The Scottish Parliament
Pàrlamaid na h-Alba

Official Report

MEETING OF THE PARLIAMENT

Tuesday 18 June 2013

Session 4

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Scottish Parliament

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

Time for Reflection

The Deputy Presiding Officer (John Scott): Good afternoon. The first item of business is time for reflection, and our time for reflection leader today is Jon Cape, co-ordinator of Fair Trade Stirling and member of Central Scotland InterFaith.

Jon Cape (Fair Trade Stirling and Central Scotland InterFaith): Please close your eyes. Imagine that you are in bright sunlight. In front of you floats a beautiful bubble, glimmering in the sun. You put out your finger to touch it, but the bubble bursts. Now wake up.

Last month, for the first time in human history, carbon dioxide in our atmosphere passed 400 parts per million. Climate change is for real and climate is just one of nine factors where we are pushing up against planetary boundaries. We need a game changer.

In his seminal book simply called "Collapse", the author Jared Diamond outlines the stories of many societies that have faced huge environmental challenges. He examines their responses and distils the success factors, looking at which societies survived and which collapsed. What did the survivors have in common? Two big things. First, societies that survived saw the problem early enough and planned ahead, before the challenge became overwhelming. Secondly, they shifted their values to be in tune with their new environment.

All of those environmental challenges were local to one society or to just a few societies. For the first time, the challenge is global. For the first time, it affects all human societies and all other species on earth.

Let us reflect on that. On the first point, on planning, Scotland has led the United Kingdom and the world by setting a tough statutory framework for carbon emission reduction by 2050. The United Nations Durban talks followed that lead. If they stick, the world will follow Scotland in setting climate change targets that have legal force. Scotland still faces challenges in meeting its targets, as does the UN in setting its, but let us celebrate Scotland's lead.

Can Scotland now rise to the challenge of leadership in responding to the second success factor? How do our values need to change? Big moral and economic values such as climate justice—where Scotland has taken a lead—and everyday values too, such as what the media industry calls news values. Wasn't climate change just a big story some five years ago?

Is there scope to deepen the dialogue between Scotland's Parliament, our faith communities and our other opinion formers—the dialogue on values for a vulnerable world? At the UN, Ban Ki-moon has called for just such a dialogue, to

"make sustainability the rallying point for action in the 21st century".

Let us do that in Scotland. It is time to reflect and time to act. Together, let us keep that bubble safe, before it bursts. So be it. Amen.

Topical Question Time

14:04

VisitScotland (Website)

1. Patricia Ferguson (Glasgow Maryhill and Springburn) (Lab): To ask the Scottish Government what discussions it has had with VisitScotland regarding the organisation's website. (S4T-00402)

The Minister for Energy, Enterprise and Tourism (Fergus Ewing): The content of the VisitScotland website is a matter for VisitScotland.

Patricia Ferguson: The minister may be aware that, at last week's meeting of the Referendum (Scotland) Bill Committee, Nicola Sturgeon said:

"They are public authorities—at any time, there are restrictions on how they behave. At any time, on any day of the week and in any week of the year, I as a minister cannot use the resources of the civil service to do certain things that are party political. Public authorities do not operate in a political way, and they will not do so during the regulated period any more than they do now."—[*Official Report*, *Referendum (Scotland) Bill Committee*, 13 June 2013; c 564.]

That statement provides little reassurance, given the evidence of the VisitScotland website. Will the minister tell Parliament what is being done to ensure that public authorities steer clear of party politics both in the regulated period and at all other times?

Fergus Ewing: I have rarely heard a more spurious and ridiculous accusation than the one that I have heard this afternoon and seen in publicity that was drawn to my attention today. I say that because the purpose of VisitScotland is to provide information about significant dates, events and matters of interest in Scotland.

Let me retell for members some of the information that VisitScotland displays on its website.

"1901 Queen Victoria dies"—

not an event associated particularly with Scottish nationalist propaganda—

"1914-18 Scotland plays a significant role in the First World War ... 1919 The German High Seas Fleet is interned at Scapa Flow in Orkney".

I could go on to list all the other years and events that are important to our history.

The idea that merely displaying factual information on a website is somehow party political is ludicrous. Had the website gone on to give some other dates—1970: the interests of Scottish fishermen are expendable for the purposes of joining the European Union; or 1975: Gavin McCrone's advice to the United Kingdom cabinet that the oil wealth in Scotland would be of enormous proportions; or 2011: the most humiliating defeat in the history of the Labour Party in Scotland—we might have the beginnings of some scintilla of evidence.

Patricia Ferguson: I am astounded by the minister's assertions. An organisation whose website ignores the 1939 to 1945 war, which devastated Scotland and every other part of the UK, as well as most of Europe, but records the election—for three months only—of the first Scottish National Party MP must surely have to think again. I ask the minister to reflect, in his calmer moments, on the content of the VisitScotland website and consider whether the evidence is that those issues are ones that would attract people to visit Scotland—which is, after all, what it purports to do.

I also ask the Scottish Government to provide, as a matter of urgency, guidance to public bodies to ensure that this partisan promotion—it can be nothing else—does not occur elsewhere in public bodies that promote Scotland.

Fergus Ewing: There is still an unfortunate tendency in the ranks of the political classes to assume that conspiracies abound in public life; that Watergate is an omnipresent event in political actions. That is ludicrous. The facts are that the VisitScotland website contains excellent information for those who wish to holiday in Scotland. It contains a huge variety of information, and the reasons why people holiday in Scotland are wide and varied.

I point out to Patricia Ferguson that, at the beginning of this year, CNN—one of the world's leading media organisations—gave Scotland the accolade of number 1 country to visit in the world. Why did it do that? It did that—this is a matter of factual evidence, not assertion—because VisitScotland is playing a blinder. So it is, and it deserves support from all parties, not the kind of approach that we have seen from Opposition politicians. I very much hope that they will join those who recognise that VisitScotland is indeed doing an excellent job on behalf of Scotland.

Patricia Ferguson: I will take lessons from no one about support for VisitScotland. I draw members' attention to my long record of supporting it in the chamber and anywhere else where I have had the opportunity to do so, in spite of opposition at times from people who should have known better. I simply point out to the minister, if any other evidence is needed, the fact that, within moments of hearing of my concerns, VisitScotland amended its website to take on board just a few of the ideas and dates that I managed to come up with in a two-minute discussion with others. That shows that VisitScotland recognised that its website had got it

badly wrong. When will the minister understand that VisitScotland was wrong on this occasion? What will he do to ensure that no other public body gets it as wrong as VisitScotland, unfortunately, did on this one, isolated—I very much hope that it will be isolated—occasion?

Fergus Ewing: I totally and fundamentally disagree with the assertion that any act, utterance or content on the VisitScotland website can be said to amount in any way to any display of any bias whatsoever. That is simply not true. It is a fact that the website set out a number of historical dates. The member was correct to say that VisitScotland subsequently added a number of other dates. That shows how responsive it is; it shows how willing it is to respond immediately to people in Scotland. I know that that is true because, as the tourism minister, I have seen first hand how responsive it is when complaints have been made. I know that, in one particular case in which a small business in the south of Scotland raised an issue, its chief executive, Malcolm Roughead, went to visit the lady for a number of hours. He got out of his quango office and went out to speak to the public. That is the sort of leadership that VisitScotland has displayed.

I am proud to be served by the leadership and staff of VisitScotland. It is playing a blinder for Scotland, and I am astonished that Patricia Ferguson's question has been asked of us today.

Murdo Fraser (Mid Scotland and Fife) (Con): Does the minister really think that the most important event in Scotland in 1945 was the election of an SNP MP?

Fergus Ewing: VisitScotland did not express any view on the importance or otherwise of any of the events. The information is not meant to be an extensive history lesson—giving that is not the role of VisitScotland or its website. The attempt by Opposition politicians to infer from a series of facts that are set out on a website that there is party-political bias just does not stack up. Were we in a court of law, Mr Fraser would be prevented from making any submission to that effect. Oh that we were in a court of law but, sadly, that is not to be.

There are serious matters that currently affect tourism. There is the level of tax that is imposed in Scotland. Fuel duty is about 40p higher than in Mediterranean countries, and there is the air passenger duty that is imposed by the Conservative-Liberal coalition, which has a very damaging impact on tourism. There is also the level of VAT, which is the second or third highest in Europe. If Mr Fraser wanted to ask about those issues, he would at least be expressing concerns that I heard about yesterday evening from members of the Federation of Small Businesses in Inverness who work in tourism. Nobody outside the chamber has mentioned this matter to me. I have not had a letter from Patricia Ferguson about it or any correspondence, emails or even tweets about it. I have had nothing whatsoever, except from members of the Opposition parties in the chamber. That says it all.

Stewart Stevenson (Banffshire and Buchan Coast) (SNP): Does the minister feel, as I do, that it is good and useful that we can see against 1888 on the website that

"The Scottish Labour Party is formed by Keir Hardie"?

I might argue that the foundation of Celtic Football Club or the opening of Peterhead prison in my constituency, which took place in the same year, was a more important event, but the fact that the VisitScotland website mentions Keir Hardie's formation of the Scottish Labour Party and, indeed, the foundation of the Scottish Trades Union Congress in 1897 is clear evidence that the website gathers to its bosom a wide range of interesting material.

The Deputy Presiding Officer (John Scott): Minister—if you can find a question in that.

Fergus Ewing: I think that I have listened to Mr Stevenson over a period of around 12 or 13 years, and I confess that I have often concluded that my education has not been sufficiently developed but that Mr Stevenson was helping me to put that right. I agree that his points are well made.

The main conclusion about all this is that VisitScotland is there to serve the public and to promote tourism. It is doing that by setting out some interesting dates and some interesting points in history. The information that it provides is not meant to imply any judgment or any view, and it does not. That is the point, and it is a point that a first-year law student could grasp in a nanosecond.

Liam McArthur (Orkney Islands) (LD): As we have heard, the admission by VisitScotland that it got it wrong gives the lie to much of what the minister has just said. The minister cannot wash his hands of the matter. He and his cabinet secretary set the agenda and the culture here. Will he state categorically for the Parliament that he does not want any more toadying by agencies that are responsible to his department?

Fergus Ewing: There has been no toadying whatever. I think that that answers the question.

I say to Liam McArthur, with whom I have always had cordial and serious dealings, that his leader was reported in the press as suggesting that Scottish ministers—presumably, me—directed VisitScotland to include the material in question on its website. I make it clear that I became aware of the issue at around 10 or 11 o'clock this morning. I had not been aware of it, because I was too busy looking at serious matters to do with the creation

of jobs in Scotland, bringing investment to Scotland and promoting tourism in Scotland. That is what I do with my time.

Mr Rennie's charge that Scottish Government ministers somehow exerted pressure on VisitScotland to put the material on the website is one of the most ludicrous charges that I have heard, and I hope that he will take the opportunity to withdraw that ludicrous and utterly unsubstantiated assertion.

Hydro Power

The Deputy Presiding Officer (John Scott): The next item of business is a debate on motion S4M-07024, in the name of Fergus Ewing, on hydro power in Scotland.

You have a generous 14 minutes, minister.

14:18

The Minister for Energy, Enterprise and Tourism (Fergus Ewing): Thank you, Presiding Officer. I will revert from fortissimo to pianoforte in my tone.

I very much welcome the opportunity to discuss the development of hydro power in Scotland and its importance for the future, and to celebrate the 70th anniversary of the Hydro-Electric Development (Scotland) Act 1943, which enabled large-scale renewable energy development in this country.

Last month, the First Minister delivered the inaugural Tom Johnston memorial lecture at an event organised by Scottish Renewables to celebrate the 70th anniversary of the 1943 act, and I think that it is fitting to start by acknowledging the role that Tom Johnston played in Scotland's hydro story.

Many members will be aware that Tom Johnston's greatest legacy was the creation of the North of Scotland Hydro-Electric Board. He was a keen proponent of hydro power and saw its potential role in the reconstruction of post-war Scotland from early on. He established an inquiry to investigate the potential for hydroelectricity in the north of Scotland, which resulted in the Hydro-Electric Development (Scotland) Act 1943 being passed into law 70 years ago.

In effect, the act nationalised the further development of Highland water resources and recommended the creation of a board to manage hydro generation in the north. I want to reflect on the consequences of that legislation, the effect that it had on Scotland's Highlands and Islands, and the example that it sets of Scotland's natural resources being used to improve the wellbeing of our people.

In 1945, fewer than half of the homes in the Highlands had access to electricity; by 1960—15 years later, when Tom Johnston stepped down as chair of the hydro board—that number had increased to more than 90 per cent. The scale of the construction work was impressive: between 1945 and 1965, 78 dams were built, 2,000 miles of tunnels were excavated and more than 20,000 miles of electricity network were established.

The workers who built the infrastructure—they were known as the hydro boys—had to work in remote locations; sometimes they had to work in dangerous conditions. Their achievement transformed the quality of life people in the north of Scotland and, as a result, more than 200,000 households had access to modern comforts for the first time. The electricity meant greater economic sustainability, which resulted in new opportunities for communities in the north of Scotland.

The effect is still evident today and can be seen through the continued economic investment and population increases. Companies based in the Highlands and Islands are competing for major investment and they are being successful. Companies across the globe recognise that the Highlands and Islands are great places in which to live, work and invest. Highlands and Islands Enterprise has become so successful that it is vacating its office premises to make way for Capgemini, which is one of the inward investor companies that it has attracted. That success is one of the important legacies of the Hydro-Electric Development (Scotland) Act 1943.

Seventy years on, Scotland is at the start of a new renewable energy revolution. Scotland's renewables sector goes from strength to strength. Last year, it produced the equivalent of 39 per cent of our total electricity demand. That is significant progress towards our 100 per cent target. As I have highlighted with regard to Tom Johnston's vision, the issue is not just one of energy generation but one of wealth creation and benefits to our communities.

To put the figure in context and show what it means today, Scotland's renewables sector saw more than £1,000 million invested in 2012 and it supports more than 11,000 jobs. A £7,000 million programme to upgrade Scotland's transmission networks proceeds apace. Up to 3,000 jobs will be created through investment by Scottish Power and SSE. That means high-quality employment for the graduates, engineers and apprentices building the infrastructure that will, incidentally, enable us to quadruple our electricity export to England, which will surely need it.

Hydroelectric power has an important role in Scotland's transition to a low-carbon economy. It accounts for a large percentage of renewable energy produced in Scotland. Although most of the large-scale hydro power schemes in Scotland have been built, the Scottish Government is determined to encourage new conventional hydro power schemes where possible.

Since 2007, we have consented 19 hydro power applications and have taken a number of actions to enable development. I will highlight a few of them. First, we have streamlined the consents process for hydro projects by raising the section 36 threshold for consent to 50MW. That will unlock further renewables capacity by encouraging schemes over 1MW. Secondly, we have published online planning advice for hydro schemes, which encourages planning authorities to include hydro power in their spatial plans.

Thirdly, last year, we recognised that there are particular influences on costs affecting projects in Scotland. We therefore maintained the level of support for large-scale hydroelectric schemes at 1 renewables obligation certificate per megawatt hour. At the same time, the United Kingdom Government was reducing its support by 30 per cent to 0.7 ROCs.

As a result of the Scottish Government's policy, SSE announced last month that it is to start construction on the 7.5MW Glasa hydro scheme. Glasa will be the largest hydro scheme to be built in the UK in the past five years and the second largest conventional hydro scheme of the past 50 years. It will employ more than 100 people at the peak of construction. When it is built, it will supply enough electricity to meet the needs of around 10,000 households.

SSE has confirmed that the project would not have gone ahead without the Scottish Government's continuing support for hydro power. I hope that shows that clear political support and leadership can lead to significant new investment.

The Scottish Government's support is also making a difference at the small community scale. Projects that started out as ideas from local volunteers are becoming a reality. Under our community and renewable energy scheme—CARES—we are supporting 15 community hydro projects.

An example of a project that CARES helped at an early stage is the Harlaw hydro project, which is being developed by Balerno Village Trust. CARES provided free independent advice and grant support for the feasibility and technical work that is crucial in assessing a project's viability. The project has now been offered a CARES loan to help with construction. Without the CARES support, the project would not have happened.

The approach shows our commitment to all communities across Scotland sharing in the rich rewards of our renewable resource, at all scales. The Scottish Government is leading the way across the UK on how we support local ownership of renewable energy.

It is reasonable to say that the UK Government's position, in particular on electricity market reform, is causing uncertainty and that that is affecting hydro power. A good example in that regard relates to pumped storage. In appropriate locations, pumped-storage schemes have huge potential to ensure that electricity supply remains

reliable, even as we move to variable energy sources such as wind. However, SSE has indicated that, before it can make investment decisions on pumped-storage hydroelectric schemes, it requires greater clarity about future UK Government policy.

I suspect that members will debate concerns that Scottish Renewables, among others, expressed about how new arrangements in relation to the feed-in tariff and tariff degression will be applied. I will listen with interest to all comments; I know that there are many members, in all parties, who take a close interest in the matter.

Hydroelectricity is one of the great industrial and economic success stories of post-war Scotland.

Mary Scanlon (Highlands and Islands) (Con): I fully support the expansion of hydro schemes. Hydro is a wonderful industrial success. Will the minister ensure that it is also an environmental success, in light of the dreadful destruction of the freshwater pearl mussel colony, along with salmon and trout, in the River Lyon?

Fergus Ewing: I agree that environmental issues are important and must be more seriously taken into account.

Mary Scanlon has somewhat spoiled my peroration, such as it was, but that need not trouble anyone unduly. I will revert to my conclusion—perhaps a bit less levity from me would help.

Hydroelectricity has transformed the living standards of people who live in remote areas of the Highlands and Islands. Tom Johnston was pivotal to that. It was cross-party consensual effort, when he was appointed Secretary of State for Scotland by Winston Churchill, that enabled that transformation, and no doubt Tom Johnston was not hindered by the lack of parliamentary scrutiny during the second world war. Be that as it may, Tom Johnston's work and the work of other people, particularly those who built the hydro schemes, sometimes in dangerous circumstances, led to huge opportunities for economic regeneration, the benefits of which we reap—and perhaps take for granted—today.

The Highlands and Islands are again at the forefront of opportunities in the renewable energy world. This is an exciting time. It is fitting to remember the days, 70 years ago, when another Scot was leading the charge and leading it well, with marvellous results. I hope that history will repeat itself in the context of renewable energy over the next 70 years.

I move,

That the Parliament welcomes the continuing commitment of the Scottish Government to developing hydropower; acknowledges the proud tradition that Scotland has in generating hydroelectricity, as championed by the former secretary of state, Tom Johnston MP, and the many homes and businesses that this has benefitted; notes that 2013 is a celebration of the 70th anniversary of the Hydro-Electric Development (Scotland) Act 1943, which enabled large-scale renewable energy development in Scotland; recognises the potential for and value of further pump storage hydro-projects in Scotland; further notes the importance of harnessing new hydropower in bringing economic benefits while reducing emissions; further recognises the importance of micro-hydropower in terms of community ownership, which can create opportunities to empower and enrich communities; recognises that developing as a hydro-nation is a huge opportunity for Scotland, and acknowledges the valuable contribution that hydropower generation makes to Scotland's renewable targets.

The Deputy Presiding Officer: I call Ken Macintosh, who has a very generous 11 minutes.

14:29

Ken Macintosh (Eastwood) (Lab): Including the minister's four unused minutes, Presiding Officer?

I suspect that many members feel, as I do, a sense of pride and achievement in Scotland's hydro industry, and in Tom Johnston and the difference that his work made to the Highlands in particular. I suspect that we are also proud of the industry's on-going contribution to meeting our energy needs in a low-carbon Scotland.

One of my strongest memories from my schooldays in Oban is of a class trip to the Cruachan dam, above Loch Awe, to see the pumped-storage station. Although I eventually chose a different path, for many years I was drawn towards engineering, simply because of the impression that the long tunnel and the turbines inside the mountain had made on me. However, I must confess that my account of the school trip, which was written when I was nine or 10 and which I still have, focuses more on the minestrone soup that I had than on the technology that I saw in action.

That said, and delighted as I am to talk about hydro's past and future contribution, I am a little surprised that the Scottish Government would want to devote a whole afternoon of parliamentary time to a subject on which I imagine that we are in broad agreement. However, now that we are here, it is useful to take stock of the huge developments in hydro power in Scotland since the first successful project in Fort Augustus 123 years ago in 1890.

In the years that followed, some of the most famous hydroelectric schemes came into being, not least the British Aluminium Company's Kinlochleven project in 1909, which to this day remains an example of how hydro schemes could be both power generators and world-renowned

architectural feats. However, it has been a slow process from those first forays into harnessing the power of Scotland's abundant supply of water for electricity generation to the point where Scotland now has 120 installed hydrogenerating stations that range from more than 100MW down to a few kilowatts and which amount in total to more than 1,800MW of capacity or 12 per cent of our electricity demand.

The House of Commons debated a bill on this issue in 1941 with a view to erecting hydroelectric works at Glen Affric and Glen Cannich. However, the bill failed and it was only through the concerted efforts of the aforementioned Labour Secretary of State for Scotland, Tom Johnston, and others from across the political spectrum that the North of Scotland Hydro-Electric Board and the large-scale hydro projects that came with it got on to the statute books.

The 1943 act and its passage through Parliament make fascinating reading. The fact that it came in a middle of a war from a coalition Government with a Tory Prime Minister and a Labour Scottish secretary makes it all the more significant. Indeed, one National Liberal MP, Sir James Henderson-Stewart, remarked that the bill was a

"hotch-potch of Scottish Nationalism and English Socialism"

while the MP for Glasgow Hillhead, James Reid, remarked:

"the Debate shows a new approach to post-war Scottish problems. Many ... Members on both sides of the House have approached the consideration of this Bill, leaving aside pre-war preconceptions and with the sole view of what is most practicable and likely to be most in the interests of Scotland as a whole, and of the Highlands in particular."—[*Official Report, House of Commons,* 24 February 1943; Vol 387, c 238, 253.]

I am tempted to hope that just occasionally we in this Parliament could leave aside our pre-referendum preconceptions and focus on what we can do now, but I suspect that that might be asking too much.

It is important that we do not underestimate how much the 1943 act revolutionised hydro power generation and, in doing so, developed large swathes of the Highlands, which had been devastated by decades of outward migration and industrial decline.

In his opening remarks on the second reading of the Hydro-Electric Development (Scotland) Bill, Tom Johnston gave a powerful review of the Highlands at the time, arguing that it was necessary to introduce hydro power not to power the central belt but to redevelop the Highlands following decades of depopulation and decline. His thoughts, which are recounted in *Hansard* from 1943, are worth repeating:

"The cruisie and the farthing dip are no doubt quaint and interesting survivals, especially to summer visitors, but as lighting equipment their place is in a museum of antiquities. For my part, I should like before I go from this place to offer some of the amenities of life to the peasant, his wife, and his family. The amenities and comforts of civilisation have largely passed by the class from which Robert Burns sprang."—[*Official Report, House of Commons*, 24 February 1943; Vol 387, c 188.]

The cruisie and farthing dip were very dirty and smelly types of lamp that were used in this country right up to the war. My father was born and brought up in a croft on Skye before the war and I find it almost incredible that before hydro he was leading the sort of life that Tom Johnston described. That said, I am not sure that he would have welcomed the use of the term "peasant".

For Tom Johnston, the 1943 act was not just about providing electricity to tens of thousands across the north of Scotland but about opening up a part of the country that had largely been left behind in the industrial development that had gone before. We should continue to bear in mind that relationship between the hydro industry and the communities that it serves.

Hydro power continues to play an integral role in our country's infrastructure today. Scotland is now the centre of the UK hydro power industry, accounting for almost 89 per cent of installed capacity and 94 per cent of UK hydro output. SSE, the privatised successor to the North of Scotland Hydro-Electric Board, has continued to develop new hydro schemes. In 2001, the first new scheme since the 1970s, Cuileig, south of Ullapool, began generating; in 2005, Kingairloch, on the Morvern peninsula, came into action; and new schemes are—if members will pardon the pun—in the pipeline for Loch Lochy and Invermoriston.

One of the most important and encouraging developments in more recent years has been the proliferation of smaller-scale projects. The 1943 schemes were necessarily large in scale, but small-scale hydro projects—generating from around 5kW for a single household up to 10MW—are equally important. The analysis that the Scottish Government published in 2010 suggests that there is considerable untapped potential from almost 7,000 possible schemes. Almost all of those would be smaller than 5MW in capacity, but in total they would be sufficient to supply more 1 million homes.

Before we get too carried away by our record and by the potential for further development, I should caution that I was contacted only this week by a constituent working in the renewables industry who struck a different note. My constituent has also written to the First Minister directly to suggest that it would be unfortunate to

celebrate the hydro sector at a time when it faces a fundamental threat.

As well as touching on the historical legacy of hydro power, I hope that the debate will address the challenges facing the industry, which include: how to promote further community ownership; how to address fuel poverty in rural and other communities; the employment opportunities that hydro development offers; planning difficulties; the delays in grid connections; the difficulties with securing finance; the Government's missed emissions reduction targets; and the potential for Scottish Water to become involved in hydro power.

I want to focus in particular on the issue of feed-in tariffs and degression rates, which I know have been the subject of many of the pre-debate briefings from Scottish Renewables and others. I know that the minister is aware of my constituent's concerns on the issue, on which I wrote in May to the Secretary of State for Energy and Climate Change, Edward Davey. Alongside electricity market reform, the UK Government is proposing changes to feed-in tariffs, including the introduction of the mechanism of degression rates, which would reduce the feed-in tariff levels in line with increased levels of deployment.

One of the benefits of feed-in tariffs as originally introduced is that they finally made it commercially viable to build and operate smaller-scale hydro schemes, which would previously have been financially impossible. Unfortunately, the proposed changes to the tariffs do not properly take into account the long project lead-in times for hydro. Typically, a medium-scale hydro project will take three years or more from inception to deployment—longer if there are grid-related delays. Consequently, much of the interest in hydro that was stimulated by the introduction of feed-in tariffs in 2010 has yet to come to fruition.

The position for hydro is particularly harsh primarily as a consequence of the parallel introduction of preliminary registration, whereby schemes are entitled to register for the prevailing tariff up to two years before project commissioning, subject to having the necessary consents and a firm grid connection offer. In itself, preliminary registration is a positive initiative that provides comfort for investors dealing with long construction lead times. However, the sting in the tail is the UK Government's decision that installations with preliminary accreditation will count towards degression triggers.

In effect, that means that, during 2013, up to three full years of projects—those to be commissioned in 2013, 2014 and 2015—will be registered for feed-in tariffs. Even on the basis of historical deployment figures, there is a risk that that could result in the highest degression trigger being activated, whereas in reality, due to a combination of supply chain constraints and grid connection delays, there is little prospect of actual deployment exceeding 25MW in any single year.

For all that there is the prospect of a significant rise in hydro deployment, even a doubling of historical levels would still result in hydro accounting for a very small proportion of overall feed-in tariff installations. Hydro schemes account for less than 0.1 per cent of all feed-in tariff installations and only 2 per cent of total installed capacity, and yet they contribute more than 10 per cent of the total electricity generated by feed-in tariff installations, thanks to average load factors in the 35 to 40 per cent range. Unlike many other feed-in tariff technologies, hydro schemes commonly have an operational life that extends long beyond the incentive payment period, with some schemes running for up to 100 years.

As things stand, we appear to be heading inexorably towards a 20 per cent real-terms cut in feed-in tariffs for hydro as from January 2014. It is the widespread view of the hydro industry that such a reduction in revenues will result in a majority of potential new schemes proving to be uncommercial. I hope that the minister will join Labour and others in the Parliament in putting maximum pressure on the UK Government to address that threat to the industry.

There are a number of issues that I hope to comment on later, and colleagues will undoubtedly raise them. I hope that the debate is a useful and constructive look at the hydro generation situation in Scotland. As I confided to Nigel Don earlier, I am particularly looking forward to Stewart Stevenson's speech as I can only assume that he knew Tom Johnston personally.

I end with another snippet from the 1943 debate, which today's ministers might take heed of. Sir James Henderson-Stewart from East Fife said:

> "If national unity is to be interpreted as meaning that Scottish Members have got to say 'Hear, hear' to everything that emerges from St. Andrew's House, then the sooner that convention is destroyed the better."—[*Official Report, House of Commons*, 24 February 1943; Vol 387, c 232.]

If only that were true in more debates, Presiding Officer.

The Deputy Presiding Officer: I call Mary Scanlon, who has a generous seven minutes.

14:40

Mary Scanlon (Highlands and Islands) (Con): We are delighted to contribute to this debate on hydro power in Scotland in recognition of the celebration of the 70th anniversary of the Hydro-Electric Development (Scotland) Act 1943 and in

acknowledgement of the contribution of Tom Johnston.

Much has changed in the world of energy in 70 years, but hydro remains a productive, effective and environmentally friendly method of producing electricity. It is the oldest form of renewable energy in Scotland, being even older than the 70 years of the 1943 act. In fact, the hydroelectric pioneers were the monks at Fort Augustus abbey on Loch Ness, who developed a small 18KW scheme in 1891 to power the chapel's electric organ and the houses in the local village. In researching for this debate, I read that, when the monks played the organ, the lights in the village went dim. Nonetheless, it was wonderful technology for the time.

Although that development and others like it proved that the technology worked, they were restricted by the fact that power could not be transmitted to a sufficiently wide area. In 1896, the Foyers catchment area was first developed for hydroelectric power, and it still produces hydroelectricity today on the shores of Loch Ness. Kinlochleven was transformed from a remote crofting settlement to a centre of industry with people from all walks of life and of many nationalities in the village when the hydroelectric power system was completed in 1909. In the graveyard at Kinlochleven, we find the graves of many men who lost their lives doing hard and dangerous work. The extensive hydro scheme there is also still operated—by Rio Tinto Alcan—although a large part of the site has been redeveloped.

After the second world war, men came from across Europe, including Ireland, to work on the hydro schemes in Scotland. The tunnellers, or tunnel tigers as they were called, could earn up to £35 a week, which at that time was 10 times the going rate for those who worked on the land in the Highlands. My mother's brothers came from Donegal, along with many other Irishmen, to work on the schemes.

Five years ago, SSE completed Britain's first large-scale conventional hydroelectric station for more than 50 years—the £150 million, 100MW plant at Glendoe, again near Fort Augustus on Loch Ness. We are not short of the water or high land that we need to make hydro the success that it is in Scotland.

The 1943 act of Parliament stated a requirement on the North of Scotland Hydro-Electric Board

"to avoid, as far as possible, injury to fisheries and the stock of fish".

That brings me nicely to my second point, which is about the freshwater pearl mussel, which is scientifically known as Margaritifera Margaritifera. As the Scottish Environment LINK species champion for the species, I cannot miss an opportunity to mention these incredible creatures, which can live for up to 134 years.

Of the rivers in the world that are known to host populations of freshwater pearl mussels, 72—one third—are here in Scotland, and we have around 50 per cent of the world's freshwater pearl mussels. The jewellery is incidental, given that only 1 per cent produce a pearl. The reason why the species needs more protection from new hydro schemes is that it is now listed as one of the world's endangered species, alongside the giant pandas.

In its first year, the pearl mussel lives harmlessly on the gills of a young salmon or trout. As payback for its first year of living on the fish, an adult mussel filters and purifies about 50 litres of water every day, allowing the fish to survive in clean river water. The issue is not just about pearl mussels; it is also about the survival of trout and salmon in Scotland's rivers.

Richard Lyle (Central Scotland) (SNP): Hear, hear.

Mary Scanlon: I thank Richard Lyle for his comments. He was very supportive in my recent members' business debate on the subject.

For all that—and all that—two contractors on the River Lyon hydro scheme managed to destroy an internationally important colony of this protected species. The damage to the River Lyon is so disastrous that it will cost more than £1 million to repair. The two contractors—one of which had previously destroyed a colony of freshwater pearl mussels at Dalmally in Argyll, which is Jamie McGrigor's home area—were found guilty and fined £6,000 and £5,000, but their company has since gone into liquidation with £143,000 of debts.

I am in favour of hydro schemes, small and large, but we perhaps have to look again at the 1943 act in order to strengthen the environmental impact assessments and the enforcement of the legislation. I understand that the River Lyon prosecution was the first ever such prosecution in Scotland, and not a penny will be paid in compensation. That scheme did not recognise the needs of the fish, the quality of the water and the mussels in the water. We need much better environmental protection.

My third and final point—which I shall make slowly, given that I have been given an extra minute—contains the need for hydro to complement wind farm energy. As more wind farms are constructed, there will be periods when the energy that is generated will exceed demand. Unless it can be stored, that energy will be wasted. Likewise, there will be times when insufficient energy will be produced.

We have the necessary technology and geology to enable pumped-storage hydro to pump water from lower to higher reservoirs and keep it ready to be used for generation at times of high demand. Although no way of storing energy is 100 per cent efficient, pumped-storage hydro has the highest efficiency of all the technologies that are currently available, and is the only one that can be deployed on a large scale.

Given the move to more wind and more wave and tidal power, the pumped-storage plants could move towards having longer running cycles, to store and release energy that is generated. The Coire Glas and Balmacaan projects have both been developed at sites that allow storage to be maximised, with the flexibility to pump and generate at the right times to make the best use of the available renewable generation. My point is that, in the dash for wind, there should also be a dash for the failsafe option of hydro power.

14:49

Mike MacKenzie (Highlands and Islands) (SNP): Hydro power is perhaps the least contentious of our renewables technologies, and the lack of amendments to the motion might be evidence of that. However, that was not always the case, as many early schemes had significant opposition. Now, 100 years or so after the opening of the earliest hydro power schemes, hydro seems to be generally regarded as a benign technology.

Perhaps that provides a lesson for us in considering other technologies. Perhaps it is just the fact that wind, wave and tidal power are relatively new and unfamiliar that gives rise to many of the concerns that we have to deal with. I have read that the early railways were also greeted with scepticism and fear and that it was suggested that passengers would suffocate at speeds of more than 30mph.

The Locomotive Act 1865 required all road locomotives—which included motor cars—to travel at a maximum speed of 4mph in the country and 2mph in towns and to have a crew of three, one of whom would carry a red flag and would walk 60 yards ahead of each vehicle.

Murdo Fraser (Mid Scotland and Fife) (Con): Does Mr MacKenzie remember those days?

Mike MacKenzie: I am grateful to Mr Fraser for introducing a note of humour into the debate.

It is hard now to relate to those concerns of more than a century ago, and it is entirely possible that, in the future, people will look back and laugh at many of the concerns that we have today about renewable energy devices.

Hydro power seems to enjoy great popularity, but that does not mean that there are no challenges in taking forward projects. Often, significant engineering and construction challenges have to be overcome, which arise out of difficult terrain. Each project presents significantly differing challenges because of differing topographies and geology as well as the problems that are associated with construction access.

Hydro projects are therefore necessarily capital intensive and, because each project is a one-off, hydro power presents less opportunity for costs to fall as the technology matures. I am glad that the Scottish Government recognises that in its continuing support regime for larger hydro projects, maintained at 1 ROC per MWh. I understand the concerns that developers of smaller projects have about feed-in tariff degression and especially about the clumsy way in which it is being implemented. I am grateful to Ken Macintosh for addressing that in detail.

Technical challenges are the challenges on which our civil engineers thrive. Such challenges can be stimulating; they can foster innovation and the sense of accomplishment that goes along with overcoming technical difficulties.

Less uplifting and quite dispiriting are the challenges of grid constraint and grid connection costs. Members will know that solving those problems depends on the United Kingdom Government getting its act together on energy policy. It is time for it to listen to the industry and to implement quickly the necessary grid infrastructure, active grid management solutions such as those in Orkney and a support regime that facilitates the development of renewables. In doing so, the UK Government should consider support for energy storage schemes, especially as pumped-hydro projects offer a well understood method for the large-scale storage that is required to balance the grid.

There are further problems with the regulatory regime, which seems to delight at times in delaying projects. There was a time when I had no antipathy towards the supposedly rare bryophyte species Hamatocaulis vernicosus. However, now that I know that that plant is an enemy of hydro power masquerading as an endangered species, when it is no such thing as endangered, I think less well of it and some of its cousins. It is aided and abetted in its subterfuge by Scottish Natural Heritage and the Scottish Environment Protection Agency, which should know better and which often simply fail to do their homework.

There is a further lesson: we will not safeguard our environment with bad science and bad biology, nor through the lazy application of the scheme in which SEPA applies a much more prohibitive and onerous regime to small-scale hydro projects of less than 100kW, which amounts

to an effective presumption against such schemes. The regulatory burden often falls most heavily on the shoulders of small business and on community projects, yet such small-scale schemes offer significant opportunities for local socioeconomic improvements, often in areas that badly need them.

Many communities across the Highlands and Islands have been dying slowly for decades. Those communities deserve our due consideration in the hierarchy of concerns, at the top of which has to be the survival and wellbeing of our own species.

14:56

Margaret McDougall (West Scotland) (Lab): I have to say that until now I have enjoyed the history lesson that has been part of the debate.

It is right that we celebrate all that has been achieved in generating hydroelectricity in Scotland, but there is scope to do much more. Hydro power is a potentially abundant source of power that is underutilised in Scotland. I am sure that all members are aware that Scotland has quite a bit of wet weather. Combined with our mountainous landscape and easy access to the sea, that means that, with sufficient investment, Scotland can be the ideal location for the further development of hydro power. It is time to take steps to encourage the use of that underutilised resource.

That is especially true in light of the fact that, for the second time running, Scotland has missed the carbon emissions targets set by the Scottish Government. To ensure that that does not happen again, I expect the Scottish Government to stop making excuses and to make the most of what is on our doorstep by doing its utmost to harness hydro power.

Mike MacKenzie: Does the member accept that it is the UK Government's failure to upgrade our grid quickly enough that is limiting our ability to decarbonise the energy supply and help to meet the targets?

Margaret McDougall: No. I will not turn around and blame the UK Government; there are things that we can do in Scotland.

Supplying 100 per cent of Scotland's energy from renewable energy sources by 2020 is an ambitious target that we are on track to meet. Staying on track will require hard work and support from communities and businesses, as well as the Scottish Government. Pursuing the 2020 target vigorously is important because of the benefits not only to the environment but to families across Scotland who are suffering from fuel poverty and unfairness in our energy market.

That is especially true of small-scale community projects. Community ownership of renewables can bring economic benefits to an area as well as boost local support and commitment to renewable energy initiatives. Therefore, I am pleased to note that the motion appreciates the benefit of enabling local ownership of at least 500MW of renewable energy by 2020.

I would like more to be done to maximise the number of identified potential sites for hydro power plants that come to fruition. The example of the Welsh Labour Government shows that, when communities are brought into planning and decision making and are given a say in the development of renewables projects in their area, hydro power projects can thrive and benefit the community through reinvestment in community projects of the income that those schemes generate.

However, I sound a note of caution about community ownership. I welcome the community benefits of renewables, but there are times when more rigorous controls should be exerted over large energy businesses, to ensure that they do not attempt to bully communities into supporting extensions of renewables projects.

I have come across one example of that in my region in relation to a wind energy project. A wind farm company used the relationship that it had built with local people—through providing grants to local areas and schools—to coerce families into supporting an increase in turbine planning applications. That emphasises the importance of ensuring that community schemes truly have community benefit, as well as environmental benefit, at their heart.

Importantly, the Scottish Government has said:

"Locational charging means Scottish generators produce about 12% of UK generation but account for 40% of the transmission costs, or about £100 million per year more than generators in the South."

In considering the Scottish Government report "Low Carbon Scotland: Meeting our Emissions Reduction Targets 2013-2027: The Draft Second Report on Proposals and Policies" at the beginning of the year, the Economy, Energy and Tourism Committee, of which I am a member, expressed frustration about grid delays and problems with hydro power's connection to the grid on Scottish islands. The situation clearly damages the viability of small-scale hydro power projects. The Scottish Government could commit to doing more to promote connection to the grid across the country, which would allow for better and more widespread development of hydro power.

In 2011, hydro power stations produced 5,331.8GWh of electricity, which was 10.4 per cent

of the total electricity generated in Scotland—51,223GWh. The report "Scottish Hydropower Resource Study" states:

"The total financially viable resource in Scotland was found to be 657 MW installed capacity, the output of which would be 2.98 TWh of electricity per year."

Fergus Ewing: I agree with much of what the member has said. She said that she would like the Scottish Government to do more to strengthen the grid. Given that there are planned projects totalling in cumulo £7 billion to upgrade the grid in Scotland, will she or one of her colleagues later in the debate perhaps give a little more detail about exactly what more they think we should do? I would be keen to know.

Margaret McDougall: Perhaps I can explain that as I go on.

I fully appreciate that the Scottish Government is not solely responsible for the implementation of new hydro power stations, but it is more than happy to welcome new investments in all the renewable energy sectors. The minister talked about extensions, but enthusiasm is lacking. The Scottish Government could use its powers to put in place a strategy to aid in the delivery of hydro power projects in identified potential sites. If the Government is serious about making Scotland a true world leader not only in setting targets but in delivering them, it needs to up its game, ditch the rhetoric and commit to radical action on hydro power.

15:03

Rob Gibson (Caithness, Sutherland and Ross) (SNP): Tom Johnston brought about his hydro power revolution as a result of the particular conditions of total war, when landlord opposition could be waved aside in the national interest. Members who read the House of Lords *Hansard* from that period will see that opposition. No one has quoted that yet, but I remember it well as I studied that period when I was a history student.

Johnston had the approval of the Prime Minister, Winston Churchill, and pressed home his advantage to create 54 main power stations by 1965 and 78 dams. At the peak, 12,000 workers were employed in their construction. However, in the 1950s, a Tory Government returned and duly set up a select committee on the issue, because it deplored the social clause in the North of Scotland Hydro-Electric Board's constitution as an interference in the market.

The Government latched on to an obscure report by an economist from the University of Aberdeen that used complicated and biased means to prove that the relative cost of hydro was far greater than that of nuclear power. Indeed, Denys Munby's paper claimed that nuclear power would make hydroelectric stations

"built at a very great capital cost ... as obsolete as the horse and carriage in fifty years time."

Of course, he—like many people at that time—did not know much about the implications and environmental impact of nuclear power.

The North of Scotland Hydro-Electric Board pressed on with its plans, but it was stopped in its tracks in 1960, when the Tory Secretary of State for Scotland, John Maclay, took the whole electricity strategy to a Cabinet economic sub-committee. The committee stopped the River Nevis scheme, which would have extracted water and sent it to be stored at a power station near Fort William.

The Nevis scheme offers an example of an early campaign on landscape led by the National Trust for Scotland. Bill Murray, who wrote the book "Highland Landscape" for the NTS in 1962, called the Nevis gorge

"one of the principal scenic wonders of Scotland."

The issue of appropriate development, with which we are very familiar today, was broached at that time.

The Mackenzie committee proposed that there should be one electricity board for Scotland and that the North of Scotland Hydro-Electric Board should go. However, a campaign in the Highlands raised the fiery cross via the electricity consultative council for the area, and people gathered round to save the board for another day.

A Labour Government was then elected, but it did not promote hydro. It called a public inquiry into the Fada-Fionn scheme in Wester Ross, and the Treasury stacked the figures by proposing an 8 per cent return on capital, so the inquiry found against the scheme. There was not a lot of opposition to the scheme from mountaineers or fishing interests at that time, although such views might have changed today.

Harold Wilson came in on the "white heat" of technology. He did not go back to the Johnston policy; instead, he supported nuclear power.

I come to the present. This weekend's *Herald* magazine, *New Era*, quoted no figures from the Department of Energy and Climate Change in London for the cost per megawatt of installed power from hydro. It quoted figures for other sources such as onshore wind, nuclear and so on, but one cannot see where hydro fits into the picture. That is probably because there is only 130MW of capacity installed in England, whereas more than 1,300MW is installed in Scotland, so hydro is not a priority down south.

However, SSE has kept the faith and has refurbished dams and power plants. It has also created the Glendoe system, which we visited in 2009, and which—despite the problems with its tunnel—has produced electricity since 2012 as a major scheme in the Highlands. It is vital in helping the Scottish Government to meet its target for 100 per cent of energy from renewables by 2020, and it is a partner for intermittent wave and wind power. It is also a key part of an integrated electricity policy that suits Scotland's needs.

There has been much talk about smaller schemes. There are a large number of them, many of which are in my constituency. A press release that was issued today said that one of the turbines in the Maldie Burn scheme, which the Duke of Westminster created, will run from this month. In that scheme, 2MW is used to power his lodge at Achfary and go on to the grid.

Unfortunately, however, only £80,000 in community benefit will come from the scheme over its life. We have to ask whether everyone involved in hydro schemes—as well as those involved in wind, wave and tidal schemes—should pay at least £5,000 per megawatt installed.

In my area, close to where I live, the Black Rock gorge scheme on Munro Ferguson's Novar estate is nearly complete at 3.5MW. The Glasa scheme in Kildermorie—which the minister mentioned—is also close by, and has a capacity of 7MW. The numbers are adding up.

The Assynt Crofters Trust community scheme has had to overcome problems in respect of the great northern diver and other SNH concerns about wildlife, but it is now up and running for the community. The Lael Forest community hydro project near Ullapool is proposed to operate in places where old schemes had existed, and a public ballot will decide later this week whether that should go ahead for the community's benefit.

The national problems of uncertainty about FIT from DECC show that capacity-based degression decreases the incentive to invest in hydro and many other schemes. Another uncertainty is that a pumped-storage tariff has not yet been created. We should recognise that it is entirely possible in this day and age to see the certainty that has been created by sticking to 1 ROC for hydro development in Scotland, not 0.7 ROCs, as a result of the Scottish Government's far-sighted belief in an integrated policy.

"The Hydro" by Peter Payne quoted Sir Christopher Hinton as saying, in opening the Glenmoriston scheme in 1958:

> "In 20, 30 and 50 years hence people... will say how tremendously fortunate it was that the water power development took place when it did."

That was true then and it is very true today.

15:10

Claire Baker (Mid Scotland and Fife) (Lab): I am pleased to take part in the debate. Hydro power provides energy and jobs to many rural communities, and it can also play a significant part in Scotland meeting its future climate change targets.

I attended the recent dinner at the Scottish Renewables hydro conference to celebrate the 70th anniversary of hydro power in Scotland, which the minister talked about. That was a great way of recognising the contribution of hydro and how it has developed, as well as providing a forum for discussion of the future challenges.

As other members have said, Tom Johnston was a visionary. The establishment of the North of Scotland Hydro-Electric Board revolutionised the Highlands by using the power of nature to generate power and bring the modern world to parts of Scotland that it had not reached. It was an early renewables sector and the technology was recognised for its importance, but the significance of its future contribution to addressing climate change and to sustainable energy were not imagined.

At the conference in May, it was fascinating to hear about the early pioneers when, on the same day, it was announced that work on the Glasa hydro scheme is to begin later this year. That will be the largest hydro scheme to be built in the UK in the past five years.

The minister mentioned pumped storage and the need for clarity on future UK Government policy, which is important. In the move to a low-carbon economy, pumped storage has a crucial role to play. It is the only commercial-scale technology that can store electricity in large quantities, and we know that that process is key to a balanced energy policy with sufficient base-load.

It is only when we go back to the early years of hydro and consider that only one in every 100 crofts had electricity at the time of the North of Scotland Hydro-Electric Board's inception that we can fully understand the size of the task that the new body had to undertake. Now, with more than half Scotland's 145 hydroelectric schemes located in the Highlands and Islands, we can see how successful hydro power has been for the area.

Agriculture is often at the centre of the rural economy, but the right training and investment mean that renewables can bring significant numbers of jobs to those areas, which strengthen links with locals and keep young families and workers from moving away to find employment. In discussions about the importance of hydro to rural economies at the recent conference, the point was highlighted that such schemes often offer more sustainable, longer-term employment from the

construction of infrastructure through to maintenance and operations than other energy projects might. The employment numbers might seem small if we consider them in an urban setting, but they can often contribute significantly to the viability of rural communities.

Total hydro generation capacity in Scotland is about 1,500MW. Although hydro's once rapid growth has slowed, new major development opportunities are in hand, and scope has been identified for thousands of smaller schemes. At one point, hydro power was the main contributor in Scotland's drive for renewable energy and, although it has since been overtaken by wind power, it still produces about 12 per cent of Scotland's electricity. We need to ensure that a package of renewables options is available across Scotland, to build on our strengths and opportunities. Despite the recent announcement that Scotland has, for the second year, missed its annual emissions target, we can recognise the role of hydro in a low-carbon future.

The Minister for Environment and Climate Change will update members next week on the redraft of the second report on proposals and policies. When the draft report was published earlier this year, it attracted some criticism for its overreliance on proposals and for not containing enough policies. However, if a significant redraft of RPP2 is to be achieved, the minister will have to do that with the help of his colleagues from other portfolio areas, including the Minister for Energy, Enterprise and Tourism. With that in mind, it would be interesting if, in his closing remarks, the minister could give his views on the redrafting process for RPP2 and on how he believes that hydro power complements other forms of renewable energy in ensuring that the Government can meet future targets.

There should be further investigation into the viability of potential schemes and their benefits in helping us to achieve future targets. Despite the rise of wind energy, the chance to truly radicalise our energy market and promote community ownership has largely been missed. Many people in the renewables sector who work in Scandinavian countries, where community ownership is expected, say that the key to expansion in Scotland concerns greater capacity and expert support to communities in order for them to be involved in the process and to see that as a possibility for them.

My colleague Ken Macintosh spoke of community ownership. The land reform review group will look at community ownership in relation to renewables in particular and its clear potential as a vehicle for tackling inequality and delivering sustainable growth.

We can lift the barriers that stand in the way of communities that wish to develop renewables.

Fergus Ewing: I entirely agree that we want to do everything practical and sensible that we can to encourage communities to develop their own schemes and, when possible, to own a proportion or all of those schemes. We are in total agreement about the objectives. If there are specific things that the Labour Party thinks that we should do, my door is open and we want to hear about them. We are doing a lot, but we are always ready to listen to practical, constructive suggestions about what more we can do.

Claire Baker: Those are welcome comments from the minister.

When I speak to people in the sector, the feeling seems to be that there is quite a gap between a community that would like to be involved in a project and the end point of it being involved, which requires a certain level of expertise, including business expertise. There seems to be a need for more consultancy support and capacity building to get communities to that level.

A small hydro scheme could generate power to 150 homes—it could revolutionise energy consumption. It has many benefits, such as helping the country to get back on track in meeting our climate change targets, providing green jobs and playing its part in tackling fuel poverty.

Through companies working together with the community or—as the minister said—through communities taking forward their own projects, smaller-scale energy schemes can benefit a local area and the country at large. That has happened in certain cases, particularly in Scandinavia, and that could be explored and developed further as we continue to try to meet our future renewable energy targets.

As we look to the future, the development of hydro power in Scotland faces challenges. Others have highlighted the range of issues that Scottish Renewables raised in its briefing, but I will highlight the concerns about the SEPA 100kW checklist. I have been contacted by a constituent who runs a business installing micro-hydro power stations. Of course we must protect Scotland's environment—SEPA has a crucial role to play in that and its efforts need to be recognised and supported. However, the application of the 100kW rule seems to be unnecessarily limiting the development of micro-hydro and community schemes, and there is a need to move to more proportionate but robust controls on development that consider each proposal's merits.

My constituent's points were that hydro schemes with a capacity that is greater than 100kW typically cost more than £500,000 to build and so are often out of the reach of small farmers,

crofters, householders and many communities and that virtually all the rivers and burns that run close to populated areas have the potential for sub-100kW schemes, but SEPA's implementation of the ministerial statement rules out viable development of those resources. However, sub-100kW schemes are more likely to use local trades in their construction, to be locally or community owned and to use British-manufactured machinery. I am happy to write to the minister with further details on those issues, but it would be good to hear his initial views this afternoon.

The debate has been an excellent opportunity to reflect on Scotland's progress on hydro power and to address some of the future challenges. Hydro was revolutionary in the 20th century and we must now ensure that it can play its part in the 21st century.

15:19

Stuart McMillan (West Scotland) (SNP): This is a timely debate that examines the past, present and future of one of Scotland's most valuable assets—a source of renewable energy that can help to combat the current problems of high fuel bills and fuel poverty in many of our communities.

Hydro power is the oldest form of renewable energy in Scotland and has a proud history. It contributes about 12 per cent of our electricity needs, as we have heard. In 1930, Scotland had a mere 45MW of large-scale hydro, and the rest of the UK also had 45MW. In 2012, Scotland had 1,339MW of large-scale hydro, while the rest of the UK had 132MW. We currently have enough hydro power to provide almost 1 million homes with their electricity every year. Hydro has been a reliable source of energy for decades; today we celebrate 70 years since the passing of the 1943 act.

In the race for cheaper, cleaner and renewable energy sources, it is too easy to forget the role of hydro power—not only in the past, but when we look to the future. There is potential for more than 1.2GW of smaller-scale hydro to be developed in Scotland, but some issues need to be resolved for that to happen. They include feed-in tariffs, which my colleague Rob Gibson touched on. Feed-in tariffs have been cut by a set amount every year, depending on the level of deployed capacity. Other issues include electricity market reform and delays in connecting new projects to the national grid.

Many, if not all, of those delays are due to the slow pace of the Westminster Government. With independence, a Scottish Government of whatever hue could provide stronger support to that key industry, which could certainly provide renewable energy to tackle the scourge of fuel poverty. The report on the achievability of the Scottish Government's renewable energy targets by the Economy, Energy and Tourism Committee, which I was a member of until the report was drafted, highlighted that

"the support the Scottish Government can provide to the development of the renewables sector is limited by the current constitutional arrangements."

It was also interesting to note that

"The Committee does not believe that there is significant evidence that the current constitutional debate is undermining investment decisions regarding renewable energy."

That report also highlighted a number of issues that need to be addressed, including the transmission system and the charging regime. There is widespread concern that Scotland's generators are being penalised for providing power while those in other parts of the UK receive generous subsidy.

Although the committee report welcomed the recent decisions that have been taken to level the playing field for mainland generators in Scotland compared to the rest of the UK, there is still concern that the improved incremental cost-related pricing that has been proposed by the Office of Gas and Electricity Markets does not go far enough, and that island generators remain at a distinct disadvantage compared with those on the mainland. I have touched on that point in previous debates. The situation will render many projects uneconomic—I expect that Liam McArthur will touch on that in his speech, as he is an Orkney MSP. Given the significant renewables resources that are located on and around Scotland's islands, a fairer system must be found.

The committee's report also mentioned the empowering of communities either to generate their own energy or to gain the maximum benefit from developments in their area. Microgeneration provides the opportunity for householders, businesses and communities to participate in the low-carbon economy. The importance of community and locally owned renewable energy is also recognised by the target of achieving 500MW of community and locally owned renewable energy by 2020.

I am aware of moves in West Scotland to create a community-led micro-hydro generation company. That would, I hope, provide hydro power to the grid and provide community benefits, much as similar community-led projects have worked with onshore wind farms. I genuinely believe that that is an exciting prospect for areas in West Scotland. The one that I know of is in Inverclyde, which as members will know has no lack of rainfall to provide the raw resource that is necessary to drive hydro power projects. A number of sites

across Inverclyde are being looked at as potential locations for micro-hydro generation. It is hoped that they can be developed either in partnership with Scottish Water or as stand-alone community-interest companies.

By following a community-led approach, such as has been used by the Neilston community wind farm, we could empower community groups to generate additional funding for their areas while they generate electricity for the grid. Such funding could be used to help to combat fuel poverty and to improve energy efficiency in homes, or it could be used for a range of developments that are aimed at improving communities. Inverclyde Council has been investigating the possibility of hydro power schemes being in council ownership or control, as part of its approach to renewable energy generation.

It will certainly be interesting to see how those schemes develop and, I hope, combine to support communities in Inverclyde. It is of great interest to me that, in the past, much of the heavy industry in Inverclyde was powered by hydro power and that much of that infrastructure still exists. With a bit more investment, who knows what could happen?

Another positive side to community hydro schemes is that they can help to address flooding, which would be greatly advantageous in Inverclyde.

We need to make it easier for communities to come together with councils and businesses to form community interest groups to ensure that at least some of the profits of hydro power go back into those communities. For that reason, the Scottish Government's decision to retain the level of support for the sector is significant. That will certainly be a boost to the smaller developments that are being looked at across the country. Such developments face more challenging conditions and higher risks, so maintaining of support—unlike what appears to be happening in the rest of the UK—is significant and will provide some stability for investment. Further support through streamlining planning consents will also encourage the future development of smaller facilities.

In conclusion, hydro power has a long and successful history in Scotland. It provides a significant amount of clean renewable electricity. With the continuing support of the Scottish Government, there are good prospects for the future development of hydro power in Scotland—potentially on a smaller, community-led, basis.

15:26

Liam McArthur (Orkney Islands) (LD): As Margaret McDougall rightly said, we have already had a historical tour de force. I particularly commend Rob Gibson's speech, in that respect.

On the 70th anniversary of the Hydro-Electric Development (Scotland) Act 1943, which was the product of what Ken Macintosh rightly observed was an impressive cross-party consensus as well as the drive of Stewart Stevenson's friend Tom Johnston, it is fitting that we take time to reflect on the contribution that hydro power has made over that time. It has powered homes, businesses and our economy, and has provided a welcome boon to the Highlands, as others have said. Like the minister, I hope that that will be improved on in the coming decades across the Highlands and Islands with the development of a wider range of renewables technologies, including wave and tidal energy technologies in my constituency.

What of the future for hydro power? As the most mature of the renewables technologies, there is perhaps a risk, or a public misconception, that hydro technology has run its course and that the opportunities for developing new projects have been exhausted. As we have already heard, that is far from being the case. Advances in technology are opening up new opportunities—from large to relatively small—but there is a range of challenges in taking forward those opportunities. I argue that it is not sensible to think that all the potential opportunities could or should be taken forward. I will come to some of the issues that the sector faces shortly.

Like Rob Gibson, I think that it is worth acknowledging that, if we are to have a balanced energy mix with a proper and healthy technology mix as part of the policy, we will need to go beyond 12 per cent of our electricity needs being met by hydro, as is currently the case. We must consider how we can capture more of our hydro potential, including the estimated 1.2GW of smaller-scale hydro power, much of which would be ideally suited to community owned and run initiatives. Claire Baker made a number of very helpful points about the benefits of such projects.

I turn to some of the obstacles that we face in trying to deliver our considerable potential in hydro energy. I am grateful to the various organisations that supplied briefings for the debate, including Scottish Renewables and RWE. Scottish Renewables might have reflected a little more on the issues for which we have responsibility in Parliament, but it set out the wider context, which is helpful.

The concerns about support mechanisms and delays in provision of grid infrastructure are clearly not new; they reflect similar anxieties that are felt across the renewables sector. However, as I have done in previous debates, I urge a little caution on those who seek to make the heroic leap in arguing that those concerns make the case for breaking up

the United Kingdom. What Scottish Renewables and its members, including those in the hydro sector, are arguing is that delays in taking decisions must be minimised, support mechanisms need to be fully thought through, and the necessary infrastructure must be put in place in a timely fashion. Reform of the current market regime must properly reflect Scottish interests, of course, but nowhere is it suggested that segmenting the market is sensible, that tapping our hydro potential requires wholesale transfer of powers, or that stepping outside the electricity market reform process is either realistic or desirable.

Mike MacKenzie: As the member for Orkney, surely Mr McArthur is frustrated with the UK Government for not getting on and putting in place the interconnector to Orkney so that it can benefit from the huge opportunities that are available to it.

Liam McArthur: I certainly share the frustrations of those who are looking to get on and deliver renewables, not just in Orkney but in the other island groups, but I do not minimise the challenges that are faced in coming to a conclusion on a regime that will support that.

I turn to what is needed in capitalising on our potential as a hydro nation, on which I have a number of points to make. I understand and support the desire for the EMR process to be completed as quickly as possible, but I acknowledge—as I reflected in my answer to Mike MacKenzie—the absolute necessity of getting it right and the fact that complex and often competing issues will need to be reconciled before that can be achieved.

That said, the call by Scottish Renewables for a transposition of the higher level of support for hydro generation in the move to contracts for difference seems to make sense. At a time of significant change, when there are prospects for developing a number of new projects—particularly smaller community projects—there are attractions to providing the continuity that the sector seeks.

The other main point that has been raised in relation to the structure of support for hydro is a concern about so-called degression as part of the feed-in tariff regime. It was always envisaged that over time, as technologies developed and take-up and competition increased, FIT rates would be brought down. That is not unreasonable, although it must always be done in a managed and transparent fashion so that shocks to the system do not undermine public or investor confidence. At the same time, confidence in the regime can be maintained only if it remains affordable and is not seen to overcompensate individuals, businesses or specific projects.

Stuart McMillan: Will Liam McArthur give way?

Liam McArthur: I will make some progress, but will come back to Mr McMillan, if I can.

There seems to be a case for looking again at how degression will apply in relation to hydro power. As RWE states in its briefing, and as Ken Macintosh set out clearly, given that a rush is anticipated for pre-accreditation in 2013, the full 20 per cent degression could be triggered, which has the potential to delay or render uneconomic other schemes in 2014 and beyond.

To gain pre-accreditation, schemes need planning consent, a water licence and a grid connection, but having those things does not mean that schemes will progress. Although access to funding, grid constraints or other issues might undermine them, they could still be taken into account when degression levels are set. Degression has always been seen as part of the FIT process, but the way in which it interacts with hydro appears to be problematic. I would welcome some comment from the minister on the discussions that he has had with the Department for Energy and Climate Change, and I would be happy to help by supporting such representations, if I can.

No debate on renewables would be complete without a reference to the grid. Scottish Renewables is right to call for network operators to make the case for strategic investment, for spare grid capacity to be released where possible, and for more active network-management solutions to be explored. Over the years, the RPZ—the registered power zone—in Orkney has proved to be successful in allowing developments to connect, but we should be clear: those are temporary fixes, which should not be seen as a reason to put off indefinitely making the investment that is necessary to allow our hydro and other renewables potential to be fully realised.

As RWE makes clear, the Scottish Government must play its part, too. It confirms that business rate increases in 2013 could make some small-scale projects economically unviable. There also seems to be some confusion over the full implications of recent statements and policy with regard to wild land. It is essential that we have the right projects in the right places, but I understand that impacts on wild land already form part of environmental impact assessments. It would be useful to hear from the minister what additional constraint will be placed on developers.

Likewise, RWE expresses concern that hydro power interests have been overlooked in the river basin management plan process. Ensuring that there is proper protection of the water environment is essential, but it would be helpful if the minister could reassure us that different views—and, perhaps, competing interests—are being

adequately reflected in the advisory groups and the development of plans.

Across the chamber, there is a shared pride in what has been achieved over the past 70 years in the development of hydro power. The task for us now is to ensure that we can look forward to the next 70 years and beyond, confident that our potential as hydro communities—and as a hydro nation—will be fully achieved.

15:34

Stewart Stevenson (Banffshire and Buchan Coast) (SNP): Water is important to us. That is a self-evident truth, not least because each and every one of us is made up of about 80 per cent water. Without water, there is no human being or human race.

The only chemical formula that many people will probably know is that of water. When H_2O is mentioned, the light goes on, even for people who know nothing of chemistry; they know that it means water.

Water is absolutely central to us. Too much of it and a person will drown and die; too little, and a person will wither and die. If people have the right amount of water, they prosper. It is important however one looks at it.

Ken Macintosh referred to Fort Augustus and the first hydro power station that was built there. In 1896, the aluminium factory had what is described as—at least in Wikipedia, so it must be true—

"the first large-scale commercial hydro-electric"

generation.

Ken Macintosh also made reference to Sir James Henderson-Stewart and some of the remarks that he made in Parliament during the war years. I was quite astonished that he did not pick up on some of the important linkages between that man and other events. For example, the 1961 by-election that followed Sir James Henderson-Stewart's death was the first parliamentary election in which I had a role. Perhaps more crucial to Ken Macintosh is that that by-election was the first parliamentary outing for John Smith—the subsequent UK Labour Party leader. He received 8,882 votes, which was some 26 per cent of the poll. He managed to move the Labour Party up to second place, so he did pretty decently. He did not sustain that in the 1964 election, moved on elsewhere and was eventually elected in 1970.

Water is a great reservoir—I think that that is the right word—of innovation. Its use led to engineering innovation in irrigation thousands of years ago. The Archimedes screw that we are familiar with today almost certainly should not be called the Archimedes screw because it probably predates him by 500 years. It is thought that it came from the time of the Assyrian king Sennacherib, around 700 BC. It was originally a device for lifting water, and was turned by hand, but it became one of the very first sources of generating hydro power by water being allowed to fall through it. It was particularly effective where there was waste material and the water was contaminated because the screw was free flowing—it did not get jammed up in unfavourable conditions.

That brings us to an essential point about water in relation to the debate—$1m^3$ of water weighs 998 kilograms, which is about 1 tonne. Therefore, one can see the power of water that moves horizontally or vertically. An early example is the undershot method, in which the power of the water flowing under a waterwheel is extracted from flow and not from fall, whereas an overshot waterwheel is a combination of underflow and overflow, in which the power is also extracted from the weight of the falling water.

It is worth saying that there is a formula—I am sure that I have it somewhere in my notes. It basically states that $1m^3$ of water falling 1 foot every second produces something like 96MW. That gives an insight into the power that there is in water. I hope that that formula is right; I simply cannot find the note that I had written it on.

Water has resulted in innovation in lots of other ways. The first combustion engines were dependent on water, the first of which was constructed in the first century AD, when the Greek engineer Hero produced a machine called the aeolipile. The aeolipile was basically a drum that contained water. When the drum was heated, the water heated up, steam came out of vents and the drum spun on an axle. Incidentally, 2,000 years ago, Hero was also the inventor of the first coin-operated dispenser, which dispensed—yes, you have guessed it—water.

Electricity is one of the great benefits from our use of water in Scotland, but transmission of it is a significant problem. We have talked about some of the problems around the network, which we are far from solving. It takes a long time to create the right kind of infrastructure, and transmission was probably the most challenging aspect of the development of hydro power in Scotland. The question was not just how to generate the electricity but how to get it to consumers.

My wife was brought up in a council house on the shores of Loch Ness, at the opposite corner from where, 60 years earlier, the first electricity from hydro power had been generated, but she was in secondary school before electricity reached her. To this day, the brass paraffin lamp beside which she studied when she was a youngster sits in our living room, as a reminder that in her lifetime

and mine—and in the lifetimes of one or two other members—the world was very different and electricity was not something that was delivered to all but a few homes.

There are other ways of transmitting power from water. In some places that is done by compressed air. I say to Mary Scanlon that that is a more mechanically efficient approach, because the power from water energy can be transferred to another location without using moving parts of any kind—hence there are no mechanical losses associated with such transmission.

It is worth saying that water is a strategic asset for countries. We need only consider Nasser's building of the Aswan dam, for irrigation and for hydro power, and the current debate—I think that "debate" is the right word—between Sudan and Egypt, as Sudan seeks to dam the Nile.

The Deputy Presiding Officer (Elaine Smith): Mr Stevenson, will you begin to conclude, please?

Stewart Stevenson: I will certainly think about doing so, Presiding Officer. [*Laughter*.]

Our hydro schemes have attracted tourism—members need only think of the salmon ladder at Pitlochry, which is associated with hydro power.

I have been invited to conclude, so I do so by saying that what Tom Johnston created lives with us today and is not just a supplier of power but something to which people in the north of Scotland have an emotional attachment. The brand "SSE" might be on the side of the vans these days, but generally people still talk about "the Hydro."

15:42

Malcolm Chisholm (Edinburgh Northern and Leith) (Lab): Today we celebrate the achievements of the pioneers of the 1940s who saw the potential of Scottish water and harnessed it in a way that changed energy production in Scotland for ever. The Hydro-Electric Development (Scotland) Act 1943—the brainchild of that great Secretary of State for Scotland, Tom Johnston—heralded a new dawn in the use of renewable energy for large-scale generation, and created thousands of jobs as well as an entirely new way of thinking about our greatest natural resource. That was a momentous achievement, so it is right in this anniversary year that we recognise the achievements of so many people in the 1940s and thereafter, which demonstrate what can be achieved through a shared agenda for positive change.

There are currently 120 installed hydro generating stations across Scotland, which vary in generation capacity from more than 100MW to a few kilowatts, and which total more than 1,800MW of capacity and make an important contribution.

Of course, capacity varies, depending on rainfall in any given season. As the Government highlighted in the context of the ROC banding review of 2011-12, a dip in renewable energy generation was attributed to

"a fall in hydro generation due to much lower rainfall in 2010."

That should not act as a disincentive to providing subsidies through ROCs, given that new technologies can mitigate loss through preparation for periods of drought.

The motion points in particular to the potential of pumped-storage hydro projects. Pumped-storage schemes involve two bodies of water, at different heights. During periods of low demand for power, electricity from other renewable sources can be used to pump water from the lower loch to the upper reservoir. The water is released later to create energy when demand is high. At present, there are four pumped-storage schemes in the UK, but as they were designed mainly to cope with brief imbalances in the grid, none has sufficient storage volume to generate at full capacity for an extended period. To ensure that hydro power continues to be seen as a valuable and innovative source of clean energy, pumped-storage plants must move towards longer running cycles.

One example of a power station that is currently in planning that would be able to fulfil such a remit is SSE's Coire Glas proposal. As the company has highlighted, there is a significant elevation of around 500m between the upper and lower reservoir sites over a relatively short distance, which makes the area ideal for development of pumped-storage system. If the plans come to fruition and consent is granted, Coire Glas will have an installed capacity of 600MW, will be capable of storing up to 30GW and at times of energy shortage will have a running time of up to 50 hours. It is predicted that building the scheme, with its higher-than-average elevation and deep lower underground cavern, will cost as much as £800 million.

The decision rests with ministers but, as the Scottish Renewables briefing highlights, it is still unclear how pumped-storage hydro will be supported in the future. That makes investment decisions difficult and it is therefore important that the Department of Energy and Climate Change clarify whether support for pumped-storage hydro will be part of the electricity market reform process, and that it work closely with developers to ensure that support is suitable for unlocking the necessary investment.

More generally, the Scottish Renewables briefing points out that hydro power currently receives higher levels of support under the renewables obligation in Scotland, where it

receives 1 ROC, than it does in England and Wales, where it receives 0.7 ROC. However, it is still unclear how that higher level of support will be transposed into the UK-wide system that is proposed under electricity market reform. For development to continue, it is crucial that existing support levels for hydro power be retained within the feed-in tariff with contracts for difference. That point reminds me of the more general question that I raised in the recent electricity market reform debate on how current devolved ROC powers would operate under contracts for difference.

Turning to micro-hydro power and community ownership, I note that one route to that is through the Forestry Commission Scotland, which is currently working with a number of energy developers to build wind and hydro projects on national forest land. An integral part of the project has been to ensure that communities benefit from such developments and are also able to pursue renewables projects of their own. Under the national forest land scheme, community organisations that submitted expression of interest forms by the deadline of 30 June 2012 may pursue a site if it is not already committed to a development partner, and communities can apply to purchase or lease land to develop renewable energy projects such as micro-hydro power systems that make the most of natural resources in the area. Community projects that receive planning permission could play an important role in providing a carbon-neutral, sustainable energy source that is efficient from day 1.

As we move towards achievement of a low-carbon energy sector, we must develop a vision that not only promotes climate change objectives but harnesses the potential of communities that stand to benefit most. Micro-hydro power is a reliable and highly efficient way of generating electricity that functions as a small and clean electricity source in a decentralised energy system.

In a 2008 article, Greenpeace highlighted the pressing need for decentralisation, and stated that the UK centralised energy sector was designed to meet the needs of a society that had not even heard of climate change. It also pointed out that the typical UK power plant was only 38 per cent efficient. We now know better and the capacity for change through subsidising and encouraging development of our hydro power stations is more apparent than ever.

Hydroelectricity was the first form of electricity generation to bring the power of nature closer to the people. What could be more fitting than to use the technologies that have developed since 1943 to take it even closer by decentralising provision and creating a more diverse and reliable system? I am happy to join members in celebrating the progress that has been made to date, and in promoting our shared vision of a clean and sustainable energy future.

15:49

Nigel Don (Angus North and Mearns) (SNP): When today's debate came up, I thought that I had finally made it in Parliament. Having been a chemical engineer in a previous existence, I thought, "Hydro electricity—what could be more up my street?" Of course, I then realised that folk would talk about history, economics and feed-in tariffs, all of which have nothing to do with the laws of thermodynamics. I will not go much into the laws of thermodynamics—do not worry—but it occurs to me that there are a few structural and systematic issues that we ought to address.

One issue is that, unlike in the days when Mary Scanlon's monks disrupted the power supply with their organ playing, we now have a very large grid system. I suspect that there is continuous copper from here to pretty much everywhere bar New Zealand and Australia, although I stand to be corrected on that. There will be some switches in-between and some relatively small connections that rather mess the system, but one reason why the organ does not dim the lights now is that there is such huge capacitance that the load can change quite considerably and everything will keep working.

In the future, we want to be able to ensure that that electromotive force is available with the minimum release of carbon dioxide. That is what greening the economy is all about. We want to maximise power security and we want to minimise the capital cost in making capacity available. To pick up on Stuart McMillan's earlier point, fuel prices depend on how we choose to cut the cake. The best job for minimising fuel poverty is to have the power available at the cheapest price—or, rather, at the lowest cost. If the cost is as low as it can be, we have the best opportunity to eliminate fuel poverty.

Renewable sources of energy cause us a problem because many of them are not continuous and, as others have said, storage is a difficulty. Wave power comes and goes, although a totally still day is pretty unlikely. Tidal power, which is potentially quite significant, is by definition cyclical and provides maximum power over a relatively short period. Wind power, as we all know fine well, is variable and can be absolutely magnificent one day but simply not be there the following day.

Storage remains a conundrum. I suspect that batteries—this is what the industry is telling us—will be significant in the longer term. When our cars are all powered by batteries, they will be

recharged when they are in the garage or on the forecourt. In addition, they will be recharged when the electricity is available and not just overnight. That will build a huge capacity as well as a bit of capacitance.

Liquefied air, as I suspect has already been mentioned, is a way of storing electricity that involves the air being expanded through a turbine. The technology works but is nonetheless exceedingly expensive. Thermodynamically, liquefied air will not be terribly efficient so, although it may have its place, I suggest that it will never become a major way of storing electricity.

National Grid tells us that much of the capacity within the system will be built by demand management. In future, for example, our washing machines will switch themselves on when there is electricity available. I will just load the machine and press the on button and, to ensure that electricity is used when it is available, the grid will decide when in the next 12 hours the machine will work. That will surely be a significant development.

Hydro pump storage, as members have already mentioned, is an important part of what can be done. The technology is very efficient but is at its best when the pump storage is situated close to the intermittent generators, because that minimises the amount of copper that is required between the intermittent generator and the pump storage.

Stewart Stevenson: Is the member aware of the work on intelligent networks that is currently being promoted in the UK and elsewhere worldwide? Is he aware that there have been delays due to an inability to come up with appropriate interoperating standards, which would allow the member's washing machine and the network to talk to each other intelligently?

Nigel Don: Indeed. If the member will forgive me, I do not want to explore that area this afternoon, as that would take us off the subject and there are other issues that I want to address. However, he makes an absolutely fair point that, if only the machines could talk to each other, we could do a lot of things already.

Small-scale hydro schemes, which are sometimes called micro schemes, have been mentioned by other members. An interesting point is that what we call micro in this context might well produce several hundred kilowatts, but that is considered micro in the context of power stations. It would be remiss of me not to mention the Glen Clova hotel in north Angus, which has recently installed a very small—in this context—water wheel that takes water from the diverted Brandy Burn. The water wheel generates 220kW, according to the name-plate, and it provides not free but relatively cheap and continuous electricity to that part of Glen Clova. That means, at the very least, that there needs to be less investment in the rest of the infrastructure to ensure a continuous supply.

I echo comments made by Claire Baker and Mike MacKenzie about the need for SEPA to ensure that it applies appropriate rules. If those rules need to be changed, maybe the Government should reflect on changing the guidance on those rules so that such schemes can be installed—obviously with due consideration to the environment, but with no unnecessary delay or complication.

One of the important issues that have not yet been stressed is that hydro power is effectively base-load. It is continuous, not intermittent. As Malcolm Chisholm pointed out, if it really does not rain very much at all then we will run short of water and the total installed capacity and generation may drop, but hydro power is not an intermittent electricity generation system, so it is extraordinarily important as part of the system.

The economics of hydro power also bear consideration. As members have already mentioned, we have been doing it for a long time—my grandfather was installing some of the hydro schemes between the wars, when he worked for Balfour Beattie—so the technology is very old, well understood and well costed, which means that any project can be pretty accurately costed. The uncertainties now arise not from the project costs, as happens in many other areas of life, but from the feed-in tariffs—from what the income will be as a result of the investment. That is different from many other large capital investments, so it is important for those who are thinking about hydro schemes that the feed-in tarifffs are well understood, are known in advance and can be depended upon.

Allow me to reflect on the future of hydro power. Independence or no, let us be absolutely clear that it will continue to rain in Scotland. Independence or no, let us be absolutely clear that there will be continuous copper wire from here to the ends of the earth. Actually, it is a classic case of interdependence. It is important that we in Scotland are able to make the appropriate decisions, and it is appropriate that the rest of the world makes its decisions, but electricity is not going to stop at Hadrian's wall, and we have an awful lot of rainfall, which we should be turning into electricity for future generations.

15:57

Jamie McGrigor (Highlands and Islands) (Con): I refer members to the reference to hydro in my entry in the register of members' interests. I

am pleased to take part in the debate. As an MSP for the Highlands and Islands, I recognise the contribution that hydro power has made over the past 70 years in meeting the energy needs of communities in my region, and indeed across Scotland, since the Hydro-Electric Development (Scotland) Act 1943.

Tom Johnston was indeed a far-sighted Secretary of State for Scotland, with his vision of a light in every glen, and I hope that he is mentioned on the VisitScotland website. He certainly should be. It is a pleasure for a Conservative to be able to praise a Labour politician, probably because the opportunity arises so seldom, but the fact that Johnston was appointed by Winston Churchill makes it even better.

Nigel Don: Could Mr McGrigor remind me which party Winston Churchill was a member of at that time?

Jamie McGrigor: It was not the Scottish National Party.

Near Inverary, in Glen Aray, there is a house called electric cottage, which was the first to receive electricity in the 1950s after the Shira dam was built. It is amazing to think that that glen, which is only 60 miles from Glasgow, did not get electricity until the 1950s. Hydro now produces 12 per cent of Scotland's needs, and it could be much more than that. Mary told us all about the monks with their 18kW scheme from the River Tarff—

The Deputy Presiding Officer (John Scott): You might wish to refer to the member by her full name, Mr McGrigor.

Jamie McGrigor: I beg your pardon, Presiding Officer.

Mary Scanlon mentioned the monks, and I pay tribute to all those who were involved in the pioneering large-scale hydro developments in the Highlands over the past 70 years. Scotland led the world with those developments, and people came from across the planet to view our engineering prowess. That was, of course, before we discovered oil and renewables got put on the back-burner. The hydro dams that were built in the 1960s at places such as Laggan, Shira and Cruachan are remarkable and, indeed, beautiful structures, although there was much opposition to them at the time, on the ground that they would spoil the view.

Now, hydro power is a long-established part of the community. I live in Loch Aweside in Argyll, near the Cruachan power station, which is located within Ben Cruachan itself. When it was built, that was the largest pumped-storage scheme in Europe. In his younger days, the Labour MSP Dr Richard Simpson was a driller on the Cruachan scheme and, I believe, a good one, too—there I go, praising Labour again; I do not know what is happening today. I encourage any colleague who happens to be in Argyll over the summer to visit the hollow mountain visitor centre at Loch Awe, which is a fantastic and interesting attraction.

Scottish Conservatives are positive about the part that the development of new hydro schemes—in particular, micro and small-scale schemes—can play in meeting Scotland's energy needs, providing a reliable source of energy and meeting renewables targets. New technology has multiplied the amount of electricity that can be generated from relatively small burns with a steep drop. We are also conscious that there is potential for expanding or improving the efficiency of the existing facilities, especially the run-of-river facilities, which might be a bit old-fashioned. The most modern plants can achieve energy conversion rates topping 90 per cent, and we would strongly support community ownership of micro and small-scale hydro projects, where that is appropriate.

A report for the Scottish Government that was published in January 2010 suggested that a combined potential capacity of 1,204MW could be achieved from more than 7,000 small hydro schemes. Almost all of those had a capacity of less than 5MW, and 3,008 of the total were identified as being in the Highland region. That report, unlike previous reports, took account of micro-hydro schemes under 100kW. The Scottish Government suggests that a 100kW scheme operating with an average annual output would generate enough electricity to power more than 50 homes every year. The report also identified the potential for hundreds of new jobs to be created from those developments.

Many of the schemes are on Forestry Commission Scotland land. I know that it has delegated some of its renewable assets to partners, and we would encourage it to continue to develop more schemes on its publicly owned land.

We are aware of the significant challenges that can face those who wish to harness the power of micro and small-scale hydro schemes. Those are set out in the very useful briefing for today's debate from Scottish Renewables, and include feed-in tariff digression and grid connection delays.

Improving grid connection is of fundamental importance and, of course, affects other types of renewables. Scottish Renewables is correct to argue that network operators must continue to make the case for strategic investment in grid upgrades. Recently, I spoke to a potential developer on Loch Tay who had been promised—and had paid for—a grid connection in 2013, which was then moved to 2015. He has now heard rumours that it will not be in place until 2017.

Building even small schemes can cost millions. How can those small developers budget if the goalposts on grid capacity are constantly moved? Frankly, that is not good enough.

Hydro power is a highly acceptable form of renewable energy, which, once installed, can go on producing for 50 years or even as long as 100 years. It contributes directly to Scottish gross domestic product, unlike imported sources of power, which reduce GDP. If that uplift to GDP is to be nurtured, the infrastructure must be put in place to carry it. It is a good long-term investment for the country. If that does not happen, the policy is only half-hearted, and it is extremely unfair to those who are prepared to take the risk of investing.

Problems lie not only with power lines but with sub-stations, but investment in those is crucial if we are to keep the renewable river running. I would like the minister to tell us what is being done at the moment to speed up the process. He mentioned an investment of £7 billion.

The Deputy Presiding Officer: Come to a close, please. You have 30 seconds.

Jamie McGrigor: Mary Scanlon made an important point about the protection of fisheries and freshwater mussels, which I agree with. We have gained a lot of experience over the past few years from the existing hydro schemes. Surely, we can use that experience to ensure that the same mistakes do not occur again.

16:05

Jamie Hepburn (Cumbernauld and Kilsyth) (SNP): In welcoming the debate, I apologise for the fact that my speech will suffer from a deficiency of information about monks, salmon and talking washing machines. Unfortunately, I have a paucity of detail on such matters.

I am happy to contribute to the debate. Over its lifetime, the Parliament has had a strong commitment to tackling climate change and reducing carbon emissions. We have also seen a strong commitment to renewable energy from the Scottish Government. The Government has set ambitious targets and we are well on the way to achieving them.

We had a pertinent time for reflection today, which I thought was of more interest and relevance to people out there than the line of questioning that followed, which was referred to by Jamie McGrigor. In his remarks, which were entirely about climate change and climate justice, Jon Cape spoke of the need for a game changer to rise to the challenge of climate change, which is the great challenge of our times. We know that renewable energy can play its part. If we are serious about renewables, they can be the game changer and we know that, of the mix that is needed, hydro power is proven to deliver.

According to Scottish Renewables, 12 per cent of our electricity now comes from hydro power. Stuart McMillan pointed out that, in 1930, Scotland had 45MW of large-scale hydro while the rest of the UK had the same but that, by 2012, Scotland had 1,339MW of large-scale hydro while the rest of the UK had 132MW. That demonstrates the scale of the change in the intervening period, and Tom Johnston deserves huge credit for that. We currently have enough hydro power to provide almost 1 million homes with electricity every year. We owe Tom Johnston a debt of gratitude for his assiduous pursuit of hydro power, and it is absolutely right that we are having this debate to mark the 70th anniversary of the Hydro-Electric Development (Scotland) Act 1943.

I was interested to hear Mary Scanlon's suggestion—I think that I picked it up correctly, but she will correct me if I am wrong—that the 1943 act should be strengthened and enforced in relation to the environmental impact that hydro power schemes can have. She is indicating that I am correct. However, we will struggle to enforce the 1943 act because it was repealed by the Tories under Margaret Thatcher in 1989. Nevertheless, I suppose that the fundamental point is that we should learn the lessons of the intervening period, and she was right to put that point on the record.

Mary Scanlon: Will the minister—sorry, the member—give way?

Jamie Hepburn: Indeed, yes.

Mary Scanlon: I am sorry—I promoted Jamie Hepburn long before he is likely to be promoted.

Mrs Thatcher is no longer with us and I am asking that, for hydro power in rivers, SNH, SEPA and councils ensure that an environmental impact assessment is carried out and adhered to. I have spoken to SNH and SEPA, and they are now doing much more work on that. We do not need any nasty comments from the member when I was making a constructive point. The matter is being taken on board by the minister and those two agencies.

Jamie Hepburn: I thank Mary Scanlon for her perspective on my prospects. I will keep my perspective on her prospects to myself. Rather than making nasty comments, I was suggesting that Mary Scanlon was right to put that comment on the record. When she checks the *Official Report*, perhaps she will reflect on the fact that I was welcoming her point rather than attacking her.

The fundamental point that I was trying to make was that although it is right to have this debate to

commemorate the now-defunct Hydro-Electric Development (Scotland) Act 1943, which is an important part of Scotland's history, more importantly the debate allows us to consider what part hydro power might play in Scotland's future.

As I have said, 12 per cent of the electricity that is generated in Scotland comes from hydro power. The question that we should pose is, how do we increase the percentage of electricity that is generated by that means? We can see the ambitions that the Scottish Government has set out. We know that its idea is to develop Scotland as a hydro nation. The Water Resources (Scotland) Act 2013 not only looked at the structure of Scottish Water but placed a general duty on Scottish ministers to take steps to ensure the development of the value of Scotland's water resources. Clearly, hydro power has to form part of that agenda. We have also seen action from the Scottish Government in relation to maintaining the level of support through the renewables obligation certificate scheme, as opposed to the proposal across the rest of the UK to reduce the value of that scheme elsewhere in the UK. We have seen the Government publish online planning advice for hydro schemes, which encourages planning authorities to include hydro power development in their spatial plans. We are seeing action from the Scottish Government to encourage and foster new developments in the area of hydro power.

In recent years, we have seen developments. We saw the £30 million scheme near Ardross receive planning permission in May 2013. We saw the Glendoe scheme open in 2009. I am aware that that scheme has had its troubles, but I am delighted to see that operations are back under way. On a smaller scale, in March the Deputy First Minister launched the UK's first Difgen hydro scheme near Denny, which is not far from my constituency, which is a great example of utilising existing infrastructure to help generate energy on a smaller scale and help make Scotland a greener place.

We have the potential here. We have the legacy, but we also have the future of this industry. I am confident that with the right support and the right determination we can harness the thus-far untapped potential and ensure that hydro power is an important part of Scotland's story for 70 years and more to come.

16:12

Elaine Murray (Dumfriesshire) (Lab): Mary Scanlon gave a great exposition in her speech of the species that she champions. I have since been unsuccessfully attempting to insert references to the natterjack toad or the tadpole shrimp into my contribution.

Scotland currently has 145 hydroelectric schemes, producing 12 per cent of Scotland's electricity, with a capacity of around 1,500MW. Malcolm Chisholm, Claire Baker and the minister referred to the large-scale pump-storage schemes planned for the Great Glen, which would have a combined generation capacity of 900MW. It is interesting that those could be the first pump schemes to be developed in the United Kingdom for 35 years. The current theme of the story of hydro power is the rediscovery and redevelopment of older technologies. Possibly the main opportunity now for the expansion of hydro power is in developing the several thousand small hydro schemes with individual capacities of under 5MW, including the run-of-river hydroelectric schemes.

More than half of Scotland's current hydroelectric plants are in the Highlands. However, there are six in Dumfries and Galloway: Carsfad, Drumjohn, Earlstoun, Glenlee, Kendoon and Tongland. None of those is in my constituency, but I have the permission of the MSP for Galloway and West Dumfries, Alex Fergusson, to mention his constituency in this context. The Galloway hydroelectric power scheme, which is operated by Scottish Power these days, draws water from the River Ken, the River Dee and the River Doon, through reservoirs at Loch Doon, Kendoon, Carsfad, Clatteringshaws and Tongland. The scheme is still capable of production power of around 106MW. It predates Scottish Hydro Electric by some years, having been authorised by the Galloway Water Power Act of 1929 and built between 1932 and 1936.

The stations in the Galloway hydro power scheme are of particular interest, having been designed by Sir Alexander Gibb. They are now listed, as they are among some of Scotland's earliest modernist buildings. For example, Tongland power station outside Kirkcudbright is an impressive grade A listed building with large windows. It really does not look like a power station at all; in fact, it reminds me slightly of St Andrew's house for some reason, and it is a considerable tourist attraction. Despite the architectural merit of some of those power stations, they are among the least expensive power stations that have built in the United Kingdom, at a total cost of only £3 million.

Mike MacKenzie mentioned that hydroelectric schemes were controversial at the time. The local poet WGM Dobie wrote:

"A raider comes today who kills
The glories of our glens and hills
With unheroic acts and bills
And private legislation
The Company Promoter's pen
Will dam the Deugh and dam the Ken
And dam the Dee—oh damn the men
Who plan such desecration".

Controversy surrounds power generation of all sorts.

The Galloway scheme makes use of the large lochs and rivers in the area, but I believe that there is much potential for small hydro schemes in the east of the region in my constituency, which would make a change from wind turbine applications. Small-scale hydro schemes are of course not new, as rivers were used to power mills in centuries past. The Robert Burns centre in Dumfries is situated in the town's 18th century watermill where, during the first half of the 20th century, the River Nith powered a low-head turbine that drove a 100kW direct current generator that for a number of decades supplied power to the Troqueer area in Maxwelltown.

Much more recently, hope has been expressed that the waters of the Nith might again generate power. In 2011, the Nithsdale area committee of Dumfries and Galloway Council agreed to support exploration of the potential for a small-scale hydro plant opposite the Whitesands that would deliver about 100kW. It is a pity that Stewart Stevenson is not here, because the scheme would use a reverse Archimedes screw system, which he described to us in such detail. Interestingly, the Archimedes system is very ancient and is thought to have been used in the irrigation of the hanging gardens of Babylon. Originally, it was a way of bringing water uphill rather than producing power by allowing it to flow downhill in a reverse scheme. The scheme is potentially being developed as part of an art installation in the river and might also be progressed through flood protection measures. As someone whose office has frequently flooded, I would welcome the art installation and the flood protection measures.

The Forestry Commission encourages the development of renewables on its estate. However, when I looked on its website, I was rather disappointed to find that there is only one operational hydro power site in Dumfries and Galloway, at Buchan Burn near Newton Stewart, and that it generates only 0.006MW. Given the extent of forestry land in the region, there must be considerable potential for small-scale hydro development that is so far untapped. As Mary Scanlon said, the dash for wind has distracted attention from other forms of renewables that could be developed, such as hydro power, and that is certainly the case in my region.

Fergus Ewing: I reassure the member that currently in the national forest estate there are 16 schemes, with an installed capacity of 14MW, with another being commissioned and six with planning consent. Seven more are in planning and a further 100 sites are under investigation in the forest estate.

Elaine Murray: That is the forest estate as a whole, but I am arguing that, unfortunately, there does not seem to be sufficient development in the south of Scotland. I would like more hydro development to be explored in Dumfries and Galloway and across the south of Scotland, because I am certain that there is potential for that.

There is also potential for tidal power in the Solway Firth. The possibility of a Solway barrage was mooted in the 1960s and was revived again in 2006. However, a report that was commissioned by Scottish Enterprise suggested that it could be extremely expensive and rather environmentally sensitive. It has since been proposed that the use of spectral marine energy converters attached to a bridge structure might enable tidal generation with an estimated output of 180MW.

Hydro power seems to be experiencing a renaissance, despite the challenges with things such as feed-in tariffs, which Ken Macintosh described in considerable detail. Of course, hydro power must be part of a balanced energy policy. I have argued for many years that other things such as nuclear energy should be part of the policy, too. However, I believe that there is much untapped hydro potential outwith the Highlands and Islands. I hope that it will be developed and that the balance between wind and hydro in the Dumfries and Galloway area might be tipped a bit more towards hydro.

16:19

Chic Brodie (South Scotland) (SNP): At the beginning of the debate, I wondered whether we had stumbled into it via the questions about the VisitScotland website, given the multiple enumerations of historical hydro events, embellished by thoughts about the Archimedes screw, intelligent washing machines and—of course—Mary Scanlon's mussels.

I am delighted to support the motion, which spells out the Government's on-going commitment to a balanced renewables programme that incorporates hydro. The Economy, Energy and Tourism Committee's recent report on how Scotland will meet its renewables target to generate the equivalent of 100 per cent of our gross electricity demand by 2020 perhaps shows that the committee spent a disproportionate amount of time deliberating on wind rather than water, but no matter: today's debate helps to address that to some extent. The motion underlines our hydroelectricity tradition and our commitment to install more than 120 hydro-generating stations of varying sizes, which will be founded on sound micro and macro mechanics and technology.

Several years ago, as a youngster, I visited Pitlochry, to be transfixed by a feeling of power: the power of and from water. Just as I was excited then by that feeling, I am excited now by the opportunities that we have to move forward.

Last year, I was shown the prospect of a resurrection of significant micro-hydro generation through the activities that are taking place at an estate near Johnstonebridge. I applaud our Government's commitment to the future of that technology in proposing to leave the support banding at one ROC—renewables obligation certificate—and to stimulate further investment of micro projects under the feed-in tariff agenda.

Those micro projects are critical, not just as an aggregate addition to national targets, but because of their community impact. Community benefit is important, whether in Maldie, Fort William or elsewhere in Scotland. However, as I highlighted in last week's debate on national planning framework 3, community ownership and/or participation, including financial decision making, will be a key element in the success of our energy programmes as we drive them forward.

I commend one company for involving the community, but we must go further and ensure that our curriculum and school communities increasingly and even more intensively reflect topics that relate to energy and climate change. Just as next year's vote recognises the political environment, so the education of today and tomorrow should increasingly embrace the implications of our physical environment.

That said, all great schemes may "Gang aft agley" unless the infusion of water-powered energy is given the arteries to be part of the national electricity body. It is therefore essential that grid connectivity and establishment are produced and sustained, not only for hydro, but for micropower generation and associated pumped-storage projects in Scotland.

The fortune of God-given natural assets such as onshore and offshore wind and inland and offshore water, including marine and tidal sources and the possibility of solar farms, puts Scotland in a good place not only to deliver energy indigenously and, potentially, to export electricity to England and Europe, but to export our technology and develop our skills, and thereby further increase job opportunities.

The World Bank is pushing to develop hydro power, which it now recognises as a medium to resolve the tension between economic development and low-carbon emissions in developing countries. As Rachel Kyte, the bank's vice-president for sustainable development—and the top staff member and adviser of the team of the bank's president, Jim Yong Kim—said:

"hydro is a very big part of the solution for Africa ... South Asia and Southeast Asia. . . . I fundamentally believe we have to be involved".

She said that the earlier move out of hydro

"was the wrong message. . . . That was then. This is now. We are back."

It was additionally significant that Peter Bosshard, the policy director of International Rivers, a group that is opposed to the World Bank's evolving hydro policy, did not oppose the general principle, but argued for smaller projects that are designed around communities. I am on his team in supporting small, microgeneration activities.

Scotland has the unique opportunity to augment its other forms of renewable energy production by stimulating and investing in community-based hydro projects, not just to drive energy costs lower and so have an impact on fuel poverty and climate change at home, but to develop and export our historical expertise and so do the same internationally.

16:25

Claudia Beamish (South Scotland) (Lab): As members will be keenly aware at this stage in the debate, hydroelectric power is firmly rooted in Scotland's post-war history and, indeed, as many members have said, in our future.

Johnston is now widely regarded as one of the most influential of Scottish politicians, not just for championing large-scale hydro power, but for vigorously promoting Scotland and Scottish interests in Cabinet. However, it was his vision of diversifying electricity production in Scotland by taking advantage of the vast, untapped potential of hydro power that cemented his place in history, part of which we are celebrating today.

Johnston believed that hydro power would be instrumental in developing the economy of the Highlands, and he was correct. As a long-term student of history, I have enjoyed and found fascinating today's history lecture, although it was somewhat fragmented, ranging from Egypt, ancient Greece and the hanging gardens of Babylon to the present day.

Rob Gibson: The modern view is that most hydro schemes enhance the upland landscape. The first hydro board chairman, the Earl of Airlie, got pelters from his landlord friends, and his son was blackballed by the Perth hunt because of his father's job. However, 50 years later, the blackballed and current earl met his accuser, who agreed that the hydro schemes had improved the landscape of Perthshire. Does the member agree with that?

Claudia Beamish: I thank Rob Gibson for that further historical analysis, and I do agree with him

about that. I am sure that he agrees with me about the abolition of the hunt, which is a debate for another day.

Although Johnston's vision did not initially gain the traction that it needed to bring hydro power centre stage, he would be pleased to know that we now produce between 10 and 12 per cent of our electricity from that power source. Naturally, when he was laying the foundations of hydro power in the 1940s, he was, like everyone at the time, blissfully unaware of the effect of carbon emissions on our climate. As I have already suggested, Johnston's main motivation for championing hydro power was the economic prosperity of the Highlands, but his early foray into the world of renewables was particularly fortuitous as it has become invaluable in the fight against climate change.

I am sure that members will not need reminding of our commitment to reducing our carbon emissions. As we all know, the Scottish Government has missed the first two targets, which makes the likelihood of achieving the first main target by 2020 increasingly challenging. We all agree that much needs to be done if we are to catch up with our targets and be on course for 2020.

Of course, there are a number of other means of achieving the required reduction in emissions through measures such as energy efficiency in homes and increased use of public transport. However, as the Scottish Government has repeatedly asserted, renewable energy is the way forward. The Scottish Government's goal of 100 per cent of gross electricity generation being done by renewables by 2020 is a challenge indeed. If that challenge is to be met, hydro power has an important role, which perhaps has been underplayed in spite of recent project announcements.

I argue that we should be further developing hydro power as part of the spectrum of renewable energy. Although wind and tidal power have a part to play, traditional hydro power should not be neglected, and today's debate has reinforced that view. It is a tried and tested technology that fits extremely well with our natural resources. It is also relatively cheap when compared with some other sources of energy, including fossil fuels and nuclear energy.

I am told that the hydro technology that was developed 70 years ago—with its simplicity and its commercial feasibility—has, in the main, not changed. In my region of South Scotland, there are a number of examples of the benefits of hydro power. The Falls of Clyde in South Lanarkshire host a hydroelectric power station that is a prime example of a large-scale power plant.

The Lanark hydroelectric scheme was, in fact, the first one in Scotland. Built in 1927, it predates by a number of years Thomas Johnston's hydro campaign. It consists of a pair of similar power stations—Bonnington and Stonebyres—on the River Clyde, which many people visit. Now run by Scottish Power, the station generates enough megawatts to power 11,000 households.

Pumped-storage hydro has been highlighted by Malcolm Chisholm and others. It is effective and proven, as shown over many years at Lanark and other places. Scottish Renewables stresses a number of benefits including

"balancing services, flexible and fast response times, and the ability to limit the incidence of elevated electricity prices."

However, Scottish Renewables calls on DECC to clarify

"whether support for pumped storage will be part of the EMR process".

Malcolm Chisholm has also highlighted that issue and the possibility of longer run times, which I hope the minister will comment on in his closing remarks.

At the other end of the scale, of course, is micro-hydro power. Small-scale projects are part of the range of renewables opportunities and sharing information among communities is essential. The Fintry Trust is going forward with a micro-hydro project that I looked at when I visited recently and members of the trust came to Clydesdale to share community energy insights. That could be a model to follow elsewhere.

Along with my colleague Claire Baker, I am pleased that the land reform review group has highlighted in its interim report that renewable energy is one of its work streams going forward to phase 2. Shared co-operative consultation services, funded by the Government, would help to kick-start a lot of community action, because some of the communities that I and my colleagues have come across are flailing rather over where to go to get support.

I want to briefly highlight concerns about the skills gap—

The Deputy Presiding Officer: Very briefly.

Claudia Beamish: I have concerns about the skills gap in relation to micro-hydro energy and wonder about the possibility of apprenticeships.

Will the minister tell members what steps Scottish Water is taking to facilitate micro-hydro power within its remit?

We in Scotland have a shared vision for the future of hydro projects, large and small—let us ensure that it happens.

16:33

Murdo Fraser (Mid Scotland and Fife) (Con): It has been an interesting debate, during which we had a number of history lessons. In reverse order of antiquity, we had Mary Scanlon reminiscing about the monks at Fort Augustus abbey playing the electric organ as the lights dimmed around the nearby village; we had Mike MacKenzie remembering standing in front of a motor car waving a red flag; and we had Stewart Stevenson learning at the knee of Archimedes.

We had a number of references to Tom Johnston's legacy. Jamie McGrigor made the point that it is rare for Conservatives to praise a Labour politician. Some of us, of course, are making an exception at the moment for Alistair Darling—in one context only and only temporarily. However, Tom Johnston's legacy is an important one.

A number of members mentioned family connections. My own father worked on the Glascarnoch hydro scheme more than half a century ago.

The point that the minister made in his opening speech about the economic benefit to the Highlands of constructing the hydro schemes was an important one. In addition, the Johnston project brought electricity to homes throughout the Highlands and Islands that otherwise would not have had it. The project was of great social as well as economic benefit.

Members on all sides of the chamber see the opportunity ahead. It is true that there are limited opportunities for large-scale hydro schemes. The Glendoe project, which is now fortunately generating power again after a short interruption, is perhaps one of the last major schemes that we will see.

However, there is great opportunity for very small-scale schemes, of which I have seen a number in highland Perthshire. They can have a very low impact on the environment and a very low visual impact but nevertheless make a considerable contribution to meeting renewable energy targets while delivering a very good source of income to the farmers and landowners involved.

Indeed, when the Economy, Energy and Tourism Committee was doing its inquiry into renewable energy, we visited one hydro scheme in Glen Lyon. It was not the one that Mary Scanlon referred to, which destroyed her beloved freshwater pearl mussels, but one slightly further upstream from that. We saw for ourselves the beneficial impact that it would have on the local community, the revenues of the local landowner and the environment.

Despite his antiquity, Mike MacKenzie made an interesting contribution. He made the interesting point that there was opposition to hydro dams when they were first constructed. The point that he was trying to make—which was reflected by Rob Gibson later in the debate—was that maybe 50 years on we will love wind farms as much as we now love hydro schemes. I am not quite so sure, for two reasons: first, the visual impact of wind turbines in our rural areas is much more significant than that of hydro schemes; and secondly, an inherent problem with the overdevelopment of wind power is that we have yet to overcome the issue of intermittency and the lack of predictability.

Rob Gibson: Does Murdo Fraser accept that complementing pumped-storage hydro with wind farms is part of a balanced policy and that wind on its own is not advocated by the Government but is part of a much wider energy policy that is suitable for Scotland?

Murdo Fraser: I was about to address pumped storage. We have a long way to go to build the pumped-storage capacity that would be required to balance out all the wind turbines that are being erected. Of course, there are issues with efficiency and the cost of pumped-storage schemes, which require subsidy. We need to remember that energy subsidy comes at a cost to the consumer. This is not a question of writing a blank cheque; we have to ensure that there is a balance.

I want to raise a specific issue that Mike MacKenzie, Claire Baker, Jamie McGrigor and others mentioned, which is small-scale hydro schemes below 100kW. The issue was also raised by Scottish Renewables in its briefing for the debate. Currently, SEPA has a screening process for small-scale hydro schemes, which states that they must have no environmental impact. In practice, that limits such schemes to being very small and in steep and usually remote locations, unless the operators agree to remove only one quarter of the river flow, which in many cases would make them unviable. There is a concern that we are taking an overly cautious approach that is perhaps a good example of gold plating of European Union obligations that could be interpreted in a less stringent way.

I do not wish to fall out with Mary Scanlon, because I accept that there is a need to protect the environment—whether for freshwater pearl mussels or the salmon fishing industry—but there is a need to look at how we apply the rules, which are preventing the development of very small-scale hydro schemes. As Claire Baker pointed out, those schemes could benefit farmers, crofters, householders and local communities. We are losing out on energy potential and we are disadvantaging very small businesses, as opposed to larger landowners who own land in further upland areas, which can benefit under the current rules. Smaller schemes are more likely to

use local trades and buy equipment from British manufacturers. I am not sure why we should treat very small schemes differently from above-100kW schemes, and I would be grateful if the minister would address that point and say what the Scottish Government is doing to make things better and improve the development of small-scale schemes.

A number of members mentioned electricity market reform, which we have debated before, and members have raised issues about billing, which are complex but are important to get right. I agree that it is important that we maintain the level of support for hydro schemes under the new contract for difference scheme. I urge the UK Government and DECC to do just that.

Fergus Ewing: Will the member give way?

Murdo Fraser: If I have time, I will give way.

The Deputy Presiding Officer: You do not have time.

The member is in his last minute. I am sorry.

Murdo Fraser: I am sorry. Perhaps the minister can address the point in his winding-up remarks.

Stuart McMillan raised the point about independence and said, "Oh, if only we were independent, everything would be fine." He rather missed the point that Mr Ewing has made on many previous occasions that, post independence, the SNP wants to retain a single energy market. I presume that whatever rules are currently being put in place would be maintained post independence.

I will close on a note of agreement, as the debate has been very consensual. Scotland has great hydro power potential. Much of that has already been developed and much more can still be developed. There are opportunities ahead, and I hope that Governments in both Edinburgh and London can work together to make the most of the industry.

16:40

Ken Macintosh: The debate has indeed been relatively consensual, unsurprisingly, and a number of members, including Rob Gibson, Liam McArthur, Malcolm Chisholm and Claire Baker, have made very thoughtful and instructive contributions. We have had poetry from Elaine Murray, flora and fauna from Mary Scanlon, and history, geography, science, engineering and mathematics from Stewart Stevenson alone. Although Stewart Stevenson did not confess to knowing Tom Johnston personally, he did not disappoint whatsoever in his contribution. I think that he told us that "the light goes on" with the formula for H_2O, whereas Mary Scanlon said that the lights would go off. He and Elaine Murray told us about the origins of the Archimedes screw. I think that, although the Syrians invented the Archimedes screw, it was patented by the Greeks. Perhaps that is a lesson for all of us.

We have had a few disagreements about independence today, although not many. Stewart Stevenson ended his contribution by talking about the politics of water in the middle east, and I think that that left us all feeling that our own arguments had been put in perspective.

A number of substantial issues have been raised. Secure and sustainable levels of finance are clearly essential to the entire renewables industry. In the early part of the debate, a number of members and I addressed the importance of feed-in tariffs and degression rates. The current uncertainty about the Co-operative Bank, which has not been raised, is of particular concern to those who are interested in developing renewables projects. As some members will be aware, around 80 to 90 per cent of project lending for small and medium-scale renewables projects comes from that bank. The excellent Neilston community wind farm project in East Renfrewshire, which Stuart McMillan mentioned, relied heavily on support from the Co-operative Bank; indeed, it is fair to say that the bank's funding was the crucial factor in community ownership going ahead in the village. Given the difficulties that the Co-operative Bank currently faces, many other small-scale community-driven schemes may find it difficult or impossible to get the cash that they need to get projects off the ground. I would welcome hearing from the minister about not only the Scottish Government's own funding schemes, but how we can put more pressure on Scottish high street banks to step in to support small and medium-scale renewables projects, including hydro projects.

The major strategic challenges include feed-in tariffs, finance and grid connectivity, which a number of members have raised not simply in the context of connecting our islands and the difficulties in planning for onshore and offshore wind, but, crucially, in the context of hydro. Stewart Stevenson said that SSE is still known affectionately as "the Hydro", and I think that Rob Gibson suggested that it has kept the faith with hydro power. I am aware of those in the renewables industry who are concerned about the potentially conflicting roles of SSE and Scottish Power as providers of grid infrastructure as well as generators, and I know that a written submission has been made to Murdo Fraser's Economy, Energy and Tourism Committee about the 50kW limit imposed by SSE on the size of grid connections over much of rural Scotland. I hope that the minister will also keep an eye on that issue.

At times, it strikes me that there is a bit of a Mexican stand-off between the Scottish Government, the UK Government and the electricity companies on who will pick up the tab for what we all view as essential renewables investments. I think that the renewables industry, and the hydro industry in particular, are less interested in who will blink first than in securing a stable future for which they can plan.

That leads me to storage, which is a related subject that a number of members raised. Like all renewables, hydro power suffers from intermittency. I think that it was Malcolm Chisholm who highlighted that, after the spring that we have just had, it might seem that water is in abundance, but the figures from 2010 reveal that, in a single year, hydro output fell by 40 per cent as a result of low levels of rainfall.

Nigel Don: I hesitate to disagree, but I ask the member to recognise that there is a difference between intermittency, which is the coming and going of an energy source over hours or days, and variability over weeks and months, which undoubtedly applies to hydro. I respectfully suggest that that is a different problem from the intermittency that comes with tidal, wave and wind power.

Ken Macintosh: I accept that, in this case, variability would be a better term to use than intermittency, given that it relates to a factor that applied over a year rather than a period of days. However, my point is that, just as wind turbines suffer during periods of low wind, hydro is affected in a similar way. That is particularly the case with pumped storage.

In answer to previous questions from Mary Scanlon on the issue, the minister has referred to SSE's planned pumped-storage scheme at Coire Glas on Loch Lochy. If that goes ahead, it will be a good example, but a number of members have emphasised that we need clarity from the UK and Scottish Governments on the future of pumped storage.

Related to that is the continuing issue of interconnectors, which allow for the sharing of renewable energy across a much larger grid and enable peaks and troughs to be balanced. Nigel Don raised that point. The "Energy Storage and Management Study" that was produced in 2010 for the Scottish Government referred in some detail to the benefits of interconnection and noted that the capital costs of interconnection were cheaper than those of large-scale pumped storage. Therefore, it was of particular concern to learn, in March, that SSE was pulling out of the Scotland-Norway interconnector project and that a cable to the north of England is now being pursued as a more viable option. I would welcome any information that the minister has on the future of that project.

There is another aspect of hydro power generation that Scotland can utilise that no other part of the UK can. The huge hydro resources of Scottish Water—a public body—can be used for the generation of hydroelectricity. Scottish Water is currently the single biggest consumer of electricity in Scotland: it has an annual electricity bill of £40 million and accounts for 1.5 per cent of overall Scottish energy consumption. If nothing else, Scottish Water has the potential to utilise its water supply to reduce that electricity bill, but it also has the potential to feed into the grid and to contribute to our overall hydro generation targets.

Scottish Water has a number of schemes in progress. The existing schemes generate around 18GW per annum, and proposed schemes would add an additional 23GW, but that is a fraction of the 500GW-plus that Scottish Water uses annually. As part of the Scottish Government's plan for a hydro nation, Labour would welcome more radical plans for Scottish Water.

Members raised a number of challenges; mostly, they raised them as issues of concern, rather than as criticisms. The good temper was broken only in the exchange between Jamie Hepburn and Mary Scanlon.

On the report on proposals and policies 2, it is unfortunately the case that the Scottish Government has missed consecutive annual emissions reduction targets. Claudia Beamish said that it would be "increasingly challenging" to meet the 2020 interim target of a 40,717,000-tonne reduction in CO_2 equivalent. Margaret McDougall and Mike MacKenzie exchanged comments on whether that was the fault of the UK Government. I simply observe that such targets are our targets and an incentive to us in Scotland to do what we can. Again, we need greater clarity from the minister, particularly on how hydro can contribute to the meeting of our targets.

The issue of green jobs was raised by a couple of members; it is certainly of importance. The Scottish Government produced a study on the employment potential of Scotland's hydro resource. I think that the most optimistic scenario would be constrained by environmental and regulatory factors. Even the more realistic forecasts rely on educational and business support to ensure that skilled hydro engineers—particularly in the micro-hydro sector—are retained in Scotland.

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

Ken Macintosh: I am conscious that in Aberdeen, for example, where they are suffering from skills shortages, the oil and gas industry is able to poach staff by offering higher salaries. I would welcome confirmation that the Scottish

Government will work with the industry to attract and retain talent.

In conclusion—

The Deputy Presiding Officer: Yes, please.

Ken Macintosh: Malcolm Chisholm talked about what can be achieved through a

"shared agenda for positive change"

in Scotland. We all support the Scottish Government's policy direction for renewables but, as the debate has shown, we have concerns about the progress that we are making.

The Deputy Presiding Officer: You must close now, please.

Ken Macintosh: We support the Government for giving ROCs to hydro and others.

16:50

Fergus Ewing: This has been an excellent debate. I thought that it would be a useful demonstration—and we have seen it this afternoon—of cross-party support for hydro power and pumped storage. That support in itself is of value. The debate has also shown that we in the Scottish Government are propounding a solution of varied sources of electricity generation.

Since this is a day for cross-party consensus, I will again quote Winston Churchill. On the policy approach to electricity generation, he said that the solution is "variety and variety alone". How electricity is generated may be different in the future from what it has been in the past.

The debate has been interesting. We have had anecdotes, personal reminiscences and scholarship. The debate has been variable and intermittent. [*Laughter*.] It has been variably illuminating and intermittently entertaining.

We have with us today a distinguished guest who is a significant figure in the world of hydro power: David Williams, who heads up the British Hydropower Association. I hope that he has enjoyed the debate and the demonstration of support from all parties for the work of the BHA's members. I have had the pleasure of learning more about that good work at reasonably frequent outings with the BHA in one form or another.

I will move on to address some of the topics that were raised in the debate, starting with the problems highlighted most recently by Scottish Renewables and the rising concerns over the future of small hydro power in Scotland. To be fair, Ken Macintosh set out the issue well, so I do not need to repeat the nature of the problem.

I do not want to make it a party-political issue, but the problem is one that—for the reasons that Scottish Renewables set out in its press releases of 18 June—very much needs to be addressed. We want to see small hydro power schemes go ahead—virtually every member of every party has said that—but how the FIT tariff and degression operate and interrelate is damaging. As the senior policy manager of Scottish Renewables rightly said, that is because the degression has been applied not to built hydro schemes but to potential hydro schemes. Therefore, a scheme that was intended to avoid boom and boost, and what Mr Fraser referred to as the excessive risk of an overinflated cost to the public purse, might inhibit the development of more small-scale hydro schemes.

I understand that the UK Government is considering the information provided by the British Hydropower Association. The BHA surveyed 38 developers who, between them, planned to pre-accredit 195 schemes with a combined installed capacity of more than 98MW. The two solutions—I am primarily interested in solutions rather than simply intoning the nature of the problems—are, first, to have a one-year hiatus on degression and, secondly, to base degression on deployment per year.

I was going to ask Mr Fraser—not in a polemic way—whether the Scottish Conservatives would support that. I think that they probably would. Mr Fraser may wish to nod at this point if the Scottish Conservatives support a solution to the unexpected consequences of how the degression rules are being applied to small-scale hydro schemes. There is a steadfast lack of nodding, so I will move on. We live in hope of clarification.

Many members, including Ken Macintosh, Claudia Beamish and Malcolm Chisholm, asked what forestry and Scottish Water are doing. That is a perfectly reasonable question. Scottish Water has 10 hydro schemes in operation, and 23 other sites host hydro or Difgen technologies—Difgen is a new way of controlling pressure of water running through pipes to generate green energy. The Deputy First Minister launched the UK's first Difgen hydro turbine on a strategic water main near Denny.

As I said in an intervention during Dr Elaine Murray's speech, in the national forestry estate there are 16 schemes, with installed capacity of 14MW. Another scheme is being commissioned, six schemes have planning consent, seven more are in planning and there are investigations into 100 more sites.

SSE is proceeding with its scheme at Glasa, in Ross-shire, which is a major scheme and will bring great benefits. Rob Gibson and many other members spoke about that. RWE npower renewables and Green Highland Renewables are also taking forward a number of schemes.

A number of members, quite rightly, mentioned community projects. We are determined to have as many community schemes in Scotland as possible and to provide the advice and assistance that are required for such schemes. That brings me to the Scottish Highland renewable energy conference—SHREC, as opposed to Shrek, the lovable monster in the children's cartoon—where I had the opportunity to meet communities from throughout Scotland who are successfully creating their own schemes or are about to do so.

Mr Macintosh asked about finance. The issue is serious and is being looked at. In Aberdeen recently I met local leaders of NFU Scotland. There is a proposal to aggregate schemes, to make them more attractive to lenders.

Ken Macintosh: I did not have a chance to say this when I summed up: Rob Gibson made a good point about micro or smaller schemes that are owned by large landowners and bring little community benefit. He suggested that a community benefit level of £5,000 per megawatt should apply to such schemes.

Fergus Ewing: I wanted to respond to Mr Fraser, who asked whether we would look carefully at the 100kW dividing line, because I understand that schemes with capacity above that are likely to cost in excess of £500,000, so farmers, crofters and other individuals might be priced out of the over-100kW market. We will need to look carefully at the issue—I have detected from Mr MacKenzie, too, a desire to do so—to see how the rules have operated, because I understand that SEPA maintains that a number of schemes have gone ahead. I will come back to members on that in due course.

A great many members mentioned pumped storage. The benefits of the technology are obvious, particularly in combination with stochastic wind energy sources, so we want more pumped storage. I should say that the lead time is between six and 10 years, and the key thing about pumped storage is that it needs investor certainty, which we do not currently have, given EMR. That is the key point, which I hope will be answered shortly.

Liam McArthur made a number of points about the islands. As he knows, the desire to get a solution on connections to the islands is close to my heart. With the positive approach of Ed Davey, I hope that the Treasury can be persuaded to find a solution. I continue to work with Mr McArthur on the issue, as well as with colleagues from Shetland and the Western Isles. It is unthinkable that the best place for generating renewable electricity in the UK would be shut out from opportunities to do so. I hope that that will never happen. I have sought to leave politics outside the room and argue the case, which is extremely strong, on its merits.

I very much hope that when it looks at the CFDs the UK Government will follow the Scottish model of 1 ROC for hydro power and not the 0.7 ROC model. As a result of the Scottish model, SSE is taking forward the biggest project for five years. Scottish Renewables has estimated that £150 million-worth of projects could go ahead if our approach were followed. In that regard, as always, we will seek to use our weapon of reasoned argument with the UK Government. It will be interesting to find out how fruitful and successful that approach will be.

Decision Time

17:00

The Deputy Presiding Officer (John Scott): There is one question to be put as a result of today's business. The question is, that motion S4M-07024, in the name of Fergus Ewing, on hydro power in Scotland, be agreed to.

Motion agreed to,

That the Parliament welcomes the continuing commitment of the Scottish Government to developing hydropower; acknowledges the proud tradition that Scotland has in generating hydroelectricity, as championed by the former secretary of state, Tom Johnston MP, and the many homes and businesses that this has benefitted; notes that 2013 is a celebration of the 70th anniversary of the Hydro-Electric Development (Scotland) Act 1943, which enabled large-scale renewable energy development in Scotland; recognises the potential for and value of further pump storage hydro-projects in Scotland; further notes the importance of harnessing new hydropower in bringing economic benefits while reducing emissions; further recognises the importance of micro-hydropower in terms of community ownership, which can create opportunities to empower and enrich communities; recognises that developing as a hydro-nation is a huge opportunity for Scotland, and acknowledges the valuable contribution that hydropower generation makes to Scotland's renewable targets.

Parkinson's Nurses

The Deputy Presiding Officer (Elaine Smith): The final item of business is a members' business debate on motion S4M-06551, in the name of James Kelly, on Parkinson's nurses in Scotland providing effective, safe, person-centred care. The debate will be concluded without any question being put.

Motion debated,

That the Parliament welcomes the report, Parkinson's nurses in Scotland: providing effective, safe, person-centred care, which outlines what it considers the central role of Scotland's Parkinson's nurses in helping people with Parkinson's to manage their condition; understands that these specialist nurses make financial savings to the NHS by preventing unnecessary hospital and care home admissions, reducing waiting times, improving symptom control and medication management and supporting people to manage their own condition; understands that there are about 10,000 people with Parkinson's in Scotland and that this number is expected to increase over the coming years; supports the Healthcare Improvement Scotland clinical standards for neurological health services, which state that everyone with Parkinson's should have access to a Parkinson's nurse from the point of diagnosis onwards; understands that Parkinson's UK has made significant investment in providing pump-prime funding to develop Parkinson's nurse posts across Scotland; welcomes the progress that NHS boards have made and continue to make in providing access to Parkinson's nurses, with recent appointments in NHS Ayrshire and Arran, NHS Borders, NHS Dumfries and Galloway, NHS Grampian and NHS Lothian and active negotiations underway in NHS Highland and NHS Western Isles; understands that, despite this progress, there are some areas of Scotland where it is difficult or impossible to access a Parkinson's nurse, and looks forward to a future where everyone with Parkinson's has ongoing access to a Parkinson's nurse, no matter where they live.

17:02

James Kelly (Rutherglen) (Lab): I welcome the opportunity to open this evening's members' business debate and thank members from across Parliament for signing the motion, thereby enabling me to bring it to the chamber. I also welcome the many campaigners from Parkinson's groups across the country who have made it to Parliament to lobby members and watch the debate. As the political parties gear up for the Aberdeen Donside by-election in two days, they might learn a trick or two from the Parkinson's campaigners, who have been very effective in making known their views and lobbying many MSPs face to face this afternoon.

Given the significant impact that, as I am sure MSPs know from speaking to the campaigners, Parkinson's disease has on the lives of constituents and their families, it is important that we as parliamentarians take the issue very seriously. More than 10,000 people in Scotland suffer from Parkinson's—it affects one in 500

people—but I am well aware that in Rutherglen, Cambuslang and Blantyre in my constituency the number of sufferers is the best part of 200, which is higher than the average for the country. The issue was first brought to my attention by my constituent, Harry Hay, who is in the gallery this evening. Mr Hay pressed his case in a very articulate and strong way, and since then I have been very vocal for increased resources in my area to support people who have Parkinson's.

Many of the issues are highlighted in Parkinson's UK's recent report, which comes on the back of the NHS Scotland report on neurological issues. Of the two key indicators in the NHS Scotland report that relate to Parkinson's, the criteria for access to specialist Parkinson's disease services are not met by five health boards and the criteria for on-going management of Parkinson's disease services are not met by 10 health boards. Clearly, therefore, there is a big job to be done in health boards across Scotland. In my previous members' business debate in 2008, I spoke about the importance of people with Parkinson's receiving their medication on time, but it is obvious from speaking to people who are involved that that issue still needs to be addressed by the NHS.

For the people in the gallery tonight, the central issue is the importance of Parkinson's nurse specialists. Figures that have been provided by the Scottish Parliament information centre show that Scotland has only 20 such nurse specialists to cover 10,000 people, so that resource is not adequate. A recent Parkinson's UK report draws attention to the National Institute for Health and Care Excellence recommendation that Parkinson's nurse specialists should have a maximum caseload of 300 patients, whereas the statistics show that each nurse is covering at least 500 people. That is certainly the case in NHS Lanarkshire, which not only fails to meet the NHS Scotland report criteria on Parkinson's but, unfortunately, has only two specialist nurses who have a caseload of 1,000 patients. Clearly, more priority needs to be given to the issue not just in NHS Lanarkshire but throughout the country.

Among other issues that the Parkinson's UK report highlights as needing to be addressed by health boards is the importance of telemedicine and of virtual teams. Especially in rural areas, such teams can do a lot to support people who have Parkinson's. A crucial issue is the link between general practitioners and the specialist nurses, which really must be reinforced. If GPs have proper awareness of the issue, they can detect the condition early and flag up appropriate treatment, which can help in management of the condition.

Another area that needs to be examined—but which is often overlooked—is data collection. It is important that we collect appropriate data on the condition because it can help us to identify best practice in management of it.

It is important to emphasise that, properly managed, all those things together would save the NHS money. If we can treat people who have Parkinson's better and keep them in their homes rather than in NHS hospitals, that will not only save health boards money but will take some of the stress away from families.

Clearly, the priority must lie with the NHS, but the Government also has an important role in leadership and co-ordination. The Scottish Government recently allocated £4 million for treatment of people who have long-term conditions. Part of that is for policy development, which is welcome because it is important; clearly, some of the issues that are outlined in the Parkinson's UK report show the need for more policy development. NHS boards need to be more aware of the issues and to give them greater priority. In the context of last week's coverage of NHS continuing care and mistreatment, in some cases, it is also worth mentioning that some of those may involve people who have Parkinson's. It is important that we have a proper process to examine when people have been mistreated and are due reimbursement.

Those are big issues that affect many people in constituencies and regions across the country, so it is important that we speak up and speak out. There is an absolutely key role for NHS boards. It is important that we use this evening's debate to get across the campaigners' message that health boards must take the issue more seriously. We want urgent and practical action.

I thank members for their support.

The Deputy Presiding Officer: We turn to the open debate, in which speeches should be of four minutes.

17:09

Margo MacDonald (Lothian) (Ind): I feel as though I have wandered into a meeting of something like Alcoholics Anonymous—I am Margo and I've got Parkinson's. Excuse me if I do not shake all over the place, because it just so happens that that is under control, so I should be able to comment on one or two things.

I have never tried to make myself an example to people who have Parkinson's, because everybody who has Parkinson's has a different form of it. There is no use in saying to someone, "There's so and so. Why aren't you like them?", because they are not like so and so, they cannot be, and why

should they be? That is something that rather appeals to me—the independence of it.

James Kelly would probably agree that a greater awareness is required among the general public, because there is unknown territory in regard to Parkinson's. It is one of those things that people do not want to get, and they are not quite sure what they have got until they are diagnosed. I certainly was not at all sure what it was until I was diagnosed, and then I found out that it was not actually as bad as I had thought; I found out that I could just get on with my life. People have to make certain adaptations, but we have to do that anyway as we get a little older—not that I am meaning to get any older but, if I get older, I expect that I will have to adapt some things.

More research is needed into the whole business of Parkinson's. I know that there is some wonderful research being done, but I would like to see a bit more. It seems that we have waited a long time for breakthroughs in relation to the condition.

The really important thing that James Kelly highlighted is a simple thing: the link between GPs, patients and specialist nurses. I regret to say that, in some areas, GPs have not kept up with developments, so I hope that they take that as me chiding them and immediately get to know all about Parkinson's and about the specialist nurses—who are too few in number, from the point of view of a Parkinson's sufferer. There are many competing claims for the priority choices that are made by health boards. I understand that, but that is where the people in the gallery come in. The campaigners are the ones who are solidly out in front calling for Parkinson's to have higher priority than it has, or are highlighting something that makes changing the rules or the law urgent. I pay full tribute to the campaigners on the condition; they can expect to be doing even more in the future, because there will be even more competition for resources.

I wish that I had longer, because I would tell members terrible sad things, but I do not. Thank you, Presiding Officer.

17:12

Stewart Stevenson (Banffshire and Buchan Coast) (SNP): Let me start by congratulating James Kelly on giving us the opportunity to have the debate tonight. I have not signed the motion; that is down to pure inadvertence and was certainly not deliberate. Because I was speaking in another debate in the chamber this afternoon, I was unable to hear Harry Hay and the many other people in the gallery, but I am absolutely sure that they put their points across extremely well.

I congratulate Parkinson's nurses throughout Scotland. Neither of my predecessors in the debate made reference to the service to the carers of those who suffer from Parkinson's, which is part of the service that is delivered by those nurses. As with many long-term conditions, it is unlikely that Parkinson's is something that a person suffers alone; it is shared with many others around them.

In NHS Grampian, which is the health board that covers my constituency, we are relatively fortunate in having four Parkinson's nurses. James Kelly highlighted the briefing by Parkinson's UK for his work with NHS Lanarkshire, and I hope that he continues with that.

We meet Parkinson's in many different circumstances, and of course not all tremors are Parkinson's related, and not all Parkinson's sufferers suffer from a single disease.

The effects of the disease were brought home vividly to me on a nine-hour flight when I was sitting beside someone who I believe probably had Parkinson's—they certainly had a tremor that continued for nine hours. I did not get to sleep, but I thought about how lucky I was to have only nine hours of mild inconvenience, whereas the person sitting beside me had a substantial difficulty that he would experience for a long time.

There are many causes of Parkinson's. My father, who was a GP, always worried that my mother would develop it as a by-product of having had diphtheria when she was a child. Many of the causes are not so obviously connected to something like that. Research is comparatively modest, compared to other areas, perhaps because there does not seem to be too great a prospect of financial benefit to the pharmaceutical companies from curing the disease or developing Parkinson's-specific drugs. There are lots of treatments for the symptoms, which vary from person to person, but not a lot is spent on considering bigger and bolder interventions that might make a real difference to the people who are represented in the gallery today.

I have always taken an interest in mental health in particular; in a significant proportion of cases, diseases such as Parkinson's are accompanied by mental ill-health. When people are struck from out of the blue by a disease, at the age of 50 or 60—or younger, when they still expect many years of productive life—there can be a mental impact as well as a physical one. I hope and believe that the Parkinson's nurses will address that as well.

On carers, I hope that we will hear in the debate that carers are an important part of the support that can be given to Parkinson's sufferers.

I end by once again congratulating James Kelly and Parkinson's nurses on the work that they have done.

17:17

Malcolm Chisholm (Edinburgh Northern and Leith) (Lab): I congratulate James Kelly on introducing this important debate, and I welcome the Parkinson's campaigners who are in the gallery today, some of whom I was pleased to speak to an hour or so ago. It is important for politicians and health professionals to listen to and learn from patients. The clearest message that came from the campaigners today was that Parkinson's nurses are absolutely central to their care. To an extent, I was not surprised by that, because, in relation to many diseases, I have come across patients who say that the clinical nurse specialist is the person who really matters to them. For example, at last week's meeting of the cross-party group on cancer, which was about brain tumours, people said that, with all of the problems that they suffered, the rock upon whom they depend is the clinical nurse specialist. Of course, a Parkinson's clinical nurse specialist has specific functions, and I heard about those today.

The campaigners impressed upon me the importance of ready access to the nurse specialist when there are any problems. In general, they said that the nurse would ensure that plenty of time was made available to discuss the issue that concerned them.

The specific issue that I was asked to raise with the minister is funding for nurse specialists. We must pay tribute to Parkinson's UK, which put a lot of pump-prime funding into new posts. The assurance that the campaigners and, indeed, MSPs, seek today is that the Government will ensure that health boards will pick up the funding in due course. That is the nature of the arrangement that Parkinson's UK has come to with the various health boards. Clearly, it would be good to know about future funding.

That issue is related to the number of nurses. We are told that the NICE guidelines suggest that there should be one nurse for every 300 patients with Parkinson's. I know that, in Lothian, there are three nurses for 1,700 people with Parkinson's, which suggests that there should be more. That said, the service in Lothian, as elsewhere, was highly praised by the people who spoke to me.

We know how important clinical nurse specialists are in helping to join up care. People often talk about fragmented care, but the nurse specialist can liaise with all of the various health professionals and social care workers who might be involved, and can help to join up care for the patient.

Margo MacDonald: On the subject of care and carers, I would probably not get my tea tonight if I did not say what a wonderful carer I have at home. It is a serious point. The three nurses in Lothian are worked off their feet. They are very good nurses and there is a good communication system, but there will never be enough—that is the point that I was trying to make. I would like training in caring to be extended to the carers—people who will not become professional carers but who could receive some additional knowledge through that route.

Malcolm Chisholm: I thank Margo MacDonald for making that important point. It is not unrelated to one of the many other roles of the clinical nurse specialist, which is to train and educate other health professionals. Part of that role may involve carers as well. I pay tribute to all the nurses, who are so highly valued by people with Parkinson's disease.

The motion encapsulates much important health policy. I congratulate James Kelly on formulating it and on managing to include issues such as patient-centred care, self-management and avoiding unnecessary hospital admissions. Those have all been great and important objectives of health policy for many years, although they have not always been successfully realised. The motion also mentions the neurological standards, and I am sure that the minister will address those in his winding-up speech. They have been important in driving up standards of care. I note—as others will, I am sure—that three of those standards are about Parkinson's nurses and how all boards should have them as key members of the multidisciplinary team. I am glad that my own health board, NHS Lothian, does. However, as Margo MacDonald has said, there is always room for more. I hope that it will be possible for the minister to give us some positive messages about future funding for that vital role.

17:22

Dennis Robertson (Aberdeenshire West) (SNP): I, too, thank James Kelly for lodging this important motion and welcome those in the public gallery this evening. Like Malcolm Chisholm, I was fortunate enough to meet some of them in committee room 1 earlier. The short time that I had with the people from Dyce and Banff, which is just outside my constituency, was a time of laughter and looking at where they are with their condition, not just as patients but with their carers.

It is always a pleasure to hear Margo MacDonald. I often think that she does not get enough time to speak in the chamber, but when she is given the opportunity she takes full advantage of it.

Stewart Stevenson mentioned the very important role of carers, and I was delighted to see patient-centred care at the heart of the motion. It takes me back to my earlier profession in social

work, as we have to look at who is at the centre of the care that is being provided. We are very fortunate in the NHS Grampian region because, as Stewart Stevenson said, we have four specialist nurses and a support nurse.

Malcolm Chisholm mentioned Parkinson's UK and the pump-prime funding that is going on. That funding has created a two-year post for a specialist nurse in Moray, in the Grampian region, and that is to be welcomed because it is providing the necessary specialism that people need.

Education and awareness must be at the forefront of what we do. We ask a lot of our GPs. Many times, I have said in the chamber that GPs need to be more aware, but I have a great deal of sympathy for them sometimes. We must recognise that if they do not have the knowledge, they must know where to go to seek that knowledge. The matter should not be put to one side; the GP must recognise that the patient has an issue and maybe a problem. Early diagnosis is important in ensuring that patients get the best possible care.

When I was talking to the small group in the committee room, what came across was the importance of getting medication at the right time during treatment. I know Parkinson's, because my father has had it for more than 20 years. He is an ex-trawlerman and when he came on shore, he worked at the council in the parks. He was a very active man. When he contracted Parkinson's, there was a physical change and a mental change, but he then realised, "I've got to adjust. I've got to live with this condition. I'm not going to sit down and say I'm nae able." We started laughing in the committee room when we talked about that. It is not about sitting back and saying, "I can't do it." People have to have a positive attitude. That is what the specialist nurses bring to the patient group and the carers. They have a can-do approach. It is about saying, "This is how we can live with the condition. This is how we can adjust our lives to the condition." Patients might reach a plateau in that adjustment and then, all of a sudden, the condition deteriorates and they think, "We have to adjust again, because we owe it to ourselves as individuals and to our family and those who care for us."

Once again, I thank James Kelly for lodging this important motion and I certainly congratulate all those who have managed to come to the chamber this afternoon, because a journey is not always easy for people with Parkinson's.

17:26

Nanette Milne (North East Scotland) (Con): Like others, I congratulate James Kelly on securing parliamentary time to discuss the report "Parkinson's nurses in Scotland: providing effective, safe, person-centred care". I thank him and Parkinson's UK for organising this afternoon's drop-in event so that we could hear at first hand from patients and their carers in our constituencies and regions who are benefiting from the support that Parkinson's specialist nurses provide to them.

Healthcare Improvement Scotland underpins the importance of the nurses by stating in its clinical standards for neurological health services that everyone with Parkinson's should have access to a specialist nurse from diagnosis onwards. The report gives excellent examples of the work that they are doing in different parts of Scotland.

In my region, Parkinson's nurses in Angus have set up review clinics, which are significantly reducing the time between referral and treatment. In one year, that saved consultant time that was equivalent to 100 new referral appointments, which enabled speedier diagnosis and allowed improvements in other areas of the service.

In Grampian, the nurses are working with the clinical effectiveness team to produce a medication audit that will help them to develop a protocol for surgical patients with Parkinson's on a nil-by-mouth regime and to ensure that in-patients are visited by a Parkinson's nurse within 48 hours of admission, or before elective surgery. Given how important it is for Parkinson's patients to receive their medication at the proper time, the benefits of such a protocol should be significant.

The Grampian nurses have developed a course for patients who are newly diagnosed with Parkinson's, which has been well received by patients and has led to some of them meeting regularly for peer support. The nurses are providing regular review clinics in care homes, when they see patients in their familiar surroundings and supported by care home staff. That initiative has resulted in more relaxed patients and fewer missed clinic appointments.

There are many examples across Scotland of the effectiveness of Parkinson's nurses, who are helping patients and their carers to manage their condition in the community, reducing hospital admissions and delaying the need for admission to a care home setting.

Dennis Robertson: The member mentioned people managing their condition. Does she accept that many people with Parkinson's have other conditions that compound their Parkinson's? They might have angina, heart conditions, diabetes and arthritis—some of which my father has, too.

Nanette Milne: Absolutely—I agree with Dennis Robertson. The situation will only get worse as more of the population get older and have complex medical needs.

Unfortunately, Parkinson's nurses are not yet available to patients in every part of Scotland, although the picture has improved significantly, largely due to the commitment of Parkinson's UK, whose investment in pump-prime funding for Parkinson's nursing posts has led to the creation of specialist posts in several health board areas, including Angus in the North East Scotland region.

In the decade since I became an MSP, I have never ceased to be impressed by the commitment and effectiveness of specialist nurses, not only for Parkinson's but for other long-term conditions, such as multiple sclerosis, chronic obstructive pulmonary disease, epilepsy, diabetes and asthma. I am in no doubt that, if we could achieve nationwide coverage of such specialist nursing posts, there would be an enormous benefit not only to patients and carers but to the public purse through savings in acute hospital admissions. I have often said that I could almost use the same speech in most members' business debates on health matters, as the core issue tends to be patchy provision of service or the so-called postcode lottery of care.

The debate has highlighted one extremely effective group of specialist nurses, who are of enormous benefit to the increasing number of people with Parkinson's and to their families and carers. I look forward to the day when all patients who are diagnosed with the condition get the access to the Parkinson's nurse care that they need and deserve. I wish to see a similar roll-out of specialist nursing services for the many patients with other long-term conditions, such as those to which I referred earlier. I commend James Kelly's motion and I thank Parkinson's UK and Scotland's Parkinson's nurses for their commitment to and care of people in Scotland who are diagnosed and coping with this debilitating and progressive condition.

17:31

Drew Smith (Glasgow) (Lab): When I spoke to my constituents at the drop-in session this afternoon, they asked whether there would be any heckling in the debate—in fact, they encouraged it—but, unfortunately, consensus has broken out. Like other members, I thank James Kelly for bringing the debate to the chamber and I thank the Parkinson's UK campaigners for coming along to the Parliament to put their case.

As we have heard, up to 100 people are diagnosed with Parkinson's every year. It is a progressive, fluctuating neurological condition that can affect all aspects of daily life. The severity of the symptoms can fluctuate from day to day and can change rapidly during the course of the day. As Margo MacDonald said, there is no cure for the condition and probably not enough research has been done on it.

James Kelly said that one person in every 500 has Parkinson's, which is about 10,000 people across Scotland. As the Scottish population ages, the prevalence of Parkinson's will increase. Parkinson's UK estimates that the number of people with the condition will increase by 20 per cent by 2020. However, we should remember that not everyone is diagnosed with Parkinson's in later life. One constituent to whom I spoke at this afternoon's drop-in session was diagnosed at 35, after five years of being tested for other conditions.

Nanette Milne is right that the Parkinson's UK report gives many examples of the great work that Parkinson's nurses do across Scotland. I suspect that not least among them is Jackie at the Lightburn hospital in Glasgow's east end, who explained to me much of what I have just said. There is good provision in Glasgow in some respects, but it is not good enough, although it is perhaps better in some areas. I know that Jackie has a case load of about 450 patients. I express my gratitude for the work that the nurses carry out to make the lives of patients and their families better. At what must be a stressful time, the nurses provide specialised care and support for families who receive a Parkinson's diagnosis.

About one in four people in Scotland with Parkinson's is admitted to hospital at least once a year. More than half those admissions are unplanned, and one in every 10 people with Parkinson's is classified as being at high risk of hospital admission in the next year. However, as I and, I am sure, other members heard this afternoon, Parkinson's nurses can help people to avoid and reduce hospital stays and the risks that are associated with them. The nurses are trained to identify risks and they can intervene early to prevent crisis admission. They can also support patients—for example, with their medication—once they are admitted.

The Parkinson's nurse team for NHS Ayrshire and Arran estimates that, over 18 months, it has prevented 15 hospital admissions of people with Parkinson's by intervening early, which is a saving of approximately £39,000. Parkinson's nurses can support hospital discharges—that ensures that patients move back home with appropriate care plans in place and thereby reduces the risk of readmission.

People with Parkinson's might need medication six or seven times a day or, as I heard this afternoon, up to 10 times a day. As with any condition, missed medication can be serious. The report found that Parkinson's nurses have used innovative ways to prevent adverse medication incidents. For example, in Dumfries and Galloway, a daily email alerts system has been set up that

highlights the admission of a person with Parkinson's to hospital. In Lothian, the nurses have developed an e-module that outlines the importance of giving medication on time.

My health board—NHS Greater Glasgow and Clyde—has eight specialist nurses, who work across the board area. The report highlights how the Glasgow nurses have developed joint clinics with mental health services to address cognitive and mental health symptoms. Those joint clinics have led to a more efficient use of mental health service time; they have also increased the Parkinson's service capacity to manage complex mental health symptoms effectively.

I recognise the good work that Parkinson's nurses do. Their support and advice have probably been invaluable to the families who have benefited from them up and down the country.

Parkinson's UK is calling for more nurses; it has said that the nurses should have a workload of no more than 300 cases at any one time, as recommended by NICE. I hope that the Scottish Government can consider those calls and I look forward to a future in which everyone has on-going access to Parkinson's nurses.

Notwithstanding some of the negatives that are associated with the condition, we have all heard this afternoon that it is possible to have a quality of life with Parkinson's. As Dennis Robertson suggested, that hope should certainly be our objective after the debate.

17:36

The Minister for Public Health (Michael Matheson): I congratulate James Kelly, as other members have done, on securing time for this important debate on how we can provide support to patients and carers of those who have Parkinson's disease and how we can continue to improve the way in which we deliver that care and support, in particular within the NHS in Scotland.

James Kelly referred to the fact that all MSPs will have constituents with the condition. I have no doubt that there are members in the chamber who have close personal experience of the disease—some closer than others. One of my own close friends, who is still relatively young, was diagnosed with Parkinson's disease a couple of years ago. Another friend of mine who had Parkinson's disease has passed away.

Margo MacDonald summed up the matter very well when she suggested that, although the disease has particular characteristics, the experience of it is personal: it affects every individual in a different way. We should not underestimate the personal impact that it can have on an individual and their ability to lead as independent a life as possible. It is important that we look for what we can do to try to support individuals to manage their condition clinically, support them socially and emotionally and support their carers when appropriate.

I very much welcome the report that has been published by Parkinson's UK. It makes a very helpful contribution. Although we continue to welcome the progress that has been made and acknowledge the support that Parkinson's UK provides, we also recognise areas where further progress needs to be made and where the level of service is not what we would wish.

Margo MacDonald: Is it within protocol for the minister to tell us where Parkinson's comes in the pecking order as regards the campaign for funds internally in the department?

Michael Matheson: I can give Margo MacDonald an exclusive revelation: there is no pecking order. We do not have a hierarchy of conditions, or decide that one is more important than another. We deal with issues on their merits, although there are some conditions where there is a greater demand for services, which I am sure she will recognise.

James Kelly and Malcolm Chisholm made reference to the way in which we have sought to drive up standards in the NHS in relation to how we provide services to individuals with neurological conditions, through the clinical standards for neurological health services.

An important part of that work was the review to which James Kelly referred, which compared boards and the level of service that they offer for a range of different neurological conditions. The review established that a number of boards do not provide the specialist nurse provision or the specialist services for people with Parkinson's that some other boards provide. That piece of work was specifically designed to demonstrate that variation, so that we could see the gaps and the action that needs to be taken to make sure that boards start to provide those services.

Having conducted the peer review around neurological standards, we then set about putting in place the national neurological standards advisory board, which exists to make sure that we continue that progress across all health boards in Scotland and continually improve how we drive forward provision. That work is taking place just now. Three of the neurological standards are specific to Parkinson's disease, and Parkinson's UK is a key part of the national advisory group. It is helping with that work so that we continue to see improvements.

Alongside that, it is important to recognise that although we can see improvements at secondary care level, we need to see improvements at the

primary care level within GP practices. We need to provide GPs with the right support and advice in their management of individuals who have Parkinson's disease. With reference to Stewart Stevenson's point, we also need to recognise the role of carers in supporting the individual in the management of their condition.

That brings me to specialist nurses. Members who attend many of the health-related members' business debates in this Parliament know that very few of the debates that deal with specific conditions do not include in the motion a request for more specialist nurses. We now have almost 1,600 specialist nurses across the NHS in Scotland, covering a wide range of different conditions.

The real value that can be delivered by the provision of specialist nurses is not in dispute. The work that Parkinson's UK has taken forward in partnership with some of our health boards is greatly valued because it drives the provision of Parkinson's nurses in individual board areas. Once a specialist Parkinson's nurse has been provided and there is a clear need for that service in an NHS board area, and once the pump-primed funding has come to an end, I expect health boards to continue with that service provision to ensure that patients do not see any reduction in the service that they receive. If possible, boards should be augmenting that provision to improve the overall service.

I recognise that specialist nurses have an important role to play. Members will also agree that there has been a call for greater provision of specialist nurses in a wide range of conditions. There has been an increasing trend in that regard in recent years, which I expect to continue in NHS Scotland for neurological conditions such as Parkinson's disease.

Margo MacDonald was correct to point out that there is a need to look at training individuals such as carers and other members of the social care workforce, as well as our healthcare workforce, so that they have greater awareness and understanding of Parkinson's disease and the needs of patients and their carers.

Margo MacDonald: I apologise for intervening again, Presiding Officer, but it might be an important point. One of the things that carers could do to help generally with the wellbeing of the person for whom they are caring is give simple massage. That is the sort of thing that could be taught to a carer in the home. It would cut back expenses and make life a lot more pleasant, and I would like it, please.

The Deputy Presiding Officer: Minister, I would be grateful if you would begin to come to a conclusion.

Michael Matheson: I will skip past Margo's request for massage.

It is important that we consider the health and wellbeing of carers as well, and provide them with the support that they need. Margo MacDonald is correct. Some of the work of the Long-term Conditions Alliance is about looking at what we can do to support more effectively individuals who have long-term conditions.

I hope that I have given some assurance that we recognise the value of specialist nurse practitioners. There has been a move towards using them more and I would like to see more of them being provided by the NHS in the coming years. The Scottish Government is committed to continuing to work with Parkinson's UK to make sure that the progress that has been made is built on and that we continue to provide the best possible service to those who have Parkinson's disease in Scotland.

Meeting closed at 17:44.

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