

TRANSPORT AND THE ENVIRONMENT COMMITTEE

Wednesday 20 March 2002
(Morning)

Session 1

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TRANSPORT AND THE ENVIRONMENT COMMITTEE

9th Meeting 2002, Session 1

CONVENER

*Bristow Muldoon (Livingston) (Lab)

DEPUTY CONVENER

*Nora Radcliffe (Gordon) (LD)

COMMITTEE MEMBERS

*Robin Harper (Lothians) (Green)

*Mr Adam Ingram (South of Scotland) (SNP)

*Angus MacKay (Edinburgh South) (Lab)

*Fiona McLeod (West of Scotland) (SNP)

*Maureen Macmillan (Highlands and Islands) (Lab)

*Des McNulty (Clydebank and Milngavie) (Lab)

*John Scott (Ayr) (Con)

*attended

THE FOLLOWING ALSO ATTENDED :

Bruce Crawford (Mid Scotland and Fife) (SNP)

Ross Finnie (Minister for Environment and Rural Development)

John Holmes (Scottish Executive Environment and Rural Affairs Department)

Charles Stewart Roper (Scottish Executive Development Department)

Phillip Wright (Scottish Executive Environment and Rural Affairs Department)

WITNESSES

Ian Burgess (Co-operative Retail)

Dominic Counsell (Scottish Natural Heritage)

Matt Dalkin (Scottish Natural Heritage)

Alastair Davison (Scottish Environment LINK)

Patrick Fotheringham (Salmonid Fisheries Forum)

Richard Luxmoore (Scottish Environment LINK)

Professor David Mackay (Salmonid Fisheries Forum)

Jeremy Read (Salmonid Fisheries Forum)

Andrew Wallace (Salmonid Fisheries Forum)

CLERK TO THE COMMITTEE

Callum Thomson

SENIOR ASSISTANT CLERK

Tracey Haw e

ASSISTANT CLERK

Alastair Macfie

LOCATION

Committee Room 1

Scottish Parliament

Transport and the Environment Committee

Wednesday 20 March 2002

(Morning)

[THE CONVENER *opened the meeting at 09:34*]

The Convener (Bristow Muldoon): I welcome members of the press and the public to this meeting of the Transport and the Environment Committee. I also welcome the Minister for Environment and Rural Development, Ross Finnie, several officials from the Scottish Executive and Bruce Crawford MSP, who are here in relation to the subordinate legislation that we will deal with under agenda item 2.

I have received no apologies for today's meeting, but I advise members that I will have to leave not long into the meeting to attend a major opening at West Lothian College, which is in my constituency. I will see the actions of the Scottish Executive in delivering on the priorities of the people, so I offer congratulations to the minister and his colleagues on the initiative.

Des McNulty (Clydebank and Milngavie) (Lab): It has taken a long time to get there.

The Convener: The deputy convener, Nora Radcliffe, will take over when I leave the meeting. I thank Nora for acting in that capacity today.

Items in Private

The Convener: Agenda item 1 is items in private. I ask members to agree to take in private agenda item 3, which is consideration of questions for witnesses in our on-going aquaculture inquiry. Is that agreed?

Members indicated agreement.

The Convener: I also ask members to agree to take in private a similar item at our next meeting, in Oban, again to consider questions for witnesses in the aquaculture inquiry. Is that agreed?

Members indicated agreement.

Subordinate Legislation

Scotland Act 1998 (Agency Arrangements) (Specification) Order 2002 (SSI 2002/261)

The Convener: Agenda item 2 is consideration of a negative instrument, the Scotland Act 1998 (Agency Arrangements) (Specification) Order 2002 (SI 2002/261). I welcome the Minister for Environment and Rural Development and his officials to the meeting to discuss the instrument.

Members will be aware that Bruce Crawford lodged a motion to annul the instrument last week. A covering note has been circulated with the papers, which sets out the procedure for a debate on a motion to annul. Before members have the opportunity to debate the motion in Bruce Crawford's name, I will give them the opportunity to ask the minister or his officials questions of a technical nature or of clarification. I make it clear to members that if they want to ask a question that it will be necessary for one of the officials to answer, they need to ask it at this stage. Once we get into the debate, only the minister and members will be able to take part.

Before I give members the opportunity to ask questions, I will give the minister the opportunity to make introductory remarks on the order.

The Minister for Environment and Rural Development (Ross Finnie): Thank you very much. Perhaps it would be helpful if I introduced the officials who are with me this morning. John Holmes and Phillip Wright will deal with environmental matters in relation to the instrument. Charles Stewart Roper is an environmental and energy economist and Murray Sinclair will deal with any legal matters.

I will make a brief introduction, as there seems to have been a little misunderstanding about the nature of the instrument. The terminology is very technical, which is the source of potential misunderstanding.

The background is that the scheme is part of the mechanisms that were allowed under the Kyoto protocol. The medium and longer-term objective is to have trading arrangements that operate at a European level.

The first issue that arose in introducing the scheme in the United Kingdom was the best way to create a market for transmissions within the United Kingdom. When the matter was put out for consultation in 2000, it became clear that companies that were engaged, that could be engaged and that could benefit from and contribute to the scheme recognised that the only sensible way in which to proceed within the UK was to create a UK market. If Scottish companies were constrained to being able to trade emissions

only within Scotland, that could seriously disadvantage Scottish companies.

The committee may want to address the economic issues to which I have referred. There is clear evidence that if we have a market in transmissions that is not liquid enough—in which too few transfers are taking place—we will not achieve our objective. That is the first misunderstanding. Eventually, we will move towards a European trading arrangement. There is no benefit in taking a narrower view.

The second issue is that of powers. We are not transferring our powers to Westminster. We are granting Westminster the power to operate the scheme so that a UK market can operate. We will be required to approve the contractual arrangements that are entered into. We are not giving up our powers; we are merely permitting UK ministers to exercise those powers so that a sensible UK market can be developed.

There is a third misunderstanding. Although the instrument is aimed at reducing emissions, it is not inextricably linked to a programme for developing renewable energy. Energy companies are excluded from the emissions regulations and are not part of the trading arrangement. There is no prospect of energy companies making money out of the scheme that could otherwise be diverted to promoting renewables. Changes to the make-up of the energy industry in the United Kingdom, particularly in Scotland, are not really a relevant factor when it comes to operating the scheme.

Having gone out to consultation, having discussed the scheme with industry, having considered the purpose of the scheme and having recognised that it is intended in the short to medium term to become a European trading scheme that would be of serious benefit to companies, we have taken the considered view that allowing Scottish companies to participate in a United Kingdom market would offer wider trading opportunities to Scottish business, which will stimulate greater emissions reductions at lower cost than would be possible under a wholly Scottish scheme. We believe that a UK-wide scheme is in the interests of Scottish business and, more particularly, of the Scottish environment. That is the basis on which we are promoting the instrument.

The Convener: I thank the minister for his introductory remarks, which will have improved members' understanding of the order. Before we proceed with the debate, I will give members the opportunity to ask questions.

Robin Harper (Lothians) (Green): Notwithstanding the advantages that you see a UK market as providing, will it be possible under the arrangements that you propose efficiently and at

very little cost to produce separate Scottish figures on emissions?

Phillip Wright (Scottish Executive Environment and Rural Affairs Department):

We already produce an annual inventory of greenhouse gas emissions. I understand that Robin Harper is asking whether we will be able to estimate or have information on the emissions reductions that are brought about in Scotland as a consequence of the scheme. We will have to explore that. We now have a list of the companies that were successful at last week's auctions. We plan to examine which of those are Scottish companies, which multinational companies have a Scottish presence and so on. We will look into the issue that the member raises, but at the moment we have no formal means of achieving what he seeks.

Ross Finnie: However, we are interested in obtaining the data for individual privately owned companies.

09:45

Bruce Crawford (Mid Scotland and Fife)

(SNP): I thank the minister for his introductory explanation, which was useful, as was the discussion that I had yesterday with some of his officials to try to understand the matter in greater depth. I want to come back to some of the issues that the minister raised. I accept what he said about the energy industry, but I have a point about the effect of the energy market on emissions trading overall. I know that I must ask questions, so I will come back to that issue in the debate.

The Executive note on the order states:

"separate schemes would lead to complexities for those participants operating both north and south of the border and could lead to adverse financial implications for such participants".

Have the financial implications been quantified? What work, if any, has been done on the potential costs of setting up a separate Scottish trading mechanism?

Phillip Wright mentioned the tendering process and the contractual arrangements with the successful tenderer. When the matter was discussed with the UK Government and it was decided to proceed on an agency basis, was the UK Government pressed to ensure that Scottish companies were included on the tender list? What guarantees were extracted from the UK Government on the inclusion on the tender list of Scottish companies before the Executive agreed to the agency arrangement?

Ross Finnie: Our consultation with the industry did not involve energy companies, but it did involve a large number of companies that have headquarters in Scotland but also operate in

England or that have headquarters in England but also operate in Scotland. I do not want to labour that point, but it is important. On the costs, those companies put it to us that a separate scheme and different trading arrangements for Scotland and for England and Wales would mean that companies could trade only within Scotland and/or within England and Wales.

The point was put to us strongly that if we are serious about getting companies that operate north and south of the border to participate in a trading scheme, to require them to have separate arrangements for separate trading would not be the most efficient use of the order. One can argue against that, but that was the view that the companies put to us and our view was informed by how those companies saw the matter.

The cost of separate schemes would be almost the same as the cost of a single scheme. The same amount of administration and the same number of officials would be required to monitor either option. However, given my answer to the first question, that point is unnecessary.

I ask one of my officials to deal with your second question, which was about the undertakings that we received from the UK Government on the eligibility of Scottish companies to tender.

Phillip Wright: The tendering process was slightly different from Mr Crawford's description of it. It was an open process involving the Department for Environment, Food and Rural Affairs, which advertised widely in the business community and more generally about the emissions trading scheme. It was known that the UK Government was developing such a scheme and DEFRA engaged with businesses throughout the UK. The process became more formal when DEFRA invited notes of interest in participating in the auction. The auction took place last week and lasted for two days. About 30 companies and organisations were successful in bidding. I was surprised to see that the Natural History Museum participated successfully in the auction. The companies offered to make carbon emission reductions in return for the payment of a certain amount of money. The amount to be paid for each tonne of emissions saved varied during the two-day period. The opening figure of £100 fell to £53 and a few pence. The auction process was open and all parties were able to participate.

As the minister said, when one looks at the list of companies—which is in the public domain—one sees companies such as Tesco and Asda, which operate throughout the United Kingdom. If we had separate Scottish and English schemes, those companies would in effect have to split their business activities and work with both schemes, as opposed to working in the context of a full, UK scheme.

Bruce Crawford: I have a couple of quick supplementary questions.

The Convener: Be as brief as possible.

Bruce Crawford: I will.

Is the trading scheme expected to raise money? If so, how much money is expected? I assume that the trading scheme will be done in similar way to the licence process. I am sure that I am wrong about that, but you can tell me whether that is the case. Were financial arrangements arrived at whereby, because of the Scottish Executive's budget, the scheme was done on an agency basis throughout the UK? If so, what were those financial arrangements?

Phillip Wright: I will take the first part of the question. I may pass over to John Holmes to deal with the latter part.

Because the scheme is non-statutory, the UK Government introduced a financial incentive. The intention is to invest £215 million over the five years of the scheme, which means £43 million each year. During the auction process, companies and organisations bid for a share of that money. Those bids often signified carbon savings.

John Holmes (Scottish Executive Environment and Rural Affairs Department): I think that £3.1 million of the money was allocated to the Scottish block. However, that money has not yet been used for the trading scheme.

Bruce Crawford: Will that money be returned to help to pay for the UK scheme?

John Holmes: That has not happened, but it might.

Bruce Crawford: Okay. I understand. They want to keep this one quiet.

Nora Radcliffe (Gordon) (LD): You can keep it in your back pooch.

I have a basic question. What does the word "domestic" mean in the context of the trading scheme? It would help to have that word defined, as it could mean many things to many people.

Phillip Wright: The word "domestic" refers to the UK context as opposed to the international one. The minister said at the outset that there is also to be a wider, international trading arrangement. That is why we focused on the word "domestic" for the UK scheme.

Nora Radcliffe: That is the sort of word that you would know the meaning of if you were involved in the scheme. If you were not, you might think, "Well, it relates to something that goes up the chimney of a hoose." However, "domestic" does not mean that.

Phillip Wright: Yes.

John Scott (Ayr) (Con): Will the minister quantify the likely cost to Scottish business of not implementing the order?

Ross Finnie: The cost would be not just the cost to business; it would be the cost to you, me and everyone in society of continuing to pollute at the level and rate at which we are doing so. However, the figures for that are difficult to pluck from the air.

John Scott: I meant in the Scottish context, not the UK context.

Ross Finnie: Our calculations indicated that the market would be so thin in an exclusively Scottish context that there would be insufficient volume for trading. Charles Stewart Roper can assist with that point.

Charles Stewart Roper (Scottish Executive Development Department): We have not made a detailed assessment for a Scottish context. The scheme's first principles make it clear that it would be much more costly for Scottish companies to be in a ring-fenced Scottish scheme. There would probably not be enough liquidity for a Scottish scheme to get off the ground. Therefore, losses would be focused on individual firms. The trading scheme allows companies that have especially high costs for making emission reductions to sell those reductions to a company that has especially low costs and which can make further reductions. That would allow the total carbon reduction to be made at a lower cost.

It is difficult to assess what the cost would be to Scottish firms of not being part of the UK trading scheme, but the cost would be focused on the firms for which making reductions would be more expensive. The firms that can make carbon savings cheaply would be unable to sell them to other agents. Therefore, there would be significant costs overall.

Maureen Macmillan (Highlands and Islands) (Lab): How will the scheme be monitored? Who will pay for the monitoring? Will the monitoring be carried out on a UK basis or on a Scottish basis?

Phillip Wright: An emissions trading authority has been established to administer the scheme and the on-going accreditation of companies. The accreditation process involves checking the baseline figures that companies provide. For example, when a company says, "Here are our emissions figures for 1998-99," those figures must be checked. The figures need to be checked at the end of each year before a company is eligible for money back from the Government. The emissions trading authority will administer that at the UK level.

Des McNulty: Will the process of emissions trading be monitored at a Scottish level to ensure

that the sale or purchase of reductions does not have an undue or imbalanced impact on Scotland's overall emissions position?

Phillip Wright: To some extent, that question reflects the earlier question on quantitative information on reductions in emissions in Scotland. We need to explore that area. We would need to know something about the reductions before we could address your concerns about the potential implications on other measures to reduce Scotland's greenhouse gas emissions. We will look at that relationship as part of the process.

Ross Finnie: As was said in response to Robin Harper's question, now that we know some of the companies that are participating, we can get a better handle on the issue.

Robin Harper: From the submission, I understand that the system will be effective in driving down emissions from low-cost emitters. What will be the long-term effect on people for whom the costs of reducing emissions is high? When will the system kick in with firms that have relatively high costs in reducing emissions?

Charles Stewart Roper: The firms that have exceptionally high costs in reducing emissions include not only those in the tender but those that have voluntary agreements under the climate change levy. There is a whole range of industrial sectors that have high energy use.

Instead of making the reductions, firms that face particularly high costs in reducing emissions because of their set-up or plant will, in effect, buy or trade permits from others that have made greater reductions than were required under the agreement. As there will be a significant business cost in buying the permits year on year, there is an increasing incentive to invest in plant that will ultimately make the energy reduction. The system will allow firms to change at their own pace; it provides them with an increasing incentive to do so, but allows them to make an economic judgment about when that is best.

The Convener: Angus MacKay wants to ask a question. I propose that his be the last question that we take.

Angus MacKay (Edinburgh South) (Lab): I want to check that I have correctly understood the argument and the figures that have been presented. Are we saying that the UK Government is providing an incentive of £215 million to support the scheme over four years?

Ross Finnie: Over five years.

Angus MacKay: If we were to organise a separate Scottish scheme, how much money would be put into that scheme and where would the money come from?

Ross Finnie: We would either need to find the money ourselves or we would need to bid to the UK Government for a proportionate share. The effect would be that the amount of money for the emissions trading scheme would be restricted.

Angus MacKay: Even if we got a Barnett share of, say, £21 million, would that exclude Scottish business from the possibility of accessing the balance of the £215 million over the five years?

Ross Finnie: In effect, yes.

The Convener: We have been through a fair range of questions, so I propose that we now begin the debate on the motion to annul. I invite Bruce Crawford to move and to speak to the motion. The minister and other members will then have an opportunity to speak.

10:00

Bruce Crawford: I would like to comment on the point that Angus MacKay made. We heard from John Holmes that, under the Barnett formula, £3.1 million has been allocated to the Scottish budget to pay for a separate scheme. There appears to be some confusion about whether that money will be paid back. I may be wrong about that; perhaps the minister can deal with the issue in his response.

When I first heard about the proposal—which, on the face of it, although not in reality, appears to hand back powers that are devolved to Scottish ministers—I was surprised and concerned, to say the least. The Executive note does not do much to help MSPs or to make the decision-making process easier. The note extends over a couple of pages, but the arguments are pretty one-sided in favour of a UK emissions trading scheme being operated by the UK Government. No other arguments are discussed or mentioned. No reference is made to the possible advantages of operating a separate Scottish emissions trading scheme designed to meet specific Scottish circumstances. Some of the information that we have received today about the order could usefully have been contained in the Executive note.

I understand fully that we will eventually move to a European trading mechanism; we may end up having a much wider international trading mechanism that extends beyond the European Community. However, at no stage does the note indicate that, because of particular Scottish circumstances, it might be more advantageous in the short term to have a separate Scottish scheme. There may be good arguments supporting the development of a trading mechanism for Scotland, although when the advantages and disadvantages of such a scheme are weighed up against one another, the balance may favour a scheme at UK level.

The Executive note makes a good case for a UK-wide scheme, but some of the arguments that it makes are pretty spurious. For example, the note states:

“The administration of different schemes would be highly complicated for both administrators and participants.”

On that basis, we might as well start to unravel the Scotland Act 1998 and hand back the power for dealing with education and health to the UK Government. The argument does not hold water. If there are particular Scottish circumstances, we should take account of them.

It would have been useful if a better note had been provided, so that we could understand the arguments from both sides. MSPs have been left in the daft situation of having to use the negative statutory instrument procedure, which requires the minister to appear before the committee to justify what he is doing. He may have much to justify—we will soon find out. If he can satisfy my concerns, I may not need to press the motion for annulment, but I would like him to address a number of issues.

I fully accept the minister's point that energy companies are not involved in the emissions trading scheme. However, the energy sector is probably one of the largest producers of emissions, so what it does will have a huge impact on the emissions trading market. I will explain that from recent Executive documents.

The Executive's “Scottish Climate Change Programme”, which was published in 2000, states:

“The challenge we face in Scotland is clear ... For example, the agriculture, forestry and land use sector accounts for 37% of Scottish and 39% of UK emissions in this area. This is disproportionately high and makes it extremely difficult for us to replicate the emission reduction targets agreed for the UK as a whole.”

I understand that agriculture is not treated in the same way under the trading mechanism, but the passage that I have just read out goes some way towards explaining that the background in Scotland is significantly different from that in the UK as a whole. Under the trading scheme, the interests of Scotland will inevitably be peripheral to those of the UK as a whole.

If we fail to introduce a separate scheme in Scotland, will the distinctive needs of Scottish business and of the Scottish environment be jeopardised? I draw the minister's attention to chapter 4 of the Executive's “Scottish Economic Report: January 2002”, which is headed “Energy and Carbon Dioxide Emissions Projections for Scotland, 1990-2020”. At the end of the opening paragraph, the report mentions the sensitivity of the Scottish market in relation to the energy sector. It says:

“However, due to the small size of the Scottish economy, the results for emissions are extremely sensitive to

potential investment changes in the market for electricity generation."

In the same chapter, the report talks about CO₂ emissions. It says:

"As a large contributor of carbon dioxide emissions ... the projections for the electricity supply industry ... would have to be a significant consideration in the determination of any future Scottish emissions reduction target."

On net exports of electricity and implications for Scottish emissions, the report says:

"Any sensitivity therefore, which suggests that Scotland may import less of its electricity, or indeed export more, than the projections suggest, results in an attendant increase in emissions from the Scottish ESI".

If we export more electricity across the border, we may burn more coal to do so. The electricity industry has a significant effect on the trading mechanism, even though it is not part of it.

On the sensitivity of the electricity market to fluctuations in oil prices, the report concludes that, if oil prices rise, the demand for cheaper electricity from Scotland's coal-fired power stations will also rise. It addresses the distinctive Scottish position and the sensitivity of the Scottish market, repeating the points over and over. I shall not repeat them—members can read the report. In a key, final paragraph, the report says:

"However, due to the small size of the Scottish electricity supply industry ... the implied effects on carbon emissions are extremely sensitive to individual investment decisions about plant in Scotland. This would inevitably make it difficult to predict future emissions in Scotland. It follows that any setting and delivering of a Scottish GHG-reduction target would be correspondingly more difficult without the use of direct regulation of power emissions—a policy which would be peculiar to the Scottish economy in UK and European terms."

I would like to hear what guarantees the minister can give about future regulation and about ways of ensuring that the order will not create problems for what the Executive's report describes as a sensitive situation. That was one of the key issues that I considered when making up my mind whether to support the order.

The report also refers to the impact of the green certificates or trading mechanisms on renewables. The issue is important in the context of the minister's responsibility for the promotion of renewables. The report states:

"However, as the ROS and RO can be satisfied without physical connection to renewable energy, but with 'green' certificates, the actual renewable generation commissioned in Scotland is not determined by the level of the ROS itself."

There is obviously a direct connection between the certificates process and the renewables industry. It is described in the report, but I am not sure that I understand it fully. It would be useful for us to receive an explanation of that before we come to a conclusion.

I am sorry for taking up your time, minister, but the order is highly technical and complicated and members should understand it as fully as they can.

The Convener: Will you move motion S1M-2776, please?

Bruce Crawford: If I move it, will I have to withdraw it later?

The Convener: You may withdraw it later if the committee agrees. However, you must move it formally at this stage.

Bruce Crawford: Perhaps my argument is perfect. I move,

That the Transport and the Environment Committee recommends that nothing further be done under the Scotland Act 1998 (Agency Arrangements) (Specification) Order 2002.

Ross Finnie: Quite properly, we are now into a much broader energy, renewables and emissions debate. Although the order is aimed at assisting and encouraging industry, in a general sense, to reduce emissions, it is not the only measure that is being deployed in the environmental field. There are also, for example, the climate change levy and renewables obligations certificates. There is regret about the fact that the interlinking of the various measures is not as effective and efficient as some might wish, but we have to take those measures at face value.

I do not think that the different natures of emissions and of the structural issues to do with the causes of emissions in Scotland detract from the fact that the order is couched ex-Kyoto and demands a mechanism for trading certificates. Charles Stewart Roper referred to considerations about whether taking the Scottish economy as a whole would mean a sufficiently liquid market in certificates. Such assessments also take account of the different nature of the Scottish economy and the structure of Scottish emissions. Our conclusion—about which we can argue—is that, no matter how the issue is considered, the lack of potential liquidity in the market is likely to give rise to a serious trading problem, simply as a result of the market's size. A range of larger participants in a more liquid market with more money attached to it is more likely to assist Scottish business—that was certainly confirmed by consultation. Clearly, not just people operating cross-border, but people in Scotland believed that a narrow market would not be most likely to meet the scheme's objectives.

The sensitivity of the problem of emissions from the energy sector was correctly identified. I suppose that that sensitivity almost explains why the energy sector is dealt with on its own. We must understand one important and difficult concept, particularly in respect of measures that

might ultimately have European implications—sulphur dioxide and nitrogen oxide are regarded as pollutants that directly impact on a local area, but CO₂ emissions are considered far more globally. In that respect, there is a greater belief that one should consider where one might be displacing. For example, it might be simple for us to turn a key on Cockenzie or Longannet but, in the present economic climate, the chances are that that would fire up coal-burning stations in England. That is not a nationalist point—I am speaking from a real concern about CO₂ emissions. Simply displacing the problem 300 miles south will not meet the Kyoto obligations. Actions need to be co-ordinated. Those are the reasons why the energy sector is not included in the order.

The instrument on renewables, which was before a committee of the Parliament only, I think, two weeks ago, is far more directed at dramatically increasing renewables. The Executive is wholly committed to that. Our economic team's projections are that pursuing that line and producing energy as a result of using renewables certificates will mean that the cost to the consumer will be even across the piece so that the renewable energy cost will not be disadvantaged. That means that dependence on fossil-burning fuels can be driven out.

I do not disagree with Bruce Crawford that both issues are extremely important, but the arguments should be separated slightly. We must focus on the potential for industrial sectors to drive down emissions that emanate from Scotland and Scottish business other than from the energy sector, which is dealt with separately. Renewables are another separate, but linked issue. The renewables obligation has been set up and targets have been set. From the available evidence, I hope that we can increase those targets—that would be everybody's ambition. We must consider the grid, the natural heritage and the state of technology, particularly in wind generation. We are working on that. Those are the key elements.

I appreciate Bruce Crawford's wider concerns, which are perfectly proper. We will manage eventually to integrate these issues a little more throughout the UK and, perhaps, throughout Europe. At the moment, we must concentrate on the aim of the order, which is to give a financial incentive to businesses. As Robin Harper rightly identified, initially we went for the cheapest solution with renewables. Only now are we beginning to consider means that are technically more efficient, but more costly. Similarly, the order means that initially we will deal with those for whom reducing emissions is cheaper and easier, but, as was explained, we will begin to produce economic incentives to invest in equipment that will drive down emissions for those for whom

reduction is more costly.

10:15

The Convener: Members who wish to participate in the debate should indicate so now. Does no one wish to participate? Robin Harper will dive in.

Robin Harper: I have just one sentence. The minister has made his case.

The Convener: I presume that the minister does not wish to respond to Robin Harper's wise contribution. I invite Bruce Crawford to respond to the debate and to indicate whether he wishes to press the motion.

Bruce Crawford: Thank you, minister. That was useful. You gave us a broader view of the issue and how the order links into it.

The Renewables Obligation (Scotland) Order 2002 made a significant difference. Those who are involved in the renewables sector—certainly, those to whom I spoke yesterday—have welcomed it. However, the recent changes in connection charges that the Office of Gas and Electricity Markets made to pay for the upgrading of the grid in the longer term are having a significant impact on small wind farm developers—for example, those who want to build a 100 megawatt facility in Scotland must pay a connection charge of up to about £1 million.

The Convener: Please be more diligent in addressing the order. I was quite lenient during your first contribution.

Bruce Crawford: You were also lenient with the minister.

The Convener: The minister was responding to your contribution.

Bruce Crawford: I will try to be helpful. My final point is that we must examine the implications of the Ministry of Defence's decisions on the future of renewables. Although I take on board what the minister said in relation to the overall picture on the emissions trading scheme, I make a plea for the briefs to be more expansive and to give more information when we deal with such processes in the future. Nonetheless, this morning's process has been useful. I ask to withdraw the motion.

Motion, by agreement, withdrawn.

Bruce Crawford: You almost made me not do that, convener. I nearly pressed the matter to a vote.

The Convener: You have got me worried.

I thank the minister and his officials for attending and I thank Bruce Crawford for participating in our deliberations. We will consider item 3 in private. I

expect that that will last only about 10 minutes. I say that for the benefit of members of the press and the public who wish to come back for the final part of the meeting. Nora Radcliffe will be the convener for the remainder of the meeting.

10:18

Meeting continued in private.

10:34

Meeting continued in public.

Aquaculture Inquiry

The Deputy Convener (Nora Radcliffe): I welcome back members of the press and public. I also welcome our first group of witnesses, who represent the Salmonid Fisheries Forum and are giving evidence as part of phase 2 of our aquaculture inquiry. I ask Patrick Fotheringham, who is leading the team, to introduce his colleagues.

Patrick Fotheringham (Salmonid Fisheries Forum): I am accompanied by Professor David Mackay, who was formerly with the Scottish Environment Protection Agency and now represents the Scottish Anglers National Association; Andrew Wallace, who is from the Association of Salmon Fishery Boards; and Jeremy Read, from the Atlantic Salmon Trust. I represent the Salmon and Trout Association (Scotland).

The Deputy Convener: As you have already provided a written submission, we will forgo an opening statement and move straight into questions, which will be more or less along the same lines as the questions you addressed in your submission.

Robin Harper: I will start with two very general questions. In determining the future of Scottish aquaculture in meeting demand for fish, how should the Executive take a holistic approach to strategy and governance? Secondly, what cost-benefit studies need to be undertaken to determine the balance of economic, social and environmental need?

Jeremy Read (Salmonid Fisheries Forum): I am afraid that I heard only the second question, on the requirement for cost-benefit studies. I did not hear the first one clearly.

Robin Harper: In what ways could the Executive take a holistic approach to the strategy for, and governance of, fisheries?

Jeremy Read: It is most important that the Executive keeps in mind its role in protecting the environment. Any examination of the economics of the development and sustainability of the aquaculture industry, and of the salmon farming industry in particular, must take place within that context. However, as far as cost-benefit considerations are concerned, it often becomes difficult to set a value on any benefit or potential disbenefit.

Robin Harper: I want to take that point a little further. Would the future development of

aquaculture in Scotland be better guided if an independent development authority were established?

Patrick Fotheringham: We have always called for an independent national fish farming authority to develop a sustainable future for the industry, to regulate it where necessary, and to promote it after regulation has been implemented. We have always argued that bringing all the issues together in one arena will give us a far better chance of getting to the heart of and solving problems and of striking the necessary balance to achieve sustainability. One of the biggest problems for the industry and its critics is the current fragmented approach. Different bodies regulate different parts of the industry, which is criticised from many angles and promoted from others. As such an approach does not do the industry or its critics any good in the long term, we have argued strongly for a national fish farming authority. The Executive has always refused to consider the proposal and has never given us a coherent reason why such a measure is not appropriate.

Robin Harper: Scientific research and technological development are crucial to the future management and expansion of the aquaculture industry. What should the priorities for research and technological development be? Who should undertake the research and development and how should it be funded?

Andrew Wallace (Salmonid Fisheries Forum): That is a fairly substantial question. The principal objectives and most important priorities for further research and development through science and technology will focus on establishing exactly what constitutes sustainable use of our environment for fish farming. We talk of creating a sustainable industry, but the word sustainable is often used in a rather woolly fashion. We would like developments to lead the industry towards a desirable situation for all, whereby the industry's development and the economic benefits that derive from that can be attained without cost to neighbouring recreational, amenity or economic activities.

With regard to who should fund that work, the tripartite working group is scratching the surface of the problem. I know from my involvement with the working group—which is backed by the fish farming industry, the Government and wild fisheries interests—that public sector funding can be routed through that organisation with no spin or bias attached to it. The various tensions are resolved within the group. We are dealing with an industry that is clearly achieving its ends at an environmental cost. The principle that the polluter should pay is now generally more accepted. We need some sort of charge on the industry for the use of the environment in which it operates.

Jeremy Read: The tripartite working group has co-ordinated some of the funding aspects, but it is important that the nature of the research and the topics covered should also be co-ordinated to ensure that there is neither duplication nor gaps. There must be some mechanism to ensure that co-ordination.

Robin Harper: What role do you see the Fisheries Research Services playing in that work?

Jeremy Read: The FRS has a strong role to play, because quite a lot of the research will be needed to support the Executive's regulatory process. I see FRS being involved in the conduct of a certain amount of the research, and it will certainly provide a major input of scientific advice to determine what research is needed.

Professor David Mackay (Salmonid Fisheries Forum): There are two specific areas of research that demand attention over the next decade or so. The first is the carrying capacity of our waters. I believe that Scottish waters have a huge potential for aquaculture, but that potential has not been clearly defined. We do not know how many thousands of tonnes of fish can be produced in Scottish waters each year without causing unacceptable damage. A major research effort should be made in that area.

The second area of research in which there is not sufficient information at the moment concerns the role of nutrients. Not only is there a salmon aquaculture industry, but haddock, cod and halibut farming is coming and will introduce substantial quantities of nutrients into our inshore waters. We desperately need to know what the effect of those nutrients might be.

Des McNulty: Notwithstanding the need for research on those matters, does the forum have a view on whether the scale of the aquaculture industry—at its current level, or at an increased or reduced level—is sustainable and compatible with the environmental concerns that you mentioned?

Patrick Fotheringham: One factor will affect carrying capacity more than any other: the extent to which the industry's activities are regulated. If the industry is regulated and behaves in an environmentally responsible manner, and the process of fish farming accords with best practice, the industry's carrying capacity is likely to be higher than that of a poorly regulated industry. In establishing carrying capacity, we must consider carefully where the industry is now and where it may be in two or three years—or however many years it takes—after the regulatory nuts and bolts have been tightened.

10:45

Robin Harper: I have a quick question for

Professor Mackay. You have said that we do not know enough about the effects of developing cod and halibut farming. Should a notional restriction be placed on the expansion of the new species until we know a little bit more about their environmental impacts?

Professor Mackay: Not necessarily. For example, when salmon farming started, it was small scale—as halibut, cod and haddock farming is at present—and was welcomed by almost everybody as the saviour of our remote communities. Salmon farming was visualised as being on a small scale in small farms, but it grew rapidly—far faster than scientists and technology could keep up with it.

We have learned much from our experience of that. If national research is conducted—it must be national, because it will be costly—those industries could be permitted to grow in a much more controlled and environmentally satisfactory way than salmon aquaculture did.

John Scott: The Executive has given a commitment to develop a strategy for aquaculture. You have touched on some key features of such a strategy. Are there other key features that the strategy should encompass? What should its key aims and objectives be?

Patrick Fothringham: The first and most important requirement is that the industry should be regulated in relation to the environment and other matters. We explored much of that in the first strain of evidence that we gave. It is most important that the strategy ensures that the process of fish farming is regulated. That must be considered proactively, rather than reactively, to prevent problems from arising. Once we have the problems, we must take difficult decisions on how to get rid of those problems. That should be the bedrock on which the strategy is positioned.

Andrew Wallace: That is key and is one problem that we have experienced in our handling of the current situation. We need to think carefully about that when we develop a strategy, but we must ensure that the industry develops sustainably and as a good neighbour. How can the industry be allowed to develop and generate economic benefit in association with all the other industries and interests in the environment in which it operates?

Patrick Fothringham is right. The industry can develop only if its processes are carefully worked out. As we are dealing with an activity in a shared marine environment, the parameters in which the industry operates are different from those in a terrestrial environment. The process and a straightforward, transparent and efficient regulatory system will be vital.

Des McNulty: Would one consequence of the introduction of a desirable regulatory system be

significant migration of existing salmon farms from sites that are inappropriate with regard to carrying capacity to more appropriate sites? If that is your view, how will that process be achieved?

Patrick Fothringham: Farms that are perceived to be in the wrong place and the associated problems can be dealt with in three key ways. The first is relocation. The farms can be moved to sites for which there is good evidence that the problems will not recur or will be reduced. The second is reducing the number of fish in a farm, to reduce the problem at the existing location. The third is removing the farm. If another site cannot be found, a farm could be removed altogether. We must bear in mind those three points when we consider many farms for which there is reasonably good evidence that they are based in the wrong place.

Des McNulty: Do you have an estimate of the proportion of farms in Scotland that you regard as being inappropriately sited? How would the process of relocating or closing farms be achieved in practice?

Andrew Wallace: Mr McNulty asked about the number of farms that might be considered to be inappropriately located. There is fairly good evidence of a number of farms that even the industry would probably admit have developed to such a size that they are now inappropriately placed. I could pass the committee a paper that lists some problematic sites.

The question of where farms go to operate in a more favourable environment presents a difficult problem. The regulatory system does not make relocation particularly easy. There is little incentive for salmon farmers to relocate and many costs are associated with relocation. We may need to find ways to encourage the industry to relocate, through grants or financial incentives.

We need to provide a regulatory system that makes fish farmers confident that they can make the move without undue damage to their businesses. At the moment, that is not the case. The regulatory pressures on fish farmers mean that they feel that any attempt to change their operations will result in serious regulatory impediments. The committee should perhaps think further about that. Such blockages may suppress industry activities. Some might consider that desirable, but it does not allow the industry to operate in the flexible way that we desire, which would allow it to take advantage of operating in areas where it might do less environmental damage.

Des McNulty: I have asked twice whether you can give an estimate of the percentage of existing fish farms and fish stocks that are in inappropriate locations and need to be relocated. It would help if you could answer the question.

Would many of the desired relocations involve a shift from relatively sheltered, accessible, inshore sites to less sheltered, less accessible sites further out? Would that have a cost implication?

Andrew Wallace: I apologise for not answering your first question. I cannot give a tonnage or percentage, but I would be more than happy to provide the committee with a paper that identifies the number of sites and locations where we are particularly uncomfortable with the industry's presence.

If a salmon farm is moved, that may benefit one person, but be at another person's cost. That the less sheltered sites are likely to be more environmentally friendly in respect of water exchange, for example, is unquestionable, but there are big questions relating to the availability and associated costs of the technology that would allow the industry to operate in such sites. We may need to consider financial incentives. There are quite a lot of Government and European grant schemes and money is also going into the industry from the financial instrument for fisheries guidance and Highlands and Islands Enterprise. Perhaps those sources could contribute to investment in the necessary capital and other expenditure that the industry would undoubtedly incur in developing the technology and moving to more exposed sites at which it could operate more effectively.

Professor Mackay: The position is fluid. When the Scottish Environment Protection Agency becomes aware that a fish farm is environmentally badly sited, it can review the farm's licence and restrict the quantity of fish that are reared on the site or, if the circulation is poor, refuse to allow sufficient therapeutants to kill sea lice so that the fish farm will operate with bad practice and will have to reduce its stocking level.

The location and production levels of fish farms are complex issues. A number of factors have to be considered, including the circulation of water, the ability to use therapeutants, the effect that food may have on algal blooms and the fouling of the sea bed. If responsibility is divided among a number of agencies, there is every opportunity for confusion, chaos and time delays, which affect the efficient organisation of our fish farms and the adoption of best practice to make the best use of resources. That underlines the strong need for a single authority or agency to balance often conflicting factors and produce a sensible, optimum distribution of fish farms, taking into account their day-to-day operation. Far too many cooks spoil the broth—they have done so for some time.

Patrick Fotheringham: It might be worth giving brief consideration to the mechanism by which relocation could occur. We noted from the committee's report on phase 1 of the inquiry into

aquaculture that it recommends the transfer of planning powers from the Crown Estate to the planning authorities and that that transfer should be included in the water environment and water services bill. We wholly agree with that recommendation—it would present an ideal opportunity to consider relocation. If the planning system views all consents as new consents when they come up for review, it should be possible to identify firms that would not have met the criteria for gaining a consent in the first place and which should be moved. As the report suggested, if that is done with all firms that come up for review and there is a deadline by which all firms must be assessed, that would go a long way towards identifying a mechanism by which relocation could be achieved.

Maureen Macmillan: Much of what I wanted to ask has been answered. Do you agree that relocation does not necessarily mean relocation to the open sea? It could be just a few hundred yards along a loch. There is a worry in the industry that farms will have to move offshore—that would have all sorts of implications relating to storms, wild weather, cages breaking, escapes, men and women not being able to get on to the cages to feed fish and fish being damaged by wild weather. We cannot blandly say that all farms must move further out to sea—that would probably not be sustainable. What do you think about that?

Andrew Wallace: That is a fair point. I do not think that the technology would allow the industry to operate far offshore. Perhaps we should consider the matter from a slightly different angle. We are not talking solely about moving production from one place where it may be damaging to another place. We are also talking about moving production to allow for the other desirable things that are very much on our minds, such as synchronising production and managing salmon farm production in a co-ordinated way over large areas. By relocating a farm we may be able to bring about synchronised production in certain areas rather more easily. That could be particularly important for some of the smaller operators—of which, unfortunately, there are increasingly few in Scotland—which have very little operational flexibility because they operate in one, two or three sites as opposed to in vast areas. They have no opportunity to synchronise production other than that which they enjoy with the current system. They need fish to sell year-round, so they are very much bound by the conditions.

It may be possible, through relocation, to ease the situation to allow the smaller operators to operate in different areas to bring about desirable synchronised production objectives. We need to consider that closely because many of the synchronised production objectives, while

environmentally desirable, may favour the larger companies over the smaller ones.

11:00

John Scott: My initial question, which provoked all those extra questions, was about the development of the strategy. You have spoken about a national fish farming authority. Would that be the body to implement the strategy? In the meantime, should it be implemented by SEPA or someone else? What should be the time scale for implementation? How would you measure the success of the strategy?

Jeremy Read: I would like to think about that for a second because it is a large question. First, it presumes that it is possible to create a national authority. As Patrick Fotheringham has said, we have long advocated the need for such an authority. However, we want to be clear that if one were to be created, it would take time to set up. We would need to move on the strategy now rather than start to redesign from scratch, as it were.

If a national authority were created, it should have the regulatory task—it would be illogical to move that elsewhere. In the meantime, we must develop a system that will operate from what we have at the moment. The authority best placed to do most of the regulation—particularly of the process of fish farming—and to co-ordinate that regulation is SEPA. It considers all the environmental aspects and can obtain advice and support from other organisations as necessary. As Professor Mackay has pointed out, one organisation must take the lead and have the basic role.

I am not qualified to comment on cost at the moment. We have been discussing working effectively through the imposition of mandatory codes of practice, to cover the whole industry and not just members of Scottish Quality Salmon. If that line were taken, one of the things that would need to be done early on is to set up—I would suggest within SEPA—the administrative framework for doing that, possibly drawing on a good deal of effort that already exists through the members of the various area management groups, who can provide a monitoring service. There will need to be a study to establish the resources that SEPA would need for that task and the source of funding.

Patrick Fotheringham: It is worth reiterating that we have been calling for a national fish farming authority for a long time. We have got nowhere with that recommendation and have come to the view that SEPA should really be in charge of considering all those things together. From our perspective, it is essential that somebody achieves

a balance. If we fragment it, items that should be regulated will fall straight between two regulatory stools. That happened with sea lice, and I am sure that we will go on to discuss that later. It is important to unify such things in SEPA. We would recommend that.

John Scott: The industry has to share the responsibility for the future of aquaculture in Scotland. What should the industry's specific roles and responsibilities be? How would you measure success?

Patrick Fotheringham: In a way, it is very simple for wild fisheries interests to measure the sea damage that the industry has caused. We hope that we will start to see our fish coming back to rivers in which, in many cases, they are now all but extinct. I shall ask Andrew Wallace to comment further.

Andrew Wallace: One of the most interesting areas for the industry to examine is compliance. The industry has extremely good codes of practice, and there are also joint Government and industry codes of practice. The theory for salmon production, and aquaculture production in general, is probably there, but the practice is not. That is the great difficulty.

Genuine economic problems are associated with complying with codes of practice, and I referred earlier to the problems of smaller companies. The industry must take a robust line to ensure that the codes of practice are adhered to and that there are no free riders. There are certain circumstances in which somebody can profoundly damage everybody's interests by not adopting the codes of practice or not complying with good management practices. It is a question of getting everybody to think more corporately. People may argue that fish farming is a business like any other and that there must be a reasonable amount of flexibility, but I return to the question of shared resource. To give a terrestrial comparison, one could have a broiler chicken shed next to an organic farm, and they could operate as discrete units without necessarily interfering with each other's business. That does not occur in the sea, because the actions of one fish farmer could have a profound impact on another fish farmer or fishing interest several miles away.

A robust industry code must be adhered to and properly policed, if not by the industry by the regulator. As Patrick Fotheringham said, the industry trade association, Scottish Quality Salmon, which develops the codes, does not currently represent all the industry, so there are people who lie outside the present code of practice on the environment.

Robin Harper: To take that one step further, given the dominance of salmon farming within the

aquaculture sector, has sufficient consideration been given to the opinions of smaller sectors such as shellfish and creeling?

Andrew Wallace: Probably not. I was actually referring to smaller salmon farmers, but when you raise the question of polyculture as it is being described, the answer is no. Many of the codes of practice relate principally to salmon farming production and not to aquaculture in general. That brings us back to the development of a strategy for aquaculture, which includes all elements of aquaculture and not just the dominant one.

The Deputy Convener: I want to move on to consideration of competitiveness in the international marketplace.

Maureen Macmillan: I was interested in what Andrew Wallace said about broilerhouse and free-range chickens because that is what I want to ask you about in regard to salmon. If we are to sustain the industry, we must produce a good product that is competitive, that people will buy and that does not have supply chain problems. It has been suggested that Scotland should go for the quality market—niche marketing and gold labels and so on—rather than the mass market, which is supplied by Norway and Chile. However, the industry says that it cannot sustain itself on the quality end of the market alone and that we have to go for the mass market as well. It says that the premium paid for quality in the supermarkets is not sufficient to make it economically viable and that the supermarkets will push down the price as much as they possibly can.

What are your views on the economics of it all? Perhaps you do not have any views, but where do you think that the balance ought to lie?

Patrick Fotheringham: You may be right that we are not in a position to have a view about that element of the economics of the industry. The way in which the industry markets its fish is a matter for the industry. However, we could consider it from a slightly different angle, which is what the industry should not do in its quest to be competitive. In other areas of the world such as Norway and Chile, we see an industry that is chasing low-cost volume production at considerable environmental cost—certainly in the case of Chile. We are very concerned that if the industry, in its drive to be competitive, keeps trying to produce huge amounts of fish at the lowest possible cost, we will all end up in a serious mess.

Andrew Wallace: There is one other element to that, which is that if we get into a spiral of chasing lower and lower prices through more and more production, we must consider carefully whether any other economic benefits arise from that process.

Is the industry employing more people and being more economically successful by pursuing that route? I suggest that, certainly on the jobs front, it probably is not, and that, as production goes up, the technology improves and the capital expenditure in various processes improves, the employment stays the same. We have a situation of increasing environmental cost with no discernible economic benefit. That is quite a worrying development in the salmon industry, but perhaps we have to recognise that that is the situation that we are in with salmon.

It is of particular concern—and something that we should consider carefully from a strategic point of view—that we try to avoid that situation recurring when the other species, such as haddock, turbot and cod, come on line. Potentially, those fish have a much bigger market and exactly the same sort of problems.

On whether it is possible to generate a premium, I understand that Scottish fish do attract a small premium but I do not know whether it is one that makes sense for the industry and which it can use to its advantage.

Mr Adam Ingram (South of Scotland) (SNP): It is obvious that we are not starting with a clean slate. How realistic is the creation of a high-quality market for farmed salmon, given that the industry has moved down the road of mass production and that there is a certain level of industry? It was also pointed out that there is an ownership profile in the industry of rather large companies that are not indigenously owned. How realistic is it to change the industry's strategy?

11:15

Patrick Fotheringham: One only has to read the newspapers to discover that the industry has a fairly tarnished image in the mind of the consumer. There is bad publicity in the environmental press. The only possible way out of that loop is through a regulatory framework. The consumer or the public should have confidence that the industry is effectively regulated so that, as far as possible, the environmental damage that it is causing is reduced or minimised. The industry can shine up its image in the eyes of the consumer and possibly aim for a premium-grade product that is environmentally more acceptable only when the message starts to reach the consumer that things are improving, the regulatory net has been tightened and the industry is being made to comply with regulation.

Mr Ingram: My other question relates to wild salmon. What markets are we losing as a result of the development of aquaculture? What is the opportunity cost in that area?

Andrew Wallace: With the emergence of fairly substantial production of farmed fish, the dynamics of the price of wild salmon have been interesting. There was a substantial reduction in the price of wild salmon—farmed fish undercut the wild salmon business. That and declining catches means that wild salmon catches are much lower and that the business is a shadow of its former self. However, the public is starting to be made aware of the problems that are associated with farmed salmon production and a market is emerging for wild fish, which attract considerable premiums. Compared to the farmed fish industry, it is an insignificant business and is likely to remain so.

Patrick Fotheringham: The key point is that the principal economic value of a wild salmon at the moment lies not in its being dead on a fishmonger's slab to be sold in the market as food, but in its being a resource for recreational angling. The Executive has just commissioned a study into the economic value of angling in Scotland. There has been a huge and detrimental economic impact on the west coast through the sharp decline in wild stocks in the past 15 years, but that must be set against the economic benefits that the industry has provided. We have always argued that the wild fisheries would have provided a sustainable resource for all time, had they been looked after in respect of aquaculture, but the industry would possibly argue otherwise.

Maureen Macmillan: Going back to the idea of increasing the competitiveness of the aquaculture industry, we were talking a little while ago about quality versus quantity. You have come down firmly on the side of quality as being more environmentally sustainable. What key management practices should the industry take responsibility for to increase its competitiveness? Do you have a view?

Patrick Fotheringham: We certainly have a view but, at the risk of being repetitive, we think that there should be an effective regulatory regime that enforces codes of best practice on all the big issues that we have discussed. Containment, fish farm escapes, disease control in general and sea lice in particular—I hope that we will have the opportunity to discuss that further—as well as other environmental issues such as nutrient enrichment are the issues that we have in mind. If proper regulation of those matters can be put in place, the industry will have lessened its environmental footprint. Only then can it hope to brighten up its image and market its fish more effectively.

Professor Mackay: As the national strategy develops, it will become clear to the industry and to everybody else that the final extent to which the industry can grow is limited. Cages have to be in reasonably sheltered waters, which is a limitation

in itself. The industry has doubled in size every few years since its inception, but that expansion will have to stop for various reasons. Government policy already limits areas of coastline that can be developed further. When an industry can produce only a certain amount each year, the push towards quality to try to keep the market becomes very strong, because that is the only way in which a fish farm can improve its income and profitability. Things are working in the right direction at the moment, although progress is rather slower than some of us would wish.

The Deputy Convener: The next group of questions is based on sustainability.

Angus MacKay: The committee is firmly of the view that industry best practice, based on sound scientific information and best available technology, is pretty crucial to long-term environmental sustainability. That view is based on the evidence that we have taken so far and the discussions that we have had. What, in your view, are the key features of best practice? How can the implementation of such best practice be incentivised?

The Deputy Convener: Angus MacKay may be asking you to re-emphasise things, but they may bear repeating.

Patrick Fotheringham: Once one has established what best practice is, compulsion must be a key feature. The industry should be made to comply with best practice. The regulatory process should have teeth; it has to be able to bite.

Perhaps it is counterintuitive, but there may be a serious advantage or reward for the industry, or parts of it, if such a regime were brought to bear. Andrew Wallace alluded to the free rider problem. There are a number of firms that are not currently members of SQS and are not employing best practice. They may well be doing a significant proportion of the environmental damage that is occurring. If one raises the bar, as it were, in terms of the standard to which the industry is regulated, the whole industry will be on a level playing field and there will be no free riders.

Those who are employing best practice at the moment are paying a pseudo-regulatory compliance cost, which is not being paid by those at the other end of the industry who are not complying. Regulation across the industry should increase the competitiveness of the part of the industry that is environmentally responsible. That may be counterintuitive, but it is one way of viewing regulation as benefiting the industry, as well as in connection with the marketing considerations that we have already discussed.

Angus MacKay: I understand the point that you make, which reiterates and augments what you have already said. You talked about how to act

once it has been established what the best practice regime should look like. To press you a little further, do you have any specific views about any elements of best practice? It would be perfectly acceptable if you preferred not to address that.

Secondly, in my original question I deliberately used the term incentivise rather than reward because I wondered whether you had clear views about how a punitive or a rewarding regime—or both—should be implemented.

Andrew Wallace: I was hoping to have an opportunity to raise that. We should reward good practice. That can be done through financial incentives. There are plenty of examples of that in agriculture, which is led by the grants system towards better environmental credentials. However, that should be balanced with effective punishment of poor practice. The previous time that we gave evidence I used a driving licence analogy. We can all put up with a bit of a fine, but the thing we fear most is losing our licence and hence our mobility. The ultimate lever that can be used with the industry is withdrawing its ability to operate.

Patrick Fotheringham: It is important to say a few words about the elements that those codes of best practice should include. From our perspective, they must first and foremost cover the sea lice issue in some shape or form. We have suggested all along that the best way to get on top of the sea lice problem is to be proactive and to consider the process of fish farming. There should be a code of practice on lice management with which it is mandatory that all fish farm operators comply. That would probably go a long way towards producing the management, or process-driven, regulation of the kind that we seek.

We would look for an element on containment to address the problem of fish farm escapes. Once we have established the best way of keeping fish in farms, it should be mandatory that people stick to it. We are learning more and more about the way in which fallowing and fire-breaks can be used to halt the spread of fish disease. All those elements should be included. Those are the biggest issues as far as we are concerned. Other environmental impacts that are outside our remit are also important, nutrient enrichment being a key one.

Professor Mackay: I would add to that list the limitation of waste and the efficient use of food, so that it is all converted into fish and not deposited on the seabed or into the environment; the minimal use of therapeutants, which can be helped by having the proper co-ordinated fallowing periods and through the timing of applications; the welfare of the stock, to ensure that the stocking density is such that the fish thrive and grow to their

maximum and do not just survive; and the prevention of cross-infestation from one farm to another. All those elements must be incorporated into the codes and then enforced.

John Scott: I was going to ask about the key elements of malpractice that you would like to be eliminated, but you have just given us a list.

Jeremy Read: We need to remember that codes of practice are not immutable. They are not frozen in time; they develop. In fact, there are already three codes of practice in the industry, although, as Andrew Wallace pointed out, they are not universally applied. The first is the sea lice control strategy, originally developed by Scottish Quality Salmon and taken forward through the work of the tripartite working group. The strategy depends on a mixture of co-ordinated stocking and fallowing and on co-ordinated treatment when treatment is necessary. The industry and the Executive have developed a code of practice on containment and escapes. They have also developed a code on the control of disease, particularly infectious salmon anaemia.

We already have the makings of codes of practice. As Professor Mackay pointed out, the codes will need to be expanded. A feature of the regulatory system that we have been discussing is the mechanism to refine and improve the codes of practice as technology, research and all the contributions of experience come to hand. That will mean that the codes of practice are, at any time, as good as they can be.

11:30

Angus MacKay: Concerns have been expressed about the sustainability of fin fish foods in relation to the supply of fishmeal and oils. What options are available for reducing the requirements for fishmeal and oils? How realistic is substitution with vegetable oils? How far advanced is the research into substitutes?

Patrick Fotheringham: We are not well qualified to discuss that issue, as it does not fall specifically within our remit.

Angus MacKay: It is refreshing when people who are giving evidence, rather than just talking, are happy to say that something is not in their area of expertise. Thank you for that reply.

Fiona McLeod (West of Scotland) (SNP): Let us not keep talking when we do not need to.

I was going to ask you to expand on your evidence, particularly on how to use therapeutants to control sea lice without having an effect on the environment, but I think that you have done that. Perhaps we could consider the sea lice issue more closely. You have talked about codes of practice that have come about through liaison

between regulatory agencies and the industry, for example. Using sea lice as an example, how do we ensure that the industry is sustainable and environmentally—"friendly" is not the right word—sensible?

Patrick Fotheringham: I hope that this is the last time that I reiterate that the most important thing is that we first consider the process. If a problem develops once we have regulated the process to the best of everyone's ability and knowledge, we will need a second string to the bow, so that a farm that can be demonstrated to have too many lice—we can talk in a minute about how we arrive at that conclusion—would be regulated by the fish health inspectorate in the way that the committee recommended in its phase 1 report.

We felt that the phase 1 report was perhaps not strong enough on ensuring that a code of practice—or best practice—on lice was made mandatory. The report talked of liaison between SEPA and the fish health inspectorate as a way of solving the problem. We felt that it would be more appropriate to nail the issue down and follow the recommendation that best practice be made mandatory. That is our first key point.

The second key point is that SEPA must maintain a balanced view. There must be a body to take everything into consideration and to take a balanced view on chemicals and lice. There is perhaps a conflict of interests, but it is arguable—in a moment I will pass the issue to Professor Mackay—that SEPA's duty is precisely to resolve such conflicts. It has a duty to assess a process's net impact on the environment and to reduce, as far as possible, that activity's environmental footprint. If SEPA is split, issues fall straight down the middle and are not dealt with, which is a serious problem.

Professor Mackay: SEPA was set up with three regional boards and a main board because it was expected that it would have to resolve such conflicts. SEPA protects the environment by controlling therapeutants, but it is also a barrier to the protection of wild fish because it does not permit the use of therapeutants to control sea lice in salmon farms. Someone must resolve that dilemma. To have two parts of the same agency battling against each other is probably not the way to reach a solution.

We have tools to reduce to low levels the sea lice infestation of salmon farms. The levels of sea lice that cause problems to farmed salmon are high enough to affect nearby natural stocks. Again, if the responsibility to protect natural stocks is not clearly placed on SEPA's shoulders, there is no incentive to keep down sea lice in farms to the low levels that are required to protect natural stocks.

We must do more work in that area. SEPA has put a huge amount of effort into developing techniques to ensure that therapeutants are used safely in the environment. SEPA's board members have discussed in considerable depth every therapeutant that has come along and they have reached a conclusion about whether the specified levels were reasonable. In addition, SEPA has sought peer review from agencies such as the water research centre for England and Wales to ensure that its calculations of acceptable concentrations are valid and reasonable. It has had that reassurance in each case.

We are on the brink of being able to manage the situation, in a complex and difficult balancing act, for the benefit of the wild stocks, the farmed salmon and the environment. We are getting close to having the tools to do that job effectively.

Andrew Wallace: I will take that a bit further. There are two options, which apply to all fish health issues, for getting rid of a disease such as sea lice. One option is the management of fish production. The other option is chemical treatments. Professor Mackay indicated that there are effective in-feed treatments that are well targeted and produce startling results. However, my concern is the fact that chemical treatment is always favoured, despite its high environmental and financial costs.

The chemical treatment route is being pursued, which means that management solutions are being neglected. Those solutions involve how fish are produced, not only in one block of farms, but in neighbouring farms. How those farms relate to one another and operate together can have a profound impact on fish health and on parasites, provided that the farms are co-ordinated and that there are incentives or, indeed, regulatory requirements to be co-ordinated. Such co-ordination is not happening nearly enough, but it needs to happen over substantial areas.

I cannot understand why the logic of that approach has not been more readily accepted. The tripartite working group has repeatedly encountered the problem of lack of co-ordination, with people on different production cycles not being able to synchronise production or create fallowing fire-breaks for diseases. To change that situation, somebody's business will have to give, possibly for six to eight months. That will clearly be costly, which is why we believe that it is important, through the process-driven approach, to attach requirements and criteria for consent to ensure that the management solutions to fish health are optimised and that we do not always resort to chemical treatments. That approach could have substantial benefits for the industry and its image.

Patrick Fotheringham: The convener and other members have mentioned the conflict of interest

that SEPA would have in taking on a role of the kind that we have recommended. Perhaps Professor Mackay could give other examples of where SEPA carries out its duties in such a way to resolve conflicts.

Professor Mackay: The example relates to SEPA's predecessors, but a good analogy is the protection of our bathing beaches. That is clearly a public health issue, but the authority to deal with it and to implement the European directive was placed firmly on the shoulders of the river purification authority. That duty has now come to SEPA and to the Environment Agency in England. SEPA's predecessors long argued that the control of virus and bacteria in the sea was not an issue for them, because it was a public health problem. That debate took place at the time of polio incidence in the 1960s. Now the situation has settled down and it is clearly SEPA's job to ensure that the levels of bacteria and viruses on our beaches are within the limits prescribed by the European directive and the Executive. That is a good example of how such procedures can work in practice.

Maureen Macmillan: I am aware that time is marching on, so I do not want to expand the discussion too much, but I have a point about the synchronisation of treatment. The witnesses talked about fallowing rather than synchronising therapeutic treatments. The industry argues that if therapeutic treatments could be synchronised, particularly the in-feed treatments, there would be no more sea lice.

Andrew Wallace: I agree. The issue is both synchronisation of production and synchronisation of treatment. One of the inevitable problems of the unco-ordinated use of treatments is resistance to the chemicals, for which there are endless precedents in aquaculture and agriculture. The more targeted and more carefully used the treatments are—I hope in ever-reducing quantities—the less chance there is of resistance. Maureen Macmillan is right that synchronisation of treatment and production is beneficial. That speaks out loud for the need for some form of process-driven approach whereby fish farmers in an area are required to operate in a co-ordinated way.

Robin Harper: Do you agree that, before we go for co-ordinated in-feed treatments, the best available technology must be put in place for feeding the fish and ensuring that an absolute minimum of feed lands on the sea floor? There would be serious considerations for fisheries that deal with benthic organisms, particularly crab fisheries and mollusc fisheries, if there were mass in-feed treatments at one time, as that would deposit a lot of a relatively toxic chemicals on the sea bed.

The Deputy Convener: I think that you touched on that matter earlier, Professor Mackay. Do you want to reiterate what you said?

Professor Mackay: I can do no more than agree with what Robin Harper said. It is vital that the wastage is limited. New technology is becoming available and the best farms are using it. For example, some feeding systems use underwater cameras, which detect when the fish have had enough so that the supply of food can be switched off. That sort of technology is helping to minimise losses.

Imagine a sea loch as a large bath. If everyone who farms that sea loch pours in therapeutants at the same time, the concentrations throughout the loch might rise to levels that are undesirable from SEPA's point of view. That is one of the dilemmas that SEPA must face. We need better research so that we can calculate and model the effects of adding several doses of therapeutant in close proximity at the same time. We are on top of the situation in which one farm uses therapeutants. At the moment, neighbouring farms are banned from using therapeutants at the same time to avoid creating a toxic cloud of material that could affect other sensitive animals in the environment, such as lobsters, crabs and shellfish that are in their young stages.

11:45

Fiona McLeod: I will summarise this part of the evidence-taking session and ask our witnesses to comment. To achieve the best environmental sustainability for sea cage fish farming, must we consider an aquaculture strategy that ensures that best practice is enforced through codes of practice and a single regulatory regime?

Patrick Fotheringham: I would say yes and I think that all my colleagues would, too.

The Deputy Convener: I was going to invite you to give a single-word answer.

Patrick Fotheringham: The key word that was used is "enforced". It is important that such a regulatory regime is enforced. The situation should not be left to the voluntary system.

The Deputy Convener: We have had a long and thorough session. I thank the witnesses for their time and their contributions to our inquiry. They gave full answers to our questions.

I welcome our next four witnesses. Richard Luxmoore and Alastair Davison are from Scottish Environment LINK and Matt Dalkin and Dominic Counsell are from Scottish Natural Heritage. Both organisations have made written submissions. If the witnesses agree, we will not have opening statements—we will regard the written evidence as such—but we will move straight to questions. I

invite John Scott to begin.

John Scott: The Executive has given a commitment to developing a strategy for aquaculture. What should be the key features of the strategy? What key aims and objectives should be identified?

Alastair Davison (Scottish Environment LINK): When developing a strategy, the Scottish Executive environment and rural affairs department should take account of a number of principles. The strategy should be advanced in an inclusive manner and should set a long-term vision for the sort of industry that is right for Scotland. It should also embrace the diversity within the Scottish aquaculture industry. About 95 per cent of the industry is salmon farming, but the strategy should include the interests of the developing shellfish and fin fish sectors.

There are several elements to the development of the strategy. The outlining of a clear vision for the long-term future of the industry and the setting of specific objectives—including targets—are critical. In other words, how the vision will be delivered must be spelled out. We must be able to identify and prioritise activities and specify the roles and responsibilities of the different actors who are involved in the regulatory regime for the aquaculture industry. At the moment, there is a lack of clarity in some areas about the roles and responsibilities, particularly of the Crown Estate commissioners. We must develop indicators within the strategy that will show whether the strategy delivers sustainability.

Dominic Counsell (Scottish Natural Heritage): Ultimately, a strategy is about getting the right amount of the right kinds of development in the right places. That task poses a range of complicated questions about different kinds of environmental impacts. There is a spatial component to the strategy. Where should the strategy be targeted on a national level? What different forms should it take? How should the strategy be implemented in an integrated way on a local scale? We must deliver best practice on the ground. A policy statement should say how the Executive views the sustainable use of maritime resources and it should specify the role of aquaculture in relation to tourism, other kinds of fisheries and biodiversity. Our waters need to provide multiple benefits. As well as providing food—obviously—they must be a source of energy, of biodiversity, of tourism and of other kinds of fisheries. The strategy needs to set out the different roles of participants and the framework that we use to implement the right kinds of development in the right places.

Alastair Davison: We have been recommending the implementation of the strategic environmental assessment process, a tool that will

allow environmental decisions to be included in the strategy from the beginning. It stems from a European directive that came into force in 2001 and that must be applied in the development of plans, projects and policies across the United Kingdom by 2004. The Scottish Executive has a good opportunity to take a proactive stance and to begin to implement the strategic environmental assessment in the development of its strategy. I echo Dominic Counsell's point about SEERAD's strategy, which must set high-level indicators. It is essential that the strategy results in action on the ground and allows inclusive local management and local planning of aquaculture development.

Fiona McLeod: How will the strategic environmental assessment that you mentioned, which must be in place by 2004, sit alongside the environmental impact assessments that are at present undertaken for fish farm locations?

Alastair Davison: The SEA is closely related to the EIAs. My understanding is that the SEA will apply the EIA process and principles to strategic decision making and planning. EIAs determine the impact of individual fish farms at one moment and in one location; the SEA will deal with the impact of our approach to the development of the industry.

Fiona McLeod: Will the SEA involve assessing the strategy rather than assessing individual planning applications?

Alastair Davison: Yes.

Richard Luxmoore (Scottish Environment LINK): One limitation of environmental impact assessments is that they do not allow consideration of alternatives or cumulative impacts, which are the features that the strategic environmental assessment will take into consideration.

Robin Harper: Will the witnesses comment further on the operation of the environmental impact assessment system?

Alastair Davison: The system of EIAs for fish farming is at a relatively early stage, but it is developing rapidly. The system is an extremely welcome and necessary step. We would welcome greater consistency in the scope and scale of EIAs for fish farms. In that respect, the guidelines of the Institute of Environmental Management and Assessment might be useful. The system is getting there, but one or two EIAs have not been as comprehensive as we wanted.

John Scott: The witnesses have given the broad principles of the strategy; I want to get down to its nuts and bolts. If the strategy is implemented, what sort of body might implement it? What would be the measures of the strategy's success and what time scale would be involved?

Dominic Counsell: There is no need for a single body to implement the strategy. There are a range of environmental impacts and a range of agencies that are best equipped to advise on them. We envisage that the Executive's role will be to set the framework for how the different agencies will work together. It is not possible to gather together the expertise in one body. In a similar way to the town and country planning system, the different functions of the agencies will be related, and an overall decision—which must be transparent and accountable—will be delivered. The framework for the strategy must be set up so that the existing agencies work together to deliver good governance.

John Scott: Should not there be only one agency—similar to the Scottish Executive environment and rural affairs department—that has the overarching role of sorting out problems and taking responsibility for the industry?

Dominic Counsell: No. Scottish Natural Heritage believes that, given the range of natural heritage implications of the aquaculture industry, it is unlikely that all the expertise can be held in one body. Different bodies must be able to comment. The national perspective that bodies such as SEERAD can offer is required, but local accountability is also required. It is appropriate that local communities take a view on some planning issues, but if the system is centralised, it might not be possible to take those views into account. The national context and local delivery are important.

12:00

Matt Dalkin (Scottish Natural Heritage): I want to back up what Dominic Counsell said. It was mentioned earlier this morning that the Scottish Environment Protection Agency would become the all-encompassing regulatory authority for the industry in the interim period. Significant changes to SEPA's remit would need to be made if it were to include areas of concern such as landscape, predators such as seals on fish farms, and the effects of predator strategies on neighbouring station populations. Those matters currently lie outwith the remit. Any new body's role would have to be so encompassing that it could become unmanageable.

Fiona McLeod: Do the concerns that you just mentioned fall within SNH's sphere of responsibility? Is SNH a regulator of natural heritage in the way that SEPA is an environmental regulator?

Matt Dalkin: At present we are consulted on the Crown Estates' planning applications and we take part in SEPA's discharge consent consultations. We are forced to comment on only one aspect of development. For SEPA consultations, we provide

information on nutrient and chemical impacts and natural heritage sensitivities. Those might include concerns that we have about adjacent wild salmonid stocks, but SEPA cannot take those into account in its discharge-consent process. The remit of the Crown Estates' planning process is a lot wider and can take those concerns into account in considering our input.

Alastair Davison: We are broadly supportive of the need for a single authority. It is an option for delivering what is, in effect, a rationalised, organised and structured regime of regulation, policy and incentives.

Matt Dalkin just outlined a reasonable example of where SNH has an important role and is being included as a consultee. Perhaps there is a need for discussion about what SNH's role is and how its duties can be included earlier. That goes back to the points that the roles of the regulators must be clear and transparent and that the national policy must be delivered through a local framework.

One of the critical points will be the transfer of planning powers to local authorities and the early and proactive development of regional aquaculture framework plans, which will include the views of regulators, local communities and stakeholders at an early stage.

Richard Luxmoore: We should see Crown Estates commissioners as landlords in terms of their responsibilities. If a person had a piece of land on which they wished to carry out mining operations, they might lease the land to a mining operator. That operator would be responsible for making good any damage that was caused—pollution or infrastructural damage—during the operation of the mine and after it closed down. Those liabilities and responsibilities would be devolved back to the landowner if the operator went bust. The landowner would then have to make good any damage that the operations, for which he took rent, caused.

The Crown Estates commissioners are in the same position with regard to the sea. They are taking large rent from the fish farming industry to permit it to carry out its operations. They do not appear to have responsibility for any damage that the fish farming industry causes. I am not particularly looking to get large sums of money from the Crown Estates commissioners to make good damage, but if they had liabilities as landowners, they might in the first place consider more closely the terms of the leases that they draw up.

The Deputy Convener: That was a good point. John, do you want to come back on that?

John Scott: I am sorry to go on about this. You will be aware that one of the industry's major

concerns is that there is no single regulatory authority. The industry is governed by about 10 agencies. If we increase the burden of regulation on the industry—it seems to be the universal view that we should do so—the problem of not having a body that makes the ultimate decisions and having to go round all those other agencies will get worse for the industry. Will that be a huge disincentive to investment?

Matt Dalkin: Planning applications for land and terrestrial bases go through local authorities. There is a consultative role in that, which we would like to be paralleled in consideration of applications for bases in the marine environment. It is a sound working practice for the land, so why should the sea be treated differently? We would like one regulatory process—one policy—that is underpinned by joined-up government working in practice.

The Deputy Convener: I think that some of the questions that Robin Harper wanted to ask have been answered. Do you want to pick up on those that have not been asked?

Robin Harper: I want to pick up on part of the first question, but I want first to pursue the research issue.

Research and technological development are crucial to the expansion and management of the industry. What should be the priorities for that research and technological development? Who should undertake the research and from where should funding come?

Alastair Davison: Those are very good questions. Much of the research that has been pursued to date—for instance, into the development of the cod and haddock industry—has examined husbandry processes and business systems. The environmental research tends to consider specific legislative requirements and any questions that those requirements raise. We need to sort out issues of sustainability. In that context, I acknowledge SEERAD's recent moves toward consideration of the potential impact of nutrients used in fish farming. There should be targeted research initially to establish how sustainable Scotland's aquaculture industry is on a global scale—that is, what our footprint on world fisheries is.

We should then look closer to home at the assimilative capacity—an issue that was rightly highlighted in the committee's phase 1 report. There has been a lack of investment in research and we are now faced with some difficult questions, although we do not have the tools that will enable us to answer them, concerning the capacity of Scotland's marine environment and the relative capacities of open and closed environments. We should concentrate on those areas.

The quality of the research that is being produced by Fisheries Research Services is extremely high. However it is worth remembering that there are potential concerns over political interference in the way in which that research is guided and communicated. We on the environmental side would be keen for that potential to be done away with. Some simple things can be done. Principles of transparency could be adopted, collaborative research could be considered and research groups could be established—which the FRS is considering—that would include representatives of industry, stakeholders and environmental bodies. That would ensure that the research is obviously and demonstrably transparent. Obvious measures such as peer review could also be introduced.

On funding, closer links to the industry should be fostered, with a possible levy. There is a sea-fish levy on the fishing industry; it might be worth while considering the imposition of a similar levy on research and development in the aquaculture industry. The bulk of the funding comes from sources such as SEERAD and from European Union funds via the financial instrument for fisheries guidance.

We would like the role of the Crown Estates commissioners in providing assistance to developing sustainability in aquaculture to be considered.

Matt Dalkin: I support most of what Alastair Davison said. One of our priorities is that we should be able to trust the results that we see. Much of the current conflict arises from the production of grey literature, or internal reports that have not been through the usual scientific peer-review process. That process has its flaws, but we would like more of the research to go through a more formal process and be published in respectable scientific journals before the debates start. It is not a new problem; medical research has encountered some of the problems that we have been discussing, and the level of rigour that is applied in scientific proposals, research and results in medicine needs to be applied to the aquaculture industry.

We can go down one of two avenues in exploring how to put more trust in the results that are obtained in aquaculture research in Scotland; for example, we could make the research independent. It could still be Government funded, although Alastair Davison criticised that to some degree. From our perspective, however, Government-funded research is much better than research that is either funded by the industry alone or purely environmentally funded.

The alternative is to promote ownership of data through participation. There are several fairly large projects under way at the moment, including the

Veterinary Medicines Directorate's research into the post-authorisation of sea-lice chemicals. That work is co-sponsored by the Government, the aquaculture industry, SNH and SEPA. Such ownership of the data overcomes some of the problems of quality and trust in the results that can stem from such projects.

The areas that SNH considers to be priorities for research have been well stated in submissions to many previous Government consultations. They are: the overlying sustainability of the industry; the issue of the feed supply; the carrying capacity of the surrounding waters, or the assimilative capacity, depending on the definitions that are being used; and research into improving best practice, husbandry and new technologies, for example in waste mitigation.

Robin Harper: Concerns have been expressed to me in the past three years about the transparency and availability of past results. I understand that you refer to some of the research that has been done as grey literature. Is there a case for making funding available to provide for peer review of the grey literature and to bring that substantially into the public domain, in such a way that we can assess its validity as quickly as possible? It is a shame if good research is just sitting on the shelf because the money to peer-review it is not available.

Matt Dalkin: There are two issues in that. One is funding, but behind that is the process by which the grey literature is transformed into peer-review literature. That should include all aspects of the debate and we need to get much of the argument out of the way before the literature is published. Crown Estates is moving towards prioritising its research through a steering committee, and I would like that process to be encouraged.

Alastair Davison: Grey literature is often produced rapidly for particular urgent questions. That will inevitably continue to be the case, so it is useful to consider the grey stage of such literature as being only an interim state. The provision of additional funds to produce peer-review literature of suitable quality would be extremely welcome. I acknowledge the Crown Estates' move towards a more open view of its research.

Dominic Counsell: Recently the Royal Commission on Environmental Pollution was trawling around for suggestions for its next project. Getting an independent assessment and authoritative scientific view of this body of grey literature might be a useful way forward.

12:15

The Deputy Convener: We have some questions about the competitiveness of the industry in the international marketplace.

Maureen Macmillan: Sometimes I think that there are two aquaculture industries—the fin fish industry and the shellfish industry. There are conflicts between the two. How can we sustain the aquaculture industry both environmentally and competitively? How do you see the industry developing? Do you envisage diversification into other species of fin fish? What about shellfish? Do you see polycultures as the way forward? I do not expect you to provide us with a commercial take on the issue.

Alastair Davison: We need to start by asking the industry a fundamental question: how does it compete at an international level? In salmon production, Scotland is competing with Norway and Chile. Those countries have vastly greater capacity for producing large quantities of salmon. That leaves us with the question of what ground Scotland wants its aquaculture product to compete on. The previous witnesses seemed to suggest that we should move towards a distinctively Scottish quality product, which would be fantastic. We would be very keen to support that. Scotland has a real opportunity to be at the forefront of the development of sustainable aquaculture, which would include shellfish and polycultures.

Scotland can become a world leader in the production of high-quality, low-environmental-impact seafood. The experiments that have taken place in organic production have been interesting. I note that the committee will hear evidence from one of the major retailers. It will be interesting to see what view that retailer takes on the state of the organics market and the potential for Scotland to move into that market.

We need to consider sustainability in its economic, social and environmental forms, while recognising that we need to be able to balance the sort of aquaculture that is allowed to take place with both market conditions and the environment's ability to withstand the impact of that activity. We may end up having lower-impact aquaculture—involving shellfish, for example—in more enclosed areas. Fish farming may end up being concentrated in those areas that can tolerate the burdens that the aquaculture industry places on the environment.

Richard Luxmoore: Polyculture is attractive in some ways, but it should not be overstressed. If one switches from salmon culture to cod and haddock production, the differences will not be great. The amount of nutrients that are poured into the environment will be more or less the same, because cod and haddock rely on the same type of feeding as salmon. The food sources will be the same, because fishmeal will require to be produced. Farmed cod and haddock will not transmit diseases to the wild salmon population, but they will probably transmit diseases to the wild cod and haddock populations. The committee

would be concerned about that.

There is scope for polyculture to reduce the environmental impact of aquaculture in shellfish culture, which strips nutrients out of the environment rather than putting them in. In some respects, that is complementary to fin fish culture. If one could find species of fish that would grow well using sources of vegetable protein, that might alleviate the fishmeal problem. One needs to consider different types of culture rather than just different species, because if a different species has a similar ecological niche to the salmon, the problems of the inputs to the industry will be the same.

Matt Dalkin: Alastair Davison hit the nail on the head when he compared the area that is available for salmon production in Scotland with the area that is available in countries such as Norway and Chile. Consider a parallel with the tourism industry: we compete with what we have and sell Scotland for its beauty, not on its weather. That is a direct parallel.

Mr Ingram: Given the nature of the industry and the fact that it is growing and competing with Norway and Chile, how realistic is it to expect the industry to be able to convert to upmarket, organic, sustainable products without reducing its scale in Scotland? Are you asking the industry to take two or three steps backwards before it can take a step forwards?

Richard Luxmoore: That is a good point. Reducing the scale is one thing, but the industry is not so much interested in scale as in profit. It is now pursuing ever-smaller profit margins on ever-larger tonnages. Ultimately, that might be unsustainable. Perhaps the industry should consider producing larger profit margins on smaller tonnages. That idea is behind the concept of finding a quality product.

John Scott: Industrial best practice must be based on sound scientific information and the best available technology, and would be crucial to environmental sustainability. What are the key features of best practice and how should its implementation be rewarded?

Richard Luxmoore: We have discussed many of the key features of best practice, the first of which would be to minimise damage and outputs to the environment. That means minimising the output of pollutants, nutrients and therapeutic chemicals and minimising the transfer of disease organisms to wild populations. Another form of environmental damage is the damage to wild populations of fish. At the moment, salmon are damaged, but other species might be damaged in future.

We would need to consider the sustainability of supplies to the industry, in particular the sources

of fishmeal or whatever else is used as an input to the industry.

One concept that we have not considered in connection with salmon farming, but which is being considered increasingly on land, is reversibility. We all know the decommissioning problems that the nuclear industry faces. Those problems are due largely to the fact that decommissioning was not considered to be a priority when the industry began. One should consider total lifetime costs, the problems of decommissioning and reversibility in future. That concept ought to be introduced.

Matt Dalkin: Fundamental to the implementation of best practice, once that practice has been identified, is the level playing field that the previous witnesses mentioned. There is no benefit for a fish farmer in following best practice if it puts them at a disadvantage compared with a competitor.

SQS represents about 70 per cent of the industry and has codes of practice. However, 30 per cent of the industry does not follow those codes of practice. We would like some form of enforcement, although I cannot say whether best practice should be made mandatory or enforced through other mechanisms.

Many practices have been recognised to be best practice. We would like emphasis to be put on best practice at varying levels of management, from the area management agreements—the work of the tripartite group—down to individual site management, which includes fallowing periods, site rotation and stocking densities. We would also like emphasis to be put on best practice in technology.

John Scott: Best practice could also be defined as getting rid of malpractice. Richard Luxmoore touched on elements of malpractice. Are there other elements that SNH regards as particularly damaging malpractice? Eliminating malpractice should be the starting point whereby best practice is arrived at.

Matt Dalkin: Malpractice is generally dealt with through the existing regulatory regime. I would use the term “better practice” rather than “malpractice”. For example, we would like the codes of practice on predator management to deal with preventing escapes and with the control of sea lice and disease. All that should be available in quite detailed documents. Another easy small-scale example of better practice would be to reduce the need for anti-foulant chemicals on nets by operating a swim-through and net drying procedure. Such environmental best practice would involve an extra cost, which we believe should be borne by the industry.

Alastair Davison: I agree that we need to

promote best practice in the process of raising fish. However, we must be aware that best practice should also cover how the industry is managed, the targets and objectives of monitoring and the assessment of environmental impact. We need to look at the principles behind self-regulation, which Scottish Quality Salmon wants to introduce or which any other scheme might want to introduce. We recognise that SQS has done a lot of good work, but there is a need for continued improvement and transparency. The previous panel of witnesses made an important point about the need to ensure that the worst performers are brought up to the level of the best performers. That is probably the only way in which we will be able to head for the prestige quality market that the industry seeks.

Robin Harper: I invite Alastair Davison to be a little more specific about sustainable sources of fish feed. Does he want to make any observations on the effect that fish-feed sourcing has on world fisheries at the moment? What prospects are there for moving to sustainable sourcing? For instance, could we set targets for best practice at some point in the future?

Alastair Davison: Sustainable sourcing of fish feed is a funny area: the more you look at it, the more confused it becomes. The key question is whether the fishmeal from which fish pellet is made comes from sustainably managed fisheries. Opinions on that vary enormously and it is extremely difficult to get a straight answer. That is frustrating for us and must be enormously frustrating for the industry. There is a job of work to be done in considering whether we can assure sustainability.

One thing that is certain is that a lot of the fishmeal that is used on Scottish farms comes from halfway across the world. Some fairly fundamental questions must be asked on how responsible it is to transport fishmeal halfway across the world to be fairly inefficiently converted into more fish flesh.

The research on alternative sources is considering the use of vegetable sources, which is interesting. My understanding is that the research is relatively inconclusive on the use of such sources in salmonid aquaculture. However, in areas such as the new white fish industry, vegetable sources appear to offer some potential.

The Deputy Convener: If no one else wants to add to that, perhaps Fiona McLeod will ask about medication.

Fiona McLeod: As with the previous panel of witnesses, I want to use sea lice as an exemplar of how we achieve best practice in the industry. One of our concerns is how to control the number of sea lice while mitigating the environmental

impact of doing so. The question arises because we tend to control the number of sea lice through medical therapeutants. Could or should the industry adopt other strategies to manage sea lice?

12:30

Matt Dalkin: The previous set of witnesses put it eloquently. The emphasis should not be on treatment alone; we need to examine management practice in the prevention of the sea lice problem and to consider the wise siting of farms away from identified sea lice hotspots. There is therefore a relocation angle. We should consider stocking densities that are appropriate to best sea lice management and co-ordinated stocking, fallowing and rotation in farms. That can all form part of an holistic sea lice management strategy, as opposed to relying only on what is rather ineffective treatment.

Fiona McLeod: If we are to pursue the holistic treatment of sea lice and so on, how are we to ensure that it is regulated? We discussed the possibility of joined-up regulation between different agencies. I was particularly interested in a comment that Richard Luxmoore made when he talked about the Fisheries Research Service. You seemed to imply that there was some political leaning on the FRS with regard to the type of research that it carries out and what it chooses to publish. If that is the case with research, and if the FRS is to be one of the regulatory agencies for sea lice management, how do we ensure that there is no political leaning on it in that regard, too? Surely a single regulatory authority would be able to provide the holistic, independent approach to regulation.

Alastair Davison: My point was that the current structure would allow for the potential for some political intervention. I was certainly not suggesting that there was hard evidence of such intervention at the moment.

The operation of the FRS and the steerage of its research would benefit enormously from the research steering group approach that we mentioned earlier, which comprises not only the views of the industry and the regulators, but those of stakeholders and other concerned groups.

Fiona McLeod: What sort of strategy should we be adopting to ensure that we have holistic approaches to the management of sea lice and environmental sustainability in the industry?

Alastair Davison: If we take sea lice, the earlier witnesses made a good point about the requirement to develop integrated pest control strategies for different production areas, so that, in a given production area, it would be a requirement, or possibly a licence condition, to

comply with or take part in the integrated control or co-ordinated use of therapeutants within the area concerned. In the development of integrated pest control plans for that area, the emphasis would be on good husbandry, which would reduce the need for the use of therapeutants, and on setting targets for reducing the amount of therapeutants used.

The Deputy Convener: I thank all the witnesses very much for their contribution to our inquiry and for their time. I apologise for having kept you waiting and thank you for your patience—we have been running rather late.

I now welcome Mr Ian Burgess from Co-operative Retail. I apologise for keeping you waiting so long, and I thank you for your patience. We are very glad to have you here and to be able to hear your contribution. We had not expected you to be representing the retail sector single-handedly. We received a late apology from the representative of Tesco, and we hope that we might be able to secure their input at a future date—we can arrange for them to contribute to our inquiry then.

If it is all right with Mr Burgess, we will move straight to questions, and I invite Maureen Macmillan to begin.

Maureen Macmillan: You will have listened to the evidence that has been heard, and will be aware that we think that there is a balance to be struck between quantity and quality. Could you outline the Co-op's policy with respect to farmed fish? How has the market developed over the past five to 10 years? Where do you source your farmed salmon?

Ian Burgess (Co-operative Retail): We should recognise that there is a price perception out there, and that certain people have certain levels of affordability. I work on the technical side, so I cannot go into the depths of the buying and commercial strategies, but any buying strategy has to address the main customer requirements, and that means providing a breadth of products that the whole customer profile can purchase.

Could you repeat the question?

Maureen Macmillan: It was about your buying policy. You have said that you have to have a range of prices. How has the market developed over the past five to 10 years? Is there an increasing demand for farmed salmon? Where do you source your fish? Do you source it from Scotland, from Norway or from organic farms, for example?

Ian Burgess: We are aware that fish is being held up as being a healthy part of people's diet, because of the omega-3 oils that it contains. The level of fish consumption has increased, and the quantity of fish that we are selling has also

increased.

We have increased the range of fish—not just salmon—that we stock: both the species type and the type of cut. There has been a move away from the piece of fillet on a plate towards more added-value products, and a divergence into ready meals. A greater proportion of fish-based ready meals is now coming on to the market. The market for fish-based products is increasing.

On sourcing, the salmon that we currently stock are all Scottish salmon. As far as I am able to say, that will be the case for the foreseeable future, although I stress again that I do not work on the buying corridors.

Maureen Macmillan: Could you say why you have chosen Scottish salmon over Norwegian salmon?

Ian Burgess: We have to stand back and take a slightly different perspective. If we talk to consumers, we find that there is a perception that something that is Scottish, or its Scottishness, delivers something over and above the norm. People are, typically, prepared to pay a little bit extra for that, because they have the perception—rightly or wrongly—that the quality of something that has a "Scottish" label attached to it is over and above the norm. That is why we would tend to keep our sourcing protocols such that we can offer the product categories that I have mentioned.

Linking into that, the labelling of products must also be considered. For example, our packs of salmon are clearly labelled to state the country of origin and whether the salmon is farmed or wild caught. We sell only farmed salmon, but it is labelled as such. Customers can therefore be aware of what they are purchasing. An essential part of a retailer's responsibility to its consumers is to tell them what they are buying, so that they can make an informed choice.

Maureen Macmillan: Do you ever discuss with the producers the conditions under which the farmed fish are produced?

Ian Burgess: As a retailer, we look for producers that comply with recognised codes of practice. That applies not only to fish but to all farmed animal species. We source products from suppliers that comply with the leading assurance schemes within their sector. Clearly, we do not have the resources to visit every fish farm. We sign up to an assurance scheme that delivers the welfare benefits that our customers expect us to look for on their behalf.

It is important to stress that, in a way, the customer abdicates responsibility for welfare to the retailer, because the customer believes that the retailer should act in the best interests of its customers. That is why we source products that come from a recognised assurance scheme.

The other factor is that we look for assurance schemes that are credible. They must be subject to review and must be continually driving forward. We do not want an assurance scheme in any sector under which people believe that they have done the job and can sit back. Assurance schemes must have a review mechanism whereby the requirements of the scheme are driven forward in the light of new technologies and other developments.

Maureen Macmillan: You will be aware that there have been growing concerns about the environmental impact of sea cage fish farming. I presume that you sign up to a producer that has an assurance scheme as a way of overcoming those concerns. Have you been aware of those concerns? Have they meant that you have had to market farmed salmon in a different way?

Ian Burgess: Our customer relations team gave us feedback on specific cases in, I think, the Inverness area, where some of the local population were concerned that the farm that we sourced from was damaging the environment. In that instance, we worked with our supplier that sources from that fish farm to ensure that it complied with the recognised code of practice. We also ensured that the relevant auditing systems that we and our supplier have in place were thorough and were delivering what we expected them to deliver.

Fiona McLeod: You have given us an individual instance in which concerns were raised. Is there a forum in which retailers and the industry can get together to ensure that the industry code of practice meets the ethical standards that businesses such as the Co-op try to reach for their customers? Are there on-going reviews?

Ian Burgess: There are numerous forums in which the retailers can get together to talk among themselves. However, we need to be careful of the rulings of the Competition Commission. If six retailers get together in one room, the next thing that is levelled at them is that some sort of price-fixing is going on. We therefore need to be careful about such meetings. That is why we tend to work with industry bodies to develop standards. Having said that, if at the end of the day a standard does not deliver what we require, we will set a baseline that must be complied with and also set additional requirements. We have had to do that in other instances, but we usually try to work with the recognised industry bodies.

Mr Ingram: There is a debate about whether Scotland should move into high-quality, high-value products and away from high-volume, low-cost products. What kind of premium and what kind of market might such high-quality products have?

Ian Burgess: I reiterate that the general public

have the perception that Scottishness adds value. I will turn your question round slightly. Whatever systems or standards are implemented in the industry, they must be seen to support that perception. If the perception takes hold that one is just another supplier of salmon—like Norway or Chile—the Scottishness factor will be lost. Anything that is done in the industry must be done with the perceptions and requirements of the consumer in mind.

12:45

Mr Ingram: I am trying to get a feel for the price implications. I want to quantify the differential between Scottish farmed salmon and, for example, Norwegian salmon. Would your customers be prepared to pay a significant differential?

Ian Burgess: I am the wrong person to answer that question. I work on the technical side of the business rather than in the buying corridors. We label products such as Aberdeen Angus or salmon “Scottish” if they originate in Scotland because consumers have a demonstrable perception that Scottish products have an added mystique. I do not know what that amounts to in pounds and pence; I cannot answer that.

John Scott: Are you happy with the assurance scheme that SQS provides? Should the industry progress with that type of assurance? The SQS assurance scheme is attractive for its members, who claim that they obtained the Label Rouge award in France as a result of it.

Ian Burgess: There needs to be a single recognised assurance scheme that includes all producers within the industry, but the scheme should not be targeted at the lowest common denominator—the worst producer. There should be no dilution of standards within such a scheme. The scheme should be enforced in a way that requires all producers to comply with the scheme’s requirements. The industry is only as good as its weakest player.

Allowing the weakest player to remain outside an assurance scheme creates a severe danger of the industry’s name being plastered across the press for all the wrong reasons. I draw the committee’s attention to the example of farmed warm water prawns from the far east. The production of such prawns has involved the uncontrolled use of antibiotics. That market has been severely damaged. The Scottish salmon industry cannot afford such damage. Therefore, a single scheme must be rigorously enforced.

Maureen Macmillan: What is your opinion on whether there is a growing market for organically farmed salmon?

Ian Burgess: Like other retailers, we have noted a growth in organic products per se right across the sector. That growth is still increasing, but at some point it will reach a plateau. Although there is a market for organic salmon, which will be valuable, it will always be a niche market; it will never become the principal market.

There are two distinct farming systems—organic and, for want of a better word, conventional. In my opinion, we should take the best aspects of each method of production and blend them together to obtain a single system that delivers the best aspects of both. We are doing that within land-based agriculture.

Angus MacKay: I am content that my first question has already been answered, as has part of my second question. You were asked about organically supplied salmon. Do you have a view about the broader development of aquaculture products and markets more generally?

Ian Burgess: There will be demand for other species, but salmon will be the driver for development as it will form the bulk of the industry for the foreseeable future. We need that critical mass to pull through and fund the development of other species, such as cod and haddock. We are all aware that stocks of those fish in the coastal waters of the UK are in decline. There will be a demand for more aquaculture products in the future.

Fiona McLeod: I want to go back to quality assurance schemes. Is it easier for a retailer to deal with voluntary quality assurance schemes or with an industry that is regulated independently by a Government agency, which ensures that quality is part of the regulation process?

Ian Burgess: It is easier to deal with an assurance scheme if it is one that is a requirement. As I said earlier, voluntary schemes leave us open to the weakest link in any chain bringing down the whole thing. We could sign up to a series of suppliers who worked towards a voluntary scheme, but all it would take is for someone outside that scheme to get bad press—for whatever reason—for the whole industry to be tarred with the same brush. Realistically, there should be enforcement or a requirement for people to comply with the standards of a scheme.

John Scott: Given that we will be in a much more regulated environment in the future—that seems to be the likely outcome of the inquiry—would regulation be the bottom line, with quality assurance as an add-on? Would a high-level quality assurance scheme create an extra niche in the market?

Ian Burgess: Any regulation scheme should encompass quality assurance, including welfare requirements and production requirements. Those

should not be excluded from the scheme.

John Scott: There will be minimum standards, but will there be room for a gold-label quality assurance scheme?

Ian Burgess: It would be for the managers of the scheme to decide whether they wanted to create various levels within a scheme. That would be possible and it would reward producers who were more responsible or conscious of their markets. That would allow us to move the base level up and would create continued development of the industry, rather than allowing a proportion of producers to remain static at the bottom of the scheme. It would be possible to develop different labels or different levels of compliance.

In the food industry we have the British retail standard, which is a code of practice that all retailers are signed up to, and which says that they want suppliers to reach the standards. There are two standards within that: the foundation level and the higher level. Over time, the requirements that were higher level have become foundation level, and we are bringing in other requirements so that the higher level is really a higher level. It gradually moves the industry up the standards to which it works. Something analogous to that could be done in the aquaculture industry.

John Scott: In effect, that would reward those who carried out truly best practice.

Ian Burgess: Yes.

The Deputy Convener: If there are no further questions, this would be a good point at which to end the meeting—we are going onward and upward.

Thank you for giving evidence. I am sorry that you had to take on the burden of the whole retail sector single-handed. I thank the committee, the clerks, the official report and other staff for sticking with us until rather later than anticipated.

Meeting closed at 12:54.

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