



Northern Ireland  
Assembly

Committee for the Environment

# OFFICIAL REPORT (Hansard)

Inquiry into Wind Energy:  
Chartered Institute of Environmental Health

5 June 2014

# NORTHERN IRELAND ASSEMBLY

## Committee for the Environment

Inquiry into Wind Energy: Chartered Institute of Environmental Health

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**Members present for all or part of the proceedings:**

Ms Anna Lo (Chairperson)  
Mrs Pam Cameron (Deputy Chairperson)  
Mr Cathal Boylan  
Mr Colum Eastwood  
Mr Tom Elliott  
Mr Alban Maginness  
Mr Ian McCrea  
Mr Barry McElduff  
Mr Peter Weir

**Witnesses:**

Dr Chris Jordan	Chartered Institute of Environmental Health
Mr Paul McCullough	Chartered Institute of Environmental Health
Mr Gary McFarlane	Chartered Institute of Environmental Health

**The Chairperson:** I welcome Gary McFarlane, who is the director. Is that right?

**Mr Gary McFarlane (Chartered Institute of Environmental Health):** That is right, Madam Chair.

**The Chairperson:** I know Gary in a different guise. Gary is also very much involved with ramblers. I also welcome Paul McCullough, who is the group principal environmental health officer; and Chris Jordan, who is the principal environmental health officer in environmental protection with Northern Group Systems Environmental Health. You are all very welcome this morning.

We are very interested in this issue. As you know, we are carrying out an inquiry, and we have received some 97 submissions. Certainly, people have been very enthusiastic in responding to our inquiry. The noise and the impact on health have been mentioned often in the submissions. We are delighted that you are here. I have read through your submission. Will you give us a briefing for five or 10 minutes and then take questions from members?

**Mr McFarlane:** Thank you, Chairman, and thank you for giving us the opportunity to come and talk to you today. I am not going to say anything about the chartered institute other than to reiterate the point that, as you know, we are here today ostensibly as an independent professional body. As you have outlined, my colleagues on either side of me — Dr Chris Jordan and Paul McCullough — are working in the environmental health service. However, I invited them here in their professional capacity —

**The Chairperson:** Sorry, I should have said that this session is being recorded by Hansard. So, please speak clearly and nice and loud.

**Mr McFarlane:** OK. Paul and Chris, although they may not care to admit it, are widely regarded, regionally in Northern Ireland and nationally, as experts in this area. As they will no doubt outline, there are reasons for that. I want to share with the Committee a couple of documents, which are really diagrams. I think that they will help with the discussion this morning.

Professionally, the chartered institute supports renewable energy. Our view is that it is the only logical and long-term sustainable way forward for these islands. I make that point in the context of anything that we may say around some of the current issues with regard to wind energy and onshore wind, in particular.

I will create the context and then pass over to Paul and Chris to deal with the two substantive issues. We believe that a lack of confidence within the community around the actual process for the approval and siting of onshore wind in Northern Ireland is underpinning the issue at the minute. There are two substantive issues under that banner that we would like to discuss with you this morning. First, there is the ETSU guidance, which Chris will deal with more specifically. We believe that it is somewhat obsolete and out of date and needs to be reviewed on a UK-wide basis. The Department responsible for it is the Department of Energy and Climate Change (DECC). The second point relates to the current planning process in Northern Ireland, particularly the planning process for single medium-scale turbines. We believe that that also needs to be reviewed.

I invite Chris to address that first point. Following that, we will take questions. Then, we will pass on to Paul to address the second point on planning, and then, of course, we will take any other questions or issues that the Committee would like to ask us about.

**Dr Chris Jordan (Chartered Institute of Environmental Health):** Good morning, everyone. Planning policy statement 18, like its equivalents in the other UK jurisdictions, recommends that wind farm developments are assessed against a particular standard. That standard is the assessment and rating of noise from wind farms, which is often referred to as ETSU-R-97. That standard is used to assess single wind turbines and wind farms. The noise impact that comes from a single wind turbine in close proximity to a residential dwelling can be the same, from a noise-level perspective, as the noise coming from a wind farm on top of a hill and, maybe, slightly further away.

I will give a brief overview of what ETSU states. Noise from wind farms should not exceed five decibels above the prevailing background noise level at any residential dwelling. However, ETSU-R-97 recognises that achieving five decibels over the background in very quiet rural locations would prevent achievement of renewable energy targets and hence provides a more permissive fixed limit, which is not set relative to the background noise level. Uniquely, ETSU-R-97 also allows more noise at night than during the day.

ETSU-R-97 was drafted in 1996 when wind turbines were in the order of a 40-metre hub height and, typically, half a megawatt in power. The wind farm turbines that are currently coming through the planning process are, typically, in the order of 80-metres hub height and three megawatts in power, individually. Given those increases in turbine heights and power outputs, and the consequential changes in the character of the noise from those larger wind turbines, the protection to amenity originally assumed by ETSU-R-97 may no longer be valid.

ETSU-R-97 recommends that it should have been reviewed within two years of publication. However, some 18 years since its original publication, ETSU-R-97 has yet to be reviewed. Whilst recent guidance has been produced by the Institute of Acoustics in the form of the good practice guide, which has assisted greatly in improving the quality and robustness of the submitted noise impact assessments, the terms of reference provided to the Institute of Acoustics specifically excluded that group from reviewing the noise limits as set within ETSU-R-97. As a consequence of the UK Department of Energy and Climate Change repeatedly refusing to review ETSU-R-97, residents have lost confidence in the assessment of wind farm noise. The environmental health service in Northern Ireland considers that a robust and transparent review of ETSU-R-97 is long overdue and should be prioritised with other United Kingdom Administrations. It is hoped that such a review would regain residents' confidence in the protection afforded to their amenity by planning policy and noise standards covering wind energy developments.

**Mr McFarlane:** Chair and members of the Committee, would you prefer Paul to make some comments on the planning issues and then take questions in general? They are intertwined.

**The Chairperson:** OK.

**Mr Paul McCullough (Chartered Institute of Environmental Health):** Chair and members, thank you for the opportunity to speak. I want to follow on from Chris's points about the noise limits. The planning process relies upon the environmental health service, which is based in local government, to assess the noise impacts of applications. By way of context, one of the charts that have been handed round is entitled 'Planning Applications for Single Wind Turbines' and that goes up to the end of April 2014. You can see from that that we are talking about a large number of applications throughout the area. The second chart that we have provided is an extract from the UK Renewable Energy Association's website, and we wanted to illustrate that we have a disproportionately high number of turbine applications in this area. It is an acute problem for the environmental health service in dealing with those applications and assessing the noise impact associated with them. Our role is very much to be independent between the developer and the local residents and to assess those impacts against the prevailing guidance. As Chris said, it is our belief that that guidance certainly needs to be refreshed, given the time that has passed.

In relation to our interaction with our colleagues in planning, it is true that this area has a dispersed population with a large number of houses in rural areas, and it tends to be rural upland areas that are most suitable for wind energy developments in an attempt to capture the most energy from the wind. So, when dealing with predictions of noise impact — it is important to point out that, at a planning application stage, they are very much predictions — we have questions about the methodology of how those predictions are being done and the limits that are applied.

The point that I want to get to is about the conditions that are attached to planning permissions to allow the adequate control of the noise from the developments in future. A set of standard conditions has been produced by the Institute of Acoustics and has been endorsed fully for use in England, Scotland and Wales. However, in Northern Ireland, we have not fully endorsed those conditions, and that creates a problem for us. The specific issue is in relation to a condition that asks the developer to demonstrate that they are in compliance with the noise limits in the event that a complaint from a member of the community arises. It is an important condition because it gives that level of confidence that, as well as achieving the noise limits, there are other means of providing confidence to the community and residents in the vicinity that the developments can go ahead without causing undue problems. In the absence of a complaint requiring a developer to undertake that investigation and to demonstrate that compliance, it falls to local government and the planning authorities to do that.

There are problems with that, and they are threefold. First, as I said, it does not show a great degree of confidence in the planning process if the developers are not able to show that. Secondly, it can lead to a problem of disproportionate costs because, as I said, a large number of those developments are going into rural dispersed areas that are higher upland areas, and those areas do not have a large industrial base or a residential population base that can bear the extraordinarily high costs of investigating compliance with noise limit conditions. Thirdly, it is not providing the best means of determining compliance with noise limits because the best way of doing it is to be in control of the operation of the turbine so that it can be turned on and turned off relative to the noise measurements that you wish to undertake. If the council is undertaking those measurements or the Planning Service is commissioning those measurements to be undertaken, they will not have control of the turbine to be able to do that in the best manner possible.

My point is that we have a disproportionately large number of single wind turbine applications in this area. We have a unique settlement population that exacerbates the problem, yet we have a planning process that does not provide the adequate level of robustness that is being provided in the other regions. Our request is that the Committee uses its influence to investigate that to see that we can bring about better public confidence in the development of wind energy.

**The Chairperson:** Thank you. Those are two very valid points. We will definitely explore that and put it into our report. I will talk to Chris first. A lot of the people we talked to when we went to Tyrone talked about noise levels and how they had disturbed sleep. Lots of people are saying that, yes, ETSU-R-97 is out of date. Why has it taken so long? Why is there such a resistance to reviewing that? It is 18 years.

**Dr Jordan:** That is an excellent question and, unfortunately, I do not know the answer. Publicly, we have been calling for it to be reviewed as well over a number of years, and why the Department of Energy and Climate Change has resisted doing so is for it to answer. I suspect that it is a fear that it may have an impact on the ability of wind energy to be developed. In effect, if the noise limits go down, it is harder to achieve and, as a consequence, you will have less wind energy.

**The Chairperson:** So, it is really a bias in favour of renewable energy.

**Dr Jordan:** Yes.

**The Chairperson:** Paul, there is an anomaly, in a way, with our Planning Service and the complaint investigation condition.

**Mr McCullough:** Yes, we believe that it sits as an anomaly and is compounded by the fact that we appear to have a unique development situation as well.

**The Chairperson:** It is essentially PPS 18 that we need to be looking at, is it not?

**Mr McCullough:** Yes.

**The Chairperson:** The diagrams are indicative of the difference between us and the rest of the UK. The black and white diagram does not show the existing turbines. It shows applications have been refused and ones where the decisions are pending, but still that is quite a large number of dots. Can you send us the colour diagram?

**Mr McFarlane:** Yes, we will send you the colour one. I have a colour version; I will pass it round. Without getting into a detailed analysis, there are a lot fewer red dots than any other colour.

**Mr I McCrea:** There seems to be a lot more dots round west Tyrone. I am not sure that it is related to Barry or anything.

**Mr McElduff:** West Tyrone has the measles.

**The Chairperson:** That is where the mountains and wind are.

**Dr Jordan:** It is worth highlighting the fact that the diagram of Northern Ireland shows only the single wind turbines; it does not include the wind farm applications, which are separate.

**The Chairperson:** How much cognisance do our planners take of objections from neighbours? If a neighbour said that they could see the wind turbine from their back window, would that be seen as a material consideration?

**Mr McCullough:** It is probably best for the planners to answer that question. However, it is a material consideration, and it is taken into regard. Obviously, our planning colleagues operate within the policy context that they are given. The point that Chris, Gary and I have been making is that the policy context needs to be looked at to see whether it is fit for purpose for the future.

**Mr Eastwood:** Thank you very much for your presentation. The diagrams make fairly interesting reading, although I am not quite sure of the scale, because there seems to be a couple over my house, and I know that there are not.

A fair bit of Scotland is not on this map, and some parts of Scotland do seem fairly dense in terms of the number of wind farms. Is there any relationship between the two? Is there any reason why the other part of Scotland is not on the map?

**Mr McCullough:** No. It was purely for illustrative purposes. Maybe I should explain the background of the charts that we have provided for you. The planning applications chart is publicly available on the DOE planning website and is updated monthly. We have printed out the most recent one for illustrative purposes. The second chart comes from the renewable energy industry's own database, and I extracted a section of that. However, you can log on and it will show the entire area. What we are trying to demonstrate is the concentration in this particular local area and it illustrates that. We are not hiding a large number of them that are in the Highlands. That is not the case, as those areas are reasonably well protected by planning.

**Mr Eastwood:** It paints a bit of a picture, and that is probably why we see so many constituents and hear so many complaints from people coming to us on this issue. It has a significant impact in one way or another for people across the North. The difficulty, of course, is the balancing act between

meeting the targets that we all know we need to meet — or most of us know we need to meet — and ensuring that residents and locals are not adversely impacted. You talked about the fact that, at the minute, you are allowed to be noisier at night than during the day, which, I think, is fairly bizarre. In your view, if we got to the stage where those regulations were all changed to a more sensible situation, how would that impact on the targets that we need to meet?

**Mr McFarlane:** I take it that you are referring to the energy mix targets.

**Mr Eastwood:** Targets on climate change and that, yes.

**Mr McCullough:** I will come in on that point. Yes, it is all about balance; you are 100% correct, and that is what we attempt to do. As Gary rightly pointed out, we recognise wind energy as a very important part of the energy mix. The line that we take is that that is to be supported, but they have to be in the right locations, and it is that policy context that needs to be developed and refreshed to make sure that we place them in the right locations. We are in a location that is exposed to a large amount of wind energy coming from Atlantic weather systems, so we are in an ideal position to capture wind energy. It is just about refining those locations to the extent that residents are adequately protected.

**Mr Eastwood:** Is the logical extension of that the fact that there would be less of a spread but more of a concentration in particular areas? Therefore, the people we have to speak to most around the work that we are doing now will still be subjected to wind farms and maybe more wind farms.

**Dr Jordan:** To clarify, the noise limits as currently set are cumulative. The wind farms do not get 40 decibels each; all of them combined have to achieve, as an example, 40 decibels. Therefore once an area becomes saturated by applications or built turbines, you will hit the buffer of the noise limit. Consequently, if the limit were to be amended and reduced, you would hit it more quickly.

**Mr McFarlane:** I will just add to that in terms of the point you were making about the wider achievement of targets. I presume that you are primarily talking about greenhouse gas reduction targets. Wind energy is only one form of renewable energy. It seems to me, at least, that we are thus far failing to harness other technologies and other means of renewable energy here in the North, including tidal, offshore, hydro and solar. There seems to be almost an inordinate focus on wind energy.

**The Chairperson:** Because it is cheap, I suppose, Gary. It is cheap and easy to do.

**Mr Eastwood:** You are absolutely right that people have seen it as an easier option. Perhaps the logical outworking of what you are saying, if we look at more sensible regulations, is that we might end up with people focusing on some of those other potentials and opportunities around renewable energy. That might be a good thing. Thanks very much.

**Mr Boylan:** Thank you very much for your presentation. I think that ETSU-R-97 resonates with all of us after the many presentations that we have had. The guidelines and regulations were set a long time ago; technology has moved on and we will compensate in some ways for it, but not in all. I have some sympathy for environmental health. It is betwixt and between, because it is under pressure from councillors, especially on single wind turbines.

I want to bring up the planning issue. A bugbear of mine is the issue of renewable energy targets. They are saying 40% by 2020, but the bigger percentage in the last number of years has been wind power. You can say it is cheaper and maybe we have not invested enough or looked at other technology. Do you not agree that the problem is that we are betwixt and between? It has nearly come to a point where they are not given permission or there is so much dispute over permission. Some wind farms are starting to make the targets, but they need to increase that to become economically viable. That is not happening, and that is where we are stuck.

Do you also agree that the ETSU-R-97 needs to be looked at? There is no doubt about it. As for PPS 18 itself, we have asked through the Committee to review it, especially the wind energy side of it. Because we have not established that much in relation to the other technologies or other forms of renewable energy targets, there is a way to go on that. Will you respond to those points?

**Mr McCullough:** I will come back to the planning context side of it. That resonates with our own experience, acting for the planners to provide expert opinion on noise, the evidence that has been

provided by the developer, yet dealing with the questions raised by the public and those concerned about such developments. That is true, and it has certainly had a dramatic impact in local government over the past five years. On the policy, again, I go back to the point that we are very supportive of wind energy as part of the mix. How the economics of that work out is for another body. We are firmly of the belief that the planning policy and its workings with noise and ETSU-R-97 need to be looked again to bring the public along. Councils are receiving a vast correspondence on concerns. You have only to look at the planning database to see dozens and, on certain occasions, hundreds of single wind turbine applications. The community does not want them in their areas, and that is not a good way to go forward with renewable energy development. We need to bring communities along with us, and that is why we are of the belief that this really does need to be looked at again.

**Mr McFarlane:** To add to what Paul said, as I said in my opening remarks, these two issues are underpinned by what we believe is a fundamental lack of confidence in the community in the controls and the checks and balances in the system. Notwithstanding the points that we were discussing a moment or so ago with regard to the mix and the broader picture on renewable energy in its totality, it seems to me that what is happening at the moment is almost a little like, if I may say so, what happened with residential development in Northern Ireland in the 1970s and 1980s, where a house appeared almost everywhere you turned. Paul has brought along diagrams to illustrate that.

Essentially, we are saying that this is an important part of a renewable energy solution but that it needs to be more strategically thought out rather than just individual applications being made. I will share with you a personal anecdotal example. I live in a rural location, and there are four farmers around me each putting up a single turbine in disparate locations rather than a coordinated approach to putting them somewhere more appropriately sited together. Why is that happening? It is because of the process around this at the moment. What my colleagues are saying is that, if these things are sited properly and the appropriate controls are put in place and the emphasis is in the right place with those controls, which means that the developer sorts out any problems, that is a more appropriate way of going about it.

The point about local government is that, in essence, what is happening with the control mechanism is that, particularly on single applications, to use layperson's language — my colleagues are the technical experts — the same controls are not being put in place for single-use turbines as for wind farms. They can produce the same effects, and, in essence, they are ending up much closer to people's properties and are much more likely to get problems. The control mechanism is to make a complaint. I am sure that my colleagues can share with you examples of the resource and expertise required to look into these as individual cases, since if this continues as at present it will put a considerable resource burden on local government and the new councils.

**Mr Boylan:** Local government will now take more responsibility, and there will be expectations from the public about the planning element. I think that we have gone far too far. Do you agree? I have no issue with single wind turbines; however, we have gone down the wrong route on the matter of engaging with the public on it. We might have gone a step too far. My fear with single wind turbines is that we will get into a situation, and I believe that this is the situation. It used to be the case that people would buy ground and sell off sites. I am concerned that some of the bigger companies are sponsoring wind turbines. I do not want you to comment on that. I am only gauging that from what people are saying.

The issue for the Committee is support for renewable energies and the targets. If it is another issue, we will look at the targets again. Let's be realistic. The issue for me is how we get around working with communities and turning that around because we are getting near saturation point. I do not need the colour diagram to see that because we are very close to saturation point across the board.

**Mr McFarlane:** If I could say something about the community aspect. I do not know whether members are aware of this, and I can make a copy available, but we did a modest study a couple of years ago of two rural communities. This was wind farms, not single turbines. One community had lived for a number of years with a wind farm in excess of five turbines. The other community was not far away, where a wind farm of a similar size had just received planning approval.

We looked at the concerns and perceptions of those two communities in different scenarios. I am slightly paraphrasing, but it reinforces what my colleagues said and one of the underpinning points that we are making: if they are properly planned and set out, there is relatively little issue.

In the first scenario, residents reported that although they had lots of concerns about the wind farm, in reality very few materialised. I am talking about noise impact and impact on visual amenity. As someone said to me, "I'm sure that when they put the electricity pylons up however many years ago, that was something new that people were concerned about, and now we don't even notice them". That is an interesting analogy.

The big issue for the community that had these turbines was that despite all the rhetoric of how this would benefit the community, in reality there was little community benefit other than individual landowners profiting and, obviously, the renewable energy companies. That probably needs to be looked at.

There is some indication since that work — I am not saying that that work was instrumental in it, although I hope that it played a part — that energy companies are looking at that afresh. The benefits that accrue to the community, whether direct benefits through rates rebates that come to local government going into the overall pot or whether it is more innovative and out-of-the-box than that in looking at how it affects their energy bills in that locality, those sort of things need to be discussed.

**Mr Boylan:** I agree. The energy companies have to look at that element and get a strategy for working with communities. They are trying to do that now.

**Dr Jordan:** I would like to add to Mr Boylan's previous comments about achieving energy targets. The noise limits are cumulative. A single turbine close to a residence may use up all the limit and, as a consequence, could block the wind farm going on the hill. That could have a significant damaging effect on achieving energy targets. There does not appear to be a strategic approach to how these are assessed.

**The Chairperson:** Chris, that proves the need for strategic planning or zoning rather than just letting people put up single turbines wherever they want.

**Mr McFarlane:** Absolutely.

**The Chairperson:** I read the survey that you mentioned. It is very interesting. Part of it could be because people have got used to it after they have lived there for a while, while others who have seen what people have gone through, object to it. You can look at it that way. People are seeing new planning applications coming in.

**Mr McFarlane:** That is undoubtedly part of it, Chair. That is what struck me. The pylon analogy reflects that. There is an element of getting used to it.

**The Chairperson:** Human beings are very adaptive.

**Mr McFarlane:** It is a broader point, but my view is that, as a collective society in Northern Ireland, we have to recognise that nothing in this life does not have cause and effect. To go back to what I think Mr Eastwood was getting at in his point, we need to secure a sustainable energy future for this country, and we have to make choices. It is about the best choices and making sure that we do it in the best way. Some of the proposals on our future energy mix — that is another discussion, and I am not referring to renewable energy — are very unsustainable.

**The Chairperson:** Yes. There is huge potential for that energy mix of different types, not just for wind turbines. Look at what SeaGen has done: it supplies about 1,000 homes with electricity. We have plenty of locations. We could have SeaGen 2, SeaGen 3, and so on.

**Mr McFarlane:** In the renewable energy discussion and debate, in its totality, Northern Ireland has the potential to be a world leader. As a result, many environmental, social and economic benefits could accrue. I am talking about jobs, exporting talent and innovation. However, we seem to be disparately considering these as single issues rather than as a collective whole.

**The Chairperson:** A WWF report from two years ago said that we have more than enough energy potential on the island of Ireland, North and South, to be not only self-sufficient but to export to Europe, by 2030 or 2050, if we put our minds to it.

**Mr McFarlane:** Absolutely. That is a valid point. That wider strategic view of energy for Northern Ireland should be looked at on an all-island basis.

**Mr McElduff:** Is there any body of research or evidence relating to the impact of wind turbines and wind farms on the overall physical and mental health of people? Are you involved in that work?

**Dr Jordan:** No, I am not. There are numerous papers in the public realm on research undertaken on the impact of wind turbines on health. Many say that there is no impact; equally, many say that there are terrible impacts. In undertaking a review of the ETSU-R-97 standard and setting noise limits, those noise limits should be set relative to health impacts. Ensuring that ETSU-R-97 is reviewed will ensure that the health impacts from noise are incorporated into the new standard.

**Mr McElduff:** Do you have a specific proposal as to how to offer greater protection to residents who are opposed to a wind turbine or wind farm in close proximity to them? Do you have any way of offering them greater protection in such a review?

**Dr Jordan:** It depends on what the review comes up with. It may reinstate the existing noise limits, in which case residents will be no better off than at present. As the review has not even commenced, it is hard to say.

**Mr McCullough:** It is certainly known that elements of wind turbine noise have not been fully encompassed in the ETSU document. You may be familiar with the term "amplitude modulation", which is receiving quite a bit of scrutiny at the minute. That is all new to ETSU-R-97; it does not encompass the modern thinking on that. So although we cannot say what a new standard should be, we can say that we think that the current standard is outdated and does not encompass the new stuff. That is our take on it. Rather than giving you definite proposals, we think that it needs looked to be at.

**Mr McFarlane:** What my colleagues are saying is that a comprehensive objective review and the incorporation of the latest evidence into that review in the guidelines that are set is the best way to offer residents much greater reassurance that any impacts, particularly in relation to noise, are dealt with as effectively as possible.

**The Chairperson:** Are we saying that the decibel level, whatever you call it, is too low?

**Dr Jordan:** It may be the opposite, Chair; it may be too high. It is about how you undertake the measurement. Without getting into too much detail because it is quite technical, amplitude is another name for volume and modulation is change. So, it is, in effect, the volume of the wind farm going up and down very quickly, and that is typically heard as a thumping noise by the local residents, and that thumping noise can be disturbing, especially in the middle of the night. If you were to take a measurement of that using the measurement parameters as stated in the guidelines, ETSU-R-97 would not recognise that thumping noise at all. So, at a wind farm that does thump and a wind farm that does not, the levels will be the same. It does not recognise the thumping noise. We need a total review of the assessment procedure, not just the limit.

**The Chairperson:** With new types of wind turbines, new problems are coming on board.

**Dr Jordan:** Yes. When ETSU-R-97 was drafted, the term "amplitude modulation" did not exist. Only as the technology has improved and grown in scale has the phenomenon of amplitude modulation become apparent.

**The Chairperson:** Because they are taller, bigger and more powerful now.

**Mr Elliott:** Thanks very much for your presentation. It is very interesting, as are the research documents. In the report, I notice that the largest proportion of people living close to the two sites are satisfied and seem reasonably content. That point was raised earlier, but it is interesting compared to what we hear generally. My question is about the environmental benefits of wind farms or wind turbines against the negative environmental aspects, because there is always the argument that there are two environmental aspects to wind farms and wind turbines, namely the positive environmental aspect of greener energy and the negative environmental aspects, particularly around the landscape and what it does to habitats. In your opinion, which outweighs which?

**Mr McFarlane:** I will answer that first and then allow my colleagues to come in. It may sound rather trite but, as they say in popular speak, I think that is really a no-brainer.

**The Chairperson:** I am sorry — what was that?

**Mr Boylan:** It is a no-brainer.

**Mr McFarlane:** You are asking me a very clear question, and, as I said, there is no option that does not have pros and cons. There are positive and negative aspects to any form of energy generation.

**Mr Elliott:** Which argument holds the greater weight?

**Mr McFarlane:** If I understand the question correctly, you are asking me whether wind energy is a better or worse alternative to our conventional energy mix. I do not think that there is any contest. I say that because the benefits from the reduction not only in reliance on a fossil fuel energy mix but in the environmental impacts of that mix show that there is no comparison.

**Mr Elliott:** To be clear: are you saying that the environmental benefits of wind farms and single wind turbines outweigh the environmental negatives?

**Mr McFarlane:** In my view, yes, they do. However, neither am I saying that there are not some potential negative environmental and social impacts of wind energy that do not need to be looked at. We have covered that. The issue for Northern Ireland seems to be that there is no strategic approach as to how best we site, position and harness onshore wind energy in this jurisdiction.

**Mr McCullough:** I would like to come in on that point. We are saying that we should capture those environmental benefits but that there is a better method of reducing the adverse effects. We are not saying that we should not put these up; we are saying that we should look at the guidelines and the planning controls and make sure that they are put up in the right locations. You can still capture all those benefits, but, by working in a better way, you can reduce the adverse impacts. The balance remains and is, in fact, better.

**Mr Elliott:** I appreciate that, but you are trying to get out of the question a wee bit, Paul, by talking about where they are located. Are you still saying that the benefits outweigh the negatives but that the map of Northern Ireland showing the huge number of planning applications for single wind turbines is not appropriate?

**Mr McCullough:** No, far from it. I will go back to my earlier point. We are in an ideal situation in the north-west corner of Europe, exposed as we are to the Atlantic systems. As Gary said, we can be a world leader. I will put it into the simplest terms, and, again, I am using hypothetical figures. We are suggesting that, instead of putting a turbine 300 metres from somebody's house, we should put it 500 metres away. It requires a little more investment, a little more cabling and x, y and z, but you can still put the turbine up.

**Mr Elliott:** I will stop you there. In fairness, the reality is that it would be impossible to get all those wind turbines 500 metres away from individual houses in Northern Ireland. I am not arguing for or against; I am interested to hear your opinion, because it is a huge issue. I take each wind turbine and wind farm on an individual basis, whether I support it or not, given the context around it. You cannot implement some of those ideas because they are impractical. There are three wind farms in the vicinity of my home, but I do not know whether any of them are 500 metres away. I can guarantee that they are not 500 metres away from every house. In fact, they are probably not more than 100 metres away from any dwelling at all. In that context, there would be none at all in my vicinity because it would be impossible.

**Mr McCullough:** I will respond to that. We are advocating a strategic approach. I will use Chris's earlier point for illustration. If the noise budget is going to be used up, it would be better used up by a wind farm capturing a lot of energy than a single wind turbine capturing a very small amount of energy. All we are advocating is a strategic approach. You say that it is difficult to find the land. It may well be, but let us at least have that strategic approach to explore those issues and see where they can go for the best use of energy with the least environmental impact.

**Mr McFarlane:** Tom, I will add to that. Perhaps I misunderstood your question. If you were asking me whether I think that the benefits of the proposals represented on the map for that number of turbines positioned where they are outweigh the negative aspects, that is not what I meant. I meant that, in a hypothetical sense —

**Mr Elliott:** I did not take it as such, Gary.

**Mr McFarlane:** You make a valid point in the sense that Northern Ireland is a small place, and we have what we have with our residential development. I mentioned failings in the past, and we cannot change that now. However, it brings me back to the point that, in my view, we will not find all the mix of renewable energy from onshore wind. At the minute, the focus seems to be on tidal, offshore, solar and anaerobic digestion. I am not quite clear why that is the case; perhaps it is an economic issue.

**The Chairperson:** From what you are saying, from looking at the map and given what Tom said, should we be calling for a stop to the further development of wind turbines in Northern Ireland?

**Mr McElduff:** Is that what you are saying?

**The Chairperson:** Should we be bold and put a moratorium on it?

**Mr McCullough:** No. We are not saying that a moratorium is needed here and now, but we recognise that we have a disproportionate number of turbines and a unique settlement population, and our profession is seeing noise impacts and concerns about noise that are not being reflected in the current policy and guidance. We are imploring you that this needs to be looked at again with some urgency.

**Mr A Maginness:** How many single turbines are in use in Northern Ireland?

**Dr Jordan:** I think that it is around 200 but with 1,000 permitted.

**Mr A Maginness:** So about 200 are in use and operational. Is that over the past five years or more?

**Dr Jordan:** Yes.

**Mr A Maginness:** Is there any evidence to suggest that they have had an adverse impact on either the environment or on individuals' health?

**Dr Jordan:** We have received a number of noise complaints across the Province.

**Mr A Maginness:** Yes, but I am asking about a cumulative effect on people in Northern Ireland. Is there any evidence to suggest that we have got it so wrong that people are suffering?

**Dr Jordan:** At the minute, the turbines that are constructed are usually fairly far away from one another. The other permitted turbines have yet to be built in between. Therefore, from a cumulative impact point of view, we are not there yet, but it may be coming.

**Mr A Maginness:** You are giving a health warning.

**Dr Jordan:** Yes.

**The Chairperson:** We have a number of research papers that show that there is no evidence of detriment to the health of those nearest to a turbine from the sound. It is very difficult to pin it down.

**Dr Jordan:** I will go back to my original point. To try to re-engage those communities and bring them along, we need to review the guidelines in a robust and transparent fashion.

**Mr A Maginness:** Could I stop you there? Is there any evidence to suggest that the situation has got so bad that that has to be done? Is there some major problem out there? I do not sense it, but you may have evidence to the contrary.

**Mr McFarlane:** Before colleagues make any further comments, from the discussions that I have had with them — obviously they are, as it were, at the sharp end — it seems to me that some cases require extensive investigation. Indeed, some are not even concluded yet, which is part of the problem. I made the point that we could be storing up problems for the future with the burden on local authorities. Perhaps colleagues could give you anecdotal examples that would illustrate that, and I know that Paul can mention one case that we have spoken about. It is a very good question, and we could come back to you with more robust information through liaising with colleagues in the other two subregional areas who are not here today. I am not dodging the question but trying to answer it more accurately.

**Mr A Maginness:** I understand that. We are all grappling with this relatively new situation, so we have to learn from one another.

Scotland is producing a lot of alternative energy and is really a leader. Is the emphasis in Scotland on wind farms or single turbines?

**Dr Jordan:** Wind farms.

**Mr A Maginness:** Does Scotland zone wind farms or single turbines?

**Dr Jordan:** Scotland's guidance on wind farms is a two-kilometre separation distance from towns and villages. I do not believe that any separation distance from individual dwellings is set in its guidance.

**Mr A Maginness:** Does Scotland use the same noise limits?

**Dr Jordan:** It does. The difference between Northern Ireland and Scotland is that we have a dispersed rural population, which is not evident in Scotland. Therefore, it has a larger land bank to allow it to place its wind farms further away from residences, and we do not have that luxury.

**Mr A Maginness:** Is that because the redcoats cleared them out?

**Mr Boylan:** Luxury is a new word for it.

**Mr A Maginness:** What you say is very interesting. I take your point about being more strategic and about greater emphasis on wind farms as opposed to single turbines. Given that there are 200 turbines at the moment, it does not strike me as a huge number operationally across Northern Ireland.

**Dr Jordan:** We are not anti-single turbines.

**Mr A Maginness:** No, but you want them to be developed on a more selective basis, and it should not be a laissez-faire approach.

**Dr Jordan:** That applies to wind farms and single turbines. Currently, there is no strategic approach to the wind energy mix, so it is a laissez-faire approach. At present, everyone builds where they like, albeit with permission. Consequently, as I said, single turbines have potentially blocked a larger wind farm on the hill behind.

**Mr A Maginness:** That, obviously, is very unhelpful.

**Dr Jordan:** Yes.

**The Chairperson:** It is simply a waste of resources. You are saying that 200 are in operation at the moment —

**Dr Jordan:** Approximately 200.

**The Chairperson:** — but 1,000 are in the pipeline, waiting for approval.

**Dr Jordan:** We could get the exact figure from the Planning Service.

**Mr McFarlane:** Would you like us to give you those exact figures?

**The Chairperson:** Yes, I think that it would be very useful.

**Mrs Cameron:** Thank you for a very interesting presentation, although I cannot help but feel that we are left with many more questions on the subject. It is very concerning that the guidance that is being used is 18 years old. I do not mind wind turbines so much, although I would not want to live beside one. I cannot get my head around the idea that there are no health implications. If the noise is such that it disturbs sleep, in my simple mind that means that there are health implications for certain people, for children with particular conditions or for whomever.

**The Chairperson:** You do not have a simple mind.

**Mrs Cameron:** Thank you, Chairperson. I wonder about the rate that we are going at. There are 200 turbines in operation and 1,000 in the pipeline. When will new guidance be available? I assume that it is not being reviewed and that there is no plan to review it. If there were a decision to review it tomorrow, how long would that take?

**Dr Jordan:** I suspect that there would be a significant amount of objection, not over the review but over the content and agreement on the content. A good example would be the Institute of Acoustics good practice guide. It took two years to develop, and it is a far simpler topic than noise limits.

**The Chairperson:** The Department is reviewing different planning policy statements PPSs all the time, so it is not difficult for them to start a process.

**Mrs Cameron:** I worry that we are not even talking about a review. Even if we did, how long would that take and how many more single turbines would we have?

**Mr McCullough:** It very much relates to a desire and to the importance we place on this industry. These issues are always complicated, and there are many opinions on them, but a good comprehensive review can take place if the appropriate resources are there to make it happen. I appreciate your point about what has gone before, but we are where we are. Our point is that, to bring communities along, we need to provide the robustness of a comprehensive review of the guidelines that they are operating under.

**Mrs Cameron:** Whose overall responsibility is it to review the guidelines?

**Mr McFarlane:** It is the responsibility of the Department of Energy and Climate Change.

**The Chairperson:** I am conscious of the time. I will allow one quick question.

**Mr Boylan:** This has been one of our better presentations, and it has offered more questions than answers. I want to go over some of the points that have been made. Anything that we do should not be to the detriment of communities. Unfortunately, we have seen that in some instances. I am surprised that there are only 200 turbines, but we will get the figures on that. I know that in my area, I have been lobbied very strongly on this matter.

We have identified 132 landscape areas. There are definitions of how the North is broken up. A number of years ago, we talked about a strategic approach for wind turbines, but that has not happened. I want to put this question to you, and maybe it is a consideration. Although we have set a 40% renewables target by 2020, whether it is a European target or whatever the case may be, I do not think that we have done an in-depth investigation into how we will achieve that, but we are where we are. I want to ask you this question because you keep talking about the Atlantic coast. Is it not the case that in Europe, under INTERREG IVa, there is an opportunity for member states to work together to bring a programme forward? Is there not a good opportunity at this point to look at offshore energy? There is an opportunity because Scotland is doing something at the moment. Is there an opportunity to involve some of that and work to meet the targets? I thought of that when you spoke about a strategic approach.

When you talk about development, Gary, I read between the lines that you are saying that perhaps there has been too much single-house development in the countryside.

**Mr McFarlane:** Yes. Historically, that happened, and that is what I was getting at. However, we cannot do anything about it.

**Mr Boylan:** We cannot, but we are trying to look at PPS 21 because there are issues for communities. I take it that that was the point you were trying to make.

**Mr McFarlane:** Yes, it was.

**The Chairperson:** We also need to sort out the interconnector.

**Mr Boylan:** Yes, but it is not coming down our way, Chair.

**The Chairperson:** We all have to bear in mind that your submission states that fossil fuel production of energy causes health problems and has negative environmental impacts because of emissions and so on, which is bad for everyone's health. We need to be clear about that.

As you can see, members found the session very interesting. Thank you very much for coming and making your presentation.

**Mr McFarlane:** Thank you for the opportunity. We will come back to you on some of your questions and to give you further information. As I said, although there are bigger issues, we believe that the Committee could add to this by at least trying to ensure that a review of the ETSU guidance gets under way and that we look at the planning framework as it exists.

**The Chairperson:** Thank you.