotland.

Something like 80 per cent of energy in the domestic environment and about 45 per cent of the total energy in the UK economy is used for heat. Under the renewables obligation, there is no mechanism to encourage biomass technology. It is difficult to set targets without having done extensive work. We would like to think that the FREDS biomass group will produce the information. To use a continental example, more than 20 per cent of Finnish energy needs are delivered by wood fuels. There are exemplars on the continent that we can consider to see what is achievable.

17:00

Chris Ballance: Thank you. I do not know whether you heard representatives of Ofgem give us evidence on transmission issues. They said that they were hopeful that they would be in agreement with you on transmission and Scottish renewables by 1 April next year. Do you share that optimism?

Dr Yemm: Look at the date that Ofgem chose. A number of issues are involved here—the SRF can circulate another briefing paper on the current position. Issues such as locational charging and BETTA have been a hot potato, because they are a long way behind schedule in being delivered, the reasons for which are not surprising. On the question of 132kV transmission in Scotland and distribution in England, a good consensus has been reached between Scottish renewables players, Scottish and Southern Energy and Scottish Power. It is critical to resolution of the issues that the key stakeholders in the industry agree on the right thing to do. Ofgem seems determined to do something different. There will be turmoil to come, because of the tension between the people who are delivering the industries—Scottish Power, Scottish and Southern Energy and renewables players—and the market within which they are constrained, which sometimes, but not always, pulls directly against Government policies and the overall policies that the country wants. There are serious questions to be asked about motives and methods.

Chris Ballance: So you think that the Ofgem market as envisaged is likely to be a barrier when it comes in.

Dr Yemm: My view is that Ofgem is playing with fire. BETTA in its current form, as proposed by Ofgem, will be detrimental to the development of renewables in Scotland and the electricity supply in general.

Chris Ballance: I wish you success in your negotiations with Ofgem. Thank you.

Christine May: I want to raise three issues, two of which are minor. In paragraph d on page 3 of your submission you say that difficulties with the Crown Estate and the levels of fees set are a barrier. Will you comment further on that and say whether the problem is just levels of fees or also the length of time taken to conclude discussions?

Dr Yemm: It always seems somewhat bizarre to me that the Government and the consumer are helping to fund the development of projects and then a Government department proposes to take 1.5 to 2 per cent of revenue back into the Treasury as a tax. That seems slightly strange. Early projects are revenue sensitive, depending on the model that is developed to encourage them. We seem to be giving with one hand and taking with the other in some regard with the Crown Estate. Projects should not be exempt from obtaining leases, but consideration should be given to the charging level and structure of the lease so that it is not detrimental to the development of the project. We should bear it in mind that the kind of money that we are talking about in early projects is small. It might seem that a lot of support is required to get the initial projects in the water, but the amounts are small in the context of the overall scale of the market. To penalise a small project with a hefty tax, which is what it is in effect, for the

lease would be a mistake. The Government should consider generally whether it is sensible to tax projects in that way.

Christine May: My second point relates to paragraph f, which is on sensible regulation. You refer to the Scottish Environment Protection Agency's definition of wood fuels as waste and the problems that that causes. Where are we in discussions with SEPA on that?

Fergus Tickell: The current position is that SEPA has been educated, if you like, by certain members of the UK Forest Products Association and taken out to sawmills and given an indication of what the wood-processing industry does. That seems to have encouraged SEPA to realise that sawmills do not produce just sawn timber but a range of co-products such as wood chips, which are essential products to sell and equate to about 45 per cent of the volume of the timber taken into the sawmill at the front end. There is a continuing educative process. SEPA has indicated that it will consider biomass projects and their use of the material on a case-by-case basis.

Christine May: I am not sure that that is particularly helpful, but I note the point that you make.

My final question relates not to the 40 per cent renewables target but to the role of the renewables industry in the remaining 60 per cent of thermal generation, particularly during the medium-term phase in which thermal plants are beginning to run down and we are beginning to build the renewables sector. What work are you doing in that area? What opportunities do you see for your industries in supporting the process?

Dr Yemm: Do you mean what should we be doing in the balance of the market?

Christine May: Yes.

Dr Yemm: At the moment, the industry is very focused on meeting an early target. There is much promise in the industry and it is now time for it to show that it can deliver, put megawatts on the ground and meet the early targets. As we move forward, a different range of issues become factors: the level of penetration into the market, grid stability, north-south supply and so on. It is not immediately obvious to what extent the industry can play a part in the process to which you refer. Most work in Scotland is focused on academic research into the issues that will arise as we move forward and the likely solutions that can be delivered. The renewables industry as a whole has a responsibility to consider the wider implications of what we are doing. As we move forward, there will be an increased focus on that. At the moment there is not a great deal of activity, other than academic input concerning the grid and supply.

Christine May: I was wondering about co-firing.

Fergus Tickell: There are obvious opportunities for co-firing. One of my concerns about biomass is that, in the system as currently constituted, renewable obligations certificates are not available for forestry material that is used in co-firing—such material must come from energy crops. That is a serious issue when we have a forestry industry whose output will grow from about 6 million m^3 of wood now to more than 11 million m^3 by 2017. There is a huge resource—many in the forestry industry say that a wall of wood is coming towards us—but there is no efficient use for much of the material.

Professor Bryden: I sincerely hope that 40 per cent is seen not as a finishing post, but as a way point. By the end of this century, we should look to have a target of 100 per cent. At the moment, we do not know how to achieve that. Much fundamental research needs to be done at the academic and industrial levels to enable us to get beyond the figure of 40 per cent. Once we get to more than 50 per cent, we are into areas that are at the fringe of our understanding.

Susan Deacon: My question will be brief, partly because I am conscious of time and also because we have already discussed the planning system at some length. I cannot help but note that the witnesses have used the word "sensible" when referring to planning and building regulations and to regulation more generally, which is a bit like being against sin. I am sure that we would all sign up to sensible planning and building regulations—those who advocate the third-party right of appeal would say that it is sensible, for example.

I ask the witnesses to nail their colours to the mast a wee bit more. You have talked about education and educating local authorities, but to be fair to many local authorities, some of which we have heard from, education is not really the issue; the issue is some of the systems that authorities work with and within. Can you put any flesh on the bones of what "sensible" means to you in the context? Will you indicate whether specific ideas will emerge on planning issues through FREDS? We all share the aspiration to have a meaningful system that is fair to all—

The Convener: And sensible.

Susan Deacon: Yes.

Dr Yemm: There you go—the choice of the word "sensible" is sensible in the context. Nobody who tries to introduce a new technology or idea finds it easy. The old acronym is NIMBY—not in my back yard—but the new one is BANANA, which stands for build absolutely nothing anywhere near anyone. Such attitudes need to be overturned through appropriate—I choose that word rather than "sensible"—guidelines that will

allow us to develop technologies. There is a grave danger that the industry will underachieve because of a lack of understanding of the reality of the technologies that are involved.

Polls before and after wind farms are built are pretty much universal in revealing a lot of worry before—although it is more reserve than opposition—and, generally, a high degree of enthusiasm after the schemes are built. That is what the word "sensible" means in relation to the planning system.

Fergus Tickell: I see planning as an opportunity rather than a problem for biomass as a technology. The fundamental problem with biomass in Scotland at present is that there is no critical mass; the industry is not of a sufficient scale to provide opportunities to develop the supply chains that the HIE representatives talked about earlier. Planning authorities have the opportunity to insist on small-scale district heating systems in new housing developments and industrial sites, which would help to produce some of that critical mass and would be a huge shot in the arm for the industry.

I am conscious of the problems that were alluded to in relation to the risk-averse nature of the PPP developments through which public buildings are constructed. We have an example of that in Argyll, where a new hospital is to be built. The preferred contractor has real concern about installing wood heating, because it is not proven and is perceived as high risk. The use of that approach removes opportunities for local authorities to be a stimulus to generating a critical mass in the industry.

Susan Deacon: All the points that you raise are perfectly legitimate and deserve further investigation and consideration by the various departments and the powers that be. Can you give us an assurance that mechanisms exist to consider and evaluate such suggestions?

Fergus Tickell: Last Friday, the FREDS biomass group met for the first time to decide on the issues that we want to consider. I assure you that planning is one of those issues.

Susan Deacon: I hope that the outcome is eminently sensible.

Dr Yemm: There are also plenty of precedents in the UK and elsewhere in Europe for planning guidelines that have led to requirements on new buildings. Such an aim is absolutely achievable and can have a major impact.

17:15

The Convener: Given that we have quite a lot of wood and that we have been burning it for millennia, people might be surprised to find that wood heating is a high risk.

One of your objectives for wave and tidal energy is the

"Reform of licensing to create a one-stop shop for seeking permissions".

Does that include planning permissions? Would the proposal be pitched at national or local level?

Dr Yemm: The issues for wave and tidal planning, particularly offshore wave energy, will be different from those for onshore wind energy. For example, visual impact is the chief issue for onshore wind energy generation, but is probably one of the least significant issues for wave power. More central issues for wave power are public rights of navigation, safety regulations at sea and so on. As those will involve more of an institutional planning process, dealing with public bodies to deliver required permits and to address any potential objections, it seems logical to have a single point of contact. Although the same proposal has been made for a number of technologies over the years, it is particularly appropriate for marine-based power, because many of the permits relate not as much to local authority planning matters as they do to matters that are dealt with at Government level such as the Food and Environmental Protection Act 1985 and the right to public navigation.

The Convener: Finally, I want to pick up on a comment that you made in your opening remarks. I think that you said that the country might have to go or be taken along a bumpy road. Politicians, especially ministers, do not like doing that. How bumpy will the road be?

Dr Yemm: Well, waves are inherently a little bit bumpy.

The Convener: But at least they are soft.

Dr Yemm: It has been true of almost every new technology that reaching the goal in question requires commitment. We need people who are committed and who are prepared to back their technology for a period of time against specific objectives and targets. Obviously, in a world of venture capital and development, there are milestones to reach and we think that the industry has to reach such milestones. If that does not happen, the situation should be reassessed.

We need commitment, continuity and clarity to secure the necessary involvement and investment in and integration of the emerging industry. We cannot simply put one toe in the water, think "Ooh, that's a bit cold," hop out and consider the matter for the next 10 years. That said, along the way, we should expect that some technologies will not succeed while others will do very well. That is what I mean by a bumpy road: part of the risk in the process is that there will be failures as well as successes. That should not make any difference

to the overall business case, except that we should ensure that we pick the technologies that are going to succeed rather than those that are destined to fail.

That rather nearly brings me to my final point about the role of the European Marine Energy Centre, which we should recognise as a Scottish achievement. HIE and the Scottish Executive flew the flag and, in some ways, swam upstream against the wishes of the DTI to establish this tremendous resource and it is now up to the Scottish Executive to ensure that it is utilised fully and correctly. We see EMEC's role as being responsible for early regulation of the industry and the introduction of safety and survival standards and performance measures to ensure that the industry, the Executive and the financial community have a pre-due diligence tool when proposing projects. Although that process has already kicked off, we believe that EMEC needs more resources and capability to give it the same kind of stature as the Danish Government's Risø laboratory, which established early standards for wind turbines. Those standards led to a successful regulated industry that the finance community could buy into.

The Convener: I thank the witnesses from the Scottish Renewables Forum for their written evidence—which I think Maf Smith, who has been sitting patiently at the back of the chamber, had a fair hand in—and for their oral evidence this afternoon.

Meeting closed at 17:19.

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