OFFICIAL REPORT
AITHISG OIFIGEIL

Economy, Jobs and Fair Work Committee

Tuesday 23 May 2017

Session 5

The Scottish Parliament
Pàrlamaid na h-Alba

Tuesday 23 May 2017

CONTENTS

ECONOMY, JOBS AND FAIR WORK COMMITTEE
16th Meeting 2017, Session 5

CONVENER

*Gordon Lindhurst (Lothian) (Con)

DEPUTY CONVENER

*John Mason (Glasgow Shettleston) (SNP)

COMMITTEE MEMBERS

*Jackie Baillie (Dumbarton) (Lab)
*Bill Bowman (North East Scotland) (Con)
*Ash Denham (Edinburgh Eastern) (SNP)
*Richard Leonard (Central Scotland) (Lab)
Dean Lockhart (Mid Scotland and Fife) (Con)
*Gordon MacDonald (Edinburgh Pentlands) (SNP)
*Gillian Martin (Aberdeenshire East) (SNP)
*Gil Paterson (Clydebank and Milngavie) (SNP)
*Andy Wightman (Lothian) (Green)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Duncan Burt (National Grid)
Nicholas Gubbins (Community Energy Scotland)
Gina Hanrahan (WWF Scotland)
Joan MacNaughton (Climate Group)
Lindsay Roberts (Scottish Renewables)
Lawrence Slade (Energy UK)
Paul Wheelhouse (Minister for Business, Innovation and Energy)
Dr Mark Winskel (University of Edinburgh)

CLERK TO THE COMMITTEE

Alison Walker

LOCATION

The David Livingstone Room (CR6)

Scottish Parliament

Economy, Jobs and Fair Work Committee

Tuesday 23 May 2017

[The Convener opened the meeting at 10:00]

Decision on Taking Business in Private

The Convener (Gordon Lindhurst): Good morning. This is the 16th meeting of the Economy, Jobs and Fair Work Committee in 2017. In the light of the terrible events in Manchester, we will commence proceedings today with a moment's silent reflection.

Members observed a short silence.

The Convener: Thank you.

I ask everyone to turn off their electrical devices or switch them to silent as they will interfere with the sound system. There is no need for our witnesses to press any buttons—the microphones will be operated by the sound engineer. I have received apologies from committee member Dean Lockhart. In addition, one of our witnesses, Duncan Burt, has been unavoidably delayed, but will join us as soon as possible.

Agenda item 1 is to make a decision on whether to take items 7 and 8 in private. Do members agree to do so?

Members *indicated agreement.*

Draft Energy Strategy

10:02

The Convener: We move to our evidence session. I remind members to keep their questions short and to the point, and I ask our witnesses to attempt to do likewise. We have quite a number of guests on our panel today. You will not all want to come in on every question; you can indicate by raising your hand that you wish to come in on a particular question or point.

I ask everyone to introduce themselves and the organisation that they are here to represent, and to say what their organisation does. I start with Joan MacNaughton, who is sitting on my right.

Joan MacNaughton (Climate Group): Thank you for the invitation, convener. I chair the Climate Group, which is a global non-governmental organisation that works with Governments, including the Scottish Government, on delivering ambitious climate reduction targets. I sit on several academic and business boards.

Lindsay Roberts (Scottish Renewables): I am a senior policy manager at Scottish Renewables, which is a trade association for companies that work in renewable energy in Scotland. We represent around 270 members, which work across the renewables sector.

Nicholas Gubbins (Community Energy Scotland): I am the chief executive of Community Energy Scotland, which is a registered Scottish charity. We have approximately 400 members from the non-profit-distributing community, and our role is to build confidence, resilience and wealth at community level through sustainable energy development. Many of our members are involved, in one way or another, in energy projects in Scotland.

Lawrence Slade (Energy UK): I am the chief executive of Energy UK. We represent a broad and diverse mix of generating companies with interests including hydro, gas, renewables, wind, onshore, offshore and nuclear. We also represent around 22 supply businesses in the electricity and gas sector, from Spark Energy to the likes of SSE.

Gina Hanrahan (WWF Scotland): I am the acting head of policy at WWF Scotland. We are part of a global environmental network, as a global environmental NGO, and we work predominantly on providing policy solutions for a low-carbon future for Scotland. Our core focus is on climate and energy policy, but within our core agenda we also work on marine policy and on delivering on the Climate Change (Scotland) Act 2009.

Dr Mark Winskel (University of Edinburgh): I am a senior research fellow at the University of

Edinburgh. I also work for the UK Energy Research Centre, which is an independent United Kingdom-wide publicly funded university-based whole-systems interdisciplinary energy-research centre. I am also a director of ClimateXChange, which is a Government-funded intermediary between the research and policy communities working on climate change in Scotland.

The Convener: Thank you. I will start with a general question. We are here to discuss the Scottish Government's "Draft Scottish Energy Strategy: The Future of Energy in Scotland". First, I seek the panel's views on the priorities, as set out in the draft strategy, for energy supply over the coming decades. Who would like to start on that?

Lindsay Roberts: At Scottish Renewables, we very much welcome the publication of the draft strategy and the priorities and vision that it sets out. In particular, we are pleased to see the inclusion of the 50 per cent all-energy target, which Scottish Renewables proposed ahead of the Scottish Parliament elections and which we were delighted to see gain cross-party support in Parliament.

Our overarching comment on the draft strategy is that, although we believe that the targets are ambitious and feasible, it is difficult to see from reading the document exactly how we are going to achieve them. The strategy needs to include slightly more detailed action plans to show us the pathways and the practical steps that need to be taken in order to realise those priorities and that vision.

Joan MacNaughton: I entirely endorse what Lindsay Roberts said. I was struck by the fact that the level of detail in the draft energy strategy is somewhat lower than it is in the "Draft Climate Change Plan—the draft Third Report on Policies and Proposals 2017-2032". One has to read the two documents together, not least because of the priority that is given to energy efficiency, which is rightly given prominence and may become even more important if other priorities prove to be slightly difficult to achieve to the full extent that the strategy sets out. The Scottish Government has, relatively, more control over energy efficiency, so although the strategy is very ambitious in that area, there could be a safety valve to compensate for lack of achievement in other areas.

There will be quite a debate about whether there should be new thermal power generation. I know that there are different views on that; I think that the subject merits further thought. The technologies for managing a system that has huge penetration of renewables are moving forward by leaps and bounds, and not just on the digital side but through development of technologies to ramp up battery storage and so on. Compared with the amount of support for renewables that is now thought to be necessary, relatively less support may be needed in the future.

Dr Winskel: It is interesting that the convener's question was on supply, because it is covered in the first of the 17 questions in the strategy consultation. It asks:

"What are ... the priorities ... for energy supply over the coming decades?"

What we have from the Government in its draft strategy document is an effort at integrated energy-strategy making that does not really do the job of integration all that successfully. We have a rather disaggregated presentation of the energy system, which starts with a lot of information on supply and on characterisation of the current system. It is quite a short document, compared to the climate change plan, and it has no integrated analysis of the energy system.

The energy strategy looks towards 2050, whereas the climate change plan period is to 2032, which is mid-term in energy terms, although I realise that it is long-term in political timescales. The year 2030 is mid-term for the energy transition and by 2050 we should have had that long-term transition and should, in essence, be running a decarbonised system. We would have liked to see the climate change plan and the energy strategy joined up, with the climate change plan on the road to the 2050 vision, and we could see the long-term picture.

Joan MacNaughton correctly said that things such as distributed generation and storage are very dynamic, so when we discuss anything for 2050, it is a world of managing uncertainties, keeping open options that are promising and understanding the key decision points in the transition. An integrated view of the whole energy system is required, spanning what level of demand we might expect, how successfully we can get demand down and how much improvement we can get in efficiency right across the system—upstream, downstream, into homes, and so on. That is difficult to do, but the Scottish Government commissioned a whole-systems energy model to understand the basic evolution of the system over time, which is quite familiar to those of us who do whole-systems research. The Committee on Climate Change has used the same basic model in its UK research centre for many years.

The presentation of the information is not as integrated as we might have hoped, given that the approach is integrated. That makes it difficult to have an evidence-based discussion about the priorities. I know that the statement is a draft, so I call for a much more integrated and holistic statement that is based on the analysis that has been possible because of the new model and lots of other evidence. That is the only way to

understand how much effort is likely to be needed on the supply side and how much is likely to be available on the demand side, and to understand the networks and the scale of system evolution. None of those is easy, but we have to strive to set all those against one another so that we can see the lowest-cost way to achieve system transition.

Lawrence Slade: Mark Winskel has made very good points; we echo his point that a whole-system approach is needed. The overall priorities of the report are definitely supported, but it is absolutely essential that the way in which technologies come together considers interactions between heat, power and transport. The requirement—which Mark touched on—is to futureproof the system work in the period to 2050, given the speed of technical development. Over the past 15 years, electricity demand has reduced, but significant uptake of electric vehicles and electrification of heat could take that demand curve the other way. It is critical that you look intensively at energy efficiency, how you manage the Scottish housing stock and how all the various technologies can work together to provide a system that supports Scotland into the future. That is really important.

Nicholas Gubbins: Community Energy Scotland strongly welcomes the priorities in the draft strategy. The question of local supply—direct supply from local generators to local demand—would benefit from a clearer vision of how it can be developed, and a clearer strategic process to cover the technical issues of matching local generation and demand, and the financial, contractual and commercial arrangements that will be necessary to make it happen. The prize would be a significant impact on local economies; the potential is significant.

10:15

Gina Hanrahan: WWF Scotland very much welcomes the strategy. It is an exciting attempt to develop a much more integrated approach to mapping our energy system for the future.

We are particularly happy that the 50 per cent target has been set for 2030 as an all-energy target, which we think will drive significant growth in the heat and transport sectors and will, for those sectors, do what the electricity target has done in the past for the electricity sector. We have advocated that for the past number of years. Together with Friends of the Earth Scotland and RSPB Scotland, we produced a report, based on independent analysis by Ricardo-AEA, that showed that the 50 per cent target is feasible within existing technologies and is necessary for us to be able to deliver on our climate change targets.

We agree with Lindsay Roberts: we would like a little more detail in the strategy in terms of road maps for particular sectors, including heat and transport. There is a lack of clarity around the pathways for those sectors, so we would like to see more actions for delivery.

Of course, the strategy document cannot be read in isolation from the climate change plan, which is its sister document. However, even within the climate change plan, there are perhaps not enough detailed actions to deliver on the ambitions for heat and transport. For instance, on heat, in the off-gas-grid sector, where we know we can get going quickly, we would like to see much more action on heat decarbonisation for new builds. That is not built into the draft climate change plan, because there is no point in locking ourselves into a situation in which we would have to retrofit new-build properties, which is expensive. We would like quick roll-out of district heating networks, on which the Government is making good progress, and their being moved forward in primary legislation.

The Convener: Thank you very much. We now come to a question from Gillian Martin.

Gillian Martin (Aberdeenshire East) (SNP): We are looking at the actions that were set out in relation to the five key priorities, quite a lot of which require collaboration with the UK Government. The energy strategies of, on the one hand, the Scottish Government and, on the other hand, the UK Government—as is; we do not know who it will be in a few days' time—seem to be diverging, in that the UK Government has more of an emphasis on forms such as shale gas and nuclear energy. Given that background, how realistic is the Scottish Government's strategy?

Nicholas Gubbins: On the community energy side, there is a disconnect between certain aspects of the strategy from the Scottish Government, given that it does not have its hands on some of the levers that are necessary to effect change—electricity regulation, for example, is a reserved matter. However, in practice, in the nitty-gritty of development work, we have seen a reasonably strong shared agenda on some of the issues. Scotland has demonstrated a lot of practical development and innovation activity, in which the UK Government and Ofgem are interested. While the disconnect appears frustrating, the picture is not wholly negative and there is scope to influence some aspects of matters that are reserved to the UK Government.

Dr Winskel: It is a major issue. With the publication of the draft climate change plan and the draft energy strategy together, we can look at the timescales for delivery—particularly in the climate change plan, which has a sense of what needs to happen and when—and see that there is

an emerging difference between the Governments. This is probably the first time that we have seen that since both Governments passed their climate change acts, and that raises a lot of questions about deliverability, socialisation of costs and so on.

Up to now, there has been a very clear alignment between the Governments. Some of the things that the Scottish Government is rightly proud of, in the context of decarbonisation of the electricity sector and the expansion of renewables, have been significantly dependent on there being a similar direction of travel in both Governments.

We have to think that through a little. The UK Government—as it was, until dissolution—accepted the Committee on Climate Change's advice on the fifth carbon budget, so at the highest level there is still a commitment to a decarbonisation transition for the energy system. Beyond that, however, there are lots of questions about the extent to which the UK Government will support things that are quite heavily built into the energy strategy and climate change plan.

On electricity, for example, carbon capture and storage is in the Scottish Government's climate change plan as early as the mid-2020s, and the plan allows for what the Government describes as a "negative emissions" factor—because if we use CCS with bio-energy we get a kind of negative bonus in our carbon budget. The UK Government's new Department for Business, Energy and Industrial Strategy's central projections for 2035 show no CCS in the system, so there is a concern there.

The other concern is to do with heat. The Scottish Government's plans on low-carbon heat supply are several years ahead of the UK Government's plans and what the Committee on Climate Change envisages, in terms of heat transition and the pace of change.

We have a UK version of energy system change and we can consider what the Committee on Climate Change is saying for the UK, as well as some other indications. We have not had a comprehensive statement from the UK Government on the emissions reduction plan—we will have to wait longer for that—but there are indications, from the industrial strategy green paper and other statements, of what the flavour of UK policy is likely to be.

The issue is partly the pace of change, in that the UK Government is some years behind where the Scottish Government wants to be; but it is also the direction of travel. The UK Government, as was, intends no further support for onshore wind, which is a big element of the Scottish transition. What that will mean for affordability, deliverability and the relationship between the Governments are significant questions.

Joan MacNaughton: I agree with a lot of what Mark Winskel has said, but not with everything. Across Europe, individual countries take different approaches to their supply mix and that, in itself, is not a bad thing. For example, some countries will have nuclear and some will not. That gives us diversity across the area.

Therefore, I would not be too concerned about a different approach to supply, subject to this point: the way in which the connections between the two countries are managed matters enormously. That is an issue in Europe, where if one country has an excess of renewables and exports it to other countries, those countries can find that the economic case for some of their investments is undermined. As Scotland is a net exporter, that is not likely to be a problem for Scotland, as such, but there will be issues to do with the approach to regulation and support. However, having a different mix is not the main thing.

I agree with Mark Winskel that the approach to attribution of costs is crucial. That will matter, because when there are different mixes, different approaches to attribution of costs—in particular, how much of the system costs the renewables sector has to bear—could matter and could be an impediment.

The support system matters more in some areas than it does in others. It matters more in relation to some of the newer technologies, particularly the marine and offshore wind technologies, even though prices are falling fast in the offshore wind sector. We are not far away from being able to achieve subsidy-free onshore wind projects, and there we come back to the issue of transmission costs, which could damage competitiveness if a crude approach were taken to location. The principle is obviously to have the sources located as near as possible to the demand, but that does not make sense in relation to wind, because some of the best sources of wind are remote.

My final point is on carbon capture and storage, which I have been working on since I was in the UK Government, as long ago as 2003. That one will matter, becausee I do not detect that the Scottish Government has confidence that it would be able to afford the money for a large-scale demonstrator of carbon capture and storage in the power sector. I do not know that we are likely to succeed in having the UK Government reverse its rather curious decision to abandon support for carbon capture and storage. That matters a lot in relation to the power sector, but I note that the energy strategy says that the Scottish Government will look for opportunities to support small-scale demonstrations, particularly in industry.

That is one of the problems with carbon capture and storage. Everybody thinks that it is about coal, whereas it will be also be needed for gas-fired power generation. However, more than in the power sector, it will also be needed by industrial processes where there are no alternative technologies like the renewables that are available in the power sector. That is probably one of the most difficult areas, and it might be one in which we need to think a little harder in the strategy about how to get access to the results of demonstrations of carbon capture and storage abroad.

Lindsay Roberts: The issue links into some of the answers to the first question about understanding the action plans and pathways. What I would like to see is something that Mark Winskel mentioned. Part of the problem is that the strategy is deliberately quite flexible, to enable lots of technologies, to future proof and to ensure that options are not being shut off prematurely, but there will be some points at which critical decisions need to be made that will shut off options. We need to understand what those critical decision points are along the pathway out to 2030 and 2050 and who owns those decisions. That is the really important bit.

It is also not just about the UK Government; other regulated sectors are involved and understanding the Scottish Government's role in each of those decisions is essential. That would help us to answer some of the issues that were raised in relation to the first question, as well as to this point.

Mark Winskel hit the nail on the head: it is not necessarily always about the direction of travel; it is about the timing between what the UK Government and the Scottish Government are trying to achieve, which, in a lot of areas, is slightly off, particularly in the heat sector, as Mark Winskel said. There are certainly issues around CCS as well.

On the question about the subsidy for onshore wind, the UK Government's own research shows that new onshore wind and solar projects, the most mature technologies, are the cheapest electricity providers out there—the cheapest options that we have. It makes sense to maximise that resource and to maximise utilisation of the renewables capacity that we have in Scotland. That will help us to deal with some of the concerns and uncertainties about the newer technologies, such as CCS.

Renewables are a proven, cheap, low-regret option, so the Scottish Government has a role to ensure that it is using all the devolved policy mechanisms that it has at hand to ensure that our projects are as competitive as possible when we are working within the competitive contract for difference resource allocation framework.

10:30

Gina Hanrahan: A lot of the points that I wanted to make have been raised already, but I want to home in on one. Although there is a huge reliance in the UK strategy on CCS, the future of the gas grid, onshore wind and other issues, that underscores the importance of doing what we can within our own powers. For example, one area in which the strategy could benefit from more detail and perhaps more ambition is demand reduction, and the Scottish Government has a lot of levers to deliver that.

At the moment, the strategy sets out a forecast increase in electricity demand of 30 per cent by 2030 as a result of heat and transport electrification. However, there is very little effort to manage that demand in the first place, which would reduce the stresses on the system.

Scotland's energy efficiency programme—SEEP—is in the strategy, which is a welcome development; we campaigned long and hard for energy efficiency to be designated a national infrastructure priority. However, the level of ambition for that is relatively weak. The forecast is for something in the region of a 10 per cent increase in overall heat demand from buildings rather than for the level of efficiency savings that we have seen in recent years to carry on.

In transport, the modelling suggests that there will be a 27 per cent increase in road miles through to the 2030s, but there is very little action in the plan to do anything to tackle that. The Scottish Government has a lot of levers to enable demand reduction in transport—for instance, we could introduce policies that are hinted at in the climate change plan around workplace parking levies, air quality zones and so on to manage demand.

Some research was done for the Scottish Government—probably quite a few years ago now—by Atkins and the University of Aberdeen, which looked at various options for decarbonising the transport sector. Demand reduction options came out as the cheapest overall. Much more could be done on that aspect, which in turn would help to alleviate the stresses on the supply side.

Lawrence Slade: I want to pick up on Gina Hanrahan's comments, looking at SEEP and going back to the question about where the policies of the UK Government and the Scottish Government are diverging.

Scotland has been ahead of the game in what it has achieved of late in the whole area of energy efficiency, and the fact that energy efficiency is

being made an infrastructure priority here is to be welcomed. However, the critical part is how Scotland's energy efficiency programmes develop in relation to how the programmes in England and Wales develop. I say that because a lot of the infrastructure, supply chains and delivery mechanisms are related, as are a lot of the regulatory regimes through what Ofgem undertakes.

Although it is fantastic that Scotland is taking a lead and is setting an example, we have to look very carefully at how its programme relates to the UK programmes as a whole and to the energy company obligation and how that functions. More work is required on that to make sure that the lead is maintained as well as the value that can be extracted from having a good, strong supply chain.

Bill Bowman (North East Scotland) (Con): Some of the questions may overlap topics a little bit. The strategy for 2030 has already been mentioned, with the all-energy renewables target to deliver the equivalent of 50 per cent of Scotland's heat, transport and electricity consumption from renewable sources. The figures for 2014 show that about 15 per cent of the energy consumed came from renewables; renewable electricity made up about 50 per cent of that total.

Most people, I think, have said that they accept that the target is ambitious and welcome it; some have said that it is feasible. I am interested in hearing about practical steps that would make it feasible that could be put to individual people in Scotland, which they would find acceptable and workable. Also, how might the energy market have to develop?

Dr Winskel: I will probably repeat myself a bit as I answer the questions. There is a broad welcome for the target from many stakeholders. At the highest level, we are interested in the least-cost path to achieve the kind of change that we need for which targets are useful. More specific targets obviously favour whatever is being targeted, and every sector would like its technology to be represented with a specific target. We start with a target that is essentially about supply, although we can achieve targets through demand reduction as well. If we maintain a high renewables sector and reduce demand, we achieve a higher percentage of demand met by renewables.

I know that there will be different views around the table, but a concern that I have about the target is that we have not seen from the Scottish Government any modelling work or representation of what its version of meeting that target looks like. There has been some independent work, using a different kind of model, that was conducted through WWF Scotland and others, but we have not seen the Scottish Government's own analysis of how we might best meet the target, so we are not able to say too much about what the implications for different sectors are.

What we already know is that 2030 is not that many years away and some sectors are better able to respond over that time than others. One of my main concerns is about the heat target and how much renewable heat it is feasible to get into the Scottish system by 2030. If the 50 per cent target relies on unrealistic assumptions about how much renewable heat supply we can achieve by that time, I would have concerns. It is a little difficult to know, because we have not yet seen the analysis but, for example, it is much easier to decarbonise electricity supply than heat supply. There is an interconnection between transport and electricity, so, again, a lot can be done there, but we will want to look more closely at how much renewable heat is expected to contribute to the target.

Lindsay Roberts: This is where members will want me to show them my working for the answer to Bill Bowman's question—how we got there.

We have said that the target is ambitious—which it definitely is—but that is what a target should be. We need to consider the success of the target on having the equivalent of 100 per cent through renewables to show the role that an ambitious target can play in driving the sector forward.

We already have around 8GW of renewable energy capacity in the system—we have done a little analysis of that, but we normally use WWF Scotland's work with Ricardo-AEA as an independent piece of work as well; I will perhaps let Gina Hanrahan go into the detail on that. We think that, by 2020, we will be sitting at around 28 per cent of our whole energy system coming from renewable energy. Therefore, to achieve another bit on top of that, to take it up to 50 per cent, we will need to at least double our existing renewable energy capacity.

Most of the analyses take us to installed capacities around the 19GW mark. As Mark Winskel says, there are lots of different ways in which we can skin the cat or slice the cake, but generally the figure falls at around 19GW. Therefore, the Scottish Government's strategy suggests that we will need between 11GW and 17GW in installed renewable energy capacity. We have a few questions on what the figure means, what it includes and how the analysis has come to it, which echo Mark's points. However, we have 12GW of renewables sitting in the planning system already. If we add that on to our existing 8GW, immediately we are at 20GW, so the target is achievable.

There will be redundancy in projects that are sitting in the pipeline. Within the existing 8GW will be some projects that are not repowered or renewed, so there will be some redundancy there as well, which is why we say that we need to more than double our capacity. However, we think that it is possible, and it is also in line with the Committee on Climate Change's advice on the lowest-cost option for achieving our climate change targets.

Bill Bowman also asked a very good question about how we communicate the benefits of the strategy to the public. The strategy itself is quite light on such areas and will have to be supported by a very large marketing and communications plan. To a degree, we do not need as much of that in relation to energy generation. It does not affect people's lives quite as directly as does heat transition, which may involve physically coming into people's homes and changing how they live, how they work at home and everything that they do. We need to be better at communicating why the changes are happening and their benefits.

Gina Hanrahan: I have the report that we have all been talking about here, and I will go through the assumptions and scenarios that we ran in it, which are slightly out of kilter with some areas of the Scottish Government's work. As Lindsay Roberts said, we assume about a doubling of electricity capacity—within pipelines, if we can find a route to market for that capacity to come through; approximately 40 per cent renewable heat penetration by 2030, which is significantly lower than the Scottish Government's figure of 80 to 94 per cent penetration of low-carbon heat by that stage; and about 18 per cent renewable transport content by 2030.

That all sounds very difficult for ordinary people to understand, so what does it all mean? That is a very important question and, in the report, we have tried to set out what those scenarios mean for real life. For example, heat networks will be expanded in urban areas; a lot of properties—up to half—will have some form of heat pump rather than a gas boiler; one in every two buses will be electric or low-carbon; and one in three cars will be electric. Those are significant advances versus where we are today.

Although those might seem huge steps forward, they are already delivering significant growth in many countries. For instance, in Norway, more than 40 per cent of new car sales are already electric, and there is a lot of talk and hype about the potential for electric vehicles to take off at pace.

The transformation is huge, but if we have the right policy framework, with clear actions to enable and support it, and if we are clear with the Scottish public about our direction and explain the changes—50 per cent all-energy is not easy to communicate properly—we will create the market drivers for expansion and the consumer demand for those products.

Lawrence Slade: I echo Lindsay Roberts's comments about the importance of onshore wind energy. It is the cheapest form of low-carbon generation—that is perfectly clear and it is ridiculous, to be frank, that it does not feature more strongly.

The committee and the Scottish Government should not ignore the benefits that smart networks can bring. Duncan Burt could probably talk a lot more about that if he were here. By harnessing technology that is available today on the grid, and by using the electricity that we have available in a more dynamic fashion, we can lessen the requirement for new generation. My main point is that we have to use all the elements together, which goes back to the point made about a whole-system approach to new forms of storage.

There is a significant amount of hydro storage in Scotland, but how can battery storage be brought into the grid, and how can that be combined with onshore wind to make more effective use of peak generation? How can onshore wind storage be combined with solar, to make better use of midday peaks in the summer months, and how can that be combined with hydrogen creation to inject into the existing gas network? A lot of tools are available for grids and distribution network operators to make the system more efficient. As Gina Hanrahan—and the WWF report—said, growth will increase.

On engagement, how we engage consumers in the importance of energy efficiency is a vast challenge for us all. The topic is not popular and a significant amount of work is required to make people understand the differences that they can make and that we can help them to make. We should not underestimate the challenge of going into every house and, potentially, replacing boilers with heat pumps and so on. There are huge barriers and the amount of time that it will take illustrates the scale of the challenge that we could face in the context of the heat strategy. When we consider the cost, the time and the engagement that will be required, we can see that it is really important that the strategy comes into play as soon as possible if the targets are to be met.

10:45

Joan MacNaughton: To pick up on Lawrence Slade's point, the good news part of the story is that a huge number of jobs will be created, although of course that generates its own challenge in building the necessary skills in our workforce.

I absolutely agree about engagement. People have talked about the matter in terms of the public's willingness to come along on the journey, but another issue, which we have not mentioned but which is crucial, is investment. We are talking about the accelerated replacement of our capital stock. The lifetime of a car is 10 to 15 years, so even at the exponential growth rates that we are seeing for electric vehicles, we are going to need some acceleration of purchase, and that is a big ask of individuals. We are going to need a huge increase in investment from project developers across all sectors—not just electricity but heat and transport.

We are looking at one of the biggest public and private sector investment challenges that we have ever faced—at an incredible pace. What we will need to think about, and what the strategy does not tackle as successfully as I would like it to do, is what the right balance will be between market mechanisms that incentivise investment and the necessary regulation to drive things forward faster than will happen if entrepreneurs are just developing electric vehicles. There has to be a place for such regulation, but it must inspire confidence so that people start investing now, because those investments will have to build the capacity, the supply chains and so forth.

Of course, it will not be possible to get all the regulation in exactly the right form first off, so we will have to adapt as circumstances and new technologies evolve. Would-be investors will need to be confident that those changes will not be driven by political whim or irrelevant circumstances and will be delivered by clearly defined triggers, such as a certain penetration of a particular technology, when subsidy can perhaps start to be reduced, the availability of new technologies, or costs changing. Such triggers could perhaps be signalled at specific time periods, so that investors can have confidence to make the investment, knowing that, for a reasonable part of the life cycle of the investment, nothing will come from left field and leave them with stranded assets.

Nicholas Gubbins: To go back to Bill Bowman's question, the chances of meeting the targets are very low unless there is a significant change in the mindset and how we talk about people's engagement and participation.

Scotland is lucky in that a high level of citizens are engaged in energy matters—to some extent, we have led on community energy in the UK and Europe. However, we have to shift from a mindset in which people see the energy system as doing things to them to one in which they have a much greater sense of partnership in developing all the new technical opportunities in which they can engage and from which they can benefit. If we cannot change the mindset and get a very active programme of mobilising local groups and so on to engage local people in the new opportunities from energy, the scope to democratise our energy system will be lost, which would be a tragedy.

The Convener: We have been joined by Duncan Burt—welcome to the meeting. Will you briefly say which organisation you represent and what it does?

Duncan Burt (National Grid): Thank you, convener—I apologise to the committee for being late this morning. I am head of operate the system for National Grid. As you know, National Grid owns the electricity transmission network in England and Wales and operates the transmission network for electricity across Great Britain. We also own and operate the gas transmission network across Great Britain.

Richard Leonard (Central Scotland) (Lab): I would like to press the panel members a little bit more on what they have said about onshore wind. If my shorthand is correct, Joan MacNaughton said that we are not far away from subsidy-free onshore wind, and Lindsay Roberts said that we need to maximise resources. Perhaps Joan MacNaughton can tell us more precisely how far away we are from onshore wind being subsidy free, and Lindsay Roberts can tell us whether she would include in her description of maximising resources the need for continued public subsidy for onshore wind.

Joan MacNaughton: I hope that it will not be regarded as contempt of Parliament if I say no, I cannot. I do not have the figures, and I did not refresh my memory on them before I came to the meeting; I apologise for that. However, I have recently seen quite a lot about the reduction in costs for onshore wind, and I am sure that there are people at the table who could give you a better and more precise feel for that.

I will make one point that Lindsay Roberts might want to develop. A lot of the problems in getting access to our onshore wind resources are as much to do with other areas, such as the planning system and connections to the grid, as they are to do with the commercial viability of onshore wind. I would be amazed if there were not onshore wind projects that could survive without subsidy, but they have to get over the hurdles in the planning system and in connecting to the grid, which are impeding the speed of deployment. The planning issue is much more neuralgic south of the border, but I do not think that it is completely absent in some communities in Scotland.

Lindsay Roberts: Just a couple of months ago, we had a report published by Baringa Partners that addresses that very question. The UK Government's own figures show that the most

mature technologies, which are onshore wind and solar, are now the cheapest forms of electricity production that we have. Baringa Partners looked at the costs in the pipeline and found that we could deliver about 1GW of projects that are currently sitting in the planning pipeline for no cost above the wholesale market price for power. Over their lifetime, those projects could pay back more to the public purse.

We believe that a pot 1 auction should be held in 2018-19. I apologise for slipping into technical language—pot 1 is for established technologies under the CFD regime, which include onshore wind and solar. Holding an auction for those technologies under the CFD regime is absolutely critical. The key to delivery at those costs—equivalent to the wholesale price, if not paying back more to the public purse—is the CFD mechanism and the provision of a low-risk route to market. It is absolutely essential that that mechanism is available for onshore wind.

With regard to Joan MacNaughton's comments on the planning system, I agree that the issue is possibly more acute down south than it is in Scotland, but Joan was right to say that we are not completely clear of any planning issues here. To accompany the energy strategy, the Scottish Government has published the onshore wind policy statement, which sets out a variety of ideas for helping onshore wind in Scotland to be competitive within a very robust planning regime that takes account of all the necessary social and environmental factors and considerations. Alongside the strategy commitments, work is being done to identify and address some of the planning issues. We will continue to commit to arguing for a pot 1 auction.

The Convener: Gordon MacDonald has a quick follow-up on that. I should say to our witnesses that if any matter is raised, they can submit further information on it in writing at a later point—it will not be regarded as contempt of Parliament. [*Laughter*.] There is an opportunity to give the committee answers after today's session.

Gordon MacDonald (Edinburgh Pentlands) (SNP): You mentioned earlier that we need to double renewable capacity and that onshore wind is one of the cheapest ways to do that, and you have talked about the difficulties with connections to the grid and planning. If we went down the route of doubling renewable capacity, would there be any other economic impact that would benefit Scotland? I am thinking of the creation of jobs and so on.

Lindsay Roberts: Absolutely. We think that holding a pot 1 auction and delivering an extra 1GW of onshore wind energy in the system could deliver more than £1 billion of private sector investment. Gina Hanrahan's report suggests that around 14,000 jobs would be created by the doubling of renewable energy capacity. The continued deployment of renewable energy will bring huge social and economic benefits in terms of investment and job creation.

Joan MacNaughton: There is a proposal in the energy strategy for power purchase agreements. They could help a lot, even if the pot 1 auction is not available. As Lindsay Roberts has said, what we are after is reducing risk. The risk feeds back into the capital cost, which is much more important for renewables relative to other energy sources, because renewables involve a high up-front capital cost and a very low operating cost.

Anything that can be done to help with the cost of capital is good. That might be an area in which it would not be completely necessary to depend on the UK Government, even if that might be the surest route that is favoured by a lot of the people in the sector.

Lindsay Roberts: The power purchase agreement proposal in the strategy is very welcome, but a lot of the analysis in the industry shows that that market is not going to be big enough to bring about the level of investment and the level of capacity that we need in onshore wind and other renewables. It is a great option that will work for some projects. It is fantastic to see the support for that in the strategy but, in and of itself, it is not going to be enough, so we would still call for a pot 1 auction to be held in 2018-19.

Jackie Baillie (Dumbarton) (Lab): We all welcome any additional jobs that would arise as a result of this, but is it not the case that existing jobs with existing investment have principally gone abroad because that is where the turbines are manufactured? Is there anything to suggest that that would not be the case with the 14,000 jobs that are predicted?

Lindsay Roberts: Our analysis is that we would have an extra £1 billion of investment in Scotland from the delivery of that 1GW. There are also lots of opportunities now in terms of repowering, which is coming up. Lots of indigenous Scottish companies are coming to speak to us about the repowering market and the opportunities that are there. They are trying to seize some of the jobs and opportunities that might initially, with the first tranche of onshore wind developments, have been delivered elsewhere in the country. With offshore wind, there is a huge amount of investment in job creation. New job creation is happening within the UK, including within Scotland. People are getting excited about the next phase.

Gil Paterson (Clydebank and Milngavie) (SNP): Joan MacNaughton mentioned thermal electricity generation in her first answer to the committee. Why is new thermal capacity

considered to be important? Under what scenario might Scotland need new thermal capacity? Do you think that repowering existing large-scale electricity generating sites is more desirable than constructing new ones, and if so, why?

11:00

Duncan Burt: Scotland has a diverse range of generation sources, as I am sure you have covered. It has significant existing nuclear alongside large amounts of onshore and—soon—offshore wind, as well as a large amount of hydro. Thermal capacity is a useful part of that mix, as it provides capability to output power when the wind is not blowing, the sun is not shining or we have a particularly dry winter. It is not absolutely essential for the grid, but operating the grid without any large power stations—which, with the potential closure of the nuclear sites, we will have to do towards the back end of the next decade—presents additional challenges. We know that we can do it, but we are still working on the timing of investment and the technical measures that we will need to take. Nevertheless, while we can operate without it, it is helpful to have thermal generation to back up and support the grid.

Lawrence Slade: I support what Duncan Burt said and refer to my earlier comment about the fact that the way in which the system is operated—including how generation is provided to the grid—has changed dramatically in a few short years. Distributed generation and combined heat and power storage are coming into play. We must look at all sources of input to the grid and how we can bring those into a more dynamic grid in the future. We also need to look at how the capacity market is functioning and at how energy market reform has brought new generation into play. We must look ahead several years so that we have the ability to plan and to provide investors with confidence about where things are going.

Gina Hanrahan: A number of years ago, we commissioned work to see whether security of supply would be delivered in a post-Hunterston, post-Torness, post-Peterhead world in which Scotland might not have thermal capacity. The analysis by energy consultancy DNV GL found that Scotland would have security of supply to meet peak demand in the absence of thermal capacity, and that security of supply would be maintained even in an extended period of low renewables.

As Duncan Burt said, it is not essential to have thermal capacity here—things can be done in its absence—but there are questions about wider system resilience that need to be thought through carefully. We must ensure that the system is absolutely resilient as we decarbonise.

The draft strategy's description of the innovative work to assess how small-scale distributed generation could play a role in maintaining system resilience was interesting. We do not have to think in the old norms of the past, which are all about base-load generation. We now have a much more distributed, decentralised model in which new system services are provided by new technologies. Perhaps Duncan Burt can pick up on that.

Duncan Burt: I was brief in my first answer, but I could talk about this issue for hours. I will try to go one level lower.

Joan MacNaughton said that we can see the world changing and that we are trying to get right the balance between markets and up-front regulation and direction. We can see a number of ways in which the supply of electricity will evolve over the next 15 to 20 years. As Gina Hanrahan said, very large amounts of distributed generation will come on. We are probably talking about a level of more than 50 cent—we certainly operate at that kind of level in Scotland. Storage—highly distributed storage and much larger cell storage—will have a significant role to play. An important point to make about the strategy is the recognition not just of the important role that pumped hydro storage—for which Scotland has significant additional capacity—can play in the future, but of the big and burgeoning global growth in battery storage, which might also play a very important role in Scotland. Those factors, combined with the large amounts of distributed energy that Scotland will have and the potential for further interconnection into Scotland, all impinge on the question of resilience post the closure of Torness and Hunterston.

I do not want to give a non-answer. I want to give a clear answer, but that clear answer is that there are a number of possible futures, and we need to watch and track them carefully. Our intention is to work closely with developers and investors in all sorts of markets so that we understand their appetite and have viable routes to ensure that we have a resilient system.

It is important to recognise that networks will play a growing role in that resilience over the next 15 years. We already see that the security of the Scottish network has been reduced. Thermal power is currently secured by the additional network investments that Scottish Power and SSE have made over the past 10 years, both to help export renewables from Scotland and to bring power into Scotland when those renewables are not running. In addition, a growing focus on ensuring that we have a resilient network will be really important.

Dr Winskel: I want to say something a little different. With regard to the extent to which power

is supplied by distributed local balancing and local storage versus large-scale power generation and large-scale storage, the question about consumer appetite is what that means for energy customers in terms of how much they are going to pay. We can get caught up in conversations because we spend a lot of time talking to entrepreneurs and aggregators who can spot opportunities, and that will no doubt be an increasing part of the make-up of the energy system, but we need to keep an understanding of the implications for total system cost, because distributed generation still relies on large-scale systems to provide an overall balancing and reserve.

To me, it sometimes feels like a case of more of everything, and we need to be careful about the extent to which we are covering the total system cost of some of those interesting and dynamic opportunities. There is lots of cost reduction happening, but there is still also lots of cost to get out of electrical battery storage compared with more conventional ways of producing flexibility. It is an evolving picture, but we should not lose sight of total system cost and its impact on consumer bills.

Gil Paterson: It is clear that there is a reluctance to invest in new thermal capacity. We have a particular problem in Scotland, simply because of the cost of transmission. Entrepreneurs are not charities, so it is difficult to understand why they would invest in Scotland, given the UK system. What can we do about that? Is there a need for some strategic thinking, as we are dependent on someone else supplying the back-up when we are short of electricity, if the wind stops blowing, for instance?

Joan MacNaughton: I might get shot by Lawrence Slade for saying this, but I have talked to quite a lot of the companies south of the border and to various people, and none of them would invest in new thermal capacity south of the border at the moment because the incentives are not adequate for investment in a new thermal power station. There might however be somebody out there who is just on the point of doing it, and that would falsify what I have said, but the general consensus that I pick up is that the overall system and the mix of instruments is not conducive to reaching an investment decision on a large power station.

Added to that, there is not huge demand growth at the moment, although as electric vehicles penetrate and we move to decarbonising the heat sector in times to come, that demand will have to grow, but people are waiting to see how quickly that happens and how quickly and consistently the policies drive those processes before they take a decision.

On your point about back-up, we should not overlook the huge cost and other benefits of back-up through greater connectivity. That is another reason for sadness about the vote to leave the European Union because, in the EU, we were moving to a much more integrated energy market on electricity and gas that had cost and performance benefits across the region. It is possible still to have interconnection even if we are not part of that market, but we will have to be careful and serious about the negotiations on the terms of trade for the interconnection. It is not impossible and it helps that our system operator has played a leading role in that integration in years past and is well respected. Operator to operator, we might continue to enjoy legacy benefits.

I would not discount the cost and other benefits of interconnection. Problems with supply and peaks in demand all vary in different places, so we get some benefit just from wanting the stuff or having it available at a different time.

The Convener: I will give Lawrence Slade a right to reply.

Lawrence Slade: I do not necessarily disagree with what Joan MacNaughton said. However, the policies that we have in place now will provide the signals to investors. Logically, investors will invest when they see the appropriate signals.

The forecasts that are made as part of the capacity market indicate how much generation capacity National Grid and the UK Government are looking for one year ahead in the short auction and four years ahead in the long-term auction. Those forecasts will take into account when plants are coming off line and demand growth, for example. Those are the signals for a Great Britain-wide system in which investors will respond. Other factors, such as location issues, come into that. However, that is what the EMR process and the capacity market were designed for. The industry cannot forecast what the numbers will be next year, the year after or the year after that, but various economic models consider it.

We have not really mentioned demand-side reduction—DSR—at scale. The other element is how new technologies can be brought to bear. The toolbox that National Grid has at hand is expanding as we harness new technologies as we prove that they can be delivered.

We must not underestimate the value of interconnectivity within the GB system and out to the island of Ireland as well as the near continent. There are also future plans for interconnections into Norway, for example, with 100 per cent renewable energy. I have been involved in some early discussions in Brussels on that point, and there is significant economic logic in maintaining

interconnectivity with Europe, certainly on electricity. There is a value to the continent and to the GB system in interconnectivity and that should not be lost when political discussions, as opposed to industry discussions, start.

Duncan Burt: I echo much of what Joan MacNaughton and Lawrence Slade say. I will pick up some of the key points.

On charging and the cost of the network, there is active interest in the development of renewable energy in Scotland, which is a good sign for us. We will have continued growth this year and next year in those connections against the backdrop of the current charging framework, which gives us good encouragement. Those costs reflect the significant upgrades that are going on in Scotland to facilitate the connection of that capacity.

11:15

Alongside that—if we step back—there are a number of tools that we can use to take a strategic view of where the grid and resilience are going over the next 15 years. It is key that we take a longer-term view of how we will need capacity. The measures that came in with electricity market reform and the capacity mechanism are part of that.

Through our future energy scenarios and system operability framework, we do a lot of work to look carefully and stepwise at the next 30 or 40 years up to 2050 and beyond, to consider what we might need and where, if we are to continue to enjoy the level of reliability that we have had.

I will talk about the big four axes in terms of flexibility in how we operate the grid. One is—if I may pick up on nouns that have already been used—interconnection, with enlargement, so that the burden of security of supply is spread across larger markets. Enlarging the market within which we trade increases the resilience of our supply and reduces costs to consumers. We hope to continue that active trading in enlargement of markets, even through Brexit.

After interconnection, there is the growth of storage, including pump storage—albeit that there are questions about the costs of battery—and infrastructure around thermal plant, whether it is new, existing, small or large.

On top of that, something that I have not touched on is the significant opportunity in demand-side response. We run the large GB-wide campaign, power responsive, which is about engaging major users—particularly industrial and commercial users, at this stage—in much more active management of their demand, to lower the carbon footprint of the energy that they take and reduce their costs, because energy tends to be cheaper when renewables are higher. We see the scale of demand-side response growth as fundamental to having a low-carbon, active and flexible electricity market in future. At the moment, that is really about industrial and commercial users; in the 2020s a major smart metering programme will be rolled out, which we hope will have a beneficial impact.

Interconnection, storage, demand-side response and thermal all play a big role. We will continue to look at things strategically and think about whether the charges and frameworks that we have in place across the regulatory framework are giving the right signals in the right way, including on location of thermal plant.

John Mason (Glasgow Shettleston) (SNP): Chapter 4 of the draft energy strategy, which is about transforming Scotland's energy use, sets out various actions. For example, it says in the strategy that the Scottish Government will

"make significant investment and employ targeted regulation to make Scotland's buildings near zero carbon by 2050, in a way that is socially and economically sustainable and supports Scotland's long-term inclusive growth".

Is that realistic and achievable?

Gina Hanrahan: The transformation of Scotland's buildings is essential if we are to meet our climate change targets out to 2050. We know that that is a relatively low-cost step to be taken in the overall decarbonisation of buildings and heat. Energy efficiency would come first and heat decarbonisation would come slightly later. We absolutely need to get on with making sure that we have zero-carbon homes in Scotland.

Among the various consultation documents, there is currently a consultation on Scotland's energy efficiency programme for the domestic and non-domestic sectors. It is due to run to the late 2030s and should massively transform Scotland's built environment. We argue that the current targets for SEEP are relatively weak and that measures are not being put in place at the pace at which they should be if, over the next decade, we are to pull people out of fuel poverty and deliver the emissions savings that we need.

There is therefore a campaign, which has had very broad support, to ask the Scottish Government to make all homes reach an energy performance standard of C by 2025, as an important milestone for SEEP. The approach needs to be backed by the right financial incentives and the capital budget has a role to play in that. We also have to unlock private sector investment, and a key way of doing that is by regulating buildings, to drive the uptake of energy efficiency measures.

One very welcome thing that has emerged over the past couple of months is another consultation, on the regulation of energy efficiency in the private rented sector in Scotland. The Scottish Government is proposing to introduce new regulation for 2019, whereby the worst-performing properties will have to be brought up to an energy performance standard of E, with a view to achieving a D standard in 2022. That will help to regulate out the worst-performing properties.

That is a long-scale programme, however, and we need to be clear about what its targets and milestones are. We also need to do a lot more work to engage those in the non-domestic sector on what it means for them.

John Mason: You have mentioned both sectors. Is there more of a challenge in the domestic sector or in the non-domestic sector?

Gina Hanrahan: There is a massive challenge with consumer engagement and getting into people's homes. There are so many homes in Scotland that we will have to tackle if we are to achieve proper heat decarbonisation and well-insulated homes.

One of the things that has come out of the strategy is that there has not yet been the level of engagement with the commercial sector on energy efficiency and heat decarbonisation that we need to see. There is a huge challenge there. We need to engage closely over the next few years on the design and delivery of SEEP so that we maximise the co-benefits of doing commercial and non-domestic at the same time as domestic where we can and where there are synergies.

Joan MacNaughton: Sometimes you see your past life flash before you. When I was working for the UK Government, from which I retired in 2007, we did a lot of work on a zero-carbon home standard. It was introduced, and it was to have been enacted for all new build from 2016. Lawrence Slade referred to political decisions whereby regulation was overturned after the 2015 Westminster election. There is no reason at all why we should not have that kind of requirement for all new build.

We are way behind most of our continental partners on what we require of our housing stock. Retrofit is a bit more difficult, and I do not feel particularly qualified either to agree that the pace of progress is leisurely or that the work is very demanding but I suspect that, if you upped the ambition, you would up the pace. Whether or not you met the whole ambition, you would certainly do better.

Enforcement is key to that in the domestic sector. There is a long tradition of building regulations sort of being absolutely complied with, if I can put it that way. Good enforcement is crucial. With enforcement and the right approach on regulation, particularly to retrofit, there would be considerable benefits in terms of jobs and the co-benefit of reducing fuel poverty.

On the non-domestic side, things ought to be more straightforward. A lot of really good work has been done by the Carbon Trust, which has been working with businesses to get them to understand the point about enlightened self-interest and feeding straight through into the bottom line. They would be taking a cost out of the business.

John Mason: Somebody said that business buildings are much more varied, which makes things more difficult.

Joan MacNaughton: I personally think that you could consult the business sector on how you will get regulations that work. You could have principle-based regulations, intensity-based regulations or square footage-based regulations. There are approaches that you can pursue.

One of the key things for businesses is to know that everyone else is in the same boat. That is why regulations are important to drive things. If all shops have to abide by the same thing, that does not give one a competitive advantage over another; it gives people clarity about what they must do. That, however, is for consultation on pace and the specific framing.

Making the framing quite goal-orientated gets us a long way towards avoiding problems over things like the variation in the stock. It also raises the issue of the business agenda. One of the problems is that, although energy intensive users are on to the issue already and really small businesses are probably also on to it because it is one of the things that they do, it is not necessarily high enough up the agenda for medium-sized businesses.

The Convener: Mark Winskel will comment briefly before we move on to a question from Jackie Baillie.

Dr Winskel: The question was about 2050, but a lot is happening immediately in this part of the system. As Gina Hanrahan said, some of the more specific consultations that are running in parallel with the energy strategy are quite detailed about the powers that local authorities will have in this area. What we expect from them in terms of delivering SEEP—as well as the local heat and energy efficiency strategy—is a huge issue.

I have been involved in some of those consultations and I know that there is quite a lot of concern at local authority level about their capacity to take on board some of the responsibilities that are built into the more specific consultations. We need to think about where it is appropriate for the Scottish Government to provide a central capacity

to help local authorities because of the pace of change that is built into SEEP, which envisages a £10 billion spend over the period to 2025. According to the existing homes alliance, half of that spend would be public money.

SEEP is a huge national programme and there are questions about the relative degree to which demand should be brought down before we think about low-carbon heat supply, because we would go a long way towards minimising the level of intervention in the supply problem if we got the demand side right. There needs to be a lot more thought about what will happen over the next 10 years, because a lot of regulatory consultation and so on is happening already.

Jackie Baillie: I wonder whether I could neatly segue into demand-side reduction and energy efficiency more generally. I am very conscious that the Scottish Government helpfully exceeded its target by a couple of percentage points last time round, but obviously the EU has set a new target of a 30 per cent reduction by 2030. Do our witnesses—perhaps starting with Joan MacNaughton—think that that is where we should be positioning the Scottish strategy? I am a lover of timetables and action plans so that we can measure exactly what we are doing as we go along. Would that be a sensible approach?

Let me throw in one final question. Should we look to measure a reduction in the final energy consumption, or should we allow for the impact of things such as the economic cycle, weather—always a key talking point in Scotland—and energy prices?

Joan MacNaughton: There would be advantage to aligning with the EU. As I have said, the extent of control over the potential for energy efficiency up here suggests to me that that is one to prioritise, and it also helps with other targets, such as the percentage of renewable energy.

I have a concern that, although the issue is not laboured in the energy strategy, too much weight has been placed on the potential of smart meters on the demand side. I think that smart meters will be the new dog that does not bark, in the same way that people do not switch. There are reasons for that, and I think that the reasons are very similar in both cases. It would be wise not to place too much reliance on the contribution that smart meters can make.

On how we measure the reduction, I know that people who are involved in looking at usage and forecasts can often produce temperature-adjusted statistics. I suggest that you always need the actuals; if you are looking for the trend, you need to correct for variations in relevant factors such as weather. There is no point in saying that you did terribly well in reducing demand for heat if the winter in question was much warmer. You need to understand whether that is a structural adjustment or a one-off, and what that might mean for your strategy and your targets.

11:30

Gina Hanrahan: We would be very supportive of setting an ambitious target for Scotland for 2030. I think that there is an issue about the extent to which we align exactly with the EU target or go further in the way that it is expressed. The EU target is measured slightly differently from how we measure the target in Scotland, which is in terms of final energy demand, and there would be enormous value in our continuing with the current approach. We are showing that it is clearly working and we are exceeding the target, so why would we change it?

The EU has examined a number of different scenarios for the 2030 timeframe, and its analysis—which I think has been done for the European Commission by Cambridge Econometrics—shows that going slightly further with energy efficiency than is being considered at EU level will result in massive macroeconomic benefits to the EU as a whole with regard to growth in gross domestic product, job creation, fossil fuel imports and even health bills. We therefore advocate that Scotland sets a final energy demand reduction target of 30 per cent for 2030, because we feel that such a move would have huge benefits.

However, delivery of that target must be backed by appropriate actions, which brings us back to the point that we made at the beginning, which is that although the draft strategy is very good in its overall description of where we want to be, it is not so good in its action plan for delivery, particularly in areas such as heat and transport. We know that we could be doing more to enhance take-up of off-gas-grid homes; we know that we could be doing more on energy efficiency in buildings; and we know that we need to put in place some actions to deliver demand reduction in transport. After all, there will be an impact on the electricity grid if everyone shifts wholly to electric vehicles and we do not try to shift people from their vehicles in the first place through measures such as low-emission zones and workplace parking levies.

The Convener: I think that Duncan Burt wanted to make a comment.

Duncan Burt: I just want to acknowledge a couple of points. First, if you are looking at the long-term trend, you need to make a temperature correction to take account of seasonal weather. For example, you can see from the graphs in the strategy that 2010 was a very cold year.

Secondly, as far as the decarbonisation of heat is concerned, we could consider the next 10 years as the calm before the storm—the period before we expect the decarbonisation of heat to start penetrating deeply into the building infrastructure of the UK and Scotland. We can see insulation and energy efficiency as an infrastructure in its own right, and getting ahead of the curve and reducing demand now will have the double whammy of capturing those efficiency benefits immediately and reducing how much we have to spend on decarbonisation later on, as Mark Winskel said earlier.

We should correct for temperature and look for trends. Economic conditions and the weather are the main two factors that we correct for, but getting ahead of the curve will give us two bangs for our buck.

Ash Denham (Edinburgh Eastern) (SNP): I am interested in the panel's views on the proposal for a Government-owned energy company. Will that help to support the development of local and community energy? Linked to that, do you think that the Scottish renewable energy bond proposal will allow savers or investors to support the renewables sector?

Nicholas Gubbins: When we first heard about that, our response was a bit mixed; we felt that it was an idea looking for a problem. However, having worked through it in a bit more detail, we feel—certainly from a community perspective—that if there are going to be more and more extensive community-owned or community-engaged energy developments, we are going to need much better economies of scale. We also think that a number of collective and facilitative roles could be undertaken by some form of co-ordinating organisation. It does not necessarily have to be a Government one, but if there were to be such an organisation, it could assist in a number of quite useful ways—both in developing new projects and in helping to underwrite or guarantee or in assisting with the various things that are necessary to generate such economies of scale.

Lindsay Roberts: I agree with a lot of those comments. In the meetings with Scottish Government officials and other stakeholders that I have been at, where we have started the conversation has determined what we ended up deciding that such an organisation should be. It has depended on the stakeholders in the room and what their interests were. They have included everything from a supply company to a project developer and an information service provider. We do not seem to be any closer to narrowing down exactly what such an organisation should be doing. We agree with what the draft strategy says, in that, if it is created, it must add value and should not duplicate things that are out there already. We are coming round to the view that it could be a very useful mechanism as a front door. There are a huge number of projects and organisations out there to help communities, but because there is so much support, it is sometimes very difficult for them to know who to go to first and which door to knock on. A one-stop shop begins to open up options for communities and to help them to travel through the project development process or whatever it is that they are looking towards to get them involved with renewable energy.

On renewable energy bonds, a while ago Snell Bridge produced a paper for us that looked at the creation of such a bond. We welcome its inclusion in the draft strategy. It is not a new idea by any stretch of the imagination, but we think that something could be done with existing community-owned renewable energy investment fund assets that would help communities that invest in those projects through such mechanisms. Our proposal is at a very early stage, and we recognise that it needs a lot more input from financial and legal experts on how it would work, but we are pleased to see the idea in the draft strategy, and we welcome the chance to work more closely with the Scottish Government on its development.

Joan MacNaughton: I agree with the two previous speakers, but I want to raise one other issue on that chapter of the draft strategy, if it is the appropriate time to do so. After a discussion about delivery, we came to the Government-owned energy company concept, which is fine for the purpose for which it is devised. However, what I see is a lack of machinery for ensuring that the overall delivery is integrated. We started off by talking about the whole-system approach. A lot of individual policy areas will be owned in different bits of Government. They seem to have been co-ordinated rather effectively by the cabinet secretary-led committee, as far as the aspirations of the strategy are concerned. However, how those are executed is just as important.

We cannot have oversight through a piece of policy machinery at the political level. We need something that is closer to the practical side. If my memory serves me correctly, some of the examples that were cited in the chapter are designed to do that. In particular, the Swedish energy agency is there to help oversee execution and to make sure that it is delivered in an integrated way across all the different sectors. For me, there is a question mark over that area; there might be a gap that needs to be filled. There is a case for a bit of machinery that is distinct from the economic regulator and from Government, but which has the accountability to report on what is actually delivered and to spot problems before they become a matter of post hoc accountability because they have not been solved.

Dr Winskel: There is no straightforward answer to this. It is an area in which we rather lack detail on what the Government has in mind on a Government-owned energy company. Joan MacNaughton is right. I think that it is the Danish energy agency that the Government is particularly interested in. I do not know a lot about that, but I think that it is quite directive, in that it involves central Government issuing implementation plans to local authorities. That is a very different system, in which local authorities have a lot of control over their areas, so it would be quite a radical change and we would have to think very carefully about how it could be applied to the UK system. In a lot of these areas, there is the option of improving regulation of the existing ownership base rather than doing something more transformative.

There is a dynamic picture regarding the degree to which we will have a highly decentralised system and the degree to which we will still be relying on more national-scale and international-scale systems. There is a challenge for any implementation body in understanding the evidence base and the extent to which plans need to be long term to attract investment, and remaking that in the light of changing evidence.

A problem that we have seen with the energy strategy is that, to some extent, the Government is trying to be the analytical body as well as the implementation body. That is quite difficult, because the analysis becomes wrapped up in the political settlement. We need some separation of independent analytical assessment and advice to Government. That area needs strengthening in the Scottish case; there is some suggestion of that later on in the draft strategy. There is a role for the Committee on Climate Change or a similar body based in Scotland, because the evidence base is so dynamic. That would be really useful.

Joan MacNaughton: I have two brief points. The first is that there is a Danish energy agency, but there is also a Swedish energy agency, which has the role that I described.

Secondly, I had in mind the Committee on Climate Change when I was talking about post hoc accountability. It is not there to spot problems early on and to help people to devise solutions. Although it is doing great work, it is not quite the kind of body that you need for the kind of role that I would like to see, which is around implementation and separating that from the policy development process.

Andy Wightman (Lothian) (Green): I want to get the panel's views on community and locally owned energy. The draft strategy includes a new target for 2020 of 2GW for the sector. The sector in the UK and Scotland is quite underdeveloped in comparison to some other European countries. What is the relevance of the target to the energy strategy? In particular, given that 90 per cent of the capacity is not community owned but locally owned, do we need to consider how relevant that definition is? One or two such projects that I have looked at are not even owned in the UK; they are owned in the Netherlands and other European countries.

Nicholas Gubbins: I pick up a bit of a retreat from community ownership in the draft strategy, although I may be a bit oversensitive on that.

To answer your question, it depends on what our mindset is on the value of community-led projects. We think very strongly that we will meet the overall targets only if we have an engaged and informed public. In our experience, that engagement is being driven massively by community energy groups—local groups—that have been active in developing and changing perceptions of what energy is about. That has been done through the medium of developing projects, which may be an advanced multimillion-pound wind farms or small facilities-associated projects.

In my view, the question is not whether community ownership is significant. I argue that it will not be possible to get to the point that we want to get to, as expressed in the draft strategy's ambition, unless we have that level of engagement and a higher level of community-owned partnership-type projects.

Lindsay Roberts: We certainly support the view that there should be more actions for community-owned projects in the strategy. In the competitive subsidy environment, it is increasingly challenging for communities to engage and understand and accept the risk profile that exists, and the closure of the feed-in tariff scheme means that there are serious challenges for the smaller-scale project sector. The draft strategy is a bit lacking when it comes to support for smaller-scale feed-in tariff projects, which are more likely to be community-led projects and which are where the targets will be achieved.

11:45

There is also a target on shared ownership. A lot of companies are working on and have delivered shared-ownership projects to date. That is another incredibly challenging target, and it will be difficult to implement in practice given the CFD framework in which we are working. There needs to be understanding of the risk profile; of what is a fair and acceptable risk to expose communities to; and of how that is accounted for in the planning process.

We all know the end point that we want to get to and what we want to achieve, but how we get there is difficult. We need to work out the nitty-

gritty through the draft energy strategy, the onshore wind policy statement and the guidance that is being produced by local energy Scotland with the Scottish Government. I would not take my eye off the ball when it comes to the challenges with the shared-ownership target or the community-owned target.

Lawrence Slade: There is a positive role here for good solid policy and regulation that relate to those targets. To pick up on Lindsay Roberts's point on the level of risk that a community would be exposed to, a community is likely to be more risk averse than some commercial institutions. If the right policy and regulatory framework are in place that provide investors and financiers with reassurance on their return, that can provide reassurance to local communities on the risk levels.

There has to be support to meet the targets, although care needs to be taken over how that is linked into regulatory and policy regimes. Local communities can be given that comfort factor, if you will, about the level of risks that they are taking on.

The Convener: We are just about at the close of this part of the meeting. Does any committee member have a follow-up point on any matter that has arisen?

Gordon MacDonald: I am trying to understand the importance of interconnection. We have heard about thermal or base-load demand being met from south of the border if Hunterston and Torness are no longer in operation. Will any of the witnesses comment on the interconnection with France and the Netherlands? My understanding of the final figures for 2015, which is the last year for which figures are complete, is that, through the interconnector with France, we imported 14,000GWh and exported 174GWh and, through the interconnector with the Netherlands, we imported 8,000GWh and exported 7GWh. What is the importance of interconnectors? Will the situation get worse or better over the years? What result will the Brexit negotiations have on UK energy generation and Scottish energy strategy?

Duncan Burt: My reference to interconnectors was about existing and future interconnectors. There will potentially be additional interconnectors with France and, indeed, right round the North Sea up towards Norway, with interconnectors from Norway going to England and Scotland.

Interconnectors provide swing—they can feed into the UK when there is reduced renewables output in the UK, and they can push some of the renewables output out to the continent when we have excess energy. They help to stabilise the price of power in the UK and they help with investment, too.

The numbers that you mentioned sound about right for the current flow. We typically see balance to the flow. When we have higher renewables energy output in the UK, we see flow going out; at other times, we often see flow coming in because of renewables energy output from Germany.

On Brexit, clearly a whole world of negotiations must happen before we get anywhere near that. We have said that we derive a lot of trade and security benefits by being part of the internal energy market or by being well integrated into the broader European energy market.

The Convener: Thank you very much to all our guests for coming. That concludes the evidence session, so I now suspend the meeting. For members of the public who are sitting in the gallery, I point out that we will recommence at 12 o'clock.

11:49

Meeting suspended.

12:00

On resuming—

Subordinate Legislation

Insolvency (Regulation (EU) 2015/848) (Miscellaneous Amendments) (Scotland) Regulations 2017 [Draft]

The Convener: I welcome the Minister for Business, Innovation and Energy, Paul Wheelhouse, who is here with Graham Fisher and Alex Reid. I invite the minister to make an opening statement on the instrument, which is being considered under the affirmative procedure.

The Minister for Business, Innovation and Energy (Paul Wheelhouse): I am pleased to have the opportunity to address the committee and introduce the regulations. They make several amendments to insolvency legislation to facilitate the implementation of the recast insolvency EU regulation 2015/848, in the fully devolved area of personal insolvency and in receivership. The recast EU regulation is primarily a restatement and modernisation of the existing European Commission regulation 1346/2000, and it aims to enhance administration of cross-border insolvency proceedings.

The primary purpose of the regulations is to make the necessary minor, technical and supporting amendments to bankruptcy and related devolved legislation in Scotland from 26 June 2017, on which date the main elements of the recast EU regulation will come into force. The regulations make minor amendments to the following pieces of primary legislation: the Insolvency Act 1986, in relation to receivers in Scotland; the Bankruptcy and Diligence etc (Scotland) Act 2007; and the Bankruptcy (Scotland) Act 2016. In terms of secondary legislation, the following instruments are amended: the Bankruptcy Fees (Scotland) Regulations 2014; the Public Services Reform (Insolvency) (Scotland) Order 2016; the Bankruptcy (Scotland) Regulations 2016; and the Bankruptcy (Applications and Decisions) (Scotland) Regulations 2016.

The amendments broadly replace existing references to EC regulation 1346/2000 with references to the corresponding provisions of EU regulation 2015/848. The regulations pick up references to the "EC Regulation" and replace them with "EU Regulation", and they update the previous term "member State liquidator" with "member State insolvency practitioner", which is the term that is adopted in the recast EU regulation.

One more substantive change in the recast EU regulation provides for insolvency practitioners in cross-border cases to supply undertakings that will avoid the need for secondary insolvency proceedings where a business has an establishment and assets in another member state. Necessary amendments have been made to the Bankruptcy (Scotland) Act 2016 in relation to actions by insolvency practitioners in those circumstances. That covers actions by Scottish insolvency practitioners where the main proceedings are in Scotland and actions by overseas practitioners where secondary proceedings in Scotland can be avoided.

I will today write formally to confirm the arrangements in respect of the implementation of aspects of the recast regulation that cover corporate insolvency proceedings spanning reserved and devolved competence. In summary, work has progressed on introducing the amendments through a UK statutory instrument using the powers in section 57(1) of the Scotland Act 1998. The snap UK election and the consequent pre-election period have stalled that process. However, work continues in conjunction with UK Government officials, and we remain hopeful that laying the UK statutory instrument soon after the election will avoid delaying the implementation. I will seek to engage with the relevant UK minister as soon as possible after the next Government is appointed.

I thank the committee for its on-going support and for taking the time to consider the regulations. We are, of course, happy to take any questions, and to outline any of the benefits if that would be helpful.

The Convener: Thank you. As there are no questions, we move to the formal debate on the motion. I invite the minister to move motion S5M-05623.

Motion moved,

That the Economy, Jobs and Fair Work Committee recommends that the Insolvency (Regulation (EU) 2015/848) (Miscellaneous Amendments) (Scotland) Regulations 2017 [draft] be approved.—[*Paul Wheelhouse*]

Motion agreed to.

Public Services Reform (Corporate Insolvency and Bankruptcy) (Scotland) Order 2017 [Draft]

The Convener: We move on to the next statutory instrument, which is also being considered under the affirmative procedure. I invite the minister to make his opening statement on the order.

Paul Wheelhouse: I am pleased to have the opportunity to address the committee and to introduce the order, which will make modernising

changes to corporate and personal insolvency legislation in Scotland.

There are two overarching policy objectives at play. First, the order makes further changes to the devolved areas of the Insolvency Act 1986 as they relate to corporate insolvency in Scotland, and it makes the legislative changes that are required to bring forward fully modernised and updated insolvency rules for Scotland. Secondly, the order will modernise personal insolvency legislation in Scotland in relation to the protection of essential supplies, and will promote the operation and rescue of viable businesses.

The order seeks to address several points with regard to corporate insolvency proceedings, which I will briefly outline. The order will facilitate remote attendance at meetings of members of a company in creditors' voluntary winding up, winding up by the court and receivership in Scotland. In future, any such meetings can be carried out remotely, which offers the potential to bring logistical benefits to the insolvency profession and to reduce costs. That is welcome, as any reduction in costs during insolvency proceedings provides the potential for increased dividends to creditors or for remaining funds to be returned to those who should be in receipt of them. The changes will bring the position in Scotland in line with that already in place in England and Wales.

The order makes provision to enable the content of the current Receivership (Scotland) Regulations 1986 to be subsumed into the new insolvency rules for Scotland, which will simplify the statute book. The order will also make changes to ensure appropriate flexibility to make provision on liquidation committees in the new insolvency rules, which, in that case, will bring the position into line with the position in England and Wales.

The order will amend the savings and transitional provisions that were set out in the previous Public Services Reform (Insolvency) (Scotland) Order 2016, which made some initial changes to the Insolvency Act 1986 to lay the foundation for the modernised insolvency rules. The change aims in due course to harmonise the approach to commencement of the new rules in Scotland with the approach to commencement of the new Insolvency (England and Wales) Rules 2016. The overall aim is that insolvency practitioners will be able to follow the new legislation, once in force, for all cases, irrespective of when the appointment is taken. Adopting a different approach in the new insolvency rules in Scotland from that in the new rules in England and Wales would be legitimate but, on this occasion, it would serve only to introduce unnecessary complication and confusion for those using the legislation.

The insolvency profession in Scotland welcomes the changes and I am pleased that the order will assist us to modernise and streamline the secondary legislation—namely, the new insolvency rules.

On personal insolvency, the order will enact changes equivalent to those that have already been made in England and Wales. In the context of sequestration and trust deeds granted by a business debtor, current legislation prevents providers of gas, electricity, water and telecoms services from demanding payment of outstanding charges as a condition of continuing supply, although it allows them to make it a condition of supply that the office holder guarantees payment of continuing charges.

The modern-day business environment has evolved and businesses can now be reliant on supply by on-sellers of utilities and telecoms services and by suppliers of information technology goods and services. The order introduces modernising changes by adding such suppliers to the list of those who are currently prevented from demanding payment of outstanding charges as a condition of continuing supply, subject to the same safeguard.

Importantly, the order also introduces a further change that will support the on-going operation and recovery of viable businesses across Scotland that are party to a protected trust deed. When a trading entity enters insolvency, suppliers may take a number of actions that can severely impede the chances of rescue, even if their invoices are being paid on time and in full. For example, some essential suppliers, such as those supplying essential IT services, can withdraw their services altogether, even though they are essential for the preservation of the business. That can be deeply unhelpful and can make the salvaging of a viable business much harder.

The further change that I am proposing today will introduce protections against essential utility and IT suppliers exercising insolvency-related clauses in their supply contracts where a trading entity is subject to a protected trust deed in Scotland, subject to safeguards for the suppliers. It is a welcome development.

The order that the committee is considering today has been the subject of informal and formal consultation as part of the superaffirmative procedure that applies, prior to being laid before the Parliament for scrutiny. I am grateful to those who responded to the consultation. As the accompanying explanatory document details, one minor adjustment was made to the draft order that was laid for consultation in light of the feedback that was received.

I understand that the committee scrutinised an earlier draft of the order when it was laid for consultation as part of the superaffirmative procedure and that it requested scenario-based examples of how the changes that are contained in the order might impact on trading organisations' creditors. My officials have provided a response, which I hope has proved to be helpful.

The order will make worthwhile improvements that make processes more efficient and effective. I thank committee members for their support and for taking the time to consider the order. We are happy to take questions or to outline other benefits, if that would be helpful to the committee.

The Convener: Thank you, minister. As there are no questions, we move to the formal debate on the motion. I invite the minister to move motion S5M-05504.

Motion moved,

That the Economy, Jobs and Fair Work Committee recommends that the Public Services Reform (Corporate Insolvency and Bankruptcy) (Scotland) Order 2017 [draft] be approved.—[*Paul Wheelhouse*]

Motion agreed to.

The Convener: I also invite the committee to agree that I, as convener, and the clerks can produce a short factual report of the committee's decision on the two instruments and arrange publication. Are we agreed?

Members *indicated agreement.*

12:11

Meeting continued in private until 12:32.

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