OFFICIAL REPORT
AITHISG OIFIGEIL

# Economy, Energy and Fair Work Committee

**Tuesday 4 February 2020**

Session 5

The Scottish Parliament
Pàrlamaid na h-Alba

# Tuesday 4 February 2020

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## ECONOMY, ENERGY AND FAIR WORK COMMITTEE
**4th Meeting 2020, Session 5**

**CONVENER**

*Gordon Lindhurst (Lothian) (Con)

**DEPUTY CONVENER**

*Willie Coffey (Kilmarnock and Irvine Valley) (SNP)

**COMMITTEE MEMBERS**

Jackie Baillie (Dumbarton) (Lab)
*Colin Beattie (Midlothian North and Musselburgh) (SNP)
*Jamie Halcro Johnston (Highlands and Islands) (Con)
*Dean Lockhart (Mid Scotland and Fife) (Con)
*Richard Lyle (Uddingston and Bellshill) (SNP)
*Gordon MacDonald (Edinburgh Pentlands) (SNP)
*Andy Wightman (Lothian) (Green)

*attended

**THE FOLLOWING ALSO PARTICIPATED:**

Rhoda Grant (Highlands and Islands) (Lab) (Committee Substitute)
Guy Jefferson (Energy Networks Association)
Claire Mack (Scottish Renewables)
Chris Morris (Local Energy Scotland)
Joanne Wade (Association for Decentralised Energy)

**CLERK TO THE COMMITTEE**

Alison Walker

**LOCATION**

The David Livingstone Room (CR6)

# Scottish Parliament

## Economy, Energy and Fair Work Committee

*Tuesday 4 February 2020*

*[The Convener opened the meeting at 09:47]*

## Decision on Taking Business in Private

**The Convener (Gordon Lindhurst):** Good morning, and welcome to the Economy, Energy and Fair Work Committee's fourth meeting in 2020. I ask everyone to turn electronic devices to silent.

Apologies have been received from Jackie Baillie; we welcome Rhoda Grant in her place. Dean Lockhart has indicated that he is unavoidably running late and should join us shortly.

Agenda item 1 is to decide whether to take agenda items 3 and 4 in private. Do members agree to do so?

**Members** *indicated agreement.*

## Energy Inquiry

09:48

**The Convener:** Agenda item 2 is our energy inquiry. The witnesses who will spend some time with us are Chris Morris, who is a manager at Local Energy Scotland; Claire Mack, who is the chief executive of Scottish Renewables; Joanne Wade, who is the deputy director of the Association for Decentralised Energy; and last—but not least—Guy Jefferson, who is from the Energy Networks Association. I welcome all four of you.

There is no need to press buttons—the microphones will be operated by the sound engineer. If you are not getting into the discussion at any point and want to come in, you should indicate that by raising your hand, and I will try to bring you in. That is, of course, subject to time constraints, as we have limited time this morning.

I will start with a question about community and locally owned energy. What effects does community and locally owned energy have on communities? Are you aware of local or community energy projects? Can you give us some indication of how they work with their local communities? I see Claire Mack nodding her head.

**Claire Mack (Scottish Renewables):** I apologise for holding up proceedings. We were behind a school party coming through security.

There are a lot of really rich case studies that help us to explain local and community energy systems and how they might operate in Scotland. They can be set up in different ways and can deliver very different benefits. For example, the local energy system on the island of Eigg was set up as a blend of solar and wind energy and storage because there was no energy network that predated it. That system works as a self-balancing needs system that provides energy for the island.

The Point and Sandwick Trust's system—the United Kingdom's largest community-owned wind farm—on the Isle of Lewis was developed and funded very much on a commercial and revenue basis. The trust returns money to the community and chooses how funds are distributed. For example, it supports the local hospice, and it has done some domestic energy efficiency programmes with money that has come through.

A community-led project in Fintry is very much mission led: people there wanted to use their local energy to alleviate the very high levels of fuel poverty in their area.

There are various ways of bringing such things to market, and there are slightly different results

from each—from local energy systems, like Eigg's, which look to deliver energy, all the way through to community-led systems, like the one in Fintry, which is for a slightly different purpose.

**The Convener:** Is there sufficient funding to help to start up such projects?

**Claire Mack:** Funding is one of the big challenges. It has been patchy, and deployment is very much dependent on funding. There is a role for a clearer and more joined-up funding landscape.

There is a good blend of funding, at the moment. For example, there is community and renewable energy scheme funding and, on the heat side, we have used a lot of funding from the low-carbon infrastructure transition programme fund, which is administered by the Scottish Government. That fund includes a lot of European Union funding, so there is a question about its future.

How the smaller-scale developments are brought to market has been a continuing issue, because of the lack of clarity about United Kingdom Government funding for things such as the feed-in tariff and other small-scale funding. Some private sector funding has also come in, for example through SP Energy Networks and Scottish and Southern Electricity Networks, about which I have previously spoken to the committee. There has also been some spend through SP Energy Networks's green economy fund. There is a blend of funding, but I imagine that it is quite difficult to understand and access that funding landscape for a community that is looking to develop a project.

**The Convener:** Thank you. I am sure that others will have comments on those and other areas, as we move along.

**Jamie Halcro Johnston (Highlands and Islands) (Con):** Good morning. There are network constraint issues and a need to improve the grid. What has been done to co-ordinate demand with generation assets, so that some of those costs could be shared?

**Guy Jefferson (Energy Networks Association):** I work for Scottish Power Energy Networks, and am here on behalf of the ENA. We try to work very closely with communities that are looking at the various publicly available options. For example, we have maps of publicly available heat that show opportunities on the network. However, the network is saturated in terms of the ability to connect.

Where possible, we work with communities on flexible connections—where connection is non-firm, as we call it—but we can connect and allow community and local energy schemes to transmit to our network at certain times of the day, through flexible arrangements. That is the type of option that we have if the grid does not have capacity to give schemes a firm connection.

We will eventually get there, but some cases require deep reinforcement. If a community is not able to pay for that, which is sometimes a big stumbling block in terms of a scheme's being economical, there is a hold-up and we sometimes have to wait for others to help to pay for that reinforcement. That is a big issue with some shovel-ready schemes.

On a positive note, you will have noticed that the Office of Gas and Electricity Markets published on Monday a nine-point action plan to deal with decarbonisation issues—electric vehicles, for example—about which the committee has heard evidence. The challenges for some EVs and reinforcement for EVs are exactly the challenges for some community energy schemes. I am delighted to see that Ofgem has responded and now accepts that it has a statutory obligation on achievement of net zero emissions, which means that we can work very hard with it, in our upcoming price review, to look at the issues in respect of the high cost of connection.

**Jamie Halcro Johnston:** I have another quick question before Chris Morris comes in.

Does saturation in some areas prevent local schemes from being brought online? In terms of planning permission, is consideration given to that kind of constraint? Should it be?

**Guy Jefferson:** In some cases there is constraint. Although it is difficult, we have been trying to get some flexible arrangements. For example, there are large schemes in Dumfries and Galloway, and one in Dunbar for which we did not have the capacity to connect all the energy sources that were coming on stream, so we put together an active network management scheme. That is a flexible scheme that allows communities to generate more effectively on a first-come, first-served basis in real time, whenever capacity is available. It is not a firm connection, so there might be constraints.

However, on many occasions—especially if wind power is being used, given that if there is no wind there is obviously no power—we find that other types of technology are connected in the area. In Dunbar, for example, there is a recycling and waste-to-energy scheme that generates 30MW of baseload energy pretty much all the time. We can use different technologies to connect flexibly, so we do not need a firm connection.

There are ways of doing it, but there can be constraints in some schemes.

**Chris Morris (Local Energy Scotland):** I run the Scottish Government's community and renewable energy scheme, so I am very much on the front line of supporting community groups and developing projects. We have supported some good innovation projects that have tried to connect generation to consumption. For example, in an ACCESS—assisting communities to connect to electric sustainable sources—project on Mull, storage heaters, flow batteries and heating elements were switched on when the generator was generating a lot, and could then be switched off to operate in a constrained system.

There are great examples out there. The challenge is, in order to allow deployment, to make the innovations business as usual, so that they work economically time and again. There is no doubt that the grid has a significant impact on connecting community energy projects and can make them unaffordable.

On how the planning side of things works, both distribution network operators are represented on the funding panel, which at least allows us to understand the scale of the issue and to engage with the DNOs at the beginning of projects, so that they can work actively with communities. We see good engagement and support from DNOs, but there are restrictions in the wires, which often stop projects connecting or make them much smaller or very expensive to connect.

**Jamie Halcro Johnston:** I am from Orkney, where there is a scheme that is repeatedly hailed as providing some sort of solution to grid-constraint issues, and provides energy commercially, to ferries. Should local plans give more consideration to the matter that we are talking about? Should it be considered when local plans are put together and when local planning decisions are made?

**Joanne Wade (Association for Decentralised Energy):** We strongly advocate zoning—not just for electricity, but for heat and energy efficiency—to give local authorities the opportunity to consider the best solutions for their communities and to use that mechanism to enable the funding to flow in from national schemes. A clear plan that says, "For these types of building stock, the community and the economy, these are the best energy solutions, so we want to access the mechanisms." That can be linked to planning, to local heat and energy efficiency strategies and so on.

**Jamie Halcro Johnston:** Is that happening at the moment? Does it need to happen?

**Joanne Wade:** It is not happening as much as is necessary; individual examples of good practice are few and far between. The approach needs to be developed.

**Chris Morris:** I can give a couple of examples of good practice, if it would help. We have done some work on community-led local energy planning. Joanne Wade is right that it is about not just looking at the grid and trying to connect as much as possible, but thinking about local needs in an area. People need to ask about what is going to be built in their area. Is there a school coming along? Will there be additional capacity? Is there a spare heat source?"

We did some work with a European Union funded project to develop community-led local energy plans, which very much had the community in mind—the Barra and Drumnadrochit plans are two good examples. A strength of the approach is that local people get involved, but it works only if the local authority and the DNO are on board, too, and if people are setting out a longer-term ambition on the energy projects that they want in their area.

**Guy Jefferson:** I agree whole-heartedly that more local planning is absolutely essential. I refer members to the encouraging announcement on Monday by the Office of Gas and Electricity Markets; Ofgem is starting to talk about decentralisation of powers that are currently held in London. That is essential because it is a mistake to believe that Ofgem can manage all the different requirements from London. Communities run at different paces, as SP Energy Networks notices from our areas—central Scotland, and Liverpool and Merseyside.

It is important to get local energy planning in place. It is also important to get powers to reinforce and invest in the things that local communities want to do. However, that is a long-term proposition. A number of areas in our network are already constrained and will be constrained in the future.

If we can share long-term plans with communities, we can plan better for solutions, and community energy groups can give us solutions to alleviate some of our network concerns. That is also a potential revenue stream for them. I whole-heartedly agree that local planning is essential.

**Jamie Halcro Johnston:** Is more localised delivery of energy that is generated and used locally more efficient in terms of use and cost because the same level of infrastructure is not needed across the whole country?

**Guy Jefferson:** From an electricity point of view the answer is yes, but we need to look at the current charging mechanisms. Ofgem is looking to reconstruct them, given all the pressures of recarbonisation and so on, and I know that, currently, the ability of community and local energy schemes to efficiently sell energy locally is held back by regulatory barriers. However, Ofgem's

announcement on Monday gives some confidence that the issue is now being taken seriously.

**Rhoda Grant (Highlands and Islands) (Lab):** On the tensions within Ofgem, the job that it has to do and the issue of grid reinforcement, often communities that might develop renewable energy do not have the resources to tie up vast amounts of money in a development for which they know that there is no access to the grid. However, in order to reinforce the grid and for Ofgem to count them, those communities have to be part of the planning system. That is an issue in the Western Isles, where we face the installation of an interconnector that will not be adequate for what is required there. The trouble is that Ofgem cannot measure what might be required because the systems are not yet in planning and will not be until there is access to the grid. There is a tension in respect of which element comes first. How do we solve that problem?

10:00

**Claire Mack:** I recognise that problem. One of the key disappointments for Scottish Renewables as a trade association has been that the last round of contracts for difference did not deliver some projects that we had hoped would come through in order to make the investments in interconnection a reality.

Overall, we have to make it clear that electrification of heat and transport will significantly increase demand. As we get greater oversight of that, we should be able to plan for anticipatory investment. A key aspect of the conversation about local energy systems is that they can be really helpful in alleviating grid constraints. However, the more that happens, how might it impact on a community's investment case for things such as an export link or an interconnector?

We need to have a much deeper conversation about the nature of the opportunities for particular areas of Scotland. For example, we know that the wind resource in the north and across the islands is very good, and that demand is going up universally. We can do more to work through the demand issues and what they mean for future investment in infrastructure.

**Chris Morris:** The situation is very challenging for projects on the Western Isles at the moment. There is a fantastic resource and a real appetite to take up the opportunity. Communities have seen neighbouring communities develop local energy systems and they want theirs to do the same, but the grid is a constraint. The solution is tricky; a community must have a lot of resources in place for securities and to pay for grid deposits in order to be able to join a scheme.

One solution might be to develop projects much further before they go into the grid. In the past, joining the grid has tended to be one of the first aspects of project development; we might need to flip that round. However, that approach involves a lot of risk in terms of whether the project will get a grid connection down the line.

It is a live issue. There is no easy solution, but one needs to be found, because people who have an appetite for such projects and who want to make positive contributions in their communities cannot do so at the moment.

**Willie Coffey (Kilmarnock and Irvine Valley) (SNP):** I wonder whether I could stick with the community element for a wee minute and get your views on the local energy systems. We know that community-owned energy systems are different, but how do they spring up? How does anyone ensure that the communities that are in greatest need can access those systems? Where is the expertise on them? Do they have enough capacity locally to deliver? What is the Scottish Government's view on how that should work?

**Claire Mack:** You have hit on something that has been a key issue for other infrastructure projects, such as broadband. It is clear that community-level broadband will develop in areas where there are people who have specialist expertise; that is a boon for those areas.

One thing that is common to any project, whether local or community, is planning, and we can work on that because it is the same for both. Other projects might need different policy supports because, as we have discussed, they offer different socioeconomic benefits and we might want to drive them in a different way. Expertise and how we gather it is an important part of that, as is understanding the different solutions for local energy systems in rural, suburban and urban areas. There are a lot of variables that we need to bring them together. Such a knowledge base will be important because the issues are complex and, as Chris Morris has explained, there is potential for a lot of money to be involved through guarantees.

We need to look at using things such as the LHEES to bring people together, to help them to understand, to drive more engagement in and to normalise these systems—that is pretty key. People need to be able to come together as a community and understand what their assets look like. If a community has a big industrial player in its space, what is its heat requirements and what ability does it have to help the community with waste heat usage and so on to drive other parts of the community project? There are lots of missing links just now, so there is a lot of potential for everything to come together as an information

source to help communities that want to engage and be part of a solution.

**Joanne Wade:** I echo what Claire Mack says. The key role of local government is to have the plan that shows the best solutions that the community has come up with. The role of the Scottish Government and the Westminster Government is to ask whether that community, with its capacity and money, can achieve the best solution for itself. If the community cannot do that, help will be needed, whether that is through developing the skills in the local workforce to install the materials that are part of the system or providing financial support for low-income households to meet the necessary level of energy efficiency. It is where the local plan interacts with national Government policy and supporting frameworks that we can tackle this problem.

**Chris Morris:** In the past, we have seen a lot of community energy projects in the Highlands and Islands, often in rural communities, that have come about through opportunities in hydro and wind and because of need. With the development of energy systems that involve the generation and the use of energy, there are lot more opportunities in communities in more urban areas and deprived communities.

We have a role to help such communities develop projects, and our development officers who help to develop projects in communities have an idea of what they want to do right the way through to completion of the project or in attracting funding to the project. That is a key role. Without that hand holding, expertise and support throughout the project, particularly in communities with low capacity that do not have funded development officers or other support, it is challenging to take a project through.

There is a prize to be had from getting energy systems in all communities, particularly deprived communities. If we want to see the uptake of heat pumps and photovoltaics across our communities, having active community buildings where people can go to see, touch, feel, understand the technology and be part of the project can help to accelerate progress and involve more people in developing climate mitigating action in their homes.

**Willie Coffey:** How would that work in practice? Kilmarnock has a population of 50,000 and has some areas that are pretty high up in the Scottish index of multiple deprivation. If such a community said that it would like a share of the experience, technology and so on, how would it come together to be one of the lucky recipients of the new technology? In many towns in Scotland, peripheral housing estates can be pretty substantial. Who helps to shape a community into a reasonable size, with the best make-up to deliver such projects? How do we do that?

**Chris Morris:** That is very much part of what the community and renewable energy scheme does. We work with individual people and communities who want to take something forward. One of the first things that we can do is give a community a small initial grant to help with a scheme. We often find that community energy schemes are four or five people's idea, but that is not enough. They need to go out to the wider community, share their ideas and try to get buy-in and support, because delivering a project requires more involvement. We can help those few individuals who have come together to set up a community group and to see whether their project is feasible. If it is feasible, we can help to attract finance for it. We provide hand holding all the way through project development in order to make a project happen.

**Willie Coffey:** However, we need folk to come forward. Is there no strategic oversight to identify the ideal areas and approach the communities there? Do we have to wait for people to come forward and ask for such a project? Is that the way round it works?

**Chris Morris:** In the past, that is the way it has worked a little bit. Projects have come from organisations with capacity, such as development trusts, which have helped to develop them. You are right that we should look at where the opportunities are on the energy network and in relation to resource, and at the communities in the greatest need. Schemes could get positive buy-in if such communities were actively targeted, which would help with the fairness agenda, too.

**Claire Mack:** I will build on Chris Morris's point. To date, the decarbonisation of the electricity system has happened very much behind closed doors. People have not been involved, because decarbonisation has happened at a systems level. That is completely changing in relation to heat and transport. People are becoming much more aware not only of their use of energy but of where it comes from—it is no longer a case of just flicking a light switch. That will drive a lot more people to question what is on their doorstep.

In advance of the meeting, I read in the committee's material about the trend in the development of community and local schemes. Schemes were coming through development trusts, but industry has now become a lot more important in the development phase, and that will continue to be the case. There is the need for industry to decarbonise itself, with regard to the 50 per cent of energy use that relates to heat and cooling. Industry organisations will have to start to look for local solutions, because I presume that relocation will not be an ideal scenario for them.

Alongside local authorities, industry will be a key partner in working with communities and drawing up local plans.

I take Willie Coffey's point that work needs to be done at that level, but someone needs to look across the top and ensure that we will definitely meet our targets, which is important, too. There is nowhere better to do that than Scotland, given that our minds have been sharpened because we have the earlier date for net zero emissions and because the 26th conference of the parties is coming to Scotland. That has made the conversation accelerate.

**Willie Coffey:** Some communities might benefit more than others, but we should not leave communities behind.

**Claire Mack:** Absolutely.

**Willie Coffey:** Thank you very much for those points.

**Andy Wightman (Lothian) (Green):** I will follow up on the deputy convener's questions on community and locally owned projects. What is the definition of "locally owned"?

**Chris Morris:** Local ownership is when the owner of a scheme, and of the farm or estate, is based on Scotland. There are good examples. In Marshill in North Lanarkshire, a farmer saw lots of wind farms going up around him and wanted to do something himself, so he developed a project on his own land. He worked with the local development trust, which has 25 per cent ownership of the project, with the farmer owning the rest. In that example, 75 per cent is locally owned and the 25 per cent share is owned by the community.

**Andy Wightman:** A landowner who lives in England or in an offshore tax haven will not be eligible.

**Chris Morris:** They should not be eligible. The challenge is often in demonstrating that, looking at the numbers and understanding the track record. It is about trying to understand which schemes are in and which are out.

10:15

**Andy Wightman:** Is there enough support available for community and locally owned schemes to get off the ground?

**Chris Morris:** There should be more support. The subsidy support for community energy projects has changed a lot because of the feed-in tariff. It is getting much harder to connect systems to the grid and systems are becoming more complex because they involve people. Community energy is enjoying a transition, and there is a great opportunity. With more resources, we could make more projects happen and build the real movement that we need to hit our wider climate targets.

We must do more to support the transition. In the past we gave support through loans; we need more capital investment in projects to kick-start them and give them the opportunity to thrive.

**Andy Wightman:** Does the private sector have a role in providing some of that capital?

**Chris Morris:** Absolutely, yes.

**Joanne Wade:** I think that it does. It is not just about more support; it is about certainty of support. We are moving from simpler schemes that are set up by people who have a lot of capability and are enthusiastic and broadening that out to more diverse communities that need longer to come together behind an idea. The traditional model with a pot of money that is available for a year and then goes away again will not enable those communities to take part. It also will not encourage the private sector to join in. There should be a more strategic and longer-term plan with some funding behind it. That would enable a broader range of both private sector and community involvement.

**Guy Jefferson:** I can speak on behalf of the network businesses in Scotland. We have a huge part to play.

As we have already discussed, sometimes the costliest part is the connection to the network. We in SP Energy Networks and SSE have funds available to assist some of those projects. We have a green economy fund, which is used for a variety of things, one of which is supporting community projects. In our most recent price review, we tried to build that community energy fund into the process and to make that a more sustainable support to those projects. It will not solve all the problems, but it will certainly support projects and build on the success of some of the pilot projects that we have been involved with in the past couple of years. We recognise a requirement there.

Community and local energy will play a very important part in the future of supporting the network and the security of the network. We have sponsored a report by WPI Economics, which we are launching today. I will make that report available to the committee as part of the evidence. It tries to bring together the potential for community energy.

We believe that there is huge potential, perhaps for as much as 3GW of power across the UK, with a large proportion of that coming from Scotland if the dynamics are right. If the support from all the involved parties is right for such projects, we think that they can play a huge part in providing the

amount of energy that we need for the future and in supporting the network, particularly in rural locations where we need help from community schemes to ensure that we have security of supply. That is a potential future revenue stream that could make schemes more economically viable.

**Andy Wightman:** Is there a level playing field in policy, support, tax and so on between community schemes and corporate ones? Corporates can move fast. Community schemes are more difficult to get off the ground, as they have to get a lot of people to agree. Those are also challenges for locally owned schemes. Does public policy treat community and corporate schemes equally?

**Chris Morris:** We put a lot more time and effort into community schemes because they need more support. One challenge is that community schemes are tied to a place and need to develop in that locality. A commercial developer might develop two or three sites and go for whichever is the most economic or where the best agreement can be made with the landowner. Community schemes are constrained by place, but it is also a strength that they are tied to a place and connected to a community to take things forward.

There used to be some good incentives that functioned as stimulants for the sector, such as tax relief for share offers, which helped get cheap money into community energy, but those have been removed.

Community energy does not get a lot of advantages. It gets a lot of good will, and rightly so, but I do not know that what it gets in that regard offers particular enhancements.

**Andy Wightman:** I have two shares in community renewables projects. Are you saying that I do not get the tax benefit any more?

**Chris Morris:** You do, because you invested when you did. However, if you bought shares in a new scheme that we started, you would not get that tax benefit. Such tax benefits work as an incentive, and they allow lower interest to be paid to members of those schemes, but people with shares in new schemes would not get that.

**Andy Wightman:** I would still invest, regardless of the tax incentive, which is not significant, anyway.

**Chris Morris:** Exactly. Interestingly, we have had some schemes recently that have used gift aid. It is amazing. People get behind the schemes and are happy to donate as well as invest.

**Andy Wightman:** Is there scope for crowdfunding schemes? A lot of people in society would like to move towards zero carbon energy, and they might want to invest £100 or £200, but it is difficult for them to find out where to put that money.

**Claire Mack:** There are lots of different routes now. Crowdfunding is an interesting one, because it enables people to place their money with the developer in effect, which means that they do not take on the responsibility that they might do in a community project.

When you talk about level playing fields, this is one area in which I can see that there is not quite the same balance of experience and expertise available to a community. Crowdfunding helps to get around that. In Scotland, such schemes have been quite popular in the wave sector and, in particular, the tidal sector, where there have been two crowdfunding rounds.

There are lots of different ways of doing things, and different balances of risk and return are offered, depending on the models that you use. To go back to the beginning of this discussion, crowdfunding works for an individual investor, because it allows them to be a stakeholder in something that they believe in and which they know aligns with their values, and it also works in relation to schemes such as the project in Fintry, where people are trying to draw in money to help their local community.

Ultimately, it comes down to the question of finding the funding that, in the past, has been the carrot that has brought a lot of community and local projects to the fore. Crowdfunding offers a slightly different outcome in that regard.

It is always good to have a different balance of ways in which people can engage with projects, but you have to be aware that you will get a different outcome depending on what your input and engagement is in the first instance.

**Andy Wightman:** I want to move on to some questions around smart energy. The submission from the Association for Decentralised Energy talked about smart decentralised energy systems as being critically important. There has been a lot of talk about that. People have smart meters—I know that they are not smart in the sense that we are talking about here—but a lot of people do not use them, or find that they do not work or whatever. Presumably, we have the technology to do what we need to do. However, what are the realistic timescales for rolling out smart energy in a way that means that decentralised energy systems can be more effective and individual households can use energy in a smarter way?

**Joanne Wade:** The next decade is the crucial period. We have smart meters, and we get a lot of data from them, but that data needs to be made accessible to people and they need to be able to share it with who they want to share it with. I have a smart meter, but I cannot take that data and give

it to somebody who can tell me how to better use energy in my home; the data goes to my energy supplier and stays there.

I need better access to that data. I need to be able to better understand it, if that is what I want to do with it, or give it to someone else who will tell me what to do. I cannot do that at the moment, but there is no reason why, in a relatively short time period, I should not be able to do that.

We also need to help the sector build trust with people and get the rules right around the sharing of that data. If I am sharing my data with someone, I need to be confident that I am doing so on the right basis and for good reasons. I need to have it explained to me that a smart system is a cheaper and fairer system.

At the moment, I feel as though I have been given a smart meter because the system needs it. As a consumer, I do not understand that it will be good for me. That education of consumers has not happened, but it can happen, and it can happen relatively quickly. I do not see why we cannot have a much smarter and therefore more efficient and more affordable system in the next decade.

**The Convener:** We will move on to questions from Colin Beattie.

**Colin Beattie (Midlothian North and Musselburgh) (SNP):** I want to ask about storage and battery technology. In evidence to us, Scottish Power Energy Networks highlighted the need for "anticipatory investment" and

"more integrated planning across the transport, heat and network"—[*Official Report, Economy, Energy and Fair Work Committee*, 28 January 2020; c 2.]

sectors. We are talking about grid constraints here.

What role can storage and battery technology play in the viability of community and local energy projects? Does it receive any form of support from any of the schemes that are out there?

**Guy Jefferson:** It has a huge part to play, particularly where we have constraints in the networks. If, instead of turning off a wind farm, we can charge a battery, we can use that energy rather than waste it. At some future point, we might need that energy to support the network, and revenues can be realised from that.

Chris Morris and I were talking about this prior to today's meeting. One of the challenges that the networks need to meet is that of providing us with a much longer-term view of where the support that batteries might provide will be needed. We have flexibility auctions at the moment, whereby support is sought from, for example, a battery scheme where we have restrictions in our network. However, unless someone has a battery in the right place now, they cannot participate in such an auction. If we had a longer-term view of when we might require that support in the network, investing in a battery would become a better commercial proposition.

**Colin Beattie:** Do we know how much work has been done on that? Is it all just theory?

**Guy Jefferson:** Do you mean work in terms of—

**Colin Beattie:** Battery storage.

**Guy Jefferson:** I do not think that it is theory. There are some commercial providers of batteries out there, but they are looking for a market. There is not really a market for some of the larger battery services. There are pilots that are there to enable the dynamics of such projects to be understood, but we are not yet in a position for that to be a commercial proposition.

**Colin Beattie:** Is there much support for the use of such technology, whether financial or otherwise?

**Chris Morris:** I want to take a step back. Intuitively, we know that we need lots of storage on the network. We have lots of wind and lots of solar, and we will need storage to manage the gaps, but it is very difficult to make the commercial argument at the moment. It is almost as though the market still needs to catch up to get us to a point at which someone could borrow money to put in a battery.

Many of the battery projects that work financially at the moment are behind the meter. They are used by big users of energy that might have, say, solar panels on the roof. Battery storage enables them to smooth their demand. That works economically because, by not having to consume that energy, they can offset the cost of buying energy.

To benefit the network, the grid and everybody else, it would probably be better doing that on an aggregated basis on a community scale instead of putting little individual batteries in people's homes or businesses. However, at the moment, there is not a strong commercial argument for building that out, knowing that you will get revenue from it.

The support that we have provided through the community and renewable energy scheme—CARES—is very much about trying to get batteries into community buildings and housing association properties to address fuel poverty or to make community assets work better. It has not been used for the deployment of batteries at a bigger, strategic level.

10:30

**Colin Beattie:** At a simple level, it seems that, one way or another, a lot of energy is lost in the network, not least from wind farms. Therefore, it seems obvious to me that large-scale storage of energy, whether through batteries or some other scheme, makes sense. How much research is being done on that? How much work is being done on it?

**Claire Mack:** You make an excellent point. One of the key issues that we, at Scottish Renewables, continue to deal with is the constraints in the system and how they are managed. Currently, we use a constraint payment system, which works and is the best way that we have to manage the system just now. However, in the future, it would be ideal to do exactly what you are talking about: to not waste any energy and be able to use it.

There is a huge opportunity with electric vehicles, because they provide a certain amount of depth into the system. They can be used as mobile batteries in the same way that the Orkney ferry is used as a mobile battery. There is a lot of change to happen in that particular area, and that is probably why we have not yet seen a good body of evidence. That is an incredibly dynamic space. Understanding more about each locality's energy demand would certainly be a great first step to figuring out what their potential supply and oversupply are and, therefore, the potential for storage.

One of the key benefits of storage is that it adds resilience to the system, which is a really big thing. Resilience is needed with smaller, localised energy systems, and that resilience is currently provided by being part of the grid. We know that we have strong capabilities to send power when it is needed, to stop power when it is not needed and to maintain that balance. At the national level, that is an incredibly fine balance; the same applies at the local level, because people rely on intermittent sources, albeit a blend of them. It is great when they are all put together and we start to build resilience. Storage is just another tool to add to that.

That is probably why we are not seeing the kind of plan that you are absolutely correct to say we need. The question is, how can we manage our resources better and how can storage play a key role in that, in order for us to use all the resources and not see them simply pass by?

**Joanne Wade:** When we think about storage, we should not think about just batteries. We are already thinking about batteries in cars as well as fixed batteries, but we need to think about the crossover between the electricity system and heat, and about effectively making our building stock more of an energy store. If a building is efficient, a person can flex when they demand the heating much more. As we electrify heat, in particular, we need to get to the point at which we can say, "I'm not going to use the heat pump for the next couple of hours because we have a constraint on the system, and that's fine, because my building is so efficient that it will not cool down." We need to think about storage in a broad way if we are to get the optimal system.

**Colin Beattie:** What you have described is fine for more modern buildings that retain heat, but older buildings, which account for the majority of the Scottish stock by far, have their own challenges that might not be met by what you have described.

**Joanne Wade:** Absolutely, but they will have to be upgraded to be fit for the future. It is not only about buildings being useful to the energy system; it is about delivering comfort and health for the people who live in them. Without upgrades, older buildings will never do that, no matter how smart the system is and how low carbon the energy supply is. If the building does not work, it will still be cold, damp and uncomfortable. We have to upgrade buildings. That is not a trivial thing—it is difficult, but it needs to be done for all sorts of reasons. When buildings have been upgraded, they will have the opportunity to become useful assets for the system as well.

**Colin Beattie:** Obviously, the grid constraints are a real problem. What work has been done to bring together electricity and gas DNOs to consider those grid constraint problems?

**Guy Jefferson:** We are obligated by our licence, but in Scotland, for example, we work with SGN to consider how our technologies might work together. Pilot schemes are under way across Scotland. For example, there is one at Levenmouth, which is there to demonstrate how we might work together to deliver against some of those constraints. However, the pilot schemes are very early in conception, and there is significant work to be done to understand how we might be able to support one another.

On grid constraints overall, we are starting to negotiate our new price review for 2023. That is some years away, but we are starting to work with Ofgem on how we might alleviate those constraints a little more quickly by democratising some of the charges across the asset base, so that connectors—especially community and local energy schemes—do not have the huge barrier of the connection cost. They will still have to pay for their connection assets, but the shallow reinforcement can be paid for by the general consumer. I think that that is where we will end up, although there is a lot of negotiation to be done before we get to that point. I hope that that will deal with the issue. It seems quite a long way

away, but, in reality, we will be negotiating that deal in the next two or three years.

**Richard Lyle (Uddingston and Bellshill) (SNP):** When a major developer wants to build a housing development or a council housing development, part of the cost is the connection to the grid. Have there ever been any private or public housing developments with their own energy supply—from a wind turbine, for example? Are there any in Scotland?

**Guy Jefferson:** I cannot give a definitive answer to that question, but it is very rare for a new scheme to have its own energy supply.

**Richard Lyle:** Should we encourage that sort of development? We talk about projects in Denmark, Sweden and so on, but we do not seem to encourage such things in Scotland. If a development area that was a few miles away from the main supply had its own individual power supply, that would mean less cost for the developer and less cost for the people who lived there, and it could provide the benefit of a community power supply. Is that possible?

**Guy Jefferson:** Yes, absolutely. There is an example in Berwickshire. The housing association down there put together its own community scheme wind farm while building council houses. It continues to generate significant revenues, and the scheme is being extended all the time. That is a great example of the potential of such projects.

**Claire Mack:** That sort of planning is highly desirable. One thing that will drive it is the Scottish Government targets on new-build properties. From 2024, electrified or low-carbon heating systems will be required for all such properties.

Some local authorities are definitely thinking in that way. Perth and Kinross Council is looking holistically at the heat and transport requirements for large housing developments in its area. However, the key drivers for such planning will be the heat networks target, the heat networks bill and the 2024 heating target for new-build properties.

**Chris Morris:** We are working with a community-based housing developer. There is quite a high grid connection cost for a new housing development, so the developer is looking at what else it could do. That feasibility study is being done at the moment. We hope that it will help to build the business case for those houses to be built and for the creation of a localised, sustainable system.

**Richard Lyle:** That leads on nicely to my main question. Can local authorities set up as energy providers? I was a councillor, and it is often commented that councils are not getting enough money. Can a council set up as an energy provider either to provide power to its own offices or to feed into the local network? Is that possible?

**Claire Mack:** Yes. A council can do that through the energy service company—ESCO—model. We are certainly seeing some of that happening with heat networks development. Heat networks, in particular, are big, long-term projects that tend to be owned and operated by a supplier. One of the great things about being a local authority is the key relationship that already exists between its citizens—or its consumers, if you will—and the local authority. There is a level of trust there, which is really important when you are undertaking huge transitions.

It comes back to whether the necessary skills and expertise exist, because it is quite an undertaking for any local authority to set up as an energy provider, and it would need to be clear about how to resource the project and use it. However, you are correct that that opportunity exists.

**Richard Lyle:** Are Government grants available? The Scottish Government is talking about setting up an energy company. Do we intend to have councils setting up their own energy companies? Are Government grants available for councils to do that?

**Chris Morris:** I am not aware of Government grants for that at the moment. Some local authorities have considered the issue.

On your point about whether local authorities can play a role, they potentially have many different roles in this space. There is perhaps an exercise to be done in looking at good examples from across the UK, including in Scotland, to see what local authorities are doing, what is working, what might be replicated and what we can learn. For example, Warrington Borough Council is considering investing in or buying energy schemes as a future revenue source and to green its overall energy consumption. There are good examples of projects across the country. Nottingham City Council has set up an energy company. There is probably an exercise to be done, perhaps working with the Convention of Scottish Local Authorities, to take stock and pull together some of the examples.

**Richard Lyle:** What roles and duties do local authorities require to fulfil in relation to local energy systems and projects, and what are local authorities likely to be asked to do in the future? Should we ask them to develop the type of system that you are thinking of?

**Chris Morris:** Local authorities can play a key role through expanding their local heat and energy efficiency strategies to give certainty about the strategic priorities in their area, the type of projects that should be developed, how the energy system

should evolve and areas where heat pumps should be put in. There is potentially a way for local authorities to be involved in projects and perhaps to generate revenue. They can also open up their roofs to community projects. Schools and other public buildings can be used for great community projects. People can coalesce around schools and school communities in order to take forward projects.

Local authorities have a great role to play, but I do not need to tell members that the challenge will be about resources and just having the headspace to be able to support such projects.

**Richard Lyle:** If you are going to generate your own income, you do not need to ask the Government for money.

Aside from further financial support, what more do local authorities need in order to fulfil their role and enhance their activities in relation to local energy systems and projects?

**Claire Mack:** Planning is one of the key areas where local authorities can facilitate and help projects. As Chris Morris alluded, local authorities can become the trusted partner and can help to engage and enthuse the community about a project. A local authority can help to build that community of interest around energy projects.

Local authorities are absolutely crucial, and there are some excellent examples of that—in Scotland, local authorities have powered ahead with this stuff. We run the Scottish green energy awards, which are about recognising the achievements of the energy industry and its partners. In the past year, a number of projects came forward through councils such as Fife Council and Aberdeen City Council. Councils are becoming much more active in this space. As Chris Morris said, we need to spotlight that work and demystify the issue, so that every local authority can see the benefit and potential of being involved in an energy project, which might be about revenue or socioeconomic benefit. That work would allow local authorities to be clear about the outcomes that they want from any engagement in an energy project.

**Guy Jefferson:** From a networks point of view, if councils are clear about what they want to do through local planning—I agree that a number of councils in Scotland have been good at that—that will allow us to know exactly where we need to reinforce the network. Ofgem's declaration on Monday and its new price control review give us an opportunity to start to make those decision-making processes much more local when it comes to reinforcement. If local planning is good, we can be much more effective at connecting and supporting energy decarbonisation projects and can do so more quickly than we do currently. The planning aspect is absolutely vital.

10:45

**Gordon MacDonald (Edinburgh Pentlands) (SNP):** We touched on the importance of consumers in the creation of a smart local energy system, and the way that consumers engage is through their smart meter. How is the roll-out of smart meters going across the UK and Scotland? The original UK Government announcement was in 2016 and the roll-out was due to end by 2020. I know that it has been extended by a further three years, but where are we on the roll-out of smart meters?

**Joanne Wade:** Plenty of people do not have a smart meter yet and plenty of people have one but do not really know that they have one. A massive opportunity has been missed to use those devices to engage people with the energy system. Just having a smart meter does not mean that somebody is engaged. People will engage if they want to, but only if it has been explained to them properly and they feel like it.

We have a massive job to do to excite people about smart meters, give them an opportunity to find them beneficial and explain why a smarter system is better for them. We have not done that; we have just helped a few people to realise that the kettle uses a lot of power, which has focused their efforts on that rather than realising that they should heat their home better. The roll-out has gone quite wrong in a lot of ways, but smart meters are there and we could use them better.

**Claire Mack:** Joanne Wade has hit on an excellent point, which is that the smart meter is part of a package. Understanding more about your energy use is great, but understanding how to reduce your energy use is even better, because the best kilowatt hour is the unused kilowatt hour. That is the absolute basic principle from which everything else should start, such as understanding the constraints of the building that you live in. Energy efficiency first should always be the mantra.

I agree with Joanne Wade that those things were never put together in the roll-out of smart meters and that there is scope to do more. People have not come so far on the journey that they are unable to start all over again, and we can help them to get to the place where we need them to be. The bottom line is that we need to accelerate if we are to hit all the net zero targets, including the more challenging one in Scotland. As we have discussed, we need to bring people with us on heat and transport; they need to understand what the benefits are because, apparently, they do not know that.

**Gordon MacDonald:** I have one more question before I ask who is responsible for that public engagement and why it has not happened. Figures from autumn 2019 show that 53 million meters have to be replaced in the UK, but that only 17 million have been replaced so far since 2016, which is less than a third. Is that the right ballpark figure and does it reflect the situation in Scotland?

**Guy Jefferson:** That is around the right figure. The figure for Scotland is the same as for the rest of the UK. I am sure that members will not be surprised to hear me say that it probably should have been a network task to roll out smart meters, which is the way that it has been done in the rest of Europe and anywhere where it has worked. In SP Energy Networks, we have colleagues in Spain who have rolled out 10 million smart meters for customers in four or five years, and with a 99 per cent success rate. Unfortunately, a decision to take a different approach was taken some time ago.

The only way to move on is for people to understand the benefit of having a smart meter, but that has not been communicated well. It is starting to happen. Some retailers are saying that people can get certain benefits only if they have a smart meter. A simple example is that, if you have an electric vehicle, you can get a better tariff if you have a smart meter and can charge through the night. The price signals are not huge for that yet, but that is the sort of thing that we need so that people ask for smart meters. At the moment, people are avoiding getting them installed rather than asking for them.

**Gordon MacDonald:** I have another question about smart meters but, before I come on to that, I would like to know who is responsible for the public engagement and why it has not happened.

**Guy Jefferson:** It is a UK Government responsibility. I cannot remember the name of the association that is responsible for communicating that, but it is a central Government responsibility. We all have a part to play. The retailers are tasked with rolling out meter replacements and they need to start to engage to convince people that smart meters will save them money and will be of use to them in future.

**Gordon MacDonald:** Most of the smart meters that have been installed are first generation. According to the Consumers Association, or Which?, first generation smart meters are not fully compatible with the network and 70 per cent lose smart function when the supplier is changed. How can that be rectified when the vast majority of the 15 million smart meters are first generation and only one in seven are second generation? How can we resolve the problem when we are still doing the roll-out?

**Guy Jefferson:** That is a good question. I am not an expert on the functionality of SMETS 1—smart metering equipment technical specifications 1—meters, but they can be programmed to get round some of those issues, through Smart DCC, which is the central management body. It is a large task, but I do not believe that it is beyond us, from a technical perspective.

**Joanne Wade:** Some of the more innovative energy suppliers are tackling the problem. I am no expert on the issue either but, speaking as a consumer, I have a SMETS 1 meter and am swapping energy suppliers. My new supplier has assured me that my meter will return to being smart within six weeks, because the supplier will do something to it. There are solutions; if the energy suppliers choose to apply them, they seem to be able to do it.

**Gordon MacDonald:** I have a first generation smart meter, and it took substantially more than six weeks before it started to tell me anything.

**Joanne Wade:** I am keeping my fingers crossed.

**Gordon MacDonald:** I can understand the benefit to the network suppliers, which have had half-hourly readings from large commercial users for years and will now get half-hourly readings from domestic premises, so it will be easier for them to match supply and demand. What is Ofgem's role in selling the benefits of smart meters to the public? Does it have a role or is it acting as a brake on the system?

**Claire Mack:** A consumer information campaign is very necessary. Lots of people are looking for information for various reasons. That is not because of anything that Ofgem has or has not done; it is more to do with the so-called Greta effect. People are starting to think about their individual use. Speaking as a consumer, I have a Hive system rather than a smart meter, but I am already on the journey of starting to learn more about my use and how I can change it.

Ofgem has a strong commitment to consumers from the perspective of costs, and I agree with Gordon MacDonald that that puts it heavily in the frame of this conversation. I agree with Guy Jefferson that there will not be just one source of information. Consumers should always have a variety of sources to go to, so that they can get the right information for them—it need not be confusing. One of the biggest relationships that people have is with their energy supplier, so it is good to hear that the suppliers see themselves in that space.

People such as Chris Morris and the Energy Saving Trust are great at bringing together advice. That needs to be done so that there is somewhere for people to get information on what is right for

their building type and circumstances, such as whether they have an EV or the potential to put on solar panels. That is particularly important when the funding sources are declining at such a rate. The decision is now not just about offsetting bills, which it will always do, although it may not now give the additional revenue that people might have looked for in the past through a feed-in tariff. The decision has become about investment, and people need to be clear about all the variables. An example is how long people might stay in their house, which is key to whether people make the financial commitment to things such as solar panels.

**Chris Morris:** There are not many strong tariffs at the moment to encourage people to have smart meters. We have spoken a lot about the issues around grid constraints, yet some householders with the highest rates of fuel poverty have expensive sources of electric heating. As the tariffs and the technology develop, people who have storage heaters or heat pumps could be rewarded, and that could really take off.

On the question of who would give that advice to consumers, there is a role for the home energy Scotland network, which is funded by the Scottish Government. The advice could be quite complicated; as the complexity increases, it is important for people to be on the right tariffs and to understand the market. As the market develops and opportunities become available, it will be possible to say that something is worth doing—there will be something for people to hang their coats on. At the moment, the benefits of flexibility tariffs are marginal, but they will come, and we are starting to see the products come through.

**The Convener:** I thank our panel for coming. If there is anything further that you wish to add to your evidence, please feel free to write in about it. We will now move into private session.

10:56

*Meeting continued in private until 11:53.*

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