HOUSE OF COMMONS

Scottish Affairs Committee

Oral evidence: Storms in Scotland follow-up, HC 968

Monday 20 February 2023

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Watch the meeting

Members present: Pete Wishart (Chair); Deidre Brock; David Duguid; Sally-Ann Hart; Douglas Ross; Dr Philippa Whitford.

Questions 1-83

Witnesses

I: Mark Rough, Director of Customer Operations, Scottish and Southern Electricity Networks, Guy Jefferson, Chief Operating Officer, Scottish Power Energy Networks, and Peter Farrer, Chief Operating Officer, Scottish Water.

Examination of witnesses

Witnesses: Mark Rough, Guy Jefferson and Peter Farrer.

Q1 **Chair:** Welcome to the Scottish Affairs Committee. Today, we have representatives of the power companies in Scotland and Scottish Water to discuss some of the issues following the devastating Storm Arwen last year. People will recall that we held a one-off session to see what the initial response was. We are delighted to have you gentlemen back again to fill us in a bit on what happened. There has also been the recent storm, which we will come on to. For the record, will you tell us who you are, who you represent and anything you want to say by way of a short introductory statement?

Mark Rough: Good afternoon. My name is Mark Rough. I am the operations director for SSEN's networks business in the north.

Guy Jefferson: I am Guy Jefferson, the chief operating officer of SP Energy Networks. We cover central Scotland.

By way of introduction, I guess Storm Arwen was the most significant storm we have had in central Scotland for 30 years. It was a one-in-50-year event. In that context and after subsequent review, while we identified a number of areas for improvement, we believe that the SPEN response was very positive. That was verified by Ofgem's subsequent decision to levy no penalties on SPEN after completing the formal review.

We have focused hard on areas of improvement, including engaging with resilience forums across Scotland to ensure that we have a much more cohesive response to future storms; improving our estimated restoration time messages for our customers; and reinforcing our customer service response by training more call handlers and staff for damage assessment to identify damage more quickly. We also reviewed a number of areas and concluded that we have best practice in some, including our standards for existing investment in the overhead line network, although we will request an acceleration of that investment through the re-opener that Ofgem put forward for 2024; our resource management, including human resources and generators; and the management of compensation, with 85% of customers compensated before Christmas, but we continue to seek ways of improving the data we hold on customers to improve that next time around.

Peter Farrer: I am Peter Farrer, the chief operating officer of Scottish Water. I concur with Guy that Storm Arwen was one of the most extreme weather events, certainly that I have faced, and I am in my fourth decade in the water industry, in Scottish Water. Although we have dealt before with power outages impacting on Scottish Water's assets, this was more widespread than I have experienced, and it impacted on a lot more assets than I have seen in the past. There was not a huge impact on our customers—it was mostly small communities—but when we have an event

like that, we always use it as a learning opportunity to make sure that we can optimise our systems and processes so that we deal with things better the next time.

Q2 **Chair:** Excellent. Thank you all ever so much for those concise introductions. When we first thought about this session, we said: "We should get the power companies and Scottish Water back in to discuss the follow-up to Storm Arwen." We supposed that there would be another incident in the course of the intervening months and, just last week, it happened with Storm Otto. I know it was roughly the SSEN area that was the most heavily impacted. Mr Rough, can you give us some sort of update? All of us in the Committee are very grateful for the regular updates we had from SSEN over the weekend—Mr Duguid's and Mr Ross's constituencies and a little bit of mine have been particularly impacted. Will you tell us exactly where we are now, what you experienced and what you had to put right in the storm that we have just experienced?

Mark Rough: Yes, certainly. On Friday, we had Storm Otto, which crossed the Scottish hydro electric power distribution area, resulting in the loss of power to about 43,000 homes and businesses. We had over 200 high-voltage faults on the network, and the last customers to be restored were restored yesterday evening at around 18.30.

There are a couple of things to point out. Although the storm started in the early hours of Friday, we restored 95% of the customers affected within 24 hours, and over 99% of customers were restored in the course of 48 hours, with only 200 customers, or slightly under 200 customers, remaining off beyond the 48 hours.

The event is classed as a double exceptional event, given the number of faults that we had. What that means, from a guaranteed standard perspective, is that it is over 48 hours before we pay compensation to customers. There is an acceptance, within the guaranteed standard, that you will have these types of events, which take longer to deal with, including, from a safety perspective, in terms of getting out and addressing issues once the wind has died down.

Chair: Thank you. Mr Duguid wants to come in at this point on some local issues.

Q3 **David Duguid:** Thank you, gentlemen, for coming along today. I would like to echo the Chairman's gratitude for the excellent communications that we as parliamentarians received over the weekend—it was a regular drumbeat. In particular, Greg Clarke and Jess Hardwick in SSEN were very helpful over the weekend. With the Committee's indulgence, I would also like to express my personal gratitude for the food vans that were put on locally to supply the people who needed food, and my gratitude to the farmers who came out and shifted the trees from the roads. Had they not done that, your operators' jobs and that of the local council would have been a lot more difficult, so I just wanted to go on record with my gratitude to those people.

My main question, Mr Rough, is focused on the SSEN area and the Otto

event last weekend. Before Otto hit on Friday, what specific learnings from Arwen do you think actually had an impact?

Mark Rough: In terms of actions that we followed up on from Arwen, there were obviously a number that came from various inquiries. We had the BEIS inquiry, the Scottish Government inquiry and the Ofgem inquiry. On the back of that, we set up a stand-alone project team within SSE to look at all those actions, separate them into nine different workstreams and work through them. They focused on how we deal with priority service registered customers; local resilience partnerships and how we collaborate and work with LRPs but also with local authorities; and communication—making sure that we had regular updates to customers and utilising, for example, the local radio stations to help us to get the message out there in terms of progress.

But I think the most meaningful update came from feedback that we had about estimated restoration times during Storm Arwen. The feedback, which we fully recognised at that time, was that our estimated restoration times were inaccurate; they led to people having false hope and being unable to make informed decisions. With Storm Otto, which, as we said, hit on Friday, we had our first storm meeting of the day at 9 o'clock. We analysed the damage at that point and what the wind speeds were—what the weather was doing. We then made a statement that the majority of customers would be on within a 48-hour period, with small pockets that may be in rural areas remaining off after that. That ended up being a very accurate assessment. We then made sure that we made people aware that we would follow up with a more informed, specific ETR after we managed to get out to sites, assess the damage and assess the access; and that is what we did. We received some very positive feedback about those updates. There were people who said over the weekend that they were sceptical about what we said, but actually there was some very good positive feedback to say there had been a marked change. So, hopefully, that is the case across all of our customer base.

Q4 **David Duguid:** Compared with Arwen, I certainly have a much quieter inbox this Monday. I think it was on a Friday that Arwen hit as well, and by the time Monday came around and people were still without power, they started really getting a bit grumpy. A few people have fed back to me that the communications were far better this time, particularly the regular updates by text or phone. That was welcome, but were there any lessons from Arwen that you have not been able to implement yet? That is maybe a question for the wider panel as well.

Mark Rough: From an SSE perspective, I think we had around 150-odd actions in total from each of the combined inquiries. All those actions, whether they are specific to SSE or involve working collaboratively across the distribution network operator groups, have been closed out.

Some activities that are continuing at the moment will help for the future. For example, SSE made a commitment to the regulator that we would increase the resilient communities fund. We increased that to £1 million, and 68 community groups have benefited from it. They have action plans

that they are still putting in place. We also ringfenced £1.8 million for local authorities, and £1 million of that went to Aberdeenshire Council, which has formed a comprehensive plan that will, over the course of this year, form the basis of a better collaborative approach for the future. Some of those elements are still in train at the moment.

In addition to the £100 million that we invest in our network annually in Scotland, we committed to invest a further £1.2 million in the backbone of our network. For us, the biggest difference we saw with Storm Arwen was the severity of the winds for such a long period of time—over 70 mph for somewhere in the region of 12 to 15 hours. That meant that the backbone of our network sustained a lot more damage than we usually see, which meant that the traditional methods of restoration that we would normally focus on were slowed down and hampered. Investing that additional money in the backbone of our network will reinforce for the future. That included additional tree cutting. Where we could not perform additional tree cutting, we have undergrounded short sections of overhead line. We have also introduced mobile diesel generation hook-up points. In layman's terms, that means that we can facilitate the faster connection of large generation in communities where it will take us longer to restore because of the impact on the network. Those are some of the things we have committed to.

Q5 **David Duguid:** You mentioned additional tree cutting. Obviously, in the Otto event, there were still trees causing damage to the power cables. I think a lot of people were assuming that that would not be a problem in the future, because where you had identified trees that were at risk of damaging power lines, they would have been dealt with. What is getting in the way of that being addressed? Are you having issues with getting access to land? What is happening there?

Mark Rough: As part of our annual plan, we cut trees that affect over 30,000 spans a year. That work is ongoing year to year and will increase in the coming years. The specific additional work that we carried out was on the 33,000 V backbone of the network. Obviously we have not been round all of our network yet. I think anybody who lives, works and travels in Aberdeenshire, such as yourself, will know that there are thousands of trees that are still on the ground or that have been badly damaged. We are working through what could put our network at risk. We have actually flown large sections of that 33,000 V network—we have carried out and recorded an aerial survey—and those are the areas that we target to make sure that we reduce the risk to large customer numbers in the future. But, ultimately, we will still have some risk from trees across the wider network.

Q6 **David Duguid:** I will ask one final question, if I may, on the actual forecast of the storm. I got a very helpful call from SSEN on Friday morning, I think, in the middle of the storm; it was noted that there had been an unexpected change in the forecast and that the storm was coming further south than had been previously expected. When did SSEN become aware of that change in the forecast?

Mark Rough: We had been monitoring the forecast from early in the week—Monday or Tuesday. On Wednesday we started to see an increase in the severity of the winds. At that point in time, it was looking as though it would mainly be across the Western Isles, Orkney and the north-west highlands, with over 80 mph gusts forecast for the Western Isles and 90 mph for Orkney. We mobilised staff to all these locations, but we also, on Wednesday, made a call to Southern Electric, our sister company in the south of England, to mobilise staff to get them to travel up for the storm. On Thursday we could see that the weather had started to move slightly further south, and we then started to put in place some requests through NEWSAC and to make calls to other DNOs, so that we could transfer staff from there. But at the same time, we still expected damage in the islands, so, ultimately, having those staff there was still going to be helpful.

Q7 **David Duguid:** So you started looking at the change in the forecast on the Wednesday night.

Mark Rough: Wednesday night into Thursday we started to see a change in where the severity was going to travel through.

Q8 **Chair:** Thank you for that catch-up about what has happened with Storm Otto. You have heard that there seem to be lessons learned from the Storm Arwen experience, and there have been the two inquiries from Ofgem and the UK Government. The Scottish Government, I believe, has done its inquiries too. Looking back at the whole Storm Arwen issue, what do you think are the main lessons that have been learned from that? What do you take as the major reflection about what happened on that weekend? I will come to you first, Mr Jefferson.

Guy Jefferson: As I said in my introduction, probably the two areas where there was lots of reflection and we recognised that we could do much better were the wider engagement in our local communities—whether that be with the resilience forums themselves or the local councils in peacetime, if I could use that phrase—and our restoration messaging, which Mark has already talked about, in terms of customers being disappointed. While we had 95% of our customers back on within 48 hours during Storm Arwen, the 5% beyond that did receive multiple restoration messages, which led them to take decisions about whether they stayed at home or sought refuge elsewhere which were ultimately incorrect because they had not been given the right information. We have done a lot of work on that as well, and Mark has reflected the process very well.

As an industry—not just as Scottish companies, but England and Wales as well—we all came together under the banner of the ENA and looked at best practice not only in restoration, but in the use of generators and how we provide welfare for customers. What we tended to find in those latter two categories was that everybody was very similar in how they managed those resources, but in some areas, such as restoration time estimation, there were some differences, which we managed to pick up and improve—not that you get a storm like Arwen very often; it is certainly the worst we have had for 30 years, but we have certainly reflected on that and improved that restoration piece.

In terms of the local authorities, there are lots of benefits beyond storms. We have been involved in more emergency exercises than ever over the last 12 months, not only for storm-related issues but for major incidents—for example, there was Operation Puma, which we were involved in with our local resilience partners. That was just a gas explosion event but, again, we were together. We are much more interactive now and are catching up on a regular basis and making good contacts, and that will make a big difference in storms moving forward.

While we were not particularly affected by Otto, we did have up to 70 mph winds, but we managed to manage that as business as usual. Colleagues in the north had higher wind speeds—hence the damage they had—but interestingly, Northern Powergrid, which covers Northumberland below us, had about 20,000 customers off. I would like to think the investment we have made in the last 15 years on our standards, in terms of our overhead lines, has made a difference, certainly in the SP Energy Networks area as well. But there are lots of reflections and there is lots of learning. While I will not wish along another storm so that we can test all that out, I am sure we will be better prepared should it come.

Q9 **Chair:** Absolutely. Mr Farrer, what are the key lessons and reflections that you have picked up since the last storm? Were you involved in any of the operations during Storm Otto?

Peter Farrer: Yes. If I can just go back to Storm Arwen, our main impact in water is when we lose power to our assets. We have a proactive emergency generation strategy, which means that any time there is any prospect of high winds coming—amber warnings etc—we send our people out and put all our big assets on to emergency generation so that they are not impacted throughout the storm. If we go back to Storm Arwen, that protected 1.5 million customers from being impacted by the power. Our assets were impacted by no power, covering 1.5 million customers, but they were protected.

Where we had some minor issues was in what we call water pumping stations out in the network. We have many thousands of these across Scotland and, because there are many thousands of them, they do not all have emergency generators on them. We rely on our response during a period of storm, where we deploy portable generators out to these assets. During Arwen, we realised that because that was the biggest, most widespread impact we have seen, we needed to do a bit more on our ability to put these portable generators out quickly.

We have done that and come up with a revised strategy; there are far more portable generators available in the areas and we have more technical support available to get them hooked up. I was monitoring our impact over Storm Otto over the weekend, and we had only 24 customers who phoned us. We managed to prevent the impact to the customers who were impacted during Arwen.

Q10 **Chair:** How closely connected are all utilities services in situations such as this? Obviously the two of you were working very closely and keenly

together. We heard a little about that, and Scottish Water too, but there are the council and other services that are available. Can you give us a bit of an idea of how all this comes together to ensure that constituents of ours are best served? Maybe you could help us, Mr Jefferson.

Guy Jefferson: Ultimately, we come under the banner of SGoRR, the Scottish Government's resilience committee, which is chaired by either the First Minister or the Deputy First Minister. Ultimately, we report into that on a daily basis, and we did during Arwen. That was spun up, and that was very useful for a report to be given on not only the electricity industry, but water, telecoms and Government services, so we understand and are able to move very quickly if, for example, roads to an essential substation are blocked. We can affect some advice at that forum and get priorities changed if required.

Q11 **Chair:** If you are given notice of a storm, like you were earlier last week, would you get in touch with each other, for example, or with local authorities to put together some sort of resilience plan? Is that roughly how all this plays out? Did that happen in Storm Arwen? Is there anything different this time around too?

Guy Jefferson: In Storm Arwen, I would say that took longer than it should have done. The complete difference is that as soon as we know there are any sort of issues rolling in from a weather perspective, we get in touch with our local resilience forums.

For example, I have six districts in Scotland. Each of those district managers has a contact in their local resilience forum, and they will call them as soon as we know there is going to be an instance where there might be an impact. We will then keep them informed as we roll closer and closer to the event. As we know, the weather can change very quickly, as Mark said earlier in answer to one of the other questions, so that communication is constant.

We also have an emergency control room number, which colleagues in Scottish Water can phone into directly if there are particular issues with a pumping station or a major installation, so if they need a quicker response from us, they can get that. That worked well during the subsequent storms.

Q12 **Deidre Brock:** Mr Jefferson, you mentioned Northumberland, I think, and 20,000 homes that were without power. Is that something that is under your management as well?

Guy Jefferson: No. It is with Northern Powergrid.

Q13 **Deidre Brock:** Okay, so what was the contrast in approach? Was there a contrast in approach?

Guy Jefferson: I do not know the answer to that question. I think the weather was very similar between central Scotland, the borders and Northumberland, yet there were more customers interrupted. You would probably have to ask Northern Powergrid about why they had a bigger impact, but certainly from our perspective, again, we had a very normal

day—a business-as-usual day—despite the fact we had over 60 mph winds. I think that is very positive from our perspective in terms of the robustness of our infrastructure.

Deidre Brock: Okay. Thank you.

Q14 **Chair:** What speed of wind does it take to get critical? When would you expect damage to follow? At 60 mph there were no issues, but at 70 mph or 75 mph—

Mark Rough: If you look at Friday, we had over 80 mph reported from Lossiemouth right across to Stonehaven on the east coast, so very high wind speeds. Anything above 70 mph tends to start giving you problems. If you look at the south of our Scottish patch, so to speak—if you go south of the Cairngorms, a line almost below the A9 road—we had very little in the way of damage or interruption over the weekend; it was all in the highland area and the north-east of Scotland, where those wind speeds were above 80 mph. That gives you a feel for how the higher wind speeds affected that more northerly area.

Q15 **Dr Whitford:** You have answered quite a lot about what you have changed, but have these been formalised into your emergency plans? Obviously, Ofgem criticised the emergency plans that you had and, Mr Jefferson, you commented that it took too long for everyone to start working together, so can any member of senior staff take something off the shelf and know exactly what is going to happen when these winds are predicted?

Guy Jefferson: Yes, all our processes are documented and updated. Some of them were just reinforced and, talking to all our colleagues across the UK, we felt that some were best practice; for example, our generator management. For local authorities, a memorandum of understanding has now been agreed with the Department for Levelling Up, Housing and Communities, which then distributed that across all the local authorities not only in Scotland, but across England and Wales. That has now been formalised in terms of the relationships that we should have with our local resilience forums: who should be responsible for what when it comes to welfare support; the kind of data we need to share with each other in terms of vulnerable customers and how and when that information should be shared; and ensuring that contacts across our business and the local forums are all well known and that the information is centralised, accessible and refreshed at least twice a year. All that is now documented as best practice for the whole of the UK, not just Scotland.

Q16 **Dr Whitford:** On vulnerable customers, it was identified—I think by you, Mr Rough—at the previous hearing that your company and local authorities had different lists and different definitions. Has that been dealt with in creating the partnership that Mr Jefferson is talking about?

Mark Rough: Yes, absolutely. We have worked hard over the last year with the local authorities and those local resilience partners to have data in a common format that can be overlaid from a geographical perspective, but also for classification and for parliamentary boundaries as well. That

obviously became very useful at the weekend. We have got a common understanding. We have obviously had a number of exercises over the year to prepare for future storms, which have tested these. On top of that, we have also overlaid the priority Scottish Water sites on our system. We have done the same for communications providers. Again, all that has played out in a positive manner over the weekend. For priority-service-registered customers, we have made our welfare arrangements a lot clearer. We have got a clear policy. We have laid down times and activities that take place, so that everyone who was involved in the storm is aware of those policies.

Q17 **Dr Whitford:** Had you not done exercises before? Was that a new thing since Arwen—to actually do major incident practices?

Mark Rough: What I would say is that we have all been involved in these sorts of preparation exercises in the past. I think Arwen brought on a whole new level of awareness as to how aligned we need to be, given the significance of the weather, the damage and the time it took to actually get out and even assess that damage. As I say, on the back of that, similar to what Guy said, we have set up that stand-alone project to take all the actions from each inquiry and then one of the workstreams within the project was to actually inform our emergency manual so that we updated all the roles and responsibilities within that to reflect all the changes that we have made.

Q18 **Dr Whitford:** You mentioned that you were actually investing in the north-east—as you said, the kind of power spine—but equally, when Otto hit, you were expecting it to be the Western Isles and the north-west highlands. Are you making similar investments in generator positioning and so on across Scotland, because, while the north-east has been hit badly twice in a row, it could be anywhere next?

Mark Rough: That is a very good point. We invest £100 million-worth of capital investment every year in Scotland. That includes all parts of the network. If you look at Orkney, Shetland and the Western Isles, from a tree perspective we do not have the same challenges. We find that wind-blown debris tends to be our biggest challenge, and very high wind speeds.

Dr Whitford: Or snow.

Mark Rough: Well, snow in Shetland was a very unusual event in December. Any of the locals will tell you that it is quite unusual. We do not tend to get much bother with snow in Shetland, Orkney or the other Western Isles. We try to ensure that the investment in all of these geographical areas is appropriate. As part of the review of the storm, we have continued to look at some of the specifications that we utilise. On top of that, within the recent price control settlement that all of the DNOs have gone through, there is a Storm Arwen reopener, which basically means that the regulator has given consideration to the fact that we may, as a group of DNOs, need to consider and change the specification associated with the networks in certain parts of the UK. On that basis, the

reopener is in place until early next year. If we come up with something that is different, specific or unique, we can play that into the reopener and think about the settlement that is required.

Q19 **Dr Whitford:** And have you put similar emergency facilities in other parts of Scotland, rather than assuming that future storms will always hit the north-east?

Mark Rough: Absolutely.

Dr Whitford: Generators and all these other things.

Mark Rough: If you take Shetland, for example, although a smaller number of customers were impacted by that storm, we worked very closely with the local authority. We set up community hubs in conjunction with the local authority to ensure that we were serving the community. We worked very closely with BBC Radio Shetland to get the message out there, and with the local authority in terms of road opening, clearing snow and getting access. On the logistical challenges of getting a large body of resources to Shetland, we worked very closely and very well with NorthLink Ferries and Loganair.

Q20 **Dr Whitford:** You were talking about much better matching and engagement with local authorities regarding vulnerable customers, but with the length of outages that went on in Arwen, there were people who would not have been on a vulnerable list, and yet became vulnerable over that time. How do you deal with that? Or would people have to report themselves to your emergency number to say, "I am now struggling"?

Guy Jefferson: We assume, after 48 hours off supply, that everyone who is still off is vulnerable, so we offer hot food and reimbursement of receipts. If the person cannot move from their accommodation, we can get food to them. Also, they are offered accommodation outside their own home after 48 hours.

Q21 **Dr Whitford:** Was that the case before Arwen, or is that a lesson you have learnt from Arwen?

Guy Jefferson: We had that in place before Arwen.

Q22 **Dr Whitford:** But it didn't work for everybody. Was that because of giving them over-hopeful reconnection and they said, "Ach, we'll just stay"?

Guy Jefferson: Absolutely. People thought that their power would come back on perhaps after two days, because that was the message they had had originally, so they chose to stay at home rather than take up the accommodation. It was more the messaging that was the problem rather than what was available.

Q23 **Dr Whitford:** Ofgem commented on the difficulty of getting through to the call centres and getting accurate information from them. Have both of you, and Scottish Water as well, expanded staff? Are you providing more training so that people who phone get accurate information?

Mark Rough: For SSE, as I stated earlier, the estimated restoration time was a huge issue for customers, which resulted in a higher volume of calls to our customer contact centre. There are two things that we have put in place. As I said earlier, the estimated restoration time process has been changed to be more appropriate and more accurate, and also to allow people to make personal choices, which has reduced the number of calls that we had, certainly over the weekend. On top of that, we have engaged with an external provider that can provide us with up to 500 additional call-takers in a storm. We utilised that at the weekend, although not to a huge scale because the call volumes were down considerably. From memory, the average speed of answer within Arwen—in fact, I have the numbers here—

Q24 **Dr Whitford:** I think it was two hours—something like that?

Mark Rough: At the weekend it was 52 seconds, so reducing the volumes, having more people to deal with it and the manner in which we deal with the customers, being more informed, has helped the situation greatly.

Q25 **Dr Whitford:** Finally, Mr Farrer, we talked about when water systems lost power, but one of the problems in large parts of the UK—certainly, in a lot of Scotland—is that surface water ends up in the sewage system. In my constituency, there is an area that we have been dealing with for over 20 years, where people suddenly have sewage in their garden or house. During Arwen or Otto, were there issues related to the fact that if it was raining as well as windy, there were sewage spills and flooding?

Peter Farrer: Yes. It is a similar situation on the wastewater side as it is on the water side. When there is a loss of power, there is a loss of power to wastewater treatment processes as well, and the treatment processes discharge to the environment so we have to make sure that we are looking after wastewater treatment in exactly the same way as the water supply.

We don't have as many emergency generators on our wastewater network, but that is one of the things we need to do. There was a question asked about anything that hasn't been implemented; the only thing we haven't implemented—we have done a lot of work on it—is the medium to long-term investment strategy for wider generation across our assets, and I am talking about the whole of Scotland. We can deal with a big regional event, such as in the north-east, but if it happened all over Scotland, it would be a different story.

So we have a fairly major piece of work on the go for medium to long-term investment. We are potentially looking at a requirement for 600 additional generators, at a cost of £200 million, plus all the maintenance and operational costs that go along with that. That is a fairly big piece of work that we are working through.

May I come back on some of the improvements in terms of the priority services register? On the back of Arwen, at the start of the winter we go out to our priority services customers and ask them if they want bottled

water delivered to them in advance of the winter. I was quite surprised that 35% of the people we contacted took us up on that, so we delivered many thousands of bottles of water to customers beforehand. Interestingly, 92% of those who took up the offer said that it really got them thinking about what else they needed to do to be more resilient over the winter period. So that was quite useful.

In terms of the contact centre you mentioned, we didn't have the impact that the electricity companies had. We had only 1,800 calls during Arwen, so there wasn't any issue with us. However, during big events we rely heavily on volunteers within Scottish Water. We have a volunteer list of 1,500 of our staff who have said, "I am not usually on standby, but if anything happens, I will put my hand up and come out."

In the lead up to Christmas this year, we had a severe cold snap. In such cold snaps, we suffer badly from burst pipes when it starts to thaw, so we had a huge amount of activity in the lead up to Christmas and we had 550 Scottish Water volunteers who put their hands up. A number of them were in the contact centre. We trained them up to use the equipment in the contact centre, and a lot of them said it was a really good experience.

Q26 **Dr Whitford:** I was talking more about the overflow from surface water on streets simply going into drains and overwhelming sewers, which is our problem in Ayrshire. It is not the pumping centre failing, but surface water washing out sewers long before it gets there. We need to think not just about high winds, but about snow and about the fact we are getting more extreme weather events. What is Scottish Water doing about that? In most of Europe, surface water and sewage water are in separate systems, but unfortunately historically our systems are not separate. Are you trying to change that? Is that part of your long-term vision?

Peter Farrer: Yes, absolutely. We have a number of things. We have a policy on surface water into combined sewers: "no more in", which was implemented probably about five years ago. That can be quite difficult sometimes, when we are dealing with developers who want to pick up a site and put the water into a combined sewer, but we say, "No, you can't. You have to find a different route for the surface water to go down." I am the ultimate arbiter of that in our business. Our teams work through that, and if there are any escalations, they come up to me to make sure we are applying the policy properly.

We are also working with developers and councils on blue-green infrastructure. On all developments—particularly brownfield developments, where there is potentially a limited ability to take surface water in a different route—we put in blue-green infrastructure such as permeable surfaces, roof surfaces that take in water and attenuation tanks. We work with the developers on all those things.

Q27 **Dr Whitford:** So you are trying to get people not to tarmac their gardens.

Peter Farrer: Absolutely.

Q28 **Chair:** On your response about restoration times, it is obviously welcome

that what you were advising customers was more or less met. Did you do any investigation into why people were given such wildly out-of-touch restoration times during Storm Arwen? Did you ask your staff why they said people would be reconnected within an unrealistic period? What did you find when you did that?

Mark Rough: I have been in this industry for nearly 37 years, and even people who are vastly experienced with storm activity were really surprised when they came upon not just the initial damage points, but the secondary damage that was found after that. Bear in mind that we struggled to get to site for a couple of days in some areas, because although we had three helicopters on standby, the winds stayed above 40 mph until the Sunday morning.

Most of the statements around estimated restoration times came from previous experience and some of the damage that had been spotted. Ultimately, we found that the sheer scale of the damage, particularly to the backbone that we talked about earlier, was far greater than what any of our staff had seen in the past. That did not help us in terms of the statements we were making.

The investment in the backbone of the network that we spoke about means that traditional fault restoration should be able to continue in future. That, along with the collaborative approach with local authorities, should allow us to get a clearer view of the estimated restoration times, because fewer customers should be affected. Even where customers are affected, it is about mitigating the consequences to customers and allowing them to make choices. In future, we have to accept that we cannot do it all on our own. Predominantly, it was about historical views about network damage and the lack of access.

Q29 **Chair:** Is that the same for you, Mr Jefferson? Was it a historical view that did not take into account the new type of storm—so you were just telling them, "This is what usually happens, so we will just tell you that again"?

Guy Jefferson: If you look back as far as 10 years ago, we did not have a problem with estimated restoration times because the events were not as big as Arwen. It is certainly the biggest we have had in 30 years, so the corporate memory was somewhat lost—that is definitely true. We were optimistic. We always try to be optimistic in terms of our capability to get customers back on, which usually serves us very well, but in this case, given the size of the event, obviously that did not work.

You talked about reflections. A reflection for us is that we can see the higher-voltage network—the A-roads, if you like—from a central point. It is remotely telemetered, so you can see when the network is not on or is off supply. For the lower-voltage side of it, you do not have the same visibility, so you are relying on a visit to site or relying on customers to tell you. If customers are struggling to get through, obviously that is hampered.

Looking forward from a technology point of view, things like smart meters are very helpful because we can ping a smart meter to see whether it is on

or off. In some cases, we will get a "last gasp" signal from a smart meter to tell us it is off. That tells you, right down at the lowest level of voltage, if that customer is off or on. Unfortunately, we only have a 40% roll-out of smart meters in our patch; I am sure it is very similar for SSE. Sometimes the importance of smart meter roll-out is lost a little, but it will also help in situations like this in future. We are looking very hard at a low-voltage technology to try to understand and use the information we have to fill in some of these gaps.

Q30 **David Duguid:** I want to come in on that comment about the smart meter. One thing I noticed about Storm Arwen was the number of people who seemed to think that the power companies would somehow know they were out of power and would just turn up as if by magic. To go back to the Otto experience over the weekend, I noticed that a lot more people knew to dial 105 or to communicate with SSEN in particular.

That leads me on to my main question, which goes back to what Mr Rough was saying earlier about the outstanding remedial actions that need to be taken on the remoter end-of-the-line locations, as both the UK Government's and Ofgem's reviews identified. The UK Government review said that rural communities "suffered disproportionately from the loss of essential services during Storm Arwen." Other than just the normal approach of people waiting their turn to get their power fixed—and who knows when that might happen—is anything specific being done by SSEN, Scottish Power or Scottish Water? The expression used for broadband is "an outside-in approach". Is anything being done to identify the hardest-to-reach places and help to get remedies in place sooner?

Mark Rough: If I can start with technology as it stands at the moment, one of the examples from the weekend that was a huge step forward for us was the Power Track app, which anybody can download. We found that the volume of traffic to us through the app had increased hugely. That did two things: it made us very aware of specific areas of damage and of any customers who were off who might not have phoned in. For example, if we have a circuit breaker that opens at a substation, as Guy said, we can tell that that whole circuit is off, but if we have an individual customer off, sometimes it is basically down to that customer phoning in.

The fact that people are now utilising the app to tell us exactly the situation—whether they are off, but also whether they have witnessed damage—is hugely advantageous to us. In terms of technology and the customer view on our network, that made a big difference this weekend. It meant that with the additional staff we had in the customer contact centre, we could actually administer and deal with customers by grouping them to find out if there was any commonality, and then target resources in a way that speeded things up. That is one thing that has been done, specifically using technology on the phone, that has helped during Otto.

Guy Jefferson: I would add one thing to that. We do have an investment stream, which we are allowed in our current business plan, called "worst-served customers", but that is very focused on customers who are off up to 12 times over a three-year period—there is a specific way of defining

those customers. We have some money to spend on those customers to ensure that their service is improved, because obviously that is unacceptable.

Ofgem has asked us to look at that mechanism and at how we might be able to factor in hotspot communities, for example. That is a piece of work that is still ongoing. We need to have that work complete this year because, as Mark has said, we have a reopener with Ofgem in March 2024, where we have to put forward our investment proposals.

A wider strategic remark would be that traditionally we have to have balance in terms of the cost to the customer. Ultimately the customer pays for all this investment, so we need to make sure that anything we put forward is robustly justified from a business-case perspective, and have that discussion with Ofgem. They have given us more leeway in this case because of what happened in Storm Arwen, and we can now come forward with those proposals and have that discussion.

Q31 **David Duguid:** I like the idea of "worst-served customers", as I think you called them; I referred to "hardest to reach", but I think that is more a broadband term. The idea is that those who repeatedly lose power, even though they are right at the end of a transmission line somewhere, would somehow appear on an "Okay, we need to fix this" list, even though they are not quite there on the priority list yet. Does SSEN have a similar approach?

Mark Rough: Yes. Every distribution network operator would have a similar approach, where you categorise a customer based on the number of outages that they have had and then tailor your response to that need.

Q32 **David Duguid:** It is tempting to think that there are only so many trees that can fall down and damage the wires, but in the rural area around where I live, for example, there are not nearly as many trees as there used to be, but there are still trees around power lines.

My final question is about compensation arrangements, which Dr Whitford touched on. Mr Jefferson, I think you described Scottish Power's approach, and I think that there are statutory things that all power companies have to provide.

I am just wondering about something. Obviously in Storm Arwen so many more people were into those 12-hour or 48-hour periods than in Otto, but have there been any improvements that you can talk about, in terms of what was learned from Storm Arwen, that make the compensation and reimbursement process easier so that customers can get their money back quicker?

Mark Rough: Guy touched on the welfare arrangements and how you could set different categories. We have done something similar from a welfare perspective, where if customers are off for 12 hours they will then receive, or be able to claim back, up to £30 per day on food. For priority services register customers, after 24 hours they can ask to go into accommodation and that would be paid at a reasonable rate. Anybody who

is going to be off for more than 36 hours can claim reasonable expenses for accommodation.

On compensation, one thing we did after the Shetland storm—having had some feedback from Storm Arwen about the time and accuracy associated with cheques—was make sure that someone flew up to Shetland with the cheques for the local postmaster, so we could get them out as quickly as we possibly could in the local area rather than going through multiple post offices. We did that in December; it proved to be very successful.

In terms of this weekend, we have already started to process that. One thing to bear in mind is that the volumes are greatly reduced, given that the number of customers who will receive compensation from this weekend is far lower than with Storm Arwen, for obvious reasons: the duration was greatly shorter.

Q33 **David Duguid:** Mr Jefferson, are there any lessons learned from Arwen about the compensation side of things?

Guy Jefferson: Yes. We moved quite quickly. As I have said, 85% before Christmas were reimbursed, which was positive for the customers involved.

I think our biggest issue was the data we had on the remaining customers. We had to write out to confirm the data with regard to names—obviously we had addresses, but we did not have names—and then we had to wait until confirmation came back before we could issue the final cheques.

Subsequently to that, every time a customer has called in to our call centre, we have checked that their data is correct. Every time we write out to a customer, we ask them to confirm or validate their data through a service on our website. We try to improve our data at every opportunity now, to make sure that if this situation happens again, we have the data quickly to hand and we can just send compensation to customers straightaway, without any further delay.

Q34 **David Duguid:** What about Scottish Water?

Peter Farrer: It is a similar thing. It used to be that customers had to phone up and request that the guaranteed standards were triggered. Now, on the back of Arwen, we proactively go out. We sent 5,500 letters to customers in the areas that we thought had been impacted; about 50% of them came back and said they had, and they got the payment.

Q35 **David Duguid:** I have one last question—for the power guys, mostly. We are seeing a lot of new infrastructure being built and increased resilience in existing infrastructure, with new offshore wind coming in: for example, in my constituency it is coming ashore around the Peterhead area. There is lots of work on increasing resilience. Are lessons being learned either from Storm Otto or from other storms, particularly Arwen, and built into the new infrastructure?

Guy Jefferson: Absolutely. Any new overhead line that we build is built to a specification that is storm-proof, especially in storm areas. We now have

maps of where we know there have been storms in the past and where weather is particularly bad; that covers the vast majority of central Scotland, you will not be surprised to hear. Any overhead line that is built in that area now is built to a very high standard, which is called ENA TS 43-40. Interestingly, all the lines that were built to that standard in the SPEN territory in central Scotland did not fail during Arwen. They all stood up. Again, that is an example of justification for that spend.

Q36 **David Duguid:** Mr Rough, there is a lot of activity, as I have just described, in my constituency around the Peterhead area in particular—New Deer substations and all that good stuff. Is there anything being learned from previous events that is being built into those new projects?

Mark Rough: The specific projects that you are referring to are mainly transmission-related connections, so most of that infrastructure is at a greater voltage than with the distribution companies. But I would say that, similarly to Scottish Power, for anything new that we build, we use that same 43-40 specification for those constructions.

Q37 **Sally-Ann Hart:** Good afternoon, gentlemen. I want to look at the more extreme weather events. It is very clear that the impact of climate change is being felt across the UK. The UK Government have underlined that we are likely to be subject to more extreme weather events in future. As we move to net zero, we will also see a greater reliance on electricity, which can be quite difficult, as we have heard this afternoon, because everything depends on electricity—water pumping and so on. What are the key risks facing utility networks from future extreme weather events? Mr Farrer, do you want to take that first?

Peter Farrer: This is an interesting one. I was speaking to the two gentlemen earlier about these events being impacted mostly by wind; they do get impacted by ice on lines as well. But the nature of water and waste water infrastructure is that we get impacted by every extreme weather event that you can get. If we go back to 2021, that was the worst series of events that I have personally experienced in my 39 years in Scottish Water and its predecessors. There was extreme cold weather, which caused burst pipes and vast rapid thaws, and there was really hot weather in the early part of the summer. We then went into summer storms, and some rainfall was one in 500. We then went into a drought in the back end of the year, and we saw reservoir levels drop to levels that we had never seen in 160 years. Then we had Storm Arwen and friends at the back of that. That was an extreme year for us. We get hit with every single one of those issues, whether it is the flooding of assets, burst pipes or drought, with dropping reservoir levels and having to get customers to try to use less water in their gardens.

There is an awful lot happening. Even just this year, we had a cold snap just before Christmas. There were two weeks of fixing burst pipes in the lead up to Christmas. We had just got on top of that, and then, between Christmas and new year, the rainfall came and I had 120 waste water treatment works completely flooded, underwater. We are getting hit more and more by weather events and we have to really work hard to see what

to do to prevent that. But it is not easy, because if you take the flooding from the rivers—the River Dee flooding, for example—these are big issues that are difficult to protect against. There is a lot of work to be done.

Q38 **Sally-Ann Hart:** What action will you have to take to mitigate extreme weather events? In the south-east, we have five water companies that have pooled together to make Water Resources South East; they are helping each other out. I think Scottish Water is on its own. You have a massive job to do. As Dr Whitford said, all over the country, people suffer from issues with storm overflows, gardens being full of sewage, and backfill coming up loos and on to the roads, if we are not careful. What are you going to do about it?

Peter Farrer: The most important thing we can do is look at our assets, and at what we can do to improve them. I talked about the freezing weather; that leads to ground movements and burst pipes. We have to look at how much investment we need to upgrade our pipes more often and prevent bursts. Take flooding; there are mitigations that we can make, in terms of flood defences, but it is about building that on to the assets to give that protection. No matter what the problem is, it generally leads to the issue of investment, and because we are a public organisation, all our money for investment comes from customers. We are in a very difficult place; we need to significantly invest in our assets to deal with these issues, but to do it in a way that reflects the fact that customers are struggling with the cost of living crisis. It is a very difficult problem.

Q39 **Sally-Ann Hart:** Private water companies are probably feeling that pressure as well. Thank you, Mr Farrer. Let me pass that over to you, Mr Jefferson. Do you want me to repeat the question?

Guy Jefferson: No, I will give it a crack; you can tell me how I do. On the different types of weather, our assets are not used to performing in hot weather, especially those in Scotland. For example, if transformers are trying to operate at 100°, the cycle of duty is completely different from what it was three or four months previously, when it could have been minus 10° or minus 15°. So far, we have not seen huge failure rates with these assets, but it is something that we are monitoring very closely, and we are able to do that, especially with our larger transformer assets. We can monitor them in real time, so that we can see the stresses and strains and react before failure. At the moment, that has not had a huge impact.

Where heat probably does have more of an impact is on vegetation growth rates. For example, the growth rate of some trees and vegetation in our licence areas in the north-west and north Wales is double what it is in central Scotland. Obviously, that can have an impact, if you have a cyclic cutting regime to keep vegetation out of your overhead lines and at a safe distance. That is something that we are monitoring. We are working with a company called Spot-It that uses satellite imagery as well as laser detection technology. Once every six years, we cover the whole of our network and do a laser analysis. We can map that together with satellite imagery and previous storms and see where the biggest effects are and

the differences in vegetation growth rates, for example. We can put that into our plans and optimise our investment on the back of that.

The last one is flooding. We have been investing, probably for the best part of 15 years, in working with SEPA in Scotland and the EA down in England and Wales on where our floodplains are, and where we have to raise the height of substations, for example, as climate adaptation.

As a result of the Arwen review, we will meet the Met Office at least annually and have a workshop with them about climate change, how it is likely to affect our areas, and what we might have to build into our plans. We like to think that we are trying to look ahead as much as possible in ordre to adapt, but it is challenging, especially when value for money is very important for customers. But we are doing all that.

Q40 **Sally-Ann Hart:** You raise a very important issue: adaptation to climate change, which is fundamental. Mr Rough, do you have anything to add?

Mark Rough: Obviously there are a lot of similarities when it comes to weather. On the location of the weather impact, there is a huge risk. Over the last couple of years, we have had a lot of weather impact across the highlands and the north-east of Scotland. Ten or nine years ago, we had the Arran and Kintyre storm; there was significant ice damage on the island of Arran and down Kintyre. Ultimately, we have never had anything like that in that area again. It is critical to prioritise, and to try to assess where you will invest in the network, but these challenges move from one place to another. We have to determine what is acceptable under our resilience categorisation, and how you respond to that, along with other public bodies.

There is an opportunity in the next price control. We have a climate resilience plan in our business plan, and there are also benefits that can come from the connection of electric vehicles and other net zero-type applications. On the back of those applications, we will have to reinforce the network for the distribution of that energy in both directions. You can build additional resilience while you are doing that, hopefully at a more efficient rate than you would if you were doing that in isolation. We need to take into account all these things in the next price control periods, so that we think about not just what we connect, but how robust the connection is, and what further benefits we can get.

Q41 **Sally-Ann Hart:** Mr Farrer, I want to go back to you on a point about flooding defence in Scotland. Scottish Water is the flood authority for Scotland—is that right?

Peter Farrer: No.

Q42 **Sally-Ann Hart:** So what responsibility does Scottish Water have for mitigating flooding, and responding to flooding events across Scotland?

Peter Farrer: We work really closely with the local resilience partnerships that we talked about earlier, the councils and SEPA. We are collaborating to make sure that everybody who can have an impact is working together. It is really about working with SEPA and the councils to see what we can

do. Our primary focus is to make sure that customers' properties do not flood, and the flooding mechanism is generally through surcharges through combined sewers; the rivers are flooding back up the pipes and coming into properties. That is the biggest impact that we would be looking at.

Q43 **Sally-Ann Hart:** We had flooding in Hastings town centre and in a village in the south-east recently, and I was able to call on the local lead flood authority, East Sussex County Council, to do an independent investigation. If there were flooding incidents in Scotland, who would do that investigation?

Peter Farrer: The local authority takes the lead on that, but Scottish Water and SEPA work closely with the local authority, and we do modelling. It can take quite a while to do long-term modelling of the rivers and the water network, with the pipe work. We do all the modelling of that, and all the agencies need to work together on it. The lead is the local authority.

Q44 **Sally-Ann Hart:** As you are a water authority rather than a company, there is no conflict when you are trying to do an investigation into flooding.

Peter Farrer: No, there is no conflict when people's properties are being flooded. We all feel exactly the same way about that.

Q45 **Sally-Ann Hart:** Thank you for clarifying that. Mr Rough, with regard to the snow in Shetland for six days in December, you mentioned that you were able to implement some of the lessons learned from Storm Arwen. Are there any further measures that you have identified since the six days in Shetland and Storm Otto? It may be too soon for Storm Otto, but are there further measures that could help to mitigate the impact of similar extreme weather events in Scotland?

Mark Rough: On Storm Otto, I just left north-east Scotland yesterday, so I haven't had a chance to review exactly what happened there, although I am very pleased with how we responded and with the feedback that we have had. For Shetland, I think the biggest challenge that we had was logistics. On the day of the storm, there was a yellow weather warning for the whole of Scotland, and ultimately for some snowfall in Shetland, but there was no line icing risk forecast by our network provider. Since then, we have worked with the Met Office. It is quite keen to look at that type of scenario, so that it can look at their forecasting in the future and try to determine what the risk may be to an electricity company. It is quite an unusual situation that doesn't happen very often, but that is probably one of the areas that we will focus on specifically. The response with the local authority and other providers of services, including lifeline services, to the islands was really good, and I don't think we could improve on that.

Q46 **Sally-Ann Hart:** Do you think the local resilience forums are good for partnership working in order to mitigate the impact of these events?

Mark Rough: Absolutely. It is imperative for the future that we work as closely as possible. I think that has been improved generally, right across

our patch, on the back of Storm Arwen. As I said earlier, and without going over all the funding that we have provided, it is important to work together to make sure that plans are implemented, and that we are all aware of not just the content of the plans but where they have got to. At the weekend, we had regular conversations with senior staff in Aberdeenshire Council and Moray Council. As we move forward, it will not just be about how much we invest or what specification we have. As my colleagues have said, the more money you spend, the more impact there can be on bills. There needs to be a balance. We need to work in conjunction with local authorities in a multi-agency approach to mitigate any impact.

Q47 **Sally-Ann Hart:** It's about partnership working, isn't it?

Mark Rough: Absolutely.

Q48 **Sally-Ann Hart:** Mr Jefferson, is there anything you would like to add to that?

Guy Jefferson: Arwen, but not so much Otto, hit the whole country, so you were limited in the resources that you could move around. We pride ourselves, as a network operator community, on the fact that we will help each other out. We were able to send 50 people to help Mark and his team at the weekend; I know he got support from a number of other DNOs in the south as well. That definitely makes a difference. On the amount of infrastructure investment we will have to put into our industry to deliver net zero over the next 15 to 20 years, a positive is that there will be more people working in the industry, which means potentially more resources to help out when we have a storm. There is a lot of pressure on us to deliver a more reliable service, but we should have more resources in the wider industry, which will allow us to respond effectively during a storm.

Q49 **Sally-Ann Hart:** Across the border?

Guy Jefferson: Yes, and across to Ireland as well. Colleagues in ESB are also part of our community—our NEWSAC community, as we call it. That is the group of ENOs across Ireland and the UK that support each other in storms.

Q50 **Sally-Ann Hart:** Mr Farrer, is there anything you want to add on the partnership local resilience forums?

Peter Farrer: Just that I concur that they are really important to an integrated response to events such as this, so that you have all the right people in there. We have Scottish Water people on all the resilience partnerships across Scotland, which is fundamental to keeping the right relationships, so that we can not only respond better, but plan for what could be done to prevent things in the future.

Q51 **Douglas Ross:** Mr Jefferson, you were saying that you can ping smart meters. Why do you need to do that?

Guy Jefferson: If there is low voltage, and we have a local outage, sometimes we want to check that people are back on supply. You either

phone them and ask, "Are you back on supply?", or just ping the meter and avoid the phone call. People might not be in; they might have left their house and might not be able to answer their phones.

Q52 **Douglas Ross:** How often is it used?

Guy Jefferson: We use it daily. Through normal operations, we are able to get the last gasp and ping people to ensure they are off supply.

Q53 **Douglas Ross:** I have a smart meter, and I did not know that someone could ping it. Are there any security concerns?

Guy Jefferson: No, it is just a simple signal that comes back. There is no data apart from the fact that they are on or off supply.

Q54 **Douglas Ross:** And customers are fully aware of that ability.

Guy Jefferson: Well, obviously you were not aware, Mr Ross, but in general, yes. It is well known and an approved practice through Ofgem, et cetera. It is very useful when you think you have restored some customers—

Q55 **Douglas Ross:** But it is only used when there is an outage.

Guy Jefferson: Basically, yes, to ensure that customers have come back on supply if they have been off it.

Q56 **Douglas Ross:** And that is the sole reason for having that ability.

Guy Jefferson: Yes.

Mark Rough: Yes, we used it during Storm Arwen. It is one of the tools in the toolkit. Obviously, the coverage of smart meters across our patch is such that we are limited in how much information we can get back, but it is just another thing that you can use to determine the state of the network.

Q57 **Douglas Ross:** I am just surprised; I have never heard of it before. There are security concerns about other things—

Guy Jefferson: We are audited annually on our usage of that functionality. It is independently audited by Ofgem through a third party.

Q58 **Douglas Ross:** Mr Rough, you mentioned the radio a couple of times and how useful it was. An issue that we looked at in response to Storm Arwen was that as power outages go on for days, people have fewer means of communicating and, in particular, receiving information. What have you done about that since Storm Arwen?

Mark Rough: We have held quite a number of engagement sessions with customers, wider stakeholder groups and local authorities. As part of the community funding we have put in place, and through local authority funding, the teams are targeting personal resilience awareness. We have a page on our website that states some of the considerations, for example, when it comes to battery-operated radios. We have handed out some of

these to our priority service registered customers. Also, Aberdeenshire Council plans to increase those types of activities to help us work together.

On communication, from a personal resilience perspective, it was very clear during Arwen that people had probably fallen away from the fact that you may need to use such things—wind-up torches, for example—on these occasions. We have heightened awareness, and for the priority service registered customers, we have increased the availability of packs.

Q59 **Douglas Ross:** Did you find during Otto that people were more aware of what was going on because of that? Or was it because it was not as severe that we did not have problems such as people's phones dying?

Mark Rough: There are a couple of points on Otto. As I said earlier, we had 95% of customers back on in 24 hours, so the impact on the customer base was certainly reduced. We also found that there was not just output from the radio stations about how bad things were; they worked with us through the Bauer stations—local radio stations—to get that message out. On the coverage, to be perfectly honest, it is probably too early for me to say. There is probably feedback coming in today or this week. Ultimately, what we have seen so far through Twitter and Facebook, and the direct feedback to us, have been generally positive, so I feel that there has been an improvement there. The duration is far shorter.

Q60 **Douglas Ross:** But ultimately you do not have a solution to a repeat of Storm Arwen or worse, when you are putting out your information on social media, for example, and people cannot get online. I am not saying you should have, but I am wondering—

Mark Rough: In terms of internet coverage, certainly not. There is nothing that we have done. In that short period of time I would be surprised if the telecommunications providers—I cannot speak for them, but it is a short period of time. For us it has been more about awareness and creating knowledge around having a personal resilience approach, and also a family and community personal approach.

I can give you a good example. In your own constituency at the weekend, one of the community groups jumped into action. They had bought a diesel generator on the back of the funding. They got out there and set up the local community hub. The power came on quite quickly. They weren't quite disappointed, but they knew what they had to do and had prepared to utilise what they had used the funding for.

Q61 **Douglas Ross:** This may seem a trivial point. I just wonder whether there is a threshold. In the regular updates that we got, which I found very useful, Mr Duguid's constituency was widely covered to the extent that Aberchirder was mentioned and even, in brackets, Foggie, so it was very, very local. For Moray it was "rural Moray". A lot of Moray is rural. Why was it not specific? Is there a threshold of properties or a size of area? For example, Logie was without power and Alves was without power. Why was there detail for Aberdeenshire but not the same detail for Moray?

Mark Rough: It is quite a specific question given the amount of activity that went on over the weekend. My honest answer is that I am not sure why. We rely on our local staff to feed back. Particularly if we have small villages of groups of houses that are off, we try to name them specifically. There were more customers off supply in the Aberdeenshire area, and in the Buchan area as well. That is certainly something we can look into in the future.

Q62 **Douglas Ross:** I am not trying to catch you out. I am genuinely interested in whether there is a certain threshold.

Mark Rough: No, we have no set threshold. Some of the colloquialisms around the naming come from the fact that some of our staff come from those areas.

Q63 **Douglas Ross:** Mr Farrer, you mentioned earlier that during Arwen 1.5 million customers were protected because you had got generators up and running, and you said there were minor issues elsewhere. It did not feel very minor in Craigellachie where you did not get the generator up and running.

Peter Farrer: We talked about that. That has been part of our revision to our temporary generation policy that I talked about earlier.

Q64 **Douglas Ross:** There had been a generator facility there before. It had not been kept up. Craigellachie and Bluehill quarry serve Aberlour and Dufftown—a very large geographical area with a significant number of residential properties. Why did that slip off the list? Why didn't that get maintained whereas other areas did? Why wasn't it?

Peter Farrer: I do not know the specifics of that one generator, but we have maintenance policies in place. They are all tested regularly. My field teams go out there and start up the generators regularly. I do not know the answer to that specific question. However, what we have done—I thought you would be talking about Archiestown.

Q65 **Douglas Ross:** I am coming on to that. Don't worry, I am not going to forget Archiestown. I want to remind you. We had a discussion and I was emailed at the time, along with Scottish Water, about a constituent who expressed their frustration at the leadership of Scottish Water, who did not have the foresight to have an emergency generator operating the water pumping station at Craigellachie. They went on to say that this issue was completely avoidable had the generators that had previously been installed still been there and maintained. Some time has passed, but they would be interested to know what the leadership team at Scottish Water had done up to that point and since to ensure that we do not have a repetition going forward. Why was that allowed to happen when you could protect 1.5 million other customers across Scotland?

Peter Farrer: We have got many, many thousands of assets across the whole country and, as I mentioned earlier in this discussion, we do not have emergency generation on all of them because that would be a massive cost and we have got to balance off the priorities of investment. But if we just park that for a minute, all of our big treatment assets, which

provide the treatment to many thousands of customers, have all got fixed generation on them, so that is why, in advance of any storm, we go out and we put on the generators in all of these big assets to make sure that power blips do not impact on our control systems or PLCs. It can be damaging if they are going in and out of power, so we put them on generation and that protected us all the way through.

Where we had issues was in the local, smaller pumping stations that we did not have in place. There are not fixed generators there; we rely on mobile generation. We had plenty of mobile generators available; the big issue was that we did not have enough technical resource because we had not experienced the widespread nature of the event that we had in Arwen. But we have built all that into our plans now. We have far more portable generators available in the area, so, at the weekend, we had an additional 30 generators out on sites and plugged into the assets before it happened. On the back of that, there was very little customer impact through the whole event at the weekend; we only had 24 discrete calls to the contact centre, which tells me that we have got that right.

Q66 **Douglas Ross:** Since you mention it, none from Archiestown this time because they were not left without water. Scandalously, last time they could not even get bottled water. Tell us again in public what you told me when we raised this.

Peter Farrer: We put out bottled water five miles from Archiestown. We did not realise that was causing a significant impact until the chair of the community council contacted us, but, as soon as he contacted us, we had bottled water out there within an hour and, the following day, it was delivered to everyone's houses.

We have built that into our plans now. We have learned from that. If you take Archiestown in particular, there is quite a complex system. Between Badentinan and Archiestown, it goes through four service reservoirs and three pumping stations, and each of these pumping stations all had emergency generation on them, so these are in response; they are not fixed. We deployed them out there when the warning came because we knew that there was a good chance that we would lose power, so we put the generators out. As I said, that was an extra 30 generators that went out in that area.

Q67 **Douglas Ross:** All our water bills are going up by 5% in April. Will some of that money go to capital investment? Did you say £200 million was needed for the generators for the waste-water system?

Peter Farrer: Yes.

Q68 **Douglas Ross:** How much of that? Because you said that 5% increase in April was to protect services, so will that protect the services that we have got now? Is it the investment? Will we see these waste-water generators installed this year or next year—when?

Peter Farrer: We have got many demands for investment. We have built £3.9 billion of investment into our plans for this regulatory period, and we

have still got to go through the prioritisation of that. We do not have the amount of money that we had originally anticipated when we set out the plans because we have not been able to increase the charges to fund the £3.9 billion of investment because—

Q69 **Douglas Ross:** Charges are going up by 5% this year. What would you have needed to increase the charges for residents in Scotland by to be able to fund that? If 5% isn't enough, what would you have needed?

Peter Farrer: You are looking at that as a discrete 5%. At the time, it was CPI plus 2% and CPI was sitting at 2% at the time. That was the level, but now, when—

Q70 **Douglas Ross:** I am quite keen to get an answer here. We are all going to be paying 5% this year. Was it 4.3% last year?

Peter Farrer: 4.2%.

Q71 **Douglas Ross:** What would it need to have gone up by this year—for example, from April—for you to be able to afford all the works that are required for Scottish Water?

Peter Farrer: It is a difficult thing to answer because we have actually—

Q72 **Douglas Ross:** Just explain, because I do not know how that can be difficult. You must know how much money you need and what you are going to get from 5%. Therefore, the difference is x percent.

Peter Farrer: Yes, and we can deal with everything that we need to just now with the 5%. The difficulties will come for us if we do not get the total amount of income that we expected to deal with all the investment in this period. Effectively, we have pushed out the issue a bit to deal with the fact that customers are having a difficult time with the cost of living crisis. So we have pushed that out a bit, but the 5% that we have at the moment is sufficient for us to continue with the investment plans that we had in place originally. But we will have to do some things differently by the end of the period.

Q73 **Douglas Ross:** What are we going to lose? What are we not going to get?

Peter Farrer: I cannot tell you that because we are working on—

Q74 **Douglas Ross:** I still do not understand why you cannot just tell us, as a Committee representing Scottish constituents, what you think Scottish residents should be paying in their water charges. What is the necessary increase to fund what you need to do? I don't think that is a difficult question.

Peter Farrer: The original investment plan was CPI plus 2%.

Q75 **Douglas Ross:** But that would not take you to 5%.

Peter Farrer: CPI is running a lot higher than that, so the 5% is less. But what we have got to look at is the balance between income and borrowing in the last three to four years of our plan to see how much of the investment we can deliver. It is a dynamic process. You cannot just say

you need this amount now, because our investment is a dynamic process and we are prioritising as we go along.

Q76 **Douglas Ross:** I am not sure I am totally satisfied with that.

Peter Farrer: I can come back to you with more information if you want.

Q77 **Douglas Ross:** That would be useful. Finally, there is currently a leadership election for the head of the Scottish National party, who may or may not become Scotland's next First Minister; there is obviously a subsequent vote in the Scottish Parliament about that. You are appearing before Scottish politicians. Is there a plea you would make during this leadership battle for what the potential next First Minister of Scotland could do to help your industries and individual businesses, to ensure that Scotland is better prepared for future storm events? You have a captive audience at the moment.

Peter Farrer: At the end of the day, a leader is a leader. We are apolitical. We have a leadership team in Scottish Water, and it will be the leadership team in Scottish Water that takes the business forward.

Guy Jefferson: Probably two things. I mentioned the smart meter roll-out. It is not good enough that only 40% of the population in central Scotland has a smart meter. I don't believe it is any different around the rest of the UK. I know that they have a benefit, certainly for networks, so one thing is to try to encourage that roll-out.

I guess the other one is about telecommunications. We are currently in discussions with BEIS about having our own spectrum for utilities made available to us so that we can build a robust telecommunications network to support our activities, especially in times of storms. The lack of communication was a big failing last time, and it hit very hard for many reasons. Communicating with our own staff and our communities was difficult because they did not have that capability; you referred to it yourself. We are trying to establish our own part of the spectrum over the next year, and then hopefully we will put a reopener into Ofgem for that investment to build our own robust telecoms network to be utilised in storms in the future. Those are the two things.

Mark Rough: Again, SSEN is apolitical. What I would say is that on the back of Arwen we had many MP and MSP visits to the site, and they interacted with us in some of the engagement sessions we held. The SGoR (M) arrangement is very good, so continuing that ongoing engagement and helping us to work together as a collaborative group across our patch in Scotland is really important.

Chair: I am sure all the leadership candidates have taken notes from that little exchange. They were almost perfect political answers in response to a direct political question.

Q78 **Deidre Brock:** It has been a really interesting session. The Scottish Government have requested that all public bodies, including councils, in addition to their usual business continuity arrangements, have a stand-

alone power resilience strategy that would be enacted in the event of any failure of the national grid system. It is particularly for what is known as a black start event, but obviously it enhances resilience in the event of any emergency needing a rapid response. Can I ask how that strategy interacts with all the work that you have done on the back of Storm Arwen and—I am sure—the work that was clearly in place before, or does that underlie all your work? Could you just tell us a little bit more about that?

I mean, I had other questions, but frankly they have been asked already. So, I had noticed this "black start event" in some of the reading that I was doing around this and I was interested.

Mark Rough: In relation to rota load disconnection, which is one of the things that was stated as being highly unlikely to happen during the winter but was still a possibility, we have interacted—interfaced—not only with the electricity national grid, who ultimately are in control of any implications associated with that, but with a wide group of stakeholders on this subject; I think 2,000 stakeholders. We have issued a letter drop to our priority-service register customers and we have also had various engagements and exercises with the local authorities on this subject.

There is a direct correlation with the work that we have done from Arwen and really the things that I stated earlier. I think that with those additional funds that we have given to the local authorities—that £1.8 million—if we take the examples that Aberdeenshire Council have built into their plan that relates to that funding, it includes a resilience conference in May this year and a project officer for two years, who will highlight and carry on the work associated with this. So I think the two things dovetail together.

Q79 **Deidre Brock:** You said it was unlikely. However, I think the UK Government have identified it as a medium risk, but one that would obviously have very significant implications if it did occur.

I saw in SSEN's 2019 business plan—I think—that the closing paragraph says, "Proposals have identified £270 million potential investment to improve our response for a black start event". Can you break that down? I mean, what would that investment consist of? Have you already begun to invest?

Mark Rough: Okay. In terms of black starts specifically, we obviously have our IT systems that interface with national grid, so ultimately making sure that we keep those types of things up to date.

However, in terms of Scottish hydroelectric power distribution, we are quite unique as well, in the fact that we have seven embedded diesel stations across the islands, which we can also call upon, and we have agreed this with national grid, if we are in a rota load disconnection situation.

Those are some of the things that are probably different to other DNOs. For the specifics of that plan, I would have to get back to you and I am quite happy to do that.

Q80 **Deidre Brock:** That is very kind. Thank you.

The Scottish Government's draft Energy Strategy and Just Transition Plan says that the Scottish Government "will continue to press UK Government to update technical requirements for black start services". Do you know what those "technical requirements" are? Sorry—I have not had time to investigate.

Mark Rough: Again, on that specific note, I am not entirely sure of the context, so I would have to check. Did you say the 2019 report—?

Q81 **Deidre Brock:** No, the Scottish Government's draft Energy Strategy and Just Transition Plan, which was released earlier this year, or very recently anyway.

Mark Rough: Again, in relation to being extremely accurate with my response, I would have to provide that outside the meeting.

Q82 **Deidre Brock:** That would be super; thank you.

North Lanarkshire Council just unanimously agreed to such a power resilience strategy and I think that they have requested that SSEN assist with the costs of generators for the nine community boards that they have set up. Now, you mentioned the £3.5 million of investment you have put into community support. Is that the sort of thing that you might consider supporting in the future?

Guy Jefferson: North Lanarkshire is in Scottish Power's territory, so—

Deidre Brock: Forgive me, Mr Jefferson.

Guy Jefferson: They may well have requested it; I'm not sure of the status of that request. Usually, we would not provide generators for local councils. We obviously give them advice, in terms of their installations that might need them, why they might need them if they are critical services, and the status of any connection that they have with us and how robust and resilient it is, which might lead them to that decision. But in terms of specifically paying for generators, we generally would not do that.

In the past, we have had a green recovery fund. Unfortunately, we are not getting that funding in our next business plan cycle from Ofgem, but we did make available funds for installations such as that in the past. So that is perhaps why there may be an opportunity to apply for that now.

Q83 **Deidre Brock:** It is certainly a subject for further discussion.

Lastly, Mr Farrer, have your organisations made similar funding commitments to communities so that future resilience can be supported in case of any other extreme weather events?

Peter Farrer: No, we have not, but the best way that we can help communities is to stop the water going off when there is any of these events, and that is what we focus on. Black start, for example, was the genesis of the generation strategy—the medium-to-long-term strategy—that I talked about, which is driving the large costs. That is what we are

focusing on. If we can prevent water from going off, that is the best way we can help communities.

Chair: I think that is all the questions we have for you today. We are very grateful to you for coming down to give us an update on Storm Arwen. Obviously, this Committee continues to take great interest in any of these issues and episodes that we have. Hopefully, we will not have to get your services once again and we will get through this winter without any further episodes.

We are all grateful for your response to Storm Otto, and I think what you have heard from colleagues around the table is that the response was good and that our constituents were served by your companies, so thank you for that. I think there were a couple of questions from Mr Ross on which you said you would maybe get back to us, so we would be grateful if you could do that. It was Mr Farrer, wasn't it? We would be grateful for that—and Ms Brock too. But for this afternoon, thank you for attending.