The Scottish Parliament
Pàrlamaid na h-Alba

Official Report

MEETING OF THE PARLIAMENT

Tuesday 11 December 2012

Session 4

Tuesday 11 December 2012

CONTENTS

Scottish Parliament

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[The Presiding Officer *opened the meeting at 14:00*]

Time for Reflection

The Presiding Officer (Tricia Marwick): Good afternoon. The first item of business this afternoon is time for reflection. Our time for reflection leader today is the Right Rev Gordon Mursell, author and former Bishop of Stafford.

The Right Rev Gordon Mursell (Author and Former Bishop of Stafford): When I retired, I started climbing the Munros. When I got to Braigh Coire Chruinn-bhalgain—which means the upland of the corrie of the round blisters—I realised that I would have to learn Gaelic if I was to stand any chance of being rescued if something terrible ever happened to me. So I am into the second year of the Ulpan Gaelic course at Castle Douglas.

Both the Munros and the Gaelic language—you do not need me to tell you this—are far more than just a part of Scottish heritage or culture; they are a part of our country's spiritual DNA. Both offer us an alternative vision of reality, a different way of seeing things. The mountains do that by lifting you out of self, into a wider picture. No one could climb them without becoming aware not just of the beauty of the landscape but of their own littleness.

That is why language such as "bagging" or "conquering" the Munros is so inappropriate; we climb them as pilgrims, encountering something other than ourselves—something that, when paid attention to, has its own story to tell: of climate change and clearances; of safety for minorities fleeing persecution; of refuge for birds and migrant animals. They do not belong to landowners or hillwalkers or even human beings; they are free. When the great Scottish climber WH Murray was liberated after years of imprisonment by the Nazis, he said, "I had not once thought of myself as imprisoned. In my mind, I was on the mountains of Scotland, and had their freedom."

In the Judaeo-Christian tradition to which I belong, mountains are not just signs of freedom. They keep us company. They inspire us to welcome the stranger, because on them we are all strangers in need of sustenance and shelter. They are not an escape from the world of politics and poverty; they inspire us to go back to it and change it for the better. Jesus went "up the mountain" to give his teaching—that is why it is called the "Sermon on the Mount"—because you can see further from up there; and the radical reversal of this world's values that he taught inspires us still because, in the same spirit as the Gaelic language and the Munros, they offer us an alternative vision of how things could be. I am no good at pronouncing this, but I shall try:

"Is beannaichte iadsan a tha bochd nan spiorad:
oir is leo rìoghachd nèimh."

"Blessed are the poor in spirit,
for theirs is the kingdom of heaven."

Affirmation

14:03

The Presiding Officer (Tricia Marwick): I invite our new member, Jayne Baxter, to make a solemn affirmation.

The following member made a solemn affirmation:

Jayne Baxter (Mid Scotland and Fife) (Lab)

Business Motion

14:04

The Presiding Officer (Tricia Marwick): The next item of business is consideration of business motion S4M-05145, in the name of Joe FitzPatrick, on behalf of the Parliamentary Bureau, setting out a revision to the business programme.

Motion moved,

That the Parliament agrees to the following revision to the programme of business—

Tuesday 11 December 2012

delete

followed by	Scottish Government Debate: Commonwealth Games 2014

and insert

followed by	Scottish Government Debate: Role of Scientific Evidence and Advice in Public Policy

Wednesday 12 December 2012

delete

followed by	Scottish Government Debate: Role of Scientific Evidence and Advice in Public Policy

and insert

followed by	Scottish Government Debate: Annual EU Fisheries Negotiations—[*Joe FitzPatrick*.]

Motion agreed to.

Topical Question Time

14:05

Unconventional Gas Exploration

1. Claire Baker (Mid Scotland and Fife) (Lab): To ask the Scottish Government what its position is on the reported increase in unconventional gas exploration. (S4T-00160)

The Minister for Energy, Enterprise and Tourism (Fergus Ewing): The Scottish Government believes that Scotland needs a diverse energy portfolio to aid resilience and maintain security of our supply. Unconventional gas offers potential as another source of natural gas, but it is essential that unconventional gas exploration and extraction are done safely and responsibly with due regard to the environment.

The Scottish Environment Protection Agency has recently produced guidance to cover its regulatory roles in relation to coal-bed methane and shale gas. We will continue to work with the United Kingdom Government and SEPA to ensure that there is a robust regulatory regime in Scotland in relation to unconventional gas exploration and to provide clarity for industry, planning authorities and communities.

Claire Baker: The minister will be aware of the reports in the media at the weekend on concerns about the safety and environmental impact of unconventional gas extraction and, in particular, fracking. It is clear from responses that I have received from local authorities that there is widespread confusion over what is needed by way of permissions or new licensing if, for example, there is a move from conventional extraction to fracking or from coal-bed methane extraction to shale gas extraction. There is also evidence that the use of delegated decision making is widespread.

There is a risk that fracking will come into Scotland under the radar, with local communities not being fully consulted on or involved in decision making. Does the minister accept that the regulatory regime is not robust enough and that it lacks local accountability and scrutiny? In the light of the expected lifting of the UK moratorium, will the Scottish Government introduce national guidelines as a matter of urgency?

Fergus Ewing: With respect to the member, I do not agree that such confusion exists. It has been made very clear indeed that there is a robust regulatory regime in place, the nature of which has been made clear on numerous occasions.

I repeat that the licensing of the exploration and development of shale gas and coal-bed methane is a reserved matter for the UK. A petroleum exploration and development licence—PEDL—is required. Such licences are issued by the UK Department of Energy and Climate Change. Following that process, planning applications to move into the production phase require planning permissions gained through local authority planning processes. Given their appeal obligations, Scottish ministers must not and cannot comment on live individual planning applications.

Therefore, there is a clear regime for obtaining necessary permissions before anything can happen. Moreover, I am not aware of any application for fracking in Scotland.

Claire Baker: The minister's response is disappointing. I assure him that, in the discussions that I have had with local authorities, communities, environmental campaigners and the industry, concern has been expressed that there are gaps and uncertainties in the regulatory regime around what is a new energy source. I am quite happy to share the correspondence that I have received with the minister.

There is a desperate need for clarity, transparency and robust scrutiny if progress is to be made with unconventional gas. The regulatory regime is cluttered and confusing. It is extremely difficult for communities to get involved. Elected representatives are being marginalised.

The Presiding Officer (Tricia Marwick): Can we have another question, Ms Baker?

Claire Baker: The situation is unacceptable. Does the minister not accept that there is a need for greater community involvement?

Fergus Ewing: I am sorry to disappoint the member once again, but I am afraid that I just do not agree with any of that. I think that there is total clarity. Above all, the approach that we take on this matter, as on so many others, must be based strongly on evidence. It is on evidence that we take our decisions in relation to energy policy.

Bruce Crawford (Stirling) (SNP): The minister may be aware that there is an application for unconventional gas exploration in my area and in some other members' areas in the Mid Scotland and Fife and Central Scotland regions. Does he think that, similar to what has happened with wind farms and other renewables, where some of the benefit is retained in the community, those who intend to develop unconventional gas exploration facilities—in our case, coal-bed methane, not fracking—should, before such developments get the go-ahead, consider strongly contributing to the local community as well as extracting the material?

Fergus Ewing: That is a sensible question. I agree entirely that it makes good sense for all those who propose to proceed with energy projects to consult fully and in detail the local authority and the local community. I commend that approach in respect of the case that Mr Crawford rightly raises.

Elaine Smith (Coatbridge and Chryston) (Lab): Recently, in Moodiesburn in my constituency, an unconventional gas exploration planning application was withdrawn following significant public objections. In light of the recent press reports, will the Scottish Government give any reassurance that gas extraction will not happen in Moodiesburn against the community's wishes?

Fergus Ewing: I cannot give assurance in respect of applications that have not been submitted. I am happy to receive details of the case to which the member refers, but it strikes me that, if the application has been withdrawn, there will be no gas extraction.

Patrick Harvie (Glasgow) (Green): There is a lack of clarity on how local planners are supposed to interpret the aspects of the SEPA guidelines that have to do with the climate change impact of adding to our stocks of fossil fuels. The minister asked about the evidence. Is it not clear that the evidence is absolutely robust that the world has dramatically more stocks of known, conventional fossil fuels than we can afford to burn if we are remotely serious about our climate change objectives?

Fergus Ewing: I doubt that there will be a meeting of minds between me and Mr Harvie on that matter. We will consider carefully any impact on emissions from the burning and extraction of shale gas and coal-bed methane, as we do with all other energy applications.

Angus MacDonald (Falkirk East) (SNP): Petroleum exploration and development licence 133, issued by the UK Government, covers part of my constituency. As we have also heard, it has received some media attention over the weekend. What safeguards will be put in place to ensure that SEPA monitors the consented water discharge points regularly?

Fergus Ewing: I thank Mr MacDonald for that question. I am happy to look into the specific detail. I have not looked at the case in detail, so I do not want to comment without knowing all the facts.

However, for the benefit of all members, many of whom have an interest in the topic, I say that SEPA is to be commended for introducing guidance proactively. Anyone who studies that guidance, as I have done, will see that it is a considerable aid indeed to everyone who has to interpret such matters, whether local authorities or others.

I am indebted to SEPA for its approach, but I will correspond with Angus MacDonald or meet him if he wishes to discuss the particular case.

Sarah Boyack (Lothian) (Lab): One of the key issues that people have been raising is how the different regulatory regimes join up. In the context of planning and the climate change obligations, is there not an argument in favour of the precautionary principle, particularly in view of the potential of methane escaping during any such works and having severe climate implications, given that it is significantly more dangerous than CO_2?

Fergus Ewing: Sarah Boyack expresses a legitimate view. I suggest that her espousal of the precautionary principle should be considered in the light of the evidence on the matter. Because unconventional gas extraction has not yet taken place in Scotland—at least, not to a significant extent or recently—it is essential that we proceed on the basis of evidence rather than any other approach based on what people think may be the facts. I hope that all other members—even Mr Harvie, who is shaking his head at this point—will agree that that alone is the correct approach on this important matter.

Jobcentre Plus (Work Experience)

2. John Mason (Glasgow Shettleston) (SNP): To ask the Scottish Government what impact the Jobcentre Plus system of encouraging work experience is having on its policies that support people into paid employment. (S4T-00162)

The Minister for Youth Employment (Angela Constance): As the Parliament knows, the Scottish Government does not duplicate services for which the United Kingdom Government has the responsibility and resources to provide. Therefore, there is no direct impact on the Scottish Government's policies to support young people into work. Indeed, we are trying to make Department for Work and Pensions and Scottish Government policies work coherently and effectively in the interests of young unemployed people.

The Scottish Government recognises that periods of work experience can be highly valuable to improving the employability and skills of young people, but we have been clear with the DWP that work experience schemes should in no way exploit those who take them up. We are supportive of voluntary, non-sanction based work experience opportunities that do not substitute substantive jobs and which give young people valuable experiences that help them to move towards employment. Clearly, we are not supportive of

employers who use work experience as a form of cheap—or, indeed, free—labour.

John Mason: As the minister said, work experience is clearly a very good thing. However, the *Sunday Mail* indicated that Jobcentre Plus managers are under pressure to encourage employers to turn paid vacancies into unpaid work experience. Can the minister tell us whether there are any estimates of the number of people filling real jobs in Scotland under the guise of work experience? Will the Scottish Government make urgent representations to Westminster regarding that practice?

Angela Constance: I am aware of the article that appeared in the *Sunday Mail* and an article that appeared in the *Daily Record* last week. Should the allegations be true, Mr Mason is right that the practice would be scandalous, but such serious allegations need to be investigated and the DWP must be given the opportunity to respond. Therefore, I have today written to the Secretary of State for Work and Pensions, Iain Duncan Smith, to seek an urgent investigation into the allegations. I will of course be happy to provide Parliament with details of his response when I receive it.

If the allegations were found to be true, the situation would be scandalous, but it would be difficult to estimate how many work experience placements to date have displaced real job opportunities.

John Mason: I am grateful that the minister has already written to the Westminster Government; that is excellent. Does she agree that, if the allegations are true, it is exploitation of people in Scotland who are looking for real work? Does she also agree that Jobcentre Plus and the DWP should be on the side of job applicants if there are unscrupulous employers out there? Can the Scottish Government do anything to offer such protection if the DWP will not? Finally, does the minister agree that Westminster's record on running the DWP has been very poor and that that is another disadvantage of Scotland remaining in the UK?

Angela Constance: I believe that everybody should be on the side of those who are seeking work. I have a strong belief in the value of work experience for young people, but—as I have already said—such placements must be voluntary and of a high quality, and they must support the young person's move towards and into employment. Employers are key partners in that regard, and we are clearly opposed to any form of exploitation.

Earlier this year, the Chartered Institute of Personnel and Development published a charter and guide for employers on work experience. It is a good-quality guide and it is very clear that work experience should not be used to fill job vacancies. I encourage every employer to apply the guidance that is contained in the document.

On a personal note, from my engagement with DWP staff I think that they work hard to try to deliver for unemployed people in very difficult circumstances. However, I am also clear that, where services impact on the lives of people in Scotland, the responsibility for those services should lie with this Parliament and no other.

Kezia Dugdale (Lothian) (Lab): I remember being quite struck when the Minister for Youth Employment said that she was relaxed about unpaid work experience. I think that that was said in response to an intervention by Patrick Harvie in a debate last year.

The minister says that she wants voluntary and high-quality work experience. Will she consider a time limit on work experience? It is certainly my experience that work experience often morphs into an unpaid job. We need to understand the difference between work experience and paid employment.

Angela Constance: I am surprised that Miss Dugdale would find me relaxed about anything. I assure her that I am not relaxed by instinct.

I will clarify what I said. It was actually a journalist who asked me not about a DWP scheme with sanctions but about the principle of work experience, and I said to him that I thought that work experience could make a positive contribution. In that regard, I was relaxed about it. In providing a comment to that journalist, I was not providing—

The Presiding Officer: Yes, but can we get the answer to Miss Dugdale's question, please?

Angela Constance: Yes, indeed. I simply thought that it was important to clarify the point.

There is an issue about time limits. If we believe in the principles that the Chartered Institute of Personnel and Development has set out, work experience should be focused on and tailored to the needs of young people, it has to enable them to progress towards and into work, and there should be clear boundaries. We cannot be prescriptive about every work experience scheme, but I would have concerns if work experience continued for protracted periods. I am therefore minded to support time-limited work experience, although flexibility is needed in working with individuals to meet their and employers' needs.

Creative Scotland (Severance Package for Chief Executive)

3. David McLetchie (Lothian) (Con): To ask the Scottish Government whether it will provide

details of the severance package agreed with the chief executive of Creative Scotland, Andrew Dixon, in light of his announcement that he is to leave the organisation in January 2013. (S4T-00158)

The Cabinet Secretary for Culture and External Affairs (Fiona Hyslop): No, as that is a matter for the board of Creative Scotland, which employs the chief executive.

David McLetchie: I am very disappointed to hear that. I am not quite sure why the Scottish Government should be complicit in a cover-up of the expenditure of considerable sums of public money.

In considering her answer to my previous question, the cabinet secretary should acknowledge that we have got into a situation in which the year of creative Scotland has turned into the year of destructive—or self-destructive—Scotland. Given that she wrote to the board of Creative Scotland prior to Mr Dixon's announcement to outline her concerns in clear terms, given the broad criticism from the artistic community over recent months of Creative Scotland's conduct and policies, and given the acknowledgement by the board of Creative Scotland of serious failings in its organisation and management, does the cabinet secretary think that the departure of one man is a sufficient response?

Fiona Hyslop: Creative Scotland's accounts will be published next year, and there will clearly be disclosure of the package as part of those accounts. Such accounts are regularly published after the financial year ends on 31 March.

The agreement with Mr Dixon is a confidential matter, and the board has been decisive in its actions. It has issued a statement, which was published on Friday. I am not sure whether the member has seen it, but it has been well received by the cultural community and by artists, who have commented that they think that the board has recognised the issues and that it needs to move on.

The board will change Creative Scotland's operational structure to use staff knowledge and expertise more effectively, and it will establish internal and external forums to allow artists, creative practitioners and staff to contribute to policy development. Long-term funding will be offered, and there will be changes to the perceived hierarchy in its funding operations.

There is an opportunity for Creative Scotland to move on. We have a very strong artistic sector and a vibrant cultural scene in Scotland, and it is incumbent on all of us to ensure that the organisation can move on. Andrew Dixon has resigned, but more has to be done with the organisation. The board's statement and the actions that it announced on Friday are a good step forward in that direction, and the sector has recognised that.

David McLetchie: Can the cabinet secretary confirm that she retains full confidence in the board of Creative Scotland and that following the publication of the internal reviews, which is due to take place on Friday, she will take all necessary steps to restore the confidence of members of the artistic community in Scotland in the organisation?

Fiona Hyslop: As the member mentioned in his previous question, I have written to the board on a number of occasions, setting out my concerns in letters of guidance to it. I made it clear in October that I wanted it to address the concerns about its operations. After my discussions with the board in June, it had already taken steps to establish the interim report process and, as the member said, those reports will be published on Friday.

The member might not be aware of the statement by the board last Friday, in which it indicated what actions it is going to take in some areas. The interim reports that will be published on Friday will also set out specific actions, which is what people expect and require. I think that we can take confidence from the statement by the board last Friday, which has been well received by the sector.

There is a job of work to be done, and I expect that work to happen. We need strong relationships between Creative Scotland and our artists. Over many years—since before my time as culture secretary and, indeed, since before our term in government—there has been a real issue with the relationships between artists and the funding organisation and the wider remit. However, the steps that the board is taking and the tone of the statement are the appropriate way forward. I think that the board deserves the support not just of the Parliament but of others in taking those actions forward.

Patricia Ferguson (Glasgow Maryhill and Springburn) (Lab): I very much agree with the cabinet secretary that the response of the board of Creative Scotland on Friday was helpful in setting a good course for the body to take. However, given the interventions that she made in June and October, I wonder why Creative Scotland could not have come to a similar conclusion sooner and why it took the resignation of the chief executive to bring about the changes. I would be grateful for her assurance that, over the period that we are about to face, when the organisation will be without a chief executive to lead it, there will be stability and continuity for those artists and arts organisations that depend on Creative Scotland.

Fiona Hyslop: I agree with Patricia Ferguson that stability and continuity are essential. Strong

relationships help to develop the cultural sector and are necessary for the work of the artists themselves and others within the sector who are dependent on Creative Scotland.

Patricia Ferguson talks about change, but the board had been examining the issues for some time. I gave evidence to the Education and Culture Committee a few months ago in which I said that we should allow the board time to carry out its piece of work. Two reports were produced by two of the board members, which were considered at length by the board last week. I do not think that it took the resignation for those actions to be taken; indeed, the work of the board has been on-going for several months.

The statement that the board made on Friday was definitive and was also a result of listening. If it was to listen to the sector—to the artists and, importantly, to the staff of the organisation—it was important that the board had the time to pursue its deliberations. I recommend that everyone read Friday's statement. I will ensure that it is in the Scottish Parliament information centre, so that all members will have access to it.

Role of Science in Public Policy

The Presiding Officer (Tricia Marwick): The next item of business is a debate on motion S4M-05154, in the name of Alasdair Allan, on the role of scientific evidence in advice on public policy. Michael Russell will open the debate, as Dr Allan has been somewhat delayed.

Cabinet secretary, you have 14 minutes.

14:28

The Cabinet Secretary for Education and Lifelong Learning (Michael Russell): My speaking notes start with the following observation:

"We all make decisions every day. Those decisions are based on what we know and what we think we know."

What I did not know, even half an hour ago, was that I was going to open the debate. Dr Alasdair Allan sends his apologies to the chamber. He has been delayed by the failure of an aircraft on the way from Stornoway but will be here to sum up the debate. I offer my apologies to the chamber for that.

Alex Johnstone (North East Scotland) (Con): I ask the cabinet secretary to confirm that the meeting that he and I were supposed to be having at this very minute is, therefore, postponed.

Michael Russell: I am happy to say that it is not postponed and the member is now late for it. My officials are leading that meeting and, with the permission of the chamber, I hope to join it at some stage, if Dr Allan arrives.

When we do not know, we ask someone else—there is a sense of irony in my speaking notes, but we will get to the facts in a moment—often someone whose opinion we trust and value. If we do not agree with an opinion, we debate it in order to change minds or have our opinions informed.

There are many types of evidence—statistical, economic and social, to name but a few. Although public policy decisions must take a range of different factors into account, it is clear that where good-quality evidence exists, it can have—and should have—considerable influence and importance in public decision making.

Since Alasdair Allan has become responsible for the science portfolio he has become acutely aware—as I have—of the importance of science, engineering and technology to the Government's goals. Both he and I have had the privilege of seeing first hand some of the wonderful scientific achievements of the university sector, for example.

However, although research undertaken in the university sector is helpful—and sometimes vital—

in informing policy, the Scottish Government has more than 300 directly employed scientists and engineers whose work feeds directly into the policy process. For example, scientists in Marine Scotland undertake research and provide scientific and technical advice in support of the Scottish Government's vision of marine and coastal environments that are clean, healthy, safe, productive and biologically diverse. Last year, they produced "Scotland's Marine Atlas", a scientific assessment of the conditions of Scotland's seas that is considered a world-leader of its kind. It is an incredible document that I commend to those who have not yet seen it.

Marine Scotland's scientists are perhaps most influential in relation to their science input into policy when it comes to the vexed issue of fish stocks and quotas. The work includes the collation of data and stock assessments for international and European scientific advisory bodies, as well as participation in discussions to formulate advice. The guiding principle in negotiating and setting fisheries quotas is always to follow the scientific advice. That policy is showing results: many of Scotland's stocks are now being fished at—or close to—sustainable rates, and discard rates are falling.

To take another example, the work of science and advice for Scottish agriculture—SASA—helps to ensure quality, safety and security of Scotland's food supply, and contributes to the overall quality of the environment.

Liam McArthur (Orkney Islands) (LD): I certainly agree with all that the cabinet secretary said about Marine Scotland and scientific advice. However, I point out the danger that, sometimes, there is a lag in following through that scientific evidence. It is therefore incumbent on politicians to exercise judgment based on a range of factors when arriving at policy decisions.

Michael Russell: I very much agree with Liam McArthur. As the environment minister, I dealt with aspects of the fisheries portfolio, and he puts his finger on a key issue: although science provides information, it is not absolute. Of course, time, cultural connections and other issues need to be taken into account.

SASA is important for Scotland's international reputation as a producer of high-quality seed potatoes, for example, which is a business that is worth £100 million to the Scottish economy. Scientists from SASA co-led negotiations in Brussels during the formation of the new European Union directive on potato cyst nematode. SASA negotiated an agreement to reduce sampling rates in fields where there was a low risk of finding PCN. That led to a threefold increase in the quantity of soil to be sampled and tested, instead of the proposed tenfold increase, the cost of which would have been simply unacceptable and probably impossible to bear.

Those are just two examples of where we have highly qualified research scientists and engineers working in-house to support Government policy. There are others, of course, in a wide range of public bodies across a swathe of disciplines, including Historic Scotland, Scottish Natural Heritage, Transport Scotland, the Scottish Environment Protection Agency, the Forestry Commission Scotland and Health Scotland, to name but a few.

The Government cannot have researchers in all areas, and some of the scientific evidence needed to support policy inevitably must come from elsewhere. Scientific endeavour, by its very nature, can be inherently uncertain. The progression of scientific thinking and understanding relies on open and honest debate about what the results appear to show. In such cases, we need advice on how to interpret the evidence and explain what the degree of uncertainty means.

That scientific advice comes from many sources. We have four eminent independent advisers in the Scottish Government with whom I and Alasdair Allan meet regularly: Dr Harry Burns, the chief medical officer; Professor Andrew Morris, the chief scientist for health; Professor Louise Heathwaite, the chief scientific adviser for rural affairs and the environment; and Professor Muffy Calder, the chief scientific adviser for Scotland. Their role is not only to advise but to challenge, and they complement the roles of other advisers, such as the chief researcher, the chief economist and the chief statistician.

Many specialist science advisers in Government work alongside economists, statisticians and social researchers to feed evidence directly into the policy process. We also have three virtual centres of expertise—on climate change, water and animal disease outbreaks—which bring together expertise across the publicly funded research sector to provide the best available scientific advice and inform Government policy in an efficient, accessible and streamlined way. That innovative approach aligns research with the main research providers and with the wider policy agenda, drawing resources from across Scotland, including from people who can contribute in our universities.

The Scottish science advisory council, Scotland's highest-level science advisory body, provides independent advice and recommendations on science strategy, policy and priorities. The SSAC is a broad-based group that includes practitioners and users of scientific innovation.

There is £37.5 million investment across the United Kingdom in the delivering assisted living lifestyles at scale—DALLAS—programme. A Scottish consortium, living it up, won the opportunity to implement the programme across Scotland and is establishing work that will reach 55,000 people by summer 2015. The approach comes from assisted living work that is being done by Scottish scientists, working with the Government.

Science has a strong role to play in policy making. It also has a role to play in enabling us to assess critical evidence and material considerations. Particularly in relation to complex or contentious policy issues, the public often have strong views on what the associated science reveals about the benefits, risks and ethical and moral considerations. Those views need to be heard, respected and fed into the policy process—that is an issue of democracy, trust and good governance. Obtaining the public's views in an open and meaningful way requires rather more than traditional consultation; it requires a two-way dialogue, in which members of the public have the opportunity to interact with scientists, stakeholders and policy makers as they deliberate on issues that are likely to be important.

Dr Richard Simpson (Mid Scotland and Fife) (Lab): I entirely agree with the cabinet secretary, but the response to the measles, mumps and rubella vaccine demonstrated a divergence between public opinion, which was based on no evidence, and all the scientific evidence. The medical colleges, the chief medical officer and so on all agreed that the MMR vaccine was effective and had nothing to do with autism. What will the cabinet secretary and his Government do to ensure that the press and public are informed and engaged properly?

Michael Russell: The member makes an important point. I was just about to talk about the sciencewise expert resource centre for public dialogue in science and innovation, which is a UK-wide initiative and has knowledge and experience of running public dialogues on science and technology-related issues. On the member's specific point about press and public perceptions being set against scientific information, advice and fact, we cannot change things overnight throughout society, but we can change things by a process of education and information. Projects such as sciencewise, which hopes to educate a range of people through dialogue, enable us to touch even hard-to-reach places such as the press, so that people understand science and technology-related issues. We are involved in steering sciencewise's work.

The civil service reform plan and the office of the chief scientific adviser are also focused on making information about policy making open and accessible to all.

We are taking a lead role in the EU-funded places project—a pan-European initiative that is exploring best practice in relation to the concept of cities of scientific culture.

By ensuring that we have a pro-science culture and an understanding of science, we will address the point that Dr Simpson made, but the point must also be addressed in Government. All sides of politics must be devoted to, interested in and supportive of science-based policy making.

Science centres and festivals offer other ways in which we can influence the public's view. The Government has supported such initiatives, which have helped to connect citizens with the science-related policy process and scientific issues. Science centres and festivals provide venues and exciting opportunities for people of all ages to discover things about science and learn about the importance of science in our lives. This year we allocated £3.5 million to support science centres, festivals and other initiatives. Scottish Government scientists play an important role in such events.

I am keen to see—and I am glad that I always do see—Government scientists out there engaging with people. I was glad, for example, that Professor Muffy Calder took on the chairmanship of the information technology excellence group within my portfolio so that she could engage with IT users and develop the right ideas for the continuation of IT excellence in Scotland.

Talking of education, we have to ensure that science is at the heart of what we do in the classroom. Government scientists go into schools to bring real-life relevance to science lessons. They play a role in supporting extra-curricular activities such as science, technology, engineering and mathematics clubs, and they act as role models, telling their own stories about the range of careers in science that are open to young people. Thousands of scientists, engineers and technologists in both the public and private sectors in Scotland also undertake those tasks, with many of them working through the excellent STEM ambassadors programme. SASA staff organise school visits, as do many others, and Marine Scotland organised its first glow meet for 1,700 pupils earlier this year.

Engaging scientists with policy making, engaging the public with science and ensuring that the ideas of science, the enthusiasm for science and the opportunities of science are made known through our schools and through our society are all very important, as is increasing opportunities to study science. I am pleased that, year on year, we have been able to continue to support STEM

projects that do those things, encouraging others to come into science, including young women, who have often been deterred from going into science. The work that is being done on that is important, as indeed are things such as the Primary Engineer awards, which I will be involved in later this week.

Politics and science are not separate. They are intertwined. The idea that politics and policy making somehow stand aside from other things in society is plain wrong. The role of science in encouraging policy making in Scotland is clear, and I am glad that Dr Allan decided to bring the subject to the chamber for debate. When he comes in and contributes to it, I am sure that his enthusiasm will shine through. [*Interruption*.] As Mr Findlay says from a sedentary position, we will all be delighted.

Neil Findlay (Lothian) (Lab): Not me.

Michael Russell: It was not Mr Findlay, apparently. He is unable to decide whose evidence he can support: mine or that which is still to come from Dr Allan. I am sure that Mr Findlay will take a scientific view.

I am sorry that I am unable to repay the compliment, because I have to say that Mr Findlay's amendment is far from scientific. It shows that curious obsession with the constitution that the Labour Party now has. It is most regrettable. Labour should take a much broader view of the world. It should try to engage with really important issues, as we are doing in this debate. We are therefore unable to support the Labour amendment. However, we are able to support the Tory amendment, because it simply exhorts us to try harder.

Members: Oh!

Michael Russell: The objections from Labour members to support for the Tory amendment are quite extraordinary. The evidence base shows that they always support the Tory party, whatever it does in this country, much to our regret.

I commend Dr Allan's motion to the Parliament. The results that we see from science-based policy making in Scotland are important and they are there to be observed.

I welcome Dr Allan to the chamber. I am profoundly glad to see him. [*Laughter*.]

I move,

That the Parliament recognises the important role that scientific evidence plays in informing decision making; recognises the contribution made by scientists and engineers in the Scottish Government, its agencies and delivery partners to the international reputation of Scotland through the provision of evidence and advice; supports the Scottish Government's efforts to increase the policy impact of publicly funded scientific research; notes the valuable work of the Scottish Science Advisory Council, and recognises the importance of engaging with the public in relation to the science that underpins policy.

The Presiding Officer: Thank you, cabinet secretary. I think that we are all very pleased to see Dr Allan.

I call Neil Findlay to speak to and move amendment S4M-05154.2. Mr Findlay, you have about 10 minutes.

14:43

Neil Findlay (Lothian) (Lab): I welcome Dr Allan, who has just parachuted in from afar.

Science plays a vital role in influencing all that we do as a society and a central part in supporting our economy, so, like the Government, I believe that this is an important debate.

In our learning and human development, in the creation and application of new technologies and in our understanding of the world and, indeed, the universe around us, science helps us to explain both simple and extremely complex concepts as well as the practical solutions that are brought to bear on many of the world's most serious problems. From the big bang, evolution and weather patterns to inventions, space travel and new technology, science is at the core of our understanding of life and our interactions with all aspects of it.

Science is taught in our schools from the earliest years, and the new school curriculum lends itself to encouraging a cross-curricular approach to the study of science. I know that our teachers will rise to the occasion, as they always do, to deliver new and stimulating lessons not just in the traditional sciences of chemistry, biology and physics but in health and food technology, geography, music, science, art, information technology and all the other disciplines that go to make up the curriculum.

Of course, it is through school learning that, throughout history, Scots have been inspired to become world leaders in the development of new scientific advances. Celebrated Scottish scientists and inventors have made a tremendous impact on the world and on humanity. Obvious examples include John Logie Baird, whose impact we could all say was truly revolutionary. Even a visionary such as he could hardly have conceived of the power and breadth of his work. Of course, I am absolutely certain that, at some point during his experiments, there was a sceptical Scottish laboratory assistant looking over his shoulder, saying, "I don't know why you're wasting your time on that thing; it'll never catch on."

Others, such as James Young Simpson, changed medical science for ever. James

"Paraffin" Young was a pioneer in the field of shale oil technology, which was referred to only a few minutes ago in the chamber, and, in recent years, Ian Wilmut and Keith Campbell at the Roslin institute created the world's most famous sheep, Dolly, who changed the face of science by becoming the first mammal to be successfully cloned. I am absolutely certain that there is a joke to be made at this point about politicians, but I will resist.

Scotland has produced countless physicists, engineers, botanists, astronomers and mathematicians—I do not include myself in that list. The Scottish science hall of fame includes the following people in its list of our top 10 greatest scientists: Lord Kelvin, who is famous for the temperature scale and the development of the trans-Atlantic telegraph; James Hutton, a pioneering geologist; Logie Baird, whom I have mentioned; James Watt, who is famous for the steam engine; Robert Watson-Watt, who developed the use of radar; Alexander Graham Bell, who invented the telephone; Alexander Fleming, who discovered penicillin; Joseph Black, who discovered carbon dioxide; Maxwell—not Stewart, I hasten to add—whose achievements are too many to list; and John Napier, who invented logarithms and who I can now blame for my third-year misery in maths. There are, of course, countless others who are unknown to the wider world but who do important scientific work every day, including work within Government, which we recognise and which the cabinet secretary ably listed.

There are some people who will soon be added to the Scottish science hall of fame. Given his speech in last week's careers debate, I am sure that the next member will be that great Scottish inventor, Stewart Stevenson, along with his brother. We will hear more about that in the debate, I am sure.

However, what is striking about that stellar list of scientists is the fact that there are no women on it. Indeed, there appear to be real issues with the recruitment and retention of women in science.

Elaine Murray (Dumfriesshire) (Lab): I wonder why Mr Findlay did not include in that list Mary Fairfax Somerville, after whom committee room 2 is named. She was a well-known female Scottish scientist.

The Presiding Officer: I thank the member for that intervention. What do you have to say, Mr Findlay?

Neil Findlay: I thank Dr Murray for that question—I believe that she was a scientist herself. However, I was referring to the list of the top 10 members of the Scottish science hall of fame, in which there are no women. That is the fact of the situation. I refer you to that list, Presiding Officer.

Earlier this year, the Royal Society of Edinburgh published a paper called "Tapping all our Talents—women in science, technology, engineering and mathematics: a strategy for Scotland". That paper says:

> "Scotland fails to realise the full potential of its research base, and will continue to do so if it systematically fails to cope with the debilitating loss of talent represented by the high attrition rate of highly-trained women from employment. Although our universities now graduate large numbers of women in science, technology, engineering and mathematics (STEM), 73% of women graduates are lost from STEM compared with 48% of male graduates, with a corresponding loss of researchers. In academia, expensively trained women are lost in larger proportions than men at every step of the postgraduate ladder and are under-represented in top positions across the spectrum of business, public service and academia."

As well as being a loss to those individuals, who are missing out, that is also a loss to our economy, society and policy development. It is estimated that a doubling of women's high-level skill contribution to the economy would be worth as much as £170 million a year to Scotland's national income. That contribution is something that we need to harness, not lose. It is puzzling and frustrating that, at a time of recession, we still hear many of Scotland's science and technology companies complaining that they cannot find people with the skills that they need when, at the same time, we are haemorrhaging women from the sector.

There are of course factors that contribute to the fact that women do not pursue a long career in the sector. The most obvious factor is family commitments, but that is only part of the story. The Royal Society of Edinburgh points to cultural factors that relate to attitudes in the workplace, the organisation of science and technology, the difficulties in accessing career resources and, with such low levels of female participation, a lack of inspirational role models.

Patrick Harvie (Glasgow) (Green): I strongly agree with the member's point about the need to attract and retain women in STEM subjects, but I am curious about why, in neither his amendment nor his speech, he is saying much about the role of scientific advice in public policy, which is the title of the debate.

Neil Findlay: I will come on to that.

The issue has a critical role to play because if we take only or largely a male perspective on policy, our policy process is much the worse.

The apparent glass ceiling and the drain of female talent have to be tackled urgently. We should seriously consider the views and recommendations of the Royal Society, which

asked the Scottish Government to take a lead and commit itself to a national strategy and action plan aimed at retaining and promoting women in STEM subjects. At the United Kingdom level, the Royal Society has asked for an extension to parental leave in recognition of the equal responsibility of mothers and fathers in parenting, and it has called on business and industry to address the issue of job design and introduce quality part-time employment at all levels.

STEM advisory boards should develop gender equality strategies and funders of university and research should link funding to gender equality.

As we are on the subject of science, it is appropriate to discuss the impact of constitutional change on our ability to retain our position as a world-class centre for science. Statistics show that, despite Scotland's relatively small size, we manage constantly to punch above our weight in relation to the level of research funding that we are awarded. As my amendment says, despite Scotland's population being just over 8 per cent of the UK's total, we still managed to secure nearly 14 per cent of the funding.

The Minister for Learning, Science and Scotland's Languages (Dr Alasdair Allan): Does the member acknowledge that the benefit that Scotland reaps in research funding is due not to any act of charity but to the excellence of Scottish institutions?

Neil Findlay: Absolutely. We recognise that and hope that that will continue. However, these are legitimate questions to ask.

A recent Universities Scotland briefing paper found that in 2009-10, Scottish universities competitively won £116 of research income per head of population, compared to £68 in England, £52 in Wales and £50 in Northern Ireland. Would Scotland, separated from the rest of the UK, manage to retain that level of funding? That is a legitimate question to ask, and it is one that we should ask because it all feeds into our policy development process.

Dr Simpson: The member may wish to note that the Wellcome Trust stopped paying for research—at 100 per cent—in Ireland after it became independent.

The other point that needs to be made is that this is not just about getting the research funding; it is about getting the research funding in competition. That competition is critical to this serious issue in future.

Neil Findlay: As always, Dr Simpson adds weight to the debate. I am sure that I do not need to add anything further.

Those doubts were raised by one of the UK's most respected scientists, Professor Hugh Pennington, who argued that the key to the monumental success of British science has been the unimpeded two-way traffic of ideas, money and people across the border. If Scotland was to leave the UK, he views it as inevitable that Scottish research funding would take a hit, hurting universities and their ability to remain a major player.

Fears about research funding in an independent Scotland were also raised by the University and College Union, which claimed that it was concerned that independence might lead to a decrease in research funding for Scotland.

I agree that we must support and recognise the achievements of science and how it feeds into our public policy agenda, but let us acknowledge that there is much work still to be done and let us have an honest debate and analysis of how science in Scotland would be affected by future constitutional change.

I move amendment S4M-05154.2, to insert at end:

"; notes with concern that, although the number of women graduates in science, technology, engineering and mathematics (STEM) subjects has increased in recent years, in Scotland only 27% of women graduates in STEM subjects work in the sector they graduated in compared with 52% of male graduates; understands that Scottish universities perform strongly in obtaining UK research funding and that, of the £4.4 billion of funding from research grants and contracts invested across the UK in 2010-11, Scotland received over £613 million, or 13.8%, of the UK total; acknowledges the comments of Professor Hugh Pennington that "if Scotland leaves the UK, its science will take a knock", and considers that Scottish universities are stronger and better together in the UK."

14:54

Murdo Fraser (Mid Scotland and Fife) (Con): I very much welcome this debate on the role of scientific evidence and advice in public policy, and I welcome the minister to his place. I am sorry that the cabinet secretary has departed; he stood in valiantly for the minister in the minister's absence. I am not sure what it is about the cabinet secretary, but I always find him much more agreeable when he delivers somebody else's speech, rather than his own.

I found little to disagree with in the cabinet secretary's speech and in what we just heard from Mr Findlay. Excellent contributions about the role of science have been made.

I preface my remarks by saying that scientists are not always right. We should always approach scientific advice with a healthy dose of scepticism. I will give two examples of what I am talking about. If we went back 80 years, we would find that eugenics was viewed as a respectable science in the scientific community. That scientific theory

reached its hideous end point at the Nazi concentration camps. We would not find a respectable scientist today who would admit to believing in eugenics and yet, in living memory, it has been a widely held scientific belief in society.

Similarly, in relation to climate change and global warming, we are told today that there is a scientific consensus about the impact of human behaviour on global temperatures. However, we do not have to go back far—only 40 years or so, to the 1970s—to find that the self-same climate scientists told us that we were about to enter another ice age.

Patrick Harvie: I am sure that the member is aware that the basic mechanism of the greenhouse gas has been identified for more than 150 years. There has been no lack of consistency on that, although other environmental suggestions might have been made. When he voted for what became the Climate Change (Scotland) Act 2009, he was surely under no illusion about the level of scientific consensus on climate change.

Murdo Fraser: I do not want to depart into a debate about climate science. I was simply making the point gently—although I seem to have hit a raw nerve with Mr Harvie in doing so—that the strong scientific consensus in the 1970s was that we were heading for another ice age. I refer him to the scientific articles, which I can produce for him if he wishes, that said that at the time. We should always be wary when a scientific consensus is claimed and we should always challenge and debate such matters.

I will raise a couple of issues on which we could do with a bit more science in the debate, despite what we have heard from the Scottish Government about scientific evidence and advice. The first issue is genetically modified crops. It is widely believed throughout the world and the scientific community that such technology offers great opportunities and has the ability to feed the world's growing population. If any member has not had the opportunity to do so, I strongly recommend that they visit the excellent James Hutton Institute in Invergowrie, which is doing world-leading research in the subject but which is held back by the Scottish Government's approach, which does not permit the institute to do field trials of GM crops.

I understand the pressure that Governments are under and I understand that the public are concerned, that there is a lot of pseudo-science out there on the internet and that there are concerns about tabloid headlines that refer to Frankenstein foods. I simply say to the Scottish Government that it should have more courage and listen to people such as Anne Glover, the former chief scientific adviser to the Scottish Government and the current chief scientific adviser to the European Union, who said just this year:

> "There is no substantiated case of any adverse impact on human health, animal health or environmental health, so that's pretty robust evidence, and I would be confident in saying that there is no more risk in eating GMO food than eating conventionally farmed food".

I am sure that members will recognise that the strong belief among scientists is that we should not close the door on GM crops. The Scottish Government should listen to that scientific advice.

The second issue is energy policy. The Economy, Energy and Tourism Committee has just done an extensive inquiry into renewable energy. In the breadth of the evidence that the committee took, it was interesting to note how the weight of the scientific and technical evidence was sceptical about the overfocus on intermittent forms of energy, particularly onshore wind.

When we looked at the evidence from bodies such as the Institution of Engineering and Technology, which sent the committee a joint submission from Sir Donald Miller, the former chair of Scottish Power, and Colin Gibson, the former power networks director of National Grid, we saw that they all expressed the same concerns.

On the other side of the debate, we received evidence from lobbyists such as WWF, Friends of the Earth and Scottish Renewables, which all said that there was no problem. We should listen to the scientists and the experts, not the lobbyists, and we will get better policy as a result.

I am grateful to the cabinet secretary for indicating his support for my amendment. Education is vital: no matter how good our scientific advice is today, we need to ensure that we train the next generation of scientists so that they can continue to provide the necessary advice.

There are skills gaps in that regard. Any member of the Economy, Energy and Tourism Committee will be aware, from the evidence that is regularly presented to us, that there is a concern—particularly in areas such as engineering and science—that the flow of new entrants to the industry is not sufficient, which is an issue that Neil Findlay addressed in his speech.

There is a problem at college level with cuts in STEM courses. According to a parliamentary written answer that I received just a few weeks ago, there has been a 41 per cent decline in the number of places in science and mathematics at further education colleges since 2008-09. That is not surprising at a time of squeezed college budgets, which I will not go into today as we have discussed that enough in the past few weeks.

However, when colleges are under financial pressure, it is easy for them to make cuts in the

courses that are expensive to deliver and labour intensive, and which require a lot of space. Those courses will be in science, technology and engineering, as it is much cheaper to deliver courses in a lecture theatre where a lot of students can be packed in. We need to be careful about that and ensure that those college courses are available. We also need better careers guidance—

The Deputy Presiding Officer (John Scott): The member must close now.

Murdo Fraser: Too often, the committee heard the message that youngsters are not getting proper advice about the opportunities that are available in new industries and in areas such as oil and gas and renewables. Much more needs to be done in that field, as we need a new generation of scientists.

I move amendment S4M-05154.1, to insert at end:

", and believes that, as the next generation of scientists and engineers is vital to informing decision making and government policy in the future, there needs to be a greater focus from the Scottish Government and all those involved in the delivery of education at all levels on promoting science, technology, engineering and mathematics (STEM) subjects for study and on presenting the advantages of careers in science and engineering to all."

15:02

George Adam (Paisley) (SNP): My dad was an armature winder and engineer. He repaired the electric motors in generators and was a proud tradesman who had learned his trade on a very practical level. He eventually became self-employed, then employed people who came from more academic and scientific engineering backgrounds and was able to open up to other markets and compete in the sector by taking their advice. He tried to get his son to be an engineer, but that did not go quite so well because I found out that there was a connection with physics, which was never a strong subject of mine. I also managed to burn out one of the electric motors in his coil-winding machine when we were working an all-nighter during an emergency so—obviously—he gave me the keys to the van and I became a salesperson for him instead.

My dad might well be looking down and laughing at my attempt to debate science and engineering advice, but one thing that he told me was that Scotland's record on scientific innovation is among the best in the world. A report that was compiled in 2009 confirms that Scotland's research is cited by other researchers around the world more often than research from any other country, relative to gross domestic product. I mention that because Labour's amendment states that it will make a difference if there is a constitutional question on independence, but I believe that Scotland's record in science throughout the world would probably just continue nonetheless. That report found that Scotland was first in terms of citations relative to gross domestic product, second in terms of the impact of its research as measured by citations and fourth in terms of the impact of the most highly cited papers in the area.

New research by the Institute of Physics that was published in October shows that the contribution of physics-based business to the economy has gone up by £1 billion to £8.5 billion since 2005. The sector contributes 9.8 per cent gross value added to the economy, in comparison with the total UK average of 8.5 per cent. Professor Sir Peter Knight said:

"Physics drives the economy of Scotland, and Scotland leads the UK: physics-based businesses contribute a greater share of the economy of Scotland than their counterparts in England, Wales and Northern Ireland. Now is the time to build on this advantage."

It just comes down Scotland's endeavours in science and engineering being highly regarded throughout the world.

Labour also mentioned the potential for women to be employed in the sciences. The science and engineering education advisory group's report was published in February this year, and following that, the Scottish Government launched the careerwise Scotland initiative at the first women's employment summit, which was held in September this year. That initiative will encourage young women to consider careers in science and engineering.

There is also a three-year commitment to Government funding of Scottish science education research, with ring-fenced funding for new work with primary teachers; there is three-year funding for Scottish science centres and festivals, as the cabinet secretary said; and there is continued development of Education Scotland's STEM support.

Although Scotland leads the world in the sector—we would like to continue to do so—I want to take members to the centre of the universe. Back in Paisley, the school of science at the University of the West of Scotland's environmental initiatives research group is tackling waste and pollution management, climate change and human health. There is also mathematics and statistics research there. The university's research covers all areas from pure mathematics to applied mathematics, and it has a molecular and health sciences research group and a sport, health and exercise research group. All that goes to prove that much is happening—even within one university in Scotland.

As Mr Findlay did, other members will, no doubt, talk about famous scientists. Although he was not

a scientist, Mr David Stow created the science of teacher training. He was from Paisley and went to Paisley grammar school. He began in 1811 to work with the Port-Eglinton Spinning Company and he published his first book, "Teacher Training", in 1828. He is remembered to this day through the name of Stow College in Glasgow, at Kelvingrove museum, and through Stow Street in Paisley—which, incidentally, is quite close to my parliamentary office.

John Witherspoon was not a scientist; he was a preacher who went to America. He signed the declaration of independence and became the president of Princeton University. At a time when things were difficult for the new American colonies, he set up one of the greatest places of learning in the world. That just goes to show that the Americans did not have a problem with the idea of independence, but were always looking outward to see what they could do. Scotland will be the same, come independence.

It is important to encourage all our young people to take up science subjects. I have mentioned some of the issues around that today. We need also to ensure that they retain their passion for it throughout their careers. Paisley and—yes; I admit it—the whole of Scotland have given the world so much in this field and we must ensure that we continue to provide the world with more Scottish scientific and engineering breakthroughs.

15:08

Iain Gray (East Lothian) (Lab): Scotland should certainly aspire to science-based policy making, especially given our historical record in science, whether we mean Hutton working out the age of the earth for the first time, CTR Wilson—Scotland's only science Nobel prize winner—developing the cloud chamber where the fundamental particles that make up the universe were discovered, or James Clerk Maxwell, who developed the equations that describe the underlying structure of the universe.

As many members have said, we still punch well above our weight when it comes to science. We are third in the world when it comes to peer-reviewed scientific papers per head of population and, as has already been pointed out, we garner for Scottish research facilities far more than our fair share of UK research funding. I say to the minister that it is, of course, true that we do that because of the quality of our research, but we also do it because we have access to a bigger research funding pot. I recently put to a research scientist the argument that scientists all collaborate across borders and would still be able to do that if we were independent. He replied, "I can collaborate across any border if I have the funding for my research." That is a real concern in the scientific community that should not be dismissed.

Last year, the Royal Society of Edinburgh produced a report on the topic, which strongly made the point that, before we can have proper science-based policy making, we must have, among the public and politicians, better understanding of science. There are three areas in which our politics and science sometimes clash. One is to do with causality. Dr Simpson talked about the issues with the MMR vaccine, when a connection that was not a causal one between vaccination and autism led to a drop in herd immunity in Scotland—or to its disappearance. We must be honest and say that the problem was not just to do with the media; some politicians rode that bandwagon and contributed to the problem, which still has consequences today.

A second issue is to do with certainty. There is a lack of understanding that uncertainty is fundamentally built into the universe and science, so the question "Are you 100 per cent sure?" can never be answered with a "Yes." Too often, we ask that question, although there cannot be the answer that we are looking for.

During the debate, we have already seen the biggest clash, which is to do with the way in which scientific consensus operates. Murdo Fraser hinted that he does not want to accept the scientific consensus on climate change. As we might expect, he was attacked by Patrick Harvie—who, of course, refuses to accept the scientific consensus on genetically modified crops, or on the safety of nuclear power and the contribution that it should make to our energy strategy.

Patrick Harvie: Iain Gray mentioned genetic modification. Rightly, my party is willing to be faced with questions if we assert something that is not scientifically valid. However, does he accept that the objection that many of us have to GM is first and foremost an economic one, because the technology can only transfer ownership of agriculture into the hands of multinationals?

Iain Gray: I accept that economic arguments are made, but the fact is that, on climate change, those whom we call climate change deniers find scientists who are outriders and who are outside the consensus and then bring their arguments to the fore. I argue that some of Mr Harvie's colleagues do exactly the same thing when it comes to GM crops.

Not that long ago, in an article in *Holyrood* magazine, the Minister for Learning, Science and Scotland's Languages said that, in his view,

"Scotland is a science nation."

We absolutely should pursue that aspiration, but if we are serious about that we need to bring

science into the strategic level of policy making. Many members have talked about the chief scientific advisers that we have had, two of whom have been good role models for women—Anne Glover and Muffy Calder. Some departments also have scientific advisers. However, it remains the case that not all departments in Scotland have scientific advisers, although all Whitehall departments do.

Further, I believe that scientific advisers here do not have a strong direct line to the highest levels of Government. The cabinet secretary said that he and the science minister regularly meet Muffy Calder—which I am sure is wonderful for her. However, I would like to hear that she regularly meets the First Minister and talks to him about what science tells us about our policy.

The Scottish science advisory committee has been mentioned. I set up and chaired the first meeting of that committee when I was Minister for Enterprise, Transport and Lifelong Learning. It was correctly stated that the committee gives independent advice, but I wonder whether that independence is less valuable than a connection to the centre of Government would be. I would like the science advisory committee to be more like the financial services advisory board or the Scottish energy advisory board and to be chaired by a cabinet secretary for science, or even by the First Minister on occasion, as those other boards are. That would demonstrate exactly how important science is to policy and policy making in this nation.

It is worth saying that we will never be "a science nation" if we lose 73 per cent of women graduates.

I come to my final suggestion, after which I will wind up, Presiding Officer.

The Deputy Presiding Officer: I will be grateful.

Iain Gray: The First Minister is well known for collecting Nobel laureates, but they are usually Nobel laureates of "the dismal science". My suggestion is that, as well as the Council of Economic Advisers, the First Minister should consider setting up a council of scientific advisers, so that Nobel laureates from wider fields could enjoy dinner with the First Minister and, more important, influence the policy of Scotland—this "science nation".

15:15

Brian Adam (Aberdeen Donside) (SNP): I would like to start by talking about evidence. Certainly, decisions should be evidence based, but as politicians we often need to cope with opinions that are given as evidence. There is a world of difference between tangible evidence and opinion. I am delighted that successive Governments have taken advice from the scientific, medical and engineering communities, although at the end of the day it is only advice; the policy decisions must be made by politicians.

It is wonderful that we can use science to see whether or not the decisions that we have made were the correct ones. If we look at addiction to nicotine, we can see that all the statements that were given to us by the medical community were, indeed, facts, but it took brave policy decisions by the Government of the day—and a brave decision by Parliament—to reach conclusions based on those statements.

In the debates on renewables and GM crops, in which accusations of all sorts fly back and forth and people are accused of being climate change deniers, it will be interesting to see with hindsight whether people's opinions and Government policy are borne out. In the past few days, research has been produced linking vitamin D deficiency with multiple sclerosis, and it has been suggested that the further north people live, the more likely they are to contract the disease. However, whether that is based on evidence will be seen only in time.

It is very easy to take research at face value. It is interesting how some people use some research, whether it is valid or otherwise, to support their policy decisions. Patrick Harvie has been accused of being a climate change denier because he supports the abolition of nuclear power in favour of renewables—I happen to agree with him on that—but whether or not that is true we will know only with time.

A number of members would like to see due respect being given in Parliament to the scientific, medical and the engineering communities, and I am delighted that that is also true of the Government. However, we cannot be accused of taking silly advice; our former scientific adviser, Professor Anne Glover—we have talked about gender politics—has been cherry picked by Europe, which shows that we are on the right lines.

I am grateful for your forbearance, Presiding Officer. Members may have watched the programmes about addiction that are currently being shown on the BBC. Some of the science, unlike eugenics, is not finding favour, but a lot of the science around the link between cancer and tobacco smoke was done in pre-war Germany. Those who had interests in the subject chose to ignore that science because of its source, but the fact is that its accuracy has been borne out, as indeed—with hindsight—has other research that has been conducted showing the link between nicotine and cancer.

I think that the Government is right to take scientific, medical and engineering advice, but it should not rely on it. It should be willing to use hindsight to see whether evidence is valid. Thank you.

15:22

Elaine Murray (Dumfriesshire) (Lab): The Scottish Government clearly has an able team of scientific advisers in the four individuals to whom the cabinet secretary referred. Three of those—Professors Calder, Morris and Heathwaite—are relatively new additions who have been appointed this year. It is a good time to offer our congratulations to Professor Anne Glover, our former chief scientific adviser, who has gone on to become the chief scientific adviser to the European Union where—I am sure—she continues to play an important role.

Iain Gray referred to the previous arrangements for the Scottish science advisory council, whereby the chief adviser was appointed by the Royal Society of Edinburgh. The council continues to sit, but a paper that was produced by the RSE in September 2011 noted that the SSAC's level of access to ministers and the opportunity that it has to influence policy are not as strong in Scotland as is the case in Whitehall, where there is a more comprehensive system of chief scientific advisers across all departments. Does the Scottish Government intend to increase the provision of advice by scientific advisers across all its departments?

The crucial question is whether the Scottish Government will take its advisers' advice if that advice runs contrary to its policy. The RSE paper to which I referred recognises that there can be tensions between scientific knowledge and public values—that is the point that Richard Simpson made in his intervention on the cabinet secretary—and that there will be occasions on which, because of societal pressures, which are often fuelled by the media, as has been mentioned, elected Governments will choose not to accept the advice of their chief scientific advisers.

In that context, I would like to draw the Parliament's attention to what Professor John Kay—professor of "the dismal arts", as my colleague Iain Gray would say—said to the Finance Committee when he gave evidence on the draft budget on earlier this year. He said:

"I have spent my life believing in and advocating evidence-based policy. I have actually seen more and more of what I call policy-based evidence, where people think up a policy and tell people to go away and find the evidence to support it. Discussion on evidence-based policy has unfortunately led to more and more of that"

and

"largely spurious calculations are generated to support the alleged benefits of policies. A lot of the work that is currently done on providing impact assessments and so on would be better not done, because they are superficial exercises that fall into the policy-based evidence category. We have persuaded ourselves that that is a process of rational decision making, when in reality it is the opposite."—[*Official Report, Finance Committee*, 24 October 2012; c 1717-8.]

Professor Kay was not talking specifically about the Scottish Government; he was making a more general criticism of policy makers. However, his comments apply in the Scottish Parliament as much as they do in other legislatures. The Parliament and the Scottish Government need to pay heed to his criticism; science will not necessarily tell politicians what they want to hear.

Science most often makes progress when theories are proved wrong and when the received wisdom is unable to explain newly observed phenomena. On the other hand, we politicians are, unfortunately, often loth to admit that we are wrong. In science, there is no value in seeking out only evidence that suggests that we are right; we must also seek out the evidence that could prove that our theories are incorrect. Evidence, not assertion, is what matters.

Therefore, if the Scottish Government—or any Government—wishes to develop policy using evidence that the scientific community provides, it must accept that that evidence and the advice of CSAs could run contrary to current policy and might suggest that policies are not working.

I move on to women in science. The Presiding Officer was keen that I mention Mary Fairfax Somerville—a famous female scientist from Jedburgh. She was a mathematician, an astronomer and a science writer. Committee room 2 is named after her, and it was the Presiding Officer and I who pressed that she be remembered in that way.

I am also pleased to note how many eminent female scientists have been appointed to the chief scientific adviser positions. Prominent female role models are important in encouraging young women to consider STEM subjects as careers. I should mention that the first female president of the Royal Society of Chemistry is Professor Lesley Yellowlees of the University of Edinburgh. She was in the year above me at university.

Alex Johnstone: Does Elaine Murray acknowledge that the only Prime Minister that this country has ever had who held a science degree was a woman? She is a role model of whom we should all be proud.

Elaine Murray: I do. Indeed, Mrs Thatcher and I were in the same line of scientific research at one point, although not at the same time. Members

can imagine that I used to get a lot of ragging from some of my colleagues.

The Labour amendment refers to the loss of women who are trained in science, technology, engineering and maths. It is not only about getting women into those subjects but about the fact that many women who start off in them drop out later on—I am part of that 73 per cent. That loss was the subject of an excellent report that was published by the Royal Society of Edinburgh and produced by a working group chaired by the distinguished astrophysicist Professor Jocelyn Bell Burnell. I was honoured to chair a meeting of the cross-party group on science and technology at which she gave an extremely inspiring and thought-provoking presentation on the working group's findings. She is a great inspiration to aspiring women scientists.

I refer to our amendment and to the point that Professor Hugh Pennington made. I find it difficult that Scottish National Party members are unable to appreciate that it is because we are so good in Scotland that proportionally we get so much more funding than our population would suggest we should get. If our funding was based on population, we would have something like £370 million less in research funding in Scotland. That is the point for many of us.

We are confident in the union because we know that Scotland is good. We know that we can hold our heads up high, that we can achieve and that we can bang the drum for Scotland. We do that in science as we do in so many other areas.

15:28

Nigel Don (Angus North and Mearns) (SNP): Before I get into what I thought I was going to say, I will pick up on a couple of points that have already been made.

I take Dr Elaine Murray's points about the need to change our minds. Every scientist knows that that is what they do, but it seems to be the most heinous offence for a politician, especially in the minds of the media. We need to persuade the media of that point as well as a few others.

I take Murdo Fraser's amendment and the point about teachers. Iain Gray and I were recently at a meeting with physics teachers at all levels. One of the points that I made there and will repeat here is that I recall my physics teachers—they were successful: they got me an A-level in the subject—as being slightly mad. I do not want to overstate that adjective, but I want to make the point that teachers have to be an inspiration. It does not matter how good a pupil's science is, they must still have some sort of role model whose appreciation of the subject inspires them. That is an important point that we sometimes forget when we turn out teachers: the good ones are perhaps born, not made.

I will address some of the issues of science and I want to go back to an understanding of how we do science. Some things that we do are based on really old and absolutely basic science. Members will see in a minute or two where I am going with this. Thermodynamics and the laws of physics and gravity have been around for centuries and they inform some pretty basic things. With the benefit of hindsight, members will not be surprised when I get on to the subject of obesity, and they will see where the laws of thermodynamics come into this.

Mike Russell mentioned James Hutton. The James Hutton Institute is based in Dundee—a little bit down the road from me in Brechin—and also a little bit further north in Aberdeen. It has done a huge amount of work on the genomes of potato and barley, in particular. That analytical science is undertaken so that better products can be bred. Genetic modification is only a way of speeding up the breeding process and we need to understand some of the science behind that, on occasion.

The institute has also done some modelling to look at various options that might come out of the European Union on single farm payments, which will help it to have a pretty clear view of how such payments would affect the economy of our rural communities. Given that we are talking about something like €650 euros, that modelling is quite important work.

I move on briefly to the subject of obesity. Very basic science tells us that we are what we eat. There is mass balance: what goes in and does not come out will have to stay. Equally, there is energy balance: energy that we take in and which does not come out one way or another must stay and be stored somewhere. Those laws are totally non-negotiable, whether we like it or not.

We can do various things in experiments in that area, such as observe populations. The Scottish health survey, which is done annually, picks up all sorts of personal measurements. Some lifestyle indicators enable us to get some clues to what is going on. I have to report that the news is not altogether good: two thirds of us are seriously overweight and lifestyle indicators are not getting much better, either.

Recent work has indicated that we can determine whether a child is likely to become an obese adult by looking at things such as the parents' body mass index, the child's birth weight, maternal gestational weight gain, behaviour and social indicators. They all give us a pretty good model of whether a child is likely to be at risk. Perhaps disturbingly, the genetic score makes precious little difference to the accuracy of the

prediction. Our chances are probably defined at birth not by genetics, but by who we are born to.

Various other experiments can be done. We can give people different things to eat and see how much they eat, for instance. Satiety work being done at the Rowett Institute of Nutrition and Health tends to suggest that if someone eats a protein-based meal, the number of calories is likely to fill them up better. Sadly, fat does entirely the reverse: it gives more calories but less satiety. That tells us what we already know, which is that fat-laden materials are not good to eat.

We know a lot—we actually know a huge amount. We are currently doing an experiment. I do not know whether members realise this, but it is my point. Not just Scotland, but most of western Europe is doing an experiment by putting scientific evidence-based messages out there, which are being substantially drowned out by the advertising of products such as fast food, fizzy drinks and choc bars. We know what the result will be. If we want to ensure that we have a healthy society—or a healthier society—Government has to pre-empt the result of that experiment. We know that those health messages will not be enough and we must take charge of the environment in which we live in ways that, at the moment, Governments throughout the world are not prepared to do.

15:35

Liam McArthur (Orkney Islands) (LD): I welcome Dr Allan to his seat and express sympathy for him. As somebody whose plane often goes technical, I find that there is often very little scientific, engineering or technological evidence or explanation to passengers in those circumstances.

I welcome the debate. At first glance, the subject may strike some as esoteric, but as every member who has spoken so far has illustrated, it is fundamental. The way in which science informs public policy has been brought home to me over the past four or five years through my involvement in scrutinising legislation, such as the Climate Change (Scotland) Bill, the Flood Risk Management (Scotland) Bill and the Marine (Scotland) Bill. There is any number of examples in which the scientific evidence that committees and the Parliament have received has been critical.

Beyond legislation, such scientific evidence is critical in policy areas, too, whether in energy production and efficiency, digital technology, disease management or food production. The areas in which scientific evidence has or should have a heavy bearing on the decisions that we as a Parliament and ministers in the Government take are brought home to us routinely. Our policy in helping science to deliver is therefore critical.

The Government motion is very worthy, although it may be somewhat lacking; perhaps the cabinet secretary conceded that in supporting Murdo Fraser's amendment, which instils a degree of urgency and exhorts the Government to do more. Neil Findlay's amendment identifies the challenges that exist, particularly with the lack of women in STEM subjects, and the potential threats—I do not think that they can be dismissed—from the potential break-up of the UK. They cannot be glossed over; they need to be taken seriously.

The thrust of the Government's motion and argument is correct. The Government points to the scientific advice in policy making being essential to arriving at better decisions. However, Elaine Murray made an excellent point in pointing to the tendency towards policy-driven evidence as opposed to evidence-based policy making. The Government is also right in saying that we not only have a fine heritage in the area—a number of members have alluded to that—but Scotland has world-class scientists who are doing world-class things right now, and we should be using them.

The contribution that science can make to meeting a wide range of policy objectives has been set out, including to the creation of a highly skilled and high-value economy, and there is also the importance of public engagement. That is important for a wide range of reasons. I was struck by Richard Simpson's allusion to MMR and the dangers that open up where there are gaps between public attitudes—and how they are picked up in the political arena—and scientific evidence. Politicians and ministers take decisions that are based on a wide variety of factors. The RSE made it clear in its briefing that

"The role of the wider science community is not to determine policy; that is for Government; their role is to develop and present the evidence for different policy options."

It went on to say:

"Science is concerned to understand the working of nature, it is for society to determine how that understanding should be used."

Iain Gray was absolutely right to warn of the risks, absolutes and 100 per cent guarantees that we seek from the scientific community, whatever issue we are wrestling with. Science is often not an absolute; it can be provisional. It is almost always necessarily qualified, as Nigel Don and Elaine Murray pointed out, but the understanding of the scientific evidence is still vital to good policy making and good government. How ministers access it therefore is a critical question.

The cabinet secretary pointed to a number of examples of expertise and advice in government, whether in SEPA, SNH, Marine Scotland, Scottish Water, the enterprise agencies or other bodies, but it still remains the case that there is more expertise outside the Government than inside it.

Brian Adam: The—

The Deputy Presiding Officer: Microphone for Mr Adam, please.

Brian Adam: The member's colleague Willie Rennie used to work with the Royal Society of Chemistry and will be very familiar with it. His predecessor and successor in that role, Bristow Muldoon, is the same. There is no doubt that there is a good and healthy relationship between politicians and scientists.

Liam McArthur: I certainly do not dispute the fact that there is a healthy and developing relationship between the scientific community and politicians. The shorter lines of communication in Scotland undoubtedly help in that regard. The Scottish science advisory council is a valuable mechanism, although Elaine Murray and Iain Gray made telling points about the way in which we could hardwire that more into the way in which decisions are arrived at.

The appointment of the chief scientific adviser, Professor Anne Glover, was a major step forward. She is not only an Orkneyphile but was very much the role model that we needed to see. In an excellent interview that was provided courtesy of the Society of Biology, Professor Glover set out her challenges in her new role as the EU adviser. Her appointment in 2006 was a step forward. At that time, she had a direct line to the First Minister and the Deputy First Minister, and it is a concern that, from 2007, she appeared to report to the education secretary. Her successor, Professor Muffy Calder, appears to report directly to Dr Allan albeit with access to the education secretary. There is a question whether that is getting the advice from the chief scientific adviser into the very top echelons of Government.

I welcome the fact that Professor Glover and Professor Calder have been able to provide not only that scientific advice but that role model. That sends a strong signal in areas where we need to do much better. Dame Jocelyn Bell Burnell made an impressive presentation at the cross-party group on science and technology last year and the production of "Tapping all our Talents" has given us a great deal of food for thought. Not only does it remind us of the importance of science, engineering and technology to policy making, our economy and intellectual vitality; it illustrates the cost of the debilitating loss of talent through the high attrition rate of highly trained women from employment in STEM.

The loss to individuals is significant, but the loss to the economy and society is greater still. There is no lack of demand in the science and technology sector for those highly qualified individuals. The causes of that loss are many and varied. The recommendations that are set out in the report appear realistic and achievable. I would like confirmation from the minister, in his winding-up speech, of whether the cabinet secretary along with himself will provide the drive to deliver on many of those recommendations and give Government ownership so that we can see a step change in addressing a problem that we all agree exists.

15:42

Fiona McLeod (Strathkelvin and Bearsden) (SNP): As I rise to follow many of my fellow members who used to be scientists, members must be wondering what a history graduate and a proud librarian can contribute to the debate. Of course, librarians of my generation are also called information scientists. The scientists and the researchers go out and find the evidence, and the big thing that we do is ensure that everybody can access the evidence so that we can have evidence-based public policy. I will, therefore, confine my remarks to how we access and use evidence—not necessarily just scientific evidence—in public policy. I hope that that is acceptable to the chamber.

What does the phrase "evidence-based" mean to those of us who are not scientists? It is interesting to look at the website of EBSCO, which is a major scientific literature publisher in Europe. It talks about the following meaning of "evidence-based":

> "Conclusions can be based on the best available evidence only if the evidence is consistently and systematically identified, evaluated and selected"—

which is the role of the librarian. I was thinking of that when listening to Murdo Fraser's comments about eugenics in the early part of the 20th century. In the context of the systematic evaluation and selection of evidence, eugenics may have had its day as a fad but it was never consensus science at any time in the scientific community. We should all understand that.

Why is it so important that we have evidence-based public policy? I came across some fantastic quotations from Paul Nurse, who won the Nobel prize in medicine. Professor Nurse commented in the *New Scientist* in 2011—I am sorry, but members must expect that I reference almost every quote that I give; I am in librarian mode and we must have the evidence—on the run-up to last year's American presidential election and the use of "science" by many of the candidates to justify

some of the more ludicrous positions that they were taking.

It is important to keep in mind what Professor Nurse was commenting on when we talk about using evidence to produce public policy. He said that

"the scientific process is such a reliable generator of knowledge—with its respect for evidence, for scepticism, for consistency of approach, for the constant testing of ideas."

Is that not what we—as politicians—should always do?

When I was researching for the debate, I was struck by the fact that the Health and Sport Committee's work on minimum unit pricing last year could be taken in the round as an excellent example of the evidence base driving public policy. Originally, the Scottish National Party Government politicians looked at evidence in other areas of public health and saw that price affected the consumption and use of products. Having had a theory about minimum unit pricing, they then set out to see whether there was any evidence to back up that theory. They went to the University of Sheffield, which carried out theoretical modelling. We were fortunate that, at the same time, Professor Stockwell in Canada was finding empirical evidence based on more than 20 years' worth of statistics to show that the Sheffield model and the Scottish Government's theory worked. We therefore had scientific evidence-based policy for minimum unit pricing.

When I was a member of the Health and Sport Committee, I was amazed when Labour refused to accept that evidence. Today it is again refusing to accept the evidence that is in front of its face. It is telling us—caught up in its constitutional hang-up and fears about independence—that we would not get good science in an independent Scotland. The evidence is not there to back that up; in fact, the evidence is to the contrary.

Iain Gray: Will the member give way?

Fiona McLeod: I will give way briefly, but I am about to list three levels of evidence, with the references.

Iain Gray: I do not think that anybody has said that we would not have good science in an independent Scotland; we have said that we would have restricted access to research funds and that, consequently, science would not be funded to the extent that it is today.

The Deputy Presiding Officer: You have one minute, Ms McLeod.

Fiona McLeod: I refer Mr Gray to paragraph 12 of the Royal Society of Edinburgh's publication, to which many Labour members have referred, which provides exactly the evidence against the assertion that he makes.

The funding that we have put in place in Scotland, and—it is not just about the money—the creative way in which we have got the Scottish Further and Higher Education Funding Council and the universities working together to prioritise research in our universities

"critically prove to be a powerful attractor for international academic talent into Scotland ... a model worthy of notice."

We are attracting investment and scientists because we are good. It is vital to point out that the scientific academic community is a global community, so why can the Labour Party not get out of its narrow UK straitjacket?

I have much more evidence, but I see that the Presiding Officer wants me to wind up, so I will finish with a last quotation from Professor Anne Glover—she has already been quoted today—from volume 59, number 5, page 33 of *The Biologist.* She was talking about politicians not interfering with the evidence.

The Deputy Presiding Officer: I would be grateful if you would close, please.

Fiona McLeod: Professor Glover says that she must ask that politicians be

"transparent about why they have not used the evidence available."

That is the question that we must ask the Labour Party today.

The Deputy Presiding Officer: That is enough. Many thanks.

I call Helen Eadie, to be followed by Marco Biagi. From now on, members have six minutes, including interventions.

15:49

Helen Eadie (Cowdenbeath) (Lab): I will pick up on the previous speaker's final point. It might be that some people deliberately misinterpret what members on the Labour benches are saying. Iain Gray was talking about access to European structural funds. I am not one of the people who argue that we would be excluded from membership of the European Union; I think that Scotland would continue to be part of the European Union but would have to negotiate terms and conditions. What would happen in the interim period while discussions were going on? It is imperative that we discuss the issue, because it is creating uncertainty—[*Interruption*.]

The Deputy Presiding Officer: Can we have order, please?

Helen Eadie: The issue is creating uncertainty throughout Scotland. Members can close their

ears to it, but they cannot close their minds to the facts. Facts are chiels that winna ding, as has often been said in the Parliament.

I was pleased to hear that I am in the company of many other people who voted for Mary Fairfax Somerville. Her childhood home was in Burntisland—some members know that Burntisland is next to Dalgety Bay—and her story was in a book called "Women Who Win", which was on my bookshelf. Her father considered her to be a savage and sent her to Musselburgh for a year of tuition at an expensive boarding school. We are proud to have a room named after her in the Parliament, and I was pleased to be part of that decision.

Perhaps no member's mind has been as focused as mine has been on the science from SEPA about radiation in Dalgety Bay. There has been a problem since 1991. Early on, some scientists were hugely dismissive of the problem. In the middle years of the digging and experimentation, a modest 50 or so radioactive fragments were discovered, but in the past year something like 600 radioactive fragments have been discovered in Dalgety Bay.

What part does the policy advice play in that regard? The committee on medical aspects of radiation in the environment—COMARE—has played a powerful part in advising us about the risk to health. We are all concerned about trust and democracy in relation to scientific advice—Mike Russell made that point—and there is an issue to do with public agencies, especially in the context of freedom of information. We have no choice about complying with freedom of information legislation; we must do so.

My community was very angry recently when COMARE released a report prior to its being peer reviewed or having the input of medical scientists at Fife NHS Board. That shows that science and the links between scientists are never straightforward, and it shows that politicians have a job to do to ensure that scientists collaborate correctly.

Should such a report be released to the public prior to peer review and finalisation? Reports that are not finalised and which contain incomplete evidence generate extreme anxiety and concern. The mental health and wellbeing of my community has been put at risk. I have written to the Cabinet Secretary for Health and Wellbeing, Alex Neil, to ask for an urgent meeting with him, so that he can allay the public's concerns about health and ensure that the policy that he arrives at is well founded and informed. We need to know whether the public are right to be as frightened as they are. That experience just shows the importance of science and professional expertise in dealing with issues.

Having highlighted that point about Dalgety Bay, I want to mention a connection that we are especially proud of in the Cowdenbeath constituency, which is our link with Professor Sir James Black CH. He was born in 1924 and educated at Beath high school in Cowdenbeath. He went on to study at the University of St Andrews. I met my husband there, so I was very proud of that. Professor James Black discovered the chemical potential of receptor blocking drugs and pioneered the beta receptor blocking drug propranolol, which helps to fight coronary heart disease and hypertension.

The Deputy Presiding Officer: You have 15 seconds remaining.

Helen Eadie: In 1988, he was awarded the Nobel prize in physiology or medicine. In the Cowdenbeath constituency, we are rightly proud of our connection with him.

The Deputy Presiding Officer: Thank you. I call Marco Biagi, to be followed by Stewart Stevenson. You have six minutes including interventions.

15:55

Marco Biagi (Edinburgh Central) (SNP): I want to speak up on behalf of an element of the sciences that has already taken a bit of a kicking today: the social sciences.

Whenever science is discussed, social science has a hard time in getting to the table. It is not always considered sufficiently scientific, but it is—frankly, the clue is in the name. When we are looking at the important role that science can play, we have to recognise that rigorous social scientific evidence often blurs the line with the STEM family, and not least the M part of that.

One problem with social science, in terms of the esteem that it has in debates such as today's, is that as it is taught in universities it leans heavily toward the qualitative. An acquaintance of mine has three degrees in politics but has never once taken a statistical research methods course. Qualitative research is worth while, but it is different. We can look at the same evidence qualitatively and interpret it differently. That makes it distinct from the formal scientific method in Karl Popper's principle of falsifiability.

Quantitative social science is different, and it deserves to be credited as such. This and previous Scottish Governments have funded the regular Scottish social attitudes survey conducted by ScotCen, which is based in my constituency. I point out that the difference between that and the Scottish health survey, which Nigel Don mentioned, is marginal. Over the years, the social attitudes survey has given us plenty of political

footballs on constitutional issues, but it has also given us irreplaceable hard data on issues such as drug use, antisocial behaviour, discrimination and racism. Although what we are presented with is often the top-line percentage, the detailed statistical analysis that happens with the data gives us a much greater insight into relationships, contributing factors and, looking at what we are doing, what works and what does not. Frankly, the distinction between that and, for example, epidemiology in health science, which is indisputably STEM, is non-existent.

Without doubt, the most obvious social science that we depend on in the Parliament is economics. Today, jobs and the economy are the top political concern. I can verify that because of social science research into mass public opinion. In the Parliament and in public debate, we regularly have to weigh up the pros and cons of all the different economic strategies that are out there.

Iain Gray: I was delighted to hear Karl Popper's name mentioned, but perhaps the member will admit that Popper would probably say that economics has still not found its paradigm and therefore is not really a science.

Marco Biagi: Indeed. The point about economics is that, as with all social sciences, it is possible to have different priorities. For example, I can value greater equality while another person can value other principles. However, where we have different values, it is possible to test, to an extent using the scientific method, whether the policies that we are putting forward will realise those values. In the Parliament, with the exception of the Scottish Green Party, we are all quite fixated on the objective of economic growth and we often scrutinise our economic policies on that basis; they can be subjected to the scientific method and, frankly, they should be.

Economics is divided quite starkly—I suppose that we could characterise it as Keynesianism versus Friedmanism—but in a way so is physics, between the Newtonian understanding of the universe and Einstein's understanding of the universe. Anybody who can reconcile those two is going to win a Nobel prize.

In Parliament, there is a strong consensus on the wisdom of capital investment. It is a rare economic decision that is taken without mention of the gross domestic product multiplier effect. All of that is derived from evidence-based methods that deploy scientific approaches in much the same way as happens in the STEM areas. Frankly, I think that we should demand the same standard of evidence and scrutiny in justifying how we run the economy as we would when deciding whether to approve a new hay fever remedy.

In June, the UK Cabinet Office issued a paper that floated the idea of taking some of the experience of randomised control trials from drugs and applying it to public policy. That is what Governments already do through piloting, but the rigour of RCTs is much higher. I once remarked to a medical researcher that an error rate of 3 per cent was reasonable. He replied that that was fine in politics but that, in his discipline, it would mean that he had killed 30 people. We should closely consider the lessons that we can take from the so-called hard sciences into the social sciences.

It is important to consider the evidence and draw conclusions from it, rather than doing things the other way around. There is a popular book that I have some sympathy with, which is quite social-scientific but whose evidence base consists of a series of simple bivariate analyses in extremely small N case studies with incredibly weak R-squared values. However, it has become political flavour of the month, in no small part because it has at least nodded towards quantitative terms, however flawed they may be.

I just want to place a marker that there is a lot happening in the social sciences that can inform our discussions here, as long as we respect their strengths and see their limits. Rigorous scientific research does not only help in the fight against disease; it can help in the fight against racism and much else. All such research is worthy of recognition today.

16:01

Stewart Stevenson (Banffshire and Buchan Coast) (SNP): I declare an interest, as I am an associate member of the Institution of Engineering and Technology.

I also want to put on record my thanks to my dentist, who, just before the debate, managed to replace a filling—science has a practical application as well. Now, suitably equipped, let me get my teeth into this debate.

Science, technology, engineering and mathematics—the STEM subjects—underpin our economy. In each of those areas, Scotland has a proud record. In science, we have Alexander Fleming and the discovery and development of penicillin. In technology, we have Wolfson Microelectronics, one of our university spin-outs, and the digital/analogue signal processing chip that allowed Apple's iPod to be developed. In engineering, we have the fax machine and the first electricity-generating wind turbine in Marykirk in 1887. In mathematics, as has already been mentioned, we have John Napier, the inventor of logarithms and also of the slide rule—a device that is still in use today, in circular form, on my watch.

Napier might be thought to be a model for offering advice to Government. In his dedication of "A Plaine Discovery of the Whole Revelation of St John" to James VI in 1594—when Scotland was independent, which means that Napier was a scientist who worked successfully in an independent Scotland—Napier counselled the king to

"reform the universal enormities of his country, and first to begin at his own house, family, and court."

It is not clear whether the calls of this respected mathematician were heeded.

What are we doing today to create the ability to learn, innovate, deliver and—crucially, for this debate—inform Government in future? Without a well-informed Government, excellent outcomes become a matter of mere chance.

Perhaps too often in the consultations that we conduct, we are looking for public opinion rather than searching for facts to inform. The collision of a convenient policy with an inconvenient fact is not something that many ministers of any political persuasion wish to contemplate very often.

In my time as a minister, it was our climate change legislation that, in its fundamentals, was most driven by scientific fact. In relation to our decision about our 2020 target for the reduction in greenhouse gases, scientific advice gave us two choices—good scientific advice informs and guides; it does not command. We were offered a 34 per cent reduction or a 42 per cent reduction. We debated a 40 per cent reduction, which came from another source, but that appeared to be politically based. I am glad that we chose the scientifically derived number because it means that we can hold fast to science underpinning that area of policy. I am proud that we chose that option.

We have good examples of debates being informed by science. Fiona McLeod referred to the alcohol debate. Four hundred years ago, James VI talked about attending post-mortem examinations of smokers and seeing the evil tar in their lungs. In the past, monarchs and rulers have looked to science to help to inform and guide.

There is a ladder of knowledge that we must try to promote to people. One of the books on the shelf in my office here is about the psychology of mathematics. Maths is something that people find difficult and yet they use it a lot. Anybody who gambles is thinking about the odds and about numbers. Anybody who fills in their tax form is dealing with numbers. Indeed, my mathematics teacher at school, a wonderful Lancastrian called Doc Inglis, used to do his tax form with the sixth year class, either to tell us how little he got paid for putting up with us or to show us that there was a practical application to maths. In the first year, he took us around the school searching for infinity. Is that not the kind of inspiring teaching that we want?

My time as environment minister touched with science on a number of occasions. One of the best ones was an engineering and science experiment in the north-west of Scotland, in which all the fish coming down a river were caught and tagged. As they went up and down thereafter, they were recorded. The seals in the bay were tagged, and when one of the seals ate one of the fish, the device on the seal recorded the tag on the fish that it had just eaten. In real time, in a little hut on the side of the loch, we had all this information telling us what each individual fish and each individual seal was doing. I was enthused, and it helped me to understand the way in which the science that I was using as a minister was delivering something for us.

Scientists are not always good communicators. My professor of natural philosophy when I was at university was RV Jones—great scientist; absolutely crap lecturer. I was told only this week that Professor Higgs—

The Deputy Presiding Officer (Elaine Smith): Watch your language, please.

Stewart Stevenson: Is that word not allowed, Presiding Officer?

The Deputy Presiding Officer: No, it is not.

Stewart Stevenson: He was a less than perfect lecturer. Apparently, Professor Higgs is tarred with the same brush by some.

At university, I returned to mathematics because my first-year lecturer Mr Morrison—not even a PhD—was so inspiring that I got 97 per cent in the term exam. He never lectured me again and I never returned to those dizzy heights. We have talked about error. It is worth saying that every success is preceded by generations of failure.

We have to change. To conform is to sustain the status quo; to rebel is to create the new. Let us listen to the scientists and find out useful ways of rebelling.

16:08

Patrick Harvie (Glasgow) (Green): I very much welcome the debate, which should be about what science has to say about policy rather than what policy has to say about science. Although I will not vote for the Labour amendment, I take Iain Gray's point in our earlier exchange. The transition that we should be trying to make from the abuse to the use of science and from policy-based evidence to evidence-based policy presents serious challenges for all of us. My party—the wider movement that I feel part of—has not always

taken a science-led argument. I hope that Iain Gray would agree that on most issues, including GM and nuclear power, the most ardent geek activist would not argue that only scientific arguments can be put forward; economic arguments also matter.

As well as challenges for my party, there are challenges for all in this debate. In particular, I flag up the experience of Professor David Nutt, sacked by the previous UK Government for the crime of simply holding drugs policy to scientific scrutiny and challenge—by a Government that had commissioned advice from the Advisory Council on Misuse of Drugs after having decided what it wanted to do. It sought advice after making a decision.

I also flag up to members a book that I have found instructive in recent months—"The Geek Manifesto". Liam McArthur might have misrecognised the book as he walked into the chamber; it is a book and it is orange, but it is not the book that he was thinking of, although I will maybe give that a go one day. "The Geek Manifesto" seeks to articulate the political objectives of a movement that has grown up and which could, if it plays its cards right, become one of the most significant single-issue campaigns to develop in recent years, by establishing a group that focuses on the role of science in policy.

The book has a great deal of constructive suggestions to offer. Marco Biagi mentioned randomised controlled trials. The book goes into great detail about how such trials are fundamentally different from the pilot schemes that we run on existing policies. Randomising a controlled trial of education policy would present challenges, but would taking a randomised controlled trial approach and generating useful data be less justified than imposing a new policy because we think, after putting a finger in the air, that it will probably work, although we find later that we have to run an assessment to justify it rather than to find out information?

At their heart, the book and the agenda seek scientific input before decisions are made, whether on climate change, the wider environment, transport or health. Stewart Stevenson mentioned the alcohol debate, which I argue has been quite poorly conducted in the Parliament—for example, last-minute amendments were proposed in the chamber to the then Licensing (Scotland) Bill on the basis of political posturing rather than years of consultation and evidence. In the previous session, we saw the unedifying spectacle of the Government and the Opposition suggesting useful and constructive changes to alcohol policy and arguing against each other's policy suggestions, each without the clear weight of evidence behind them.

Liam McArthur: Does Patrick Harvie accept that, in developing the evidence, there is an exercise in conditioning the public environment? For example, if a Government had sought to ban smoking in public places three, four or five years earlier, it is likely that the ban would not have been the success that it ultimately was.

Patrick Harvie: I agree very much. Liam McArthur comes on to an issue that I was about to speak about—the fact that public acceptance of and the public attitude to arguments are conditioned far more by the media than by what we do in parliamentary debates. There are far too many examples of science abuse in the media. Perhaps James Delingpole is one of Murdo Fraser's favourite columnists on climate change; he is guilty of repeatedly pushing deliberately distorted arguments on climate change—that is not just a political challenge but deliberate distortion.

The Deputy Presiding Officer: The member is in his last minute.

Patrick Harvie: Similar examples can be found in relation to drugs policy, sexual health policy and a range of issues. We in this country are not as bad as the US, where the tactics that the tobacco industry developed to argue against public health measures are now used to argue against teaching evolution and to undermine climate science. However, even in this Parliament and in this afternoon's discussions, we have heard an energy minister emphasise the role of evidence in relation to unconventional gas but refuse to join the dots. The evidence is abundantly clear that we have far more fossil fuels than we can afford to burn, yet Government after Government seeks to run a high-carbon, low-carbon energy policy.

I am grateful to have had the opportunity to speak in the debate. I commend "The Geek Manifesto", which is available from the Scottish Parliament information centre library, to any member who wants to take a look.

16:14

Willie Coffey (Kilmarnock and Irvine Valley) (SNP): I am grateful for the opportunity to contribute to the debate. When I tell anyone who asks me that I am an honours graduate in computer science, I usually get a strange look, as if to say, "What on earth are you doing here in the Scottish Parliament?" Regrettably, I am still getting that look from some colleagues in the chamber today.

The look of surprise on people's faces tells me something about attitudes to science and where people think that it rightly belongs. We should all strive to change those attitudes by inviting the public to engage with science and, as

policymakers, by putting science centre stage in what we do.

That wonderful professor of science Carl Sagan once said:

"We live in a society exquisitely dependent on science and technology, in which hardly anyone knows anything about science and technology."

My own journey in science began as a youngster with my fascination with the moon landings in 1969; I was fortunate to be able to highlight those events in a recent members' business debate in tribute to Neil Armstrong. Within a few years, I was lucky enough to be studying computer science at the University of Strathclyde. Way back then, hardly anyone I knew knew anything about computers and the impact that they were to have on our changing world, but I wanted to be a part of it anyway to see where it took me. I think that Professor Sagan was right about science being a bit of an unknown to most people in our society.

I am grateful to the Royal Society of Edinburgh for its briefing paper to members, which tells us:

"much more scientific knowledge exists outside than within government."

We probably all knew that, but good progress is being made in Scotland and in the European Union in that regard.

The science for Scotland strategy that was launched in 2008 underpins much of the work that is currently going on in Scotland to place science more at the heart of what we do. It is aimed at individuals and at encouraging greater awareness of and participation in science, supporting scientific research, fostering more partnerships between business and academia and reaching out to develop Scotland's role as a key player in science internationally.

Members have highlighted Scotland's respected role in research citations around the world, and the increasing number of international collaborations that are taking place with countries such as Germany, France, China and the USA. Looking to Europe, I find it extremely encouraging to note, as members have mentioned, that Professor Anne Glover was appointed as the European Commission's first-ever chief scientific adviser, following her similar role for the Scottish Government.

The horizon 2020 programme, of which members may well be aware, is attempting to simplify and nurture research and innovation capabilities and to be a real driver for jobs and growth in Europe. It will be a huge test of the European Union's ability to apply scientific knowledge directly and positively to effect the kind of societal change that most of us want to see.

I was fortunate to meet Professor Glover a few years ago at one of the many science festivals that take place at Our Dynamic Earth, and I look forward to seeing her develop an influential role as one of Scotland's top scientists at the heart of European policy making.

I will move to a local focus. I have had the privilege of seeing the emergence of a new engineering and science society in Kilmarnock, which Professor Danny Gorman established just last year. The idea came from a conference that was held at Kilmarnock College, which resulted in discussions on science engagement—or the lack of it at the time—and the desire to promote a greater interest in science among our pupils.

I am delighted to say that the society is going from strength to strength. It has already had five major lectures from scientists such as Professor Colin McInnes, who spoke on advanced space concepts; Dr Dan Kirkwood, who spoke on new materials that are emerging; Suzanne Flynn, who talked about her experience in aerospace engineering; and Professor Martin Hendry, who gave us a fantastic lecture on gravitational waves. In the new year, we are to hear from Dr Victoria Martin of the University of Edinburgh, who is, coincidentally, also from Kilmarnock. She will tell us about her work in searching for the Higgs boson particle and its implications for understanding the origins of the universe.

The point is that all the presenters and members of the society meet to promote science—and engineering in our case—to further public interest in science and to influence public policy. One of our champions of the society is a local teacher, Colin Barbour, who is principal teacher of physics at St Joseph's academy in Kilmarnock and recently won the Institute of Physics teacher of the year award 2012.

The comment from Professor Sir Peter Knight about physics driving the Scottish economy and Scotland leading the UK in that regard is both appropriate and encouraging.

Scotland has a long and impressive history of scientific contributions that have made the world a much better place in which to live. The new challenges that we face in world population, climate change, energy, food production and economic prosperity are all areas in which we can find Scottish scientists making an important contribution. In my view, we are placing science more at the heart of what we do and perhaps, if he had lived for a few more years, Professor Sagan would change his view and see that science and scientists are everywhere, even at the heart of government.

16:20

Neil Bibby (West Scotland) (Lab): It is important that we use the opportunity today to recognise not just the important role that scientific evidence plays in forming public policy, but the importance of science and research to Scotland as a whole and the challenges that the sector faces, particularly in relation to the underrepresentation of women, which is where I start my remarks.

I agree with the Scottish Government when it points to the importance of

"engaging with the public in relation to the science that underpins policy."

However, our starting point should be to focus on engaging the public, particularly women, in science in general. As members have pointed out, the number of female graduates in STEM subjects has increased recently and that is, of course, welcome and I hope that the trend continues into the future. However, it should not distract us from the reality, which is that women are still underrepresented at every level of STEM education and careers. The glass ceiling clearly still exists for women in science.

In the report "Tapping all our Talents—Women in science, technology, engineering and mathematics: a strategy for Scotland", the Royal Society of Edinburgh stated that women are lost at every level of the academic career structure. They also continue to be underrepresented in top posts. The report highlights the loss of qualified female scientists to the public and private sectors in Scotland. That represents a loss of individual opportunity and a cost to the Scottish economy.

The report states:

"Scotland fails to realise the full potential of its research base, and will continue to do so if it systematically fails to cope with the debilitating loss of talent represented by the high attrition rate of highly-trained women from employment."

Those words are key in outlining the challenges that we face. It is concerning to hear that 73 per cent of female graduates are lost from STEM careers, compared with less than half the number of male graduates. We need to ask why that happens and examine why female graduates are discouraged from pursuing a career in their field of study.

Professor Anne Glover, who has been well quoted today, also highlighted some important points when she was asked about the issues for women and science that need to be tackled. She pointed out the difficulties of combining a family life with working in science. She spoke about the importance of encouraging employers to think about how female-friendly their environment is. Professor Glover points to flexibility being a key issue. Allowing work meetings to be tailored to childcare arrangements, job sharing and keeping women in touch with their workplaces when they are on maternity leave are relatively simple things that can make a positive difference. I am sure that all members support such steps, and it is vital that significant steps are taken to foster the kind of work-life balance that encourages women to pursue a career in the science sector.

Many members have highlighted the importance of our universities to science and research and I do not think that that can be overstated. Our universities have a long and proud history of research, innovation and discovery and, as Neil Findlay and others have said, one of the many benefits of being part of the UK is that Scottish universities receive a large amount of funding from UK bodies; indeed, Scotland punches above its weight when it comes to competing for UK research funding. Scottish researchers continue to work collaboratively with leading researchers from across the UK. We have only to look at the world-famous example of Dolly the sheep, the world's first mammal to be successfully cloned from an adult cell, to see the success that such working together can bring. The Roslin Institute in Edinburgh, where Dolly the sheep was created, brings together experts from across the UK and receives substantial funding from the UK Biotechnology and Biological Sciences Research Council. We should aim to build on that already successful partnership by making collaboration easier, not more difficult.

Before the debate, I took the opportunity to find out about the University of the West of Scotland, which is in my area and which George Adam mentioned. Its financial figures for the academic year ending July 2011 show that it received nearly £3 million in research grants and contracts, which included money from UK research councils, the European Commission and UK charities. That sort of funding has allowed the UWS to undertake valuable research projects, which are described on its website, and which Mr Adam also mentioned.

Members have mentioned various briefings. The Society of Biology briefing that was provided to members highlights the strategy for UK life sciences, which describes the importance of the sector to the UK economy in generating turnover of £50 billion and employing 167,500 people in more than 4,500 companies. That makes clear the important role of science in economic growth, which we should all appreciate, particularly in the current financial circumstances.

Scientific research plays a significant role throughout modern life. We are rightly proud of our reputation for excellence in research and science, but we need to address the significant challenges that we face. We can and should address those

challenges in Scotland while maintaining our status as a world leader in research as part of the United Kingdom.

16:26

Clare Adamson (Central Scotland) (SNP): I am pleased to speak in the debate not only as a member of the Scottish Parliament, but as a member of the cross-party group in the Scottish Parliament on science and technology and of the British Computer Society. I put on record my thanks to the partners in the cross-party group who have contributed to the debate by providing helpful briefings.

I am a bit perturbed by the direction in which the debate has gone and by the Labour amendment. Like Patrick Harvie, I thought that we would focus on scientific evidence, but the Labour amendment raises the issue of funding in an independent Scotland. That is concerning because, of course, Scotland contributes to the UK research fund. The approach seems to be that if a fund has the term "UK" attached, somehow Scotland has not contributed to it. If we look on a population basis, as the Labour Party has done, we find that Scotland contributes more to the UK economy than it gets back. Figures from the Organisation for Economic Co-operation and Development show that Scotland, as an independent nation, would be sixth in terms of wealth. Therefore, the idea that scientific funding would be reduced or threatened in an independent Scotland is, to my mind, just absurd.

Neil Findlay: Will the member take an intervention?

Clare Adamson: No. I am sorry, but I am very tight for time, as I am the final speaker in the open debate.

Concerns have been raised about women in science. It is somewhat ironic for me to talk about that, as I am one of the women who has left the scientific professions to pursue a different career. However, I believe that the problem is societal. The issue is endemic in society, and the gender pay gap plays a large part. If we are to tackle gender inequality in the STEM professions, we must tackle gender inequality, pay differentials and established working practices that impinge on family life, for men and women and for carers throughout society. The problems are not unique to the STEM professions.

In my profession, the British Computer Society has said that there is a significant pay gap between male and female computing graduates within only 15 months of graduation. That is untenable. Many members have talked about the report, "Tapping all our Talents". The issues that the report raises when it considers what the Scottish Government can do are mainly ones that we are trying to tackle, such as childcare provision, procurement policy and the gender pay gap. Measures are being taken that seek to improve the situation.

Anne Glover, in a recent article in *The Biologist*, spoke about the issue, but pointed out that there is also an issue for men in science to do with the traditional way in which the scientific research community has developed. The working practices are hard on all in family life, not just on women.

Anne Glover also makes the point—in the same article on politics and evidence-based science that Fiona McLeod quoted—that

"Politicians can't interfere with the evidence, but they can decide not to use it."

That has aye been the case. When Galileo proved Copernicus's theory that the earth is not the centre of the universe, he paid a high price for going against the perceived wisdom of the time: at first he was condemned to death, but then he was exiled for the remainder of his life.

As a librarian, Fiona McLeod will be interested to know that I attended the National Library of Scotland exhibition on banned books last year. In one of those banned books, Darwin's grandfather had first put down the initial stages of what would become evolution theory, which was later taken up by his grandson and published in "On the Origin of Species". That perhaps shows that the perceived scientific wisdom and where we actually are do not always go together.

Part of the issue is that we have a long way to go on how the language of science is used. We certainly need to build more confidence in and a better understanding of that. In this chamber—although not today, I have to say—I have heard people say that Alexander Fleming invented penicillin, whereas of course he only discovered it. Those small things about the understanding of science are really important. To pick up the point that Murdo Fraser made, simply calling something a theory does not make it a scientific theory of merit. That is a particularly important point as regards eugenics.

I am a bit younger than some of those who might be inspired today by Anne Glover or Brian Cox, but one of my inspirations in science was the physics Nobel prize winner Richard Feynman, who was a theoretical physicist. He said:

"the idea is to try to give all of the information to help others to judge the value of your contribution; not just the information that leads to judgment in one particular direction or another."

I would say that eugenics far from matches that standard, which Richard Feynman set.

Let me finish by pointing out that Richard Feynman also said that, in his area of science,

"If you have a theory, you must try to explain what's good and what's bad about it equally. In science, you learn a kind of standard integrity and honesty."

I hope that we will take away from today's debate confidence in the standard integrity and honesty of the scientists who advise our Government and policy.

The Deputy Presiding Officer: We now turn to closing speeches. Alex Johnstone, you have up to seven minutes.

16:33

Alex Johnstone (North East Scotland) (Con): Presiding Officer, I begin by offering my apologies to you and other members in the chamber for missing the opening speeches in the debate. Unfortunately, I had a meeting with the education minister, who was here to open the debate. It is fascinating how we can all pull and push in different directions and yet all end up in the right place at the right time—that is perhaps an example of how we might use science.

I was delighted to see the Government come forward with a debate that is designed to highlight the opportunities that science affords us in Scotland. As was pointed out on numerous occasions during the debate, Scotland is a country that punches well above its weight in relation to scientific research. Nevertheless, we have the problem that, too often, we have allowed public opinion—sometimes manifested in political parties' policies—to be the judge of right and wrong in deciding how to exploit technologies that are available to us.

Some years ago, along with a young man by the name of Tommy Docherty who, at that time, worked for British Nuclear Fuels, I took the opportunity to participate in a number of university debates on the future of nuclear power—Tommy and I were always on the same side, as I am sure members will realise. Our experience was that, in the traditional and more arty universities, we got gubbed in the vote at the end of the debate. However, if we went to the new universities—the University of Strathclyde and Robert Gordon University—and there was a vote at the end of the debate, we won comfortably. That was because, in the new universities that encouraged technology and scientific education, there was a much broader view of that technology.

Today, we have a Government that is quite determined to ignore the opportunities that nuclear power offers this country on the basis of an understanding—or rather, a lack of understanding—of the science that, sadly, makes me worry for the future of technology in Scotland.

Stewart Stevenson: Will the member take an intervention?

Alex Johnstone: No, I think that I will continue. I do not want to talk about nuclear power too much; I want to move ahead. I will simply say that that is an example of how a particular branch of science has gone down the political agenda and down the list of priorities in Scotland in recent years.

I want to move on to genetic engineering. Genetic manipulation is something that I have a lot of personal experience of because, as a farmer, I was involved in trying to improve from generation to generation when breeding livestock and growing crops. None of us should be afraid of genetic manipulation, as it has been happening for generations.

In this country, we have a record of doing some very interesting things when it comes to manipulating genes. The history of many of the barley varieties that are used to produce Scotland's whisky today can be traced back to an experiment that was conducted in the 1950s, when barley seed was put in a nuclear pile and irradiated. After the experiment, much of the grain was found to be dead, but some of it was able to be grown. Some of the seed that grew demonstrated characteristics that exceeded those of the parent crop. By doing that experiment, we produced a generation of crops that have sustained Scottish agriculture up to the present day.

Although in the past I have described this Government's resistance to GM technology as being an embarrassment to it—I think that I once accused Mike Russell of being a puritan and a luddite—we need to get a firm understanding of what the science means. That is what lies at the heart of debate.

Patrick Harvie: Does the member accept that there is nothing unscientific about advancing an argument on GM technology that is based on the economics of a technique that can be deployed only by multinationals to transfer the control of agriculture from smallholders and independent farmers to themselves?

Alex Johnstone: I understand what the member means, but he has misunderstood what has happened in relation to GM technology. For example, the terminator gene was originally developed to ensure that crops could not be grown beyond a single generation. The fact that it also gave those who possessed the intellectual property the opportunity to limit its use is something that the member rightly complains about, but that is not core to the technology.

Similarly, the development of resistance to specific preparatory herbicides was a commercial

activity that is not at the core of what we do. Through what was formerly known as the Scottish Crop Research Institute at Invergowrie, we in Scotland were world leaders in the development of genetically modified crops. We had the opportunity to provide our farmers and farmers the world over with the crops that they needed to feed another generation. If we had been allowed to concentrate on achieving the key successes that farmers the world over await, by now we might have seen the drought-resistant wheat that would alleviate the problem of periodic famines; salt-tolerant rice, which would allow us to grow our crops on the coastal plains; and frost-resistant maize, which would enable farmers in Scotland to be massively more productive. If we in Scotland turn our backs on GM crops and someone somewhere develops a blight-resistant potato, our potato industry will come to a sad and quick end.

Professor John Hillman, a friend of mine who was the director of the Scottish Crop Research Institute, has a level of expertise well beyond that of many in the science. In Scotland, we have missed the opportunity to exploit men such as him and the technology that they and their staff have developed. We had the opportunity to develop new sciences and make biotechnology our heavy industry of the 21st century, but we have a Government that cannot buck public opinion.

16:40

Hugh Henry (Renfrewshire South) (Lab): I commend the Cabinet Secretary for Education and Lifelong Learning for being able to step in at short notice for Alasdair Allan. However, listening to his opening remarks, I thought that he might have picked up the wrong set of notes. When he said

"When we don't know, we ask someone else",

I thought that he was about to talk about college funding, but he went on to focus on the topic of the debate.

I come from a generation that was perhaps scarred by science teaching. I could never understand why we had a textbook called "Physics is Fun" because I discovered nothing in the learning of physics in my school that was anywhere near fun.

Stewart Stevenson: Has Hugh Henry never had the immense pleasure of being charged up by a Van de Graaff generator, walking down the corridor and zapping someone with 1 million volts? How much fun does he really want?

Hugh Henry: It is not for me to speculate on what has gone on in Stewart Stevenson's life and how he enjoys himself. When he talked about his teacher taking him round the school searching for infinity, I thought that an early Buzz Lightyear had got in there first. Whether he discovered anything remains to be seen.

How physics and science in general were taught when I was at school unfortunately soured them for many people. However, in our schools and through the opportunities that are afforded by the curriculum for excellence, we now see an imaginative way of stimulating interest and allowing our youngsters to see the relevance of science and experience the joy of learning.

Scotland's history of scientific achievement through the many notable individuals we have referred to has come out in the debate. We realise that, if Scotland is to succeed in the 21st century, we need to breed and develop a new generation of scientists to enable them to play a similar role today.

That must start at a young age. Young people must understand the value and significance of science. There is no point in our talking about science shaping policy development if we have a population that does not see the value of science in itself.

We still have a long way to go. When I listened to the exchange between Marco Biagi and Iain Gray about Karl Popper, I reflected that when many people in Edinburgh and Glasgow talk about "popper", they are talking not about eminent philosophers but about something completely different. Much of the debate, learned as it is, would pass many people by. We must ask ourselves why science and its value still fail to touch so many people.

Most people agree that we need data, research and evidence, and that we should listen to and be advised by scientists. However, as many speakers said, ultimately, it must be politicians who make the decisions, and we hope that they make them wisely.

Helen Eadie made an interesting point when she talked about the experience of radiation at Dalgety Bay. She mentioned how some scientists were hugely dismissive of the early evidence. That proves that, sometimes, the context in which science does its work and in which information is delivered can be the ultimate determinant. If we do not create the political culture and environment in which scientists feel free to challenge information and interrogate evidence, as a society we will be the losers. Some of the good work of scientists in Dalgety Bay that is beginning to come out shows that there has been a long-standing problem there.

In this as in many aspects of Scottish life, it is undoubtedly the case that too few women are engaged at the top levels. Neil Findlay and others spoke about the need to encourage women into the debate on science. In an excellent speech, Iain Gray made a worthy suggestion: if we can have a

Council of Economic Advisers, surely a council of scientific advisers is worthy of consideration.

A number of speakers in the debate mentioned MMR. Of course, the whole MMR debate and discussion was a warning about politicians ignoring scientific evidence and debate. Indeed, politicians in this Parliament did no service to the communities and individuals they represented in shunning much of the scientific debate that took place.

Patrick Harvie: Will the member give way?

Hugh Henry: No, thank you.

The tragedy is the human damage that can be caused when politicians wantonly ignore the evidence simply to make political points. If anything has come of out of the debate today, I hope that it is that caution and warning to us all.

I dispute some of what Fiona McLeod said about the evidence from the Sheffield study in the alcohol minimum pricing debate. The study included one model, but many scientists and economists would challenge much of the evidence that was brought forward by that model.

Fiona McLeod: Will the member give way?

Hugh Henry: No, thank you. I am just about to conclude.

We should always be cautious about how we use information, but we should never be scared of seeking out information and advice and then using them wisely in the proper context.

This has been a good, interesting debate. For someone who does not have a scientific background, it has been very informative. I end by repeating what I said earlier: despite the progress that we have made on science in Scotland over many generations, we cannot afford to rest on our laurels. There is a danger that if we do not encourage, promote and advance scientific endeavour, this country and society will be the losers.

16:48

The Minister for Learning, Science and Scotland's Languages (Dr Alasdair Allan): I must first apologise for my lateness. As my plane sat on the runway at Inverness airport, it crossed my mind that perhaps something that science could contribute usefully to my life would be a teleporter, or, failing that, some jump leads that I could carry about with me.

The debate has been very interesting and has drawn a wide variety of contributions. In response to a remark that Murdo Fraser made, I am unable to say—having arrived when I did—whether Michael Russell picked up the speech that I intended to deliver, so I will not try to refer to it.

It has been particularly good to have had interest in the debate from the learned societies, which are important contributors of evidence for public policy through not just their formal papers and their support of the annual science in the Parliament debate but their informative newsletter and regular updates on current science stories and events.

They also produce some interesting reports. The Institute of Physics launched "Physics, the key to a thriving Scottish economy" in this building in October. It showed that Scotland has performed better than the other nations of these islands.

I think that we have largely agreed on the importance of scientific evidence in informing decision making and further demonstrated how the evidence comes from the hard work and dedication of scientists and engineers from all walks of life, wherever they work.

I will refer to the contributions of some members.

I am not quite sure where Mr Fraser was headed with some of his arguments about global warming; he struck me as being rather sceptical. I thought that some of his comparisons with eugenics were a little far fetched, but it is certainly legitimate that everyone in the chamber and elsewhere should scrutinise and interrogate science. That said, Mr Fraser seemed to argue against his own position slightly in his comments on GM. It is worth adding that, although the Scottish Government does not support GM trials, it supports wider crop research to the tune of £8 million a year.

Members have largely agreed on the importance of having access to independent advice from both the chief scientific advisers and the Scottish science advisory council.

Brian Adam: Does the minister agree that the important question that scientific advice can answer, or at least go some way towards answering, is: is it a coincidence or is there a causal link? It is quite often very hard to give a definitive answer to that.

Dr Allan: I appreciate the distinction that the member makes between the warming of the earth and the presence of a man-made factor that is behind that, but I think that the overwhelming scientific consensus is that there is a man-made agency behind the rise in the temperatures of the earth and the seas.

Each of the independent advisers has a large remit of their own, but there is potentially considerable added value in their co-ordinating their advice. Regular meetings that will start in the

new year are being arranged between them. I already regularly meet Professor Calder, and meetings in future will include updates on the combined discussions.

To answer a point that Mr Gray and Mr McArthur made about the First Minister, the First Minister is arranging to meet the Scottish science advisory council as part of his continuing commitment to regular engagement. Indeed, only a few days ago, he was in my constituency meeting the scientific community, which is engaged in work in various areas of research around the development of omega 3.

Liam McArthur: I welcome the engagement that the minister mentioned. However, will he respond to the suggestion that Iain Gray and a number of other members have made about having a council of scientific advisers, just as we have the Council of Economic Advisers?

Dr Allan: There is, of course, the Scottish science advisory council, which advises the Government, and I certainly believe that that advice is taken seriously. The importance of engaging with the public on the science that underpins all policy is certainly given the recognition that it merits.

Alex Johnstone: Will the minister take an intervention?

Dr Allan: I will have to make some progress before I take further interventions.

Mr George Adam managed to mention the science centres in Scotland and the science festivals in a speech that contained an impressive number of namechecks for Paisley.

It is worth remembering the work that can be done with young people and the wider public, which can help Government scientists to develop valuable new skills and provide a new perspective on their role. I know from being at the Scottish Government's science and engineering profession annual conference last month that that fits in with the work of the profession board in supporting the career paths of Scottish Government scientists. Part of the chief scientific adviser's role is to act as head of profession and ensure the continued quality of the evidence by encouraging peer review and continued professional development among Government scientists.

Murdo Fraser's amendment talks of the need for greater focus on the promotion of STEM subjects and on presenting the advantages of STEM careers. It is vital that we attract young people into careers in science, engineering and technology. Apart from anything else, STEM degrees are good degrees to have, as the employment rate from them is 84 per cent. The curriculum for learning approach will help to ensure that pupils at all stages can explore the real-life relevance of science. I believe, for the reasons that I have already described, that the greater focus that he is looking for is already under way, and for that reason I can happily accept the amendment.

Many members—including Neil Findlay, Iain Gray and Neil Bibby, among others—rightly referred to the role of women in science. It is interesting that even in a subject such as biology, in which women traditionally outnumber men at undergraduate level, industry and academia still have difficulty in retaining that highly trained talent. The Royal Society of Edinburgh produced an informative report on that earlier this year and, since then, we have held Scotland's first employment summit for women; launched the new £250,000 careerwise Scotland initiative, which is aimed at encouraging more young women to consider careers in the field of science; and committed to funding the Scottish resource centre for women in science, engineering and technology.

The issues that were raised around constitutional change were interesting. Scotland's excellence in the field of science holds true regardless of future constitutional changes. Our universities are arguably the strongest part of Scotland's science heritage. That will be a legitimate debate to have in the time leading up to the referendum, and I am sure that it will take place within the academic community. I am not sure about the relevance of Dr Simpson's remarks regarding the 1921 Anglo-Irish treaty—it presently evades me—but there will be discussion of some of the broader issues.

Dr Simpson: Will the minister take an intervention?

Dr Allan: As I have named the member, I will.

Dr Simpson: Eire was a member of the Medical Research Council for two years after it became independent. After that, its membership of the Medical Research Council was dropped and the Wellcome Foundation reduced its funding for any project from Eire by 50 per cent—that is the point.

Dr Allan: I am tempted to say that the world has moved on since then. There seems to be an assumption, on the part of some Labour members, that the Scottish Government has only one model in mind when it comes to potential funding models for Scotland after independence. There are many models and many countries that share research councils. That is worth bearing in mind.

The issue of Scotland getting more than her just return in academic research funding has been raised a number of times. The reason for that is not any political decision to kill Scotland with kindness, but the fact that Scotland is excellent in the field of scientific research.

The Parliament has learned that we probably do not give enough attention to the subject of science in our deliberations. I therefore encourage all members to take up the opportunities that are presented to them to engage with scientists and all those connected with science and to celebrate their work and achievements.

As I sat on the plane today, I was rather worried that I would miss out on hearing from Renaissance man, in the form of Mr Stewart Stevenson. He did not disappoint. His remarks on the Van der Graaf generator were an interesting contribution to the debate but, coming from a man who has in the past—rather to my fear—asked me parliamentary questions about algebra, did not come as a surprise.

I could sum up by talking about all the various speeches from members, of which many were learned and helpful, but I have time only to mention one more. Mr Henry said that his personality and outlook on life were scarred by physics. In defence of physics, I must say that that is one thing for which physics should not have to take responsibility. [*Laughter*.]

Fundamentally, however, I believe that the chamber united today and that the purpose of the debate was to show how important the decision-making process is and how essential a part of it scientific evidence is. For those and many other reasons, I invite members to support the motion.

Point of Order

17:00

Lewis Macdonald (North East Scotland) (Lab): On a point of order under rule 13.5.2, Presiding Officer. On 9 October, after Donald Trump had published an email sent to him by a special adviser seeking endorsement of the decision to release the Lockerbie bomber, I asked a number of specific parliamentary questions to establish whether the Scottish Government had sent emails to other individuals or organisations seeking endorsement of that decision.

On 5 November, I received a holding reply from the Cabinet Secretary for Justice, which promised a full reply to my questions as soon as possible. On 6 December, the Scottish Government published on its website a number of emails sent by special advisers in the First Minister's office in response to a freedom of information request from a newspaper, which contained precisely the information that I had asked for. The information was then published in newspapers on 7 December, but I received answers to the questions only yesterday, on 10 December.

I am disappointed that the Government chose not to answer my specific questions but instead published the information separately some eight weeks after I had lodged the questions and four weeks after I was promised that I would be replied to as soon as possible. Mr MacAskill's answer to question S4W-10134 assured me that copies of the relevant correspondence were being placed that same day on the Scottish Government website, when they had in fact been published several days earlier. The answer was provided after 46 days, rather than the 20 days that is laid down under standing orders.

Presiding Officer, you ruled on a point of order raised by Mark Griffin last week. You said that the Scottish Government should not treat members

"with such discourtesy in the future."—[*Official Report*, *4 December 2012*; c 14284.]

I ask that you use your authority to ensure that there are no further such occurrences and that the Scottish Government answers all questions promptly, in accordance with standing orders, no matter how embarrassing its answers may be.

The Presiding Officer (Tricia Marwick): I thank the member for his point of order. When I spoke last week about courtesy and respect for the Parliament, I expected that to apply to all members and not just to Government members. I am therefore disappointed to learn that Mr Macdonald's point of order was circulated to the press in advance of it being raised first in the chamber.

I made my position clear last week in response to Mark Griffin's point of order. I understand that the Minister for Parliamentary Business, who was initially made aware of Mr Macdonald's point of order from the press, wishes to respond.

The Minister for Parliamentary Business (Joe FitzPatrick): We were alerted to the point of order through the press. I confirm that a number of FOI requests were received by the Government on 8 October from various sources. The PQs from Lewis Macdonald were received one day later, on 9 October. The FOI requests were answered on Friday 7 December; the PQs were answered one working day later, on Monday 10 December.

Decision Time

17:03

The Presiding Officer (Tricia Marwick): There are three questions to be put as a result of today's business.

The first question is, that amendment S4M-05154.2, in the name of Neil Findlay, which seeks to amend motion S4M-05154, in the name of Alasdair Allan, on the role of scientific evidence and advice in public policy, be agreed to. Are we agreed?

Members: No.

The Presiding Officer: There will be a division.

For

Baker, Claire (Mid Scotland and Fife) (Lab)
Baxter, Jayne (Mid Scotland and Fife) (Lab)
Bibby, Neil (West Scotland) (Lab)
Boyack, Sarah (Lothian) (Lab)
Brown, Gavin (Lothian) (Con)
Carlaw, Jackson (West Scotland) (Con)
Chisholm, Malcolm (Edinburgh Northern and Leith) (Lab)
Davidson, Ruth (Glasgow) (Con)
Dugdale, Kezia (Lothian) (Lab)
Eadie, Helen (Cowdenbeath) (Lab)
Fee, Mary (West Scotland) (Lab)
Ferguson, Patricia (Glasgow Maryhill and Springburn) (Lab)
Fergusson, Alex (Galloway and West Dumfries) (Con)
Findlay, Neil (Lothian) (Lab)
Fraser, Murdo (Mid Scotland and Fife) (Con)
Goldie, Annabel (West Scotland) (Con)
Grant, Rhoda (Highlands and Islands) (Lab)
Gray, Iain (East Lothian) (Lab)
Griffin, Mark (Central Scotland) (Lab)
Henry, Hugh (Renfrewshire South) (Lab)
Hume, Jim (South Scotland) (LD)
Johnstone, Alex (North East Scotland) (Con)
Kelly, James (Rutherglen) (Lab)
Lamont, John (Ettrick, Roxburgh and Berwickshire) (Con)
Macdonald, Lewis (North East Scotland) (Lab)
Macintosh, Ken (Eastwood) (Lab)
Malik, Hanzala (Glasgow) (Lab)
Marra, Jenny (North East Scotland) (Lab)
Martin, Paul (Glasgow Provan) (Lab)
McArthur, Liam (Orkney Islands) (LD)
McCulloch, Margaret (Central Scotland) (Lab)
McDougall, Margaret (West Scotland) (Lab)
McGrigor, Jamie (Highlands and Islands) (Con)
McInnes, Alison (North East Scotland) (LD)
McMahon, Michael (Uddingston and Bellshill) (Lab)
McMahon, Siobhan (Central Scotland) (Lab)
McNeil, Duncan (Greenock and Inverclyde) (Lab)
McTaggart, Anne (Glasgow) (Lab)
Milne, Nanette (North East Scotland) (Con)
Mitchell, Margaret (Central Scotland) (Con)
Murray, Elaine (Dumfriesshire) (Lab)
Pearson, Graeme (South Scotland) (Lab)
Pentland, John (Motherwell and Wishaw) (Lab)
Rennie, Willie (Mid Scotland and Fife) (LD)
Scanlon, Mary (Highlands and Islands) (Con)
Scott, John (Ayr) (Con)
Scott, Tavish (Shetland Islands) (LD)
Simpson, Dr Richard (Mid Scotland and Fife) (Lab)
Smith, Drew (Glasgow) (Lab)
Smith, Elaine (Coatbridge and Chryston) (Lab)

Smith, Liz (Mid Scotland and Fife) (Con)
Stewart, David (Highlands and Islands) (Lab)

Against

Adam, Brian (Aberdeen Donside) (SNP)
Adam, George (Paisley) (SNP)
Adamson, Clare (Central Scotland) (SNP)
Allan, Dr Alasdair (Na h-Eileanan an Iar) (SNP)
Beattie, Colin (Midlothian North and Musselburgh) (SNP)
Biagi, Marco (Edinburgh Central) (SNP)
Brodie, Chic (South Scotland) (SNP)
Burgess, Margaret (Cunninghame South) (SNP)
Campbell, Roderick (North East Fife) (SNP)
Coffey, Willie (Kilmarnock and Irvine Valley) (SNP)
Constance, Angela (Almond Valley) (SNP)
Crawford, Bruce (Stirling) (SNP)
Cunningham, Roseanna (Perthshire South and Kinross-shire) (SNP)
Dey, Graeme (Angus South) (SNP)
Don, Nigel (Angus North and Mearns) (SNP)
Doris, Bob (Glasgow) (SNP)
Dornan, James (Glasgow Cathcart) (SNP)
Eadie, Jim (Edinburgh Southern) (SNP)
Ewing, Annabelle (Mid Scotland and Fife) (SNP)
Ewing, Fergus (Inverness and Nairn) (SNP)
Fabiani, Linda (East Kilbride) (SNP)
Finnie, John (Highlands and Islands) (Ind)
FitzPatrick, Joe (Dundee City West) (SNP)
Gibson, Kenneth (Cunninghame North) (SNP)
Gibson, Rob (Caithness, Sutherland and Ross) (SNP)
Grahame, Christine (Midlothian South, Tweeddale and Lauderdale) (SNP)
Harvie, Patrick (Glasgow) (Green)
Hepburn, Jamie (Cumbernauld and Kilsyth) (SNP)
Hyslop, Fiona (Linlithgow) (SNP)
Ingram, Adam (Carrick, Cumnock and Doon Valley) (SNP)
Johnstone, Alison (Lothian) (Green)
Keir, Colin (Edinburgh Western) (SNP)
Kidd, Bill (Glasgow Anniesland) (SNP)
Lochhead, Richard (Moray) (SNP)
Lyle, Richard (Central Scotland) (SNP)
MacAskill, Kenny (Edinburgh Eastern) (SNP)
MacDonald, Angus (Falkirk East) (SNP)
MacDonald, Gordon (Edinburgh Pentlands) (SNP)
Mackay, Derek (Renfrewshire North and West) (SNP)
MacKenzie, Mike (Highlands and Islands) (SNP)
Mason, John (Glasgow Shettleston) (SNP)
Matheson, Michael (Falkirk West) (SNP)
Maxwell, Stewart (West Scotland) (SNP)
McAlpine, Joan (South Scotland) (SNP)
McDonald, Mark (North East Scotland) (SNP)
McKelvie, Christina (Hamilton, Larkhall and Stonehouse) (SNP)
McLeod, Aileen (South Scotland) (SNP)
McLeod, Fiona (Strathkelvin and Bearsden) (SNP)
Neil, Alex (Airdrie and Shotts) (SNP)
Paterson, Gil (Clydebank and Milngavie) (SNP)
Robertson, Dennis (Aberdeenshire West) (SNP)
Robison, Shona (Dundee City East) (SNP)
Russell, Michael (Argyll and Bute) (SNP)
Salmond, Alex (Aberdeenshire East) (SNP)
Stevenson, Stewart (Banffshire and Buchan Coast) (SNP)
Stewart, Kevin (Aberdeen Central) (SNP)
Sturgeon, Nicola (Glasgow Southside) (SNP)
Thompson, Dave (Skye, Lochaber and Badenoch) (SNP)
Torrance, David (Kirkcaldy) (SNP)
Urquhart, Jean (Highlands and Islands) (Ind)
Watt, Maureen (Aberdeen South and North Kincardine) (SNP)
Wheelhouse, Paul (South Scotland) (SNP)
White, Sandra (Glasgow Kelvin) (SNP)
Wilson, John (Central Scotland) (SNP)
Yousaf, Humza (Glasgow) (SNP)

The Presiding Officer: The result of the division is: For 52, Against 65, Abstentions 0.

Amendment disagreed to.

The Presiding Officer: The next question is, that amendment S4M-05154.1, in the name of Murdo Fraser, which seeks to amend motion S4M-05154, in the name of Alasdair Allan, on the role of scientific evidence and advice in public policy, be agreed to.

Amendment agreed to.

The Presiding Officer: The next question is, that motion S4M-05154, in the name of Alasdair Allan, on the role of scientific evidence and advice in public policy, as amended, be agreed to.

Motion, as amended, agreed to,

That the Parliament recognises the important role that scientific evidence plays in informing decision making; recognises the contribution made by scientists and engineers in the Scottish Government, its agencies and delivery partners to the international reputation of Scotland through the provision of evidence and advice; supports the Scottish Government's efforts to increase the policy impact of publicly funded scientific research; notes the valuable work of the Scottish Science Advisory Council; recognises the importance of engaging with the public in relation to the science that underpins policy, and believes that, as the next generation of scientists and engineers is vital to informing decision making and government policy in the future, there needs to be a greater focus from the Scottish Government and all those involved in the delivery of education at all levels on promoting science, technology, engineering and mathematics (STEM) subjects for study and on presenting the advantages of careers in science and engineering to all.

Camphill Scotland

The Deputy Presiding Officer (John Scott): The final item of business is a members' business debate on motion S4M-04569, in the name of Alison McInnes, on Camphill Scotland. The debate will be concluded without any question being put.

Motion debated,

That the Parliament applauds the Camphill movement, which has supported children, young people and adults of all ages with learning disabilities, mental health issues and other support needs for more than seven decades; notes that the Camphill movement, founded in 1940 near Aberdeen, has now expanded to become a worldwide movement that boasts over 100 communities in more than 20 countries, including 12 in Scotland; understands that the movement's approach seeks to provide mutual support and nurture independence through living, learning and working together; congratulates Camphill School in Aberdeen and its eco-committee on receiving a Gold Green Flag award, which it understands was achieved through pupil-led initiatives, including developing an eco-code, litter-picking and encouraging recycling; considers that this is an example of the innovative and ambitious nature of the movement; further believes that the movement's success has been made possible by the dedication of staff, co-workers and volunteers, and wishes all of those involved continued success in the future.

17:06

Alison McInnes (North East Scotland) (LD): I welcome members of Camphill communities from around Scotland who are in the public gallery this evening, and I thank fellow MSPs who supported my motion and enabled it to be debated tonight.

Camphill is a worldwide movement of communities, which support children, young people, adults and older people who have learning disabilities and other support needs. Support is provided through an holistic model of care, support and education. The approach seeks to provide mutual support and nurture independence, through living, learning and working together.

The movement was founded more than 70 years ago in Aberdeen by a group of Austrian refugees, many of whom had had to flee the country in 1939 because they were Jewish. They set up their first community in a rented manse, providing accommodation and food from the garden for the small group of children for whom they were caring. The men were interned as enemy aliens, but the women proceeded to purchase Camphill House on 1 June 1940, which is considered to be the birthday of the movement.

Today, Scotland is home to 12 Camphill communities, from the north-east and through the central belt to Dumfries and Galloway. Many Camphill communities are thriving social enterprises, selling home-made breads and cheeses and handicrafts, running cafes in the community or providing community composting facilities. Strong emphasis is placed on each individual achieving their potential and as much independence as they are able to achieve, to widen their opportunities when they make the move to long-term provision.

Camphill School Aberdeen is an independent day and residential school on the outskirts of Aberdeen. I have visited the school twice this year, and I was privileged to meet members of the pupil council and eco-committee. It was enlightening to talk to pupils. I congratulate the pupils on winning the green flag award—it is an elite few schools that win the gold award without first using the stepping stones of bronze and silver awards, and the green flag is a testament to the pupils' hard work.

I was also able to visit Simeon Care for the Elderly. When I visited, the home had 17 residents, the majority of whom were very elderly and frail. Some residents used to be in the community at Newton Dee and others are former co-workers, which demonstrates that Camphill can provide support at every stage of an individual's life. The home is always full and there is a waiting list. Simeon Care is trying to raise £3.5 million for a new home on the same site; it will also provide new outreach services to the other communities. So far, fundraising is going well, but there is quite a long way to go yet.

I am also acquainted with Newton Dee and its lovely cafe and bakery, so I have an insight into the range of services that Camphill provides. I was pleased to host a reception at lunch time and to meet people from the other communities round Scotland. I learned too much to fit it all into this speech, but I know that other members will highlight some of the good work that goes on in their areas. In that regard, Nigel Don expressed disappointment that he was unable to stay for this evening's debate.

The different communities across Scotland are all united behind the same commitment to help every individual to achieve their potential and as much independence as they can. What has struck me most whenever I have visited is the complete positivity within each community. They are distinctive communities in which education and learning, appreciation of arts and music, concern for the land and the environment and the fostering of mutual respect and understanding combine to create happy and optimistic individuals who share life together in a calm and safe environment. Rather than seeing a difficulty or defining an individual by what they cannot do, Camphill has the determination to look for the positive to unlock each individual's potential.

Independent scrutiny by the care inspectorate confirms that the communities are offering

services of the highest quality. The particular strengths of Camphill, as assessed, lie in its creation of therapeutic environments and its particular staffing, management and leadership models, and that is borne out by the collaborative work that it does with the University of Aberdeen on a BA in social pedagogy.

What concerns me is the lack of recognition of the benefits of this approach by statutory authorities and the significant difficulties that parents, in particular, can face in securing funding from local authorities for residential care or education of this nature. Parents tell me that it can be such a battle, and is often only when things are at breaking point that funding is agreed. We should encourage a more co-operative approach, with local authorities supporting the best choice for each individual. It is surely wrong when an overinsistence on inclusion turns, in reality, into isolation and exclusion.

I quote a pupil's words:

"Before I came to Camphill I wasn't included in anything. I was pushed to the side, no one wanted to teach me. Teachers would ignore me if I asked questions and other pupils would pick on me. I chose to sit inside for lunch because I was afraid to go outside. I was accepted at Camphill, asked my opinion on things, and given the opportunity to do things such as going to college and also drama and art. I never thought I would be allowed to do these things and actually discovered that I was quite good at them!"

Here is a parent's view:

"Jack's life at Camphill has purpose. His daily routine builds into a complete year in which he feels secure and through this, his character is developing. His contribution is valued—he has self worth. While at Camphill he has grown into a person who we are proud of; he has achieved things we'd have never dreamed possible. He has learned to speak. We thank you for this. You are an extended family to us—not just for Jack—a lifeline that we will never forget nor take for granted."

I urge local authorities and statutory services to consider taking a more person-centred approach to what is appropriate for any individual. I hope that this debate will help to do that, and I will be grateful if the minister, in his response, is able to support that call.

In closing, I pay tribute to the achievements of pupils and residents and to the dedication of staff, co-workers and volunteers in the Camphill movement. I hope that they will continue to flourish.

17:13

Maureen Watt (Aberdeen South and North Kincardine) (SNP): I thank Alison McInnes for bringing this debate to the Parliament to highlight the importance and value of the Camphill movement. I also thank the many constituents who emailed me in advance of the debate.

Of the 12 Camphill communities in Scotland, no fewer than five are in my constituency of Aberdeen South and North Kincardine. They cover the range of Camphill's activities. For children and young people, there is Camphill school. For young adults, there is Beannachar on South Deeside Road. For adults, there is Newton Dee and Tigh a'Chomainn—I apologise for the pronunciation—and for elderly people there is the Simeon Care facility.

I first got to know about the Camphill communities many years ago when a cousin of my mum's with Down's syndrome stayed at Newton Dee for a short time and we visited her. I think that her elderly parents thought that she might want to stay there, but she was too much of a Cockney to stay for long out of London.

Since then, I have visited most of the facilities in my constituency. I visited Beannachar on a doors-open day and saw growing there the biggest raspberries that I have ever seen. I do not know whether the plants are talked to, but the community there has a wonderful way with growing crops. The facility is close to my heart, as many Germans come across to do voluntary work there. The rules of compulsory service in Germany mean that conscientious objectors do voluntary work, and a lot of them come to Beannachar. They can often be seen walking to Aberdeen along South Deeside Road.

Newton Dee, as Alison McInnes pointed out, is a wonderful facility. It is nice to go there and have a cup of coffee, buy some bread and just chill out a bit. It is little wonder that it has the highest eco-flag status, because it not only has a wind turbine but the people there are all very much into eco-friendly activities—the woodcrafts are something to behold.

The Simeon Care for the Elderly facility, which Alison McInnes also mentioned, is engaging very much with the community to raise the funds to rebuild that community.

Many years ago, the Camphill philosophy was thought of as being a kind of non-mainstream, hippy philosophy. It is based on self-determination and equality and is focused on providing for each individual's needs through a supportive community and the creation of a safe and supportive environment for individuals, who are encouraged to develop their own independence through an engagement in community life. Of course, that philosophy has become very much mainstream.

As Alison McInnes said, there are opportunities for councils to make more use of the facilities that are on their doorstep and are provided by the Camphill movement. It is silly that local authorities will set about creating new facilities when Camphill, in and around Aberdeen, already has

the facilities to provide for the vulnerable in society.

I pay tribute to the Camphill movement, its organisers and its users, whose professionalism, care and hard work have made a world of difference to the lives of individuals and families across Scotland.

17:17

Anne McTaggart (Glasgow) (Lab): I am delighted to contribute to this debate on the Camphill movement in Scotland, and I thank Alison McInnes for securing time in the chamber to highlight the valuable work that Camphill and its many volunteers and staff undertake. I also welcome the Camphill staff who are in the gallery.

As we have heard, Camphill is an international organisation that supports people who have mental and physical disabilities, and helps people of all ages with additional support needs to live full and active lives in their communities.

In Scotland, Camphill works in 12 areas. Although there are no current operations in my region—Glasgow—I know that Camphill has built a strong reputation across the country as an inclusive and dynamic organisation that provides benefits not only for those with whom it works directly, but for the wider communities in which it operates.

Although Camphill has a dedicated and talented staff team, it is fortunate in that it is also supported by a team of active volunteers who undertake a variety of roles in the charity. Those volunteers provide crucial support to full-time staff members and help to increase the quality of life for Camphill residents across the 12 centres in Scotland. I am sure that the contribution of those volunteers has been instrumental in the recent positive assessment of Camphill by Social Care and Social Work Improvement Scotland, which found that the centres are performing well for their residents and, in particular, are providing a high-quality staffing and leadership structure for all staff and volunteers. That is an excellent result for the charity. It rightly recognises Camphill as a first-class provider of care for people who have additional physical and mental health needs.

However, it is my view that no disabled person should receive lower-quality care simply because of where they live. More needs to be done to replicate models of best practice like Camphill in other areas of Scotland—particularly in Glasgow.

It is a sad reality that caring for people who have additional needs is a costly and often complex process in which no one-size-fits-all approach can be adopted. Therefore, we should seek to learn from examples of organisations that are meeting the needs of those whom they support and inspire, in order to ensure the same standards and approaches throughout the country, irrespective of whether the provider is public, private or charitable.

17:20

Joan McAlpine (South Scotland) (SNP): I, too, congratulate Alison McInnes on securing the debate, and I welcome the members of the Camphill communities who are in the gallery today.

There are two Camphill projects in my region, which is South Scotland. One is at Loch Arthur, which my colleague Aileen McLeod will talk about in more detail later. The other is at Pishwanton in East Lothian, to which I intend to devote most of my speech.

Pishwanton Wood is a place of learning, but not in the traditional sense. The facility consists of 60 acres of varied plant and animal habitat at the foot of the Lammermuir hills south-east of Edinburgh. It has belonged to the Life Science Trust since 1996, when it was bought as a base for the demonstration of Goethean science and art in action. Ever since then, it has been used as an outdoor classroom, and has gradually developed indoor facilities over the years.

The focus on inclusion is apparent in how the land is worked. Pishwanton Wood is not a closed community; people with learning difficulties work alongside students and volunteers from the area in a manner that promotes therapy for the people and the land. The work of the community at Pishwanton not only promotes inclusion and integration of people with learning disabilities, but is important for Scotland's dedication to a sustainable future. It is a flagship for sustainable environmental practice, with beautiful handcrafted buildings made of natural materials. The team listens to the land in order to care for it and develop it in a way that marries the best of human intention for sustainable ecological action with what the land itself is trying to become.

Pishwanton Wood is also a centre of environmental education, research and therapy, which offers opportunities for people of all ages and abilities to renew and deepen their relationship with nature. Using Goethean scientific holistic methodology, people are encouraged to explore ways of integrating biodynamic land management, agriculture, building, horticulture, and woodland management and conservation activities to create a practical demonstration of sustainable land use.

It was my great pleasure at the reception at lunch time today to meet David, who is one of the young men who work at Pishwanton, and to

discuss with him the opportunities that the community has given him. David told me that he has been working on a new chalet that is being built for indoor teaching. I saw the foundations that he had been digging and the joinery and tiling work that he has been doing. The building project has given that young man an opportunity to do meaningful work and to develop his skills, particularly in woodwork, with the correct training and in a nurturing environment.

One of the first things that I did when I was elected was visit Loch Arthur in Dumfries and Galloway. There, I was struck by the opportunities that people have to develop their skills. People with learning disabilities are as varied as everyone else, but often people with certain learning disabilities can do things that other people, who do not have disabilities, cannot do quite so well. For example, they can do methodical work. I have a learning disabled sister—she has Down's syndrome—who is much more methodical than I am; she is much more organised and can pay attention to detail. There are many people who, if they were given a supportive environment, without interruptions and distractions, in which they could work to a routine, could perform at a high level in spite of their disability.

I congratulate Camphill, and I congratulate Alison McInnes again on securing the debate. I endorse the point that she and Maureen Watt made, which is that Camphill offers an important model that local authorities would do well to pay more attention to.

17:25

Alex Fergusson (Galloway and West Dumfries) (Con): Like other members, I begin by applauding and thanking Alison McInnes for bringing the motion to the chamber and I echo the delight in being able to participate in the debate.

I first became aware of the Camphill movement early in my MSP career, if it can be called that, when my wife and I attended an open day—Maureen Watt said that she had the same experience—that was held by the Loch Arthur community at Beeswing, which is in what is now my constituency. I am delighted to welcome the three representatives from Loch Arthur to the gallery. At that open day, I bought some of the most delicious cheese and bread that it has ever been my pleasure to consume. What is probably more important is that I learned a great deal more about the Loch Arthur community and the Camphill movement.

The subtitle on the website of the Loch Arthur Camphill community—as it is known—is "A life of many colours". I can think of no more fitting description for that extraordinary place. It is a community of nine houses that are occupied by more than 70 people. The houses are not just somewhere for a group of individuals to live. As the movement says,

"We want each house to be a group of people who benefit from and enjoy living together."

Loch Arthur is a self-help society that caters for every level of disability and need through mutual care, friendship, respect and support. However, it is also a working community, and an incredibly effective one at that. It is based around a farm and a large garden, which are highly productive and have gradually expanded to include a creamery, which is increasingly renowned for its fantastic cheeses—I can still taste the Criffel cheese that I had at lunch time, which is strong as well as fantastic—as well as a bakery, a woodwork shop and a weaving workshop. Since the end of November, the community has had a magnificent new purpose-built cafe and farm shop, which sells the full range of Loch Arthur products, all of which are produced to the highest standards of certified organic production.

Loch Arthur is a massive success story that has come up against many a hurdle since its establishment in 1984—not the least of which was the outbreak of foot-and-mouth disease in 2001, which resulted in the wholesale destruction of much of Galloway's livestock. That situation reduced many a hardened Galloway farmer to tears, so I simply leave it to members' imagination to picture how the Loch Arthur community felt when it was caught up in that horrendous scenario.

However, as always, Loch Arthur bounced back—not just to where it was before, but to the extent that only a year ago it was awarded the BBC's food and farming award for being the best food producer of the year, which is just about the highest accolade that can be got and which is a truly outstanding achievement and recognition for a truly outstanding community. I suspect that that is typical of Camphill communities across the country.

I do not want to give the impression that Loch Arthur is in any way a closed community; it is very much the opposite. It is now an important local employer—it has 17 employees from outwith the community. It sponsors students on the BA in social pedagogy to which Alison McInnes referred. That course was developed as a successful partnership between the University of Aberdeen and the Camphill Rudolf Steiner Schools in Aberdeen. I was more than happy to join the community in opposing changes to that course that the Scottish Government, through the Scottish Social Services Council, sought to make in 2011. Those changes would have had a detrimental

impact on Loch Arthur and I am delighted that they were successfully opposed.

The Loch Arthur community recently presented its own production of Shakespeare's "The Tempest". There is surely no finer way to describe that community and the Camphill movement than by quoting from that great work:

"How beauteous mankind is! O brave new world,
That has such people in't."

I applaud the work and the ethos of Camphill, from which we can all learn a great deal.

17:29

Aileen McLeod (South Scotland) (SNP): I too congratulate Alison McInnes on securing the debate and I welcome the members of the Camphill movement who are in the public gallery. I will focus my remarks on the Camphill movement's contribution to the south of Scotland and on the community that I am most familiar with—Loch Arthur in Beeswing.

Some members will recognise the name Loch Arthur from another context. As Alex Fergusson so rightly pointed out, last year Loch Arthur won the prestigious BBC food and farming award for best food producer and Loch Arthur cheese has won numerous other awards since 1991. I hope that members had the opportunity to sample Loch Arthur cheese—Alex Fergusson certainly did—at the lunch time reception that celebrated the work of Camphill communities across Scotland. Given those awards, I make no apology for urging anyone who is visiting Galloway to drop in at Loch Arthur's new farm shop and cafe, which opened at the end of November.

That ambitious new development is an indication of Loch Arthur's success as a social enterprise but it is also a fundamental part of the underlying philosophy of the Camphill movement. Loch Arthur is not a closed community but one that is very much part of, and contributes to the wellbeing of, the wider community that surrounds it. It is also a significant local employer, contributing meaningfully to a rural economy.

Dave Mitchell from Loch Arthur speaks of that new development as not just a response to customer demand, but a means by which the public can have an encounter with the Loch Arthur community. It is a means of introducing people to the Camphill movement's wider aims through the excellent produce and beautiful surroundings that the Loch Arthur community has created.

I do not want members to think therefore that I am interested in only the social enterprise aspects of Loch Arthur or in the food that it produces—although I assure members that it is extremely delicious. Loch Arthur's primary purpose, after all, is to care for adults with varying support needs. There is a great deal of relevance in the model of supported living that the Camphill movement espouses.

More than 70 people live at Loch Arthur in nine houses, as Alex Fergusson said. Of those 70 people, 28 have disabilities and live in supported tenancies. The community revolves around the importance of the home life that they create in their shared households and the importance of people of all abilities having meaningful work to do and being empowered to contribute to the wellbeing of the community as a whole. In a sense, the success of the social enterprise and the community's core aims are indivisible.

The Camphill movement's emphasis on respect, the value of the individual irrespective of their abilities or care needs, the importance of sustainability and the nurturing power of a caring community enrich Scotland. Loch Arthur's successful social enterprise links the aims and objectives of its community to the wider community as a whole. The success of its excellent produce validates Loch Arthur's ethos of work in which everyone can participate, whatever their ability.

The Camphill movement has grown and flourished over a 70-year history in this country. I join other members in whole-heartedly wishing Loch Arthur and all of the Camphill movement's Scottish communities every success for the future. I pay tribute to the dedication and commitment of the staff and the volunteers and all the valuable work that they do.

17:33

Lewis Macdonald (North East Scotland) (Lab): I congratulate Alison McInnes on securing the debate. I too had the opportunity to visit Camphill School Aberdeen in the summer. A young man called Steven welcomed me and explained what Camphill had meant in transforming his life and the lives of others. I am delighted that I was able to welcome Steven and his friends to Holyrood on their visit today and that they are in the public gallery this evening.

Alison McInnes and Maureen Watt were right to highlight the importance of the city of Aberdeen to the worldwide Camphill movement. The theory and practice of what we now call holistic education are what characterise the movement—that is one more export of which Aberdeen can be justly proud.

I live just downhill from the Camphill estate—or downriver, I should say—but when I visited it this summer, I discovered an even closer connection. When those progressive thinkers and educators fled from Nazi tyranny in Austria, the first place

where they made a home in Britain was in the old manse at Insch—the village in Aberdeenshire where my late father was the minister and where I lived in my teenage years. That was the origin of the community that, after the outbreak of war, set up home at Camphill with the support of the publisher, SW Macmillan.

The teachings of Rudolf Steiner about addressing the physical, emotional, intellectual and spiritual needs of every pupil, and celebrating our humanity, could hardly be more diametrically opposed to the inhuman creed from which those refugees had fled. It is therefore an honour that Aberdeen and the north-east are home to the Camphill movement, and that Scotland is the first among the 20 countries where its philosophy has been put into practice.

When I met Steven and co-ordinator Laurence Alfred at Camphill in the summer, they told me about the opportunities that young people who have learning disabilities enjoy, such as access to an education, to practical skills and to vocational qualifications, allowing them to work and live as part of a real community within the safe environment that Camphill provides. It is the first school in Aberdeen to hold the prestigious autism accreditation after scoring 100 per cent in a parent satisfaction survey. In its latest report, Education Scotland graded Camphill school as excellent in three of the eight areas that were inspected and very good in the other five: a record that speaks for itself.

As has been said, Aberdeen is home to a total of five Camphill communities that provide residential and day care, education and training, and care and support for people of all ages, from young children at the kindergarten, to Simeon Care for the Elderly. Today, for the first time, I had the opportunity to meet Jeannie Carlson from Simeon Care for the Elderly—she is among those who are in the public gallery. She explained that her unit at Bieldside is the only Camphill community in this country that is designed for older people and she talked about the £2 million fundraising campaign that has been launched to expand the residential care home and build a day care centre that would provide much-needed respite for elderly residents and their families and carers.

I was interested to hear that those plans will involve applying the logic of Camphill's approach to younger age groups to those who are facing some of the toughest challenges of old age, such as dementia. Aberdeen previously had a pioneering home at Thorngrove that specialised in dementia care, but three or four years ago it was a victim of local authority cuts. It would be marvellous to have a unit that can give a national and international lead in supporting people at such a challenging time in their lives, and it would be fantastic to see all that has been achieved so far projected forwards and outwards to meet the needs of more people in more age groups and more communities in the future, in Scotland and around the world.

17:37

Mark McDonald (North East Scotland) (SNP): I congratulate Alison McInnes on bringing the debate to the chamber. I also thank Laurence Alfred of Camphill in Aberdeen for taking the time to show me around the campus on Deeside yesterday afternoon, and the many residents, pupils and co-workers from Camphill communities across Scotland who came to Parliament today. I had the pleasure of sampling what was probably the smelliest but certainly the tastiest cheese from the award-winning cheese range at Loch Arthur, as well as some of the jams that were on display. I have taken away an order form to ensure that I get my Christmas cheese board sorted.

What I saw when I visited Camphill yesterday was what I would consider to be the embodiment of whole-life learning and the notion that learning does not just exist in the classroom or the school but is part of life. That was very clear from the discussions that I had with Laurence as I was going around the site. Indeed, I was drawn to the Education Scotland report that Lewis Macdonald cited that was issued in January this year. It talks about the particular strengths of the school:

"Happy, relaxed children and young people who feel safe, valued and respected.

The dedication and enthusiasm of staff and their sensitivity to individual needs.

Use of the natural environment to develop children and young people's communication, personal, social and vocational skills."

We heard about the fantastic eco award that the Camphill school in Aberdeen received. The report goes on to mention:

"The breadth of the curriculum including therapeutic support services.

The effective implementation of a clear and shared vision for care and education of the coordinators."

That speaks volumes for the school's ethos.

During my visit, the community feel of the school campus was very clear. The community ethos is also demonstrated by some of the fundraising efforts that are taking place. Indeed, I note from documentation that has been provided to me that the school is trying to develop the swimming pool and intends to raise £70,000 to spend on new equipment for the swimming pool.

The school does not just raise funds for local issues. The spring and summer school newsletter states that

"Camphill school Aberdeen has raised £1029.00 for Tools for Self Reliance"

in Africa. That speaks volumes for the hard work ethos of the school.

One issue that was raised with me during my visit was the fact that the local authority has categorised Camphill as an out-of-authority school. Geographically, it is in the city of Aberdeen, but children who go there are categorised in the same way as if they were being sent on a placement to Cornwall or Bristol. The issue has been raised with the chief executive of Aberdeen City Council. Part of the getting it right for every child agenda should be that we look at the kind of environment that is provided at Camphill.

Another crucial issue is what happens to the funding for children when they reach 16. It is possible that such children might no longer be afforded the opportunity to remain in the Camphill environment, despite the fact that, on balance, it is probably the best thing for them. Local authorities need to consider that carefully when they take decisions regarding those young people.

People of my generation, and possibly people more widely in the north-east community, will probably be aware of Camphill in the context of the controversies that existed around the Aberdeen western peripheral route. It would be a great pity if that were the only thing for which Camphill was known. From my visit and from members' speeches, it is clear that there is a whole lot more to it and that people really should take the time to find that out.

17:41

The Minister for Learning, Science and Scotland's Languages (Dr Alasdair Allan): I congratulate Alison McInnes on the motion for this debate on Camphill Scotland, which has of course achieved cross-party support. We have heard from members about the quality of the support that the Camphill movement provides for children, young people and adults of all ages with learning disabilities, mental health issues and other support needs.

Camphill communities in Scotland support more than 400 children, young people, adults and older people through a mixture of residential and day support. More than a third of those people are under 26. I welcome the contribution that third sector partners, including Camphill Scotland, make to delivering services for people with learning disabilities.

As we have heard, the entire Camphill movement takes its name from Camphill estate in the Milltimber area of Aberdeen, where the Camphill founders opened their first community for children with special needs in June 1940. As Lewis Macdonald said, the origins of the movement are all the more remarkable, considering that many of its founders were fleeing Nazi persecution at that time. The expansion of Camphill to become a worldwide movement with more than 100 communities in more than 20 countries, including 12 in Scotland, is a credit to the dedication of the staff, co-workers, volunteers and everyone else who has contributed to its success over the decades.

Alex Fergusson, Aileen McLeod and Mark McDonald pointed to the achievements of Camphill in the field of food, not least in cheese, and I felt that I could almost smell that achievement keenly, given that my last sustenance was a bacon roll at 8 am in Stornoway airport.

The debate has provided a valuable opportunity to mark the contribution and achievements of Camphill internationally. The Camphill school in Aberdeen has played a major role in the success of the movement. The school provides care, education and therapy services for children and young people aged three to 19 with additional support needs arising from autism and complex physical disabilities.

Through the Education (Additional Support for Learning) (Scotland) Act 2004, the Parliament set a clear expectation that every child or young person in Scotland should have any additional support needs identified and met. In response to the point that Alison McInnes made about the relationship between local authorities and Camphill, it is certainly the case that organisations such as Camphill play a crucial role in augmenting local authority provision and supporting some of our most vulnerable young people. The 2004 act places duties on local authorities to meet children's needs, and those apply just as much to placements in independent schools as they apply elsewhere. Following the completion of Peter Doran's review of complex needs provision last month, we are now taking forward his recommendations in order to ensure that every pupil gets the right help at the right time and in the right place.

In the joint Education Scotland and care commission inspection report on Camphill School Aberdeen that was published in January 2012, all the quality indicators were ranked very good or excellent. Particular strengths of the school include: happy, relaxed children and young people who feel safe, valued and respected; the dedication and enthusiasm of staff; and the use of

the natural environment to help to develop children and young people's skills.

As noted in the motion and by several members, the Camphill school also achieved the eco-schools green flag status earlier this year. Along with the Royal Blind School, the Camphill school is the only independent all-through—that is, from three to 18—additional support needs school to hold green flag award status in Scotland. A further 14 all-through ASN local authority schools have also attained green flag award status.

Camphill Scotland also deserves credit for its role in promoting the development and wellbeing of Camphill communities, including encouraging communities to work together and helping them to learn from one another and collaborate for common benefit. That community and ecological aspect of the Camphill schools was highlighted by both Joan McAlpine and Maureen Watt. In addition, Camphill Scotland engages with national policy and legislative changes, including self-directed support, the "The same as you?" learning disability policy and the children and young people bill.

The Scottish Government is now working on a new strategy document for people with learning disabilities that maintains the principles and direction of travel that were established by "The same as you?" Progress needs to be maintained on reducing barriers and discrimination so that the aspirations of people with learning disabilities to live meaningful, fulfilled, independent, included and healthy lives can be met.

The national drive to move away from long-term residential care for people with learning disabilities towards support in the community has been incredibly successful, as the vast majority are now supported in their local communities, including in Camphill communities. Having choice and control is also critical to achieving independence for those with learning disabilities. The on-going work on the passage of the Social Care (Self-directed Support) (Scotland) Bill and the wider self-directed support strategy will have a clear part to play in all of that.

By way of conclusion, let me say that Camphill provides an outstanding education in its broadest and most inclusive sense. With that in mind, I very much welcome this opportunity to recognise its achievements.

Meeting closed at 17:47.

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