



Cynulliad Cenedlaethol Cymru **The National Assembly for Wales**

Y Pwyllgor Amgylchedd a Chynaliadwyedd **The Environment and Sustainability Committee**

Dydd Iau, 1 Mawrth 2012
Thursday, 1 March 2012

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These proceedings are reported in the language in which they were spoken in the committee. In addition, an English translation of Welsh speeches is included.

Aelodau'r pwyllgor yn bresennol
Committee members in attendance

Mick Antoni	Llafur Labour
Yr Arglwydd/Lord Elis-Thomas	Plaid Cymru (Cadeirydd y Pwyllgor) The Party of Wales (Committee Chair)
Rebecca Evans	Llafur Labour
Russell George	Ceidwadwyr Cymreig Welsh Conservatives
Vaughan Gething	Llafur Labour
Llyr Huws Gruffydd	Plaid Cymru The Party of Wales
Julie James	Llafur Labour
David Rees	Llafur Labour
Antoinette Sandbach	Ceidwadwyr Cymreig Welsh Conservatives

Eraill yn bresennol
Others in attendance

Dr Sandra Esteves	Cyfarwyddwr, Canolfan Ragoriaeth Cymru ar gyfer Treulio Anaerobig, Prifysgol Morgannwg Director, Wales Centre of Excellence for Anaerobic Digestion, University of Glamorgan
Kath McNulty	Rheolwr Cenedlaethol Cymru, Cydffederasiwn Diwydiannau Coedwigoedd (ConFor) National Manager for Wales, Confederation of Forest Industries (ConFor)
Clifford Parish	Cadeirydd, Sefydliad Siartredig Rheoli Gwastraff Cymru Chair, Chartered Institution of Wastes Management Wales
Darren Williams	Cyfarwyddwr Masnachol, Eco2 Commercial Director, Eco2

Swyddogion Cynulliad Cenedlaethol Cymru yn bresennol
National Assembly for Wales officials in attendance

Alun Davidson	Clerc Clerk
Catherine Hunt	Dirprwy Glerc Deputy Clerk
Lisa MacDonald	Gwasanaeth Ymchwil Research Service
Graham Winter	Gwasanaeth Ymchwil Research Service

Dechreuodd y cyfarfod am 9.36 a.m.
The meeting began at 9.36 a.m.

Cyflwyniad, Ymddiheuriadau a Dirprwyon
Introduction, Apologies and Substitutions

[1] **Yr Arglwydd Elis-Thomas:** Bore **Lord Elis-Thomas:** Good morning.

da. Croeso i bawb. Rydym wedi cael ymddiheuriadau gan William Powell. Rwy'n deall ei fod yng Nghyngor Sir Powys yn coffáu yr Arglwydd Hooson, sy'n eithaf priodol.

Welcome to you all. We have received apologies from William Powell. I understand that he is at Powys County Council commemorating Lord Hooson, which is quite appropriate.

**Ymchwiliad i Bolisi Ynni a Chynllunio yng Nghymru—Tystiolaeth ar Dreulio
Anaerobig a Throi Gwastraff yn Ynni
Inquiry into Energy Policy and Planning in Wales—Evidence on Anaerobic
Digestion and Energy From Waste**

[2] **Yr Arglwydd Elis-Thomas:** Dyma'r **Lord Elis-Thomas:** This is the latest cyfarfod diweddaraf yn ein hymchwiliad. meeting in our inquiry. I am grateful to both Rwy'n ddiolchgar iawn i'r ddau sy'n witnesses who are appearing before us. ymddangos ger ein bron.

[3] You are both very welcome to our committee. We look forward to questioning you on your evidence. If you would like to introduce yourselves, I will then ask colleagues to begin asking questions.

[4] **Dr Esteves:** Good morning. I am Sandra Esteves. I direct the Wales Centre of Excellence for Anaerobic Digestion, which is based at the University of Glamorgan.

[5] **Mr Parish:** Good morning. I am Clifford Parish, and I am currently the chairman of the Chartered Institution of Wastes Management in Wales. I am a chartered waste manager and civil engineer and I have worked in the waste industry for 37 years.

[6] **Lord Elis-Thomas:** We are very grateful to you for providing us with your experience. I will ask a general opening question and then I will invite my colleagues to ask their questions. What is your current assessment of the nature of government plans—both the Welsh Government and Welsh local government—in this whole area of energy from waste?

[7] **Dr Esteves:** I will start. On anaerobic digestion, I think that the support that has been provided so far has been positive. In terms of municipal waste streams, there is a large procurement that is occurring, which will hopefully bring anaerobic digestion plants to Wales. I can see from a water company perspective that there is also interest in having more AD facilities. From an agriculture perspective, I think that there is more to be done as the support is really not there yet. There are feed-in tariffs, renewables obligation certificates and all the incentives related to renewable energy generation, but in smaller-scale facilities, that incentive is really not sufficient for progressing to building plants and operating them afterwards.

[8] **Lord Elis-Thomas:** Would you welcome it if we looked at this issue of incentives specifically in terms of a level playing field, as it is called, or at least better equalisation between different forms of renewables?

[9] **Dr Esteves:** I think that it is important to look at it from the perspective of a level playing field. However, it is also important to integrate AD, not only for renewable energy generation but also because of the other benefits that will come from it, such as waste treatment and better quality of soils and water, particularly groundwater. The waste treatment itself is massively important; there is the ability to recover fertilisers such as nitrogen, phosphorus and potassium, for example, which is of massive importance. All of those elements bring about a reduction in emissions, so AD should not just be seen as part of the renewable energy agenda, although it is still an important part of it. It can contribute to a

number of other important facets as well.

[10] **Lord Elis-Thomas:** So, we should look in terms of the contribution of this activity to the overall question of tackling climate change, and ensuring the objectives of the Welsh Government's recent Green Paper on the environment and ecosystems generally.

[11] **Dr Esteves:** That is right, and I think that there is tremendous potential for job creation from the whole perspective of the supply chain, from equipment manufacture to consultancy businesses and legal advice. I deal with companies on a daily basis, and since 2008 we have dealt with more than 100 companies. So, there is interest, as long as there is some framework on the ground that supports that development. With recent economic developments, it is difficult to borrow funds. A number of pieces in the jigsaw need to flow together at the same time, but that is not always straightforward.

[12] **Lord Elis-Thomas:** Would you like to add anything from the point of view of the chartered institution?

[13] **Mr Parish:** Certainly, Chair. The Chartered Institution of Wastes Management Wales feels that the Welsh Government has been very supportive to local authorities in providing significant funding to take forward procurement for waste treatment facilities. Waste to energy, particularly with regard to AD, is focused, but the rest of it is market-led. The Welsh Government has a policy for waste to energy for municipal waste for other technologies. We believe that those technologies have a role to play as long as a full life cycle and health impact assessment is carried out, and we are very supportive of the assistance that it has given.

[14] I should have said that my day job is in local government, so my views need to be carefully expressed from a CIWM perspective, and not from a local government perspective. There is a view, which I share, that Welsh Government policy is perhaps over-focused on municipal waste and not on controlled waste as a whole, and that some of the solutions now being sought, including waste to energy and AD, focus on municipal waste. There is still a gap to look at with regard to the bigger picture. However, as far as integrated waste management goes, we feel that the Welsh Government is very supportive of waste to energy technologies within an integrated solution.

[15] **Rebecca Evans:** I have some questions on the public perception and understanding of energy from waste. The CIWM paper says that

[16] 'public perception and understanding of energy recovery from waste is poor'.

[17] Why do you think that is, and what could be done to improve it? That question is for both of you.

[18] **Mr Parish:** I would say that the public perception of energy waste from thermal processes—the main thermal process being incineration—is worse than poor; it is negative, full stop. That is historic. That is my opinion, based on knowledge of incineration plants from the 1970s and 1980s, which did not have the technology that is being pursued today. There are many examples of this in the press; I have one before me in which the Health Protection Agency is reviewing its position, although the statement from the chairman is that its current view has not changed. However, due to public perception, the agency feels that it has to review it. There has been quite a bit of technical press on developing waste to energy, and this announcement has caused problems that may delay planning applications and the development of this technology.

[19] From correspondence that local authorities receive from pressure groups and

elements of local communities, there is a clear perception that energy from waste using incineration-based technology is something that the public does not want.

9.45 a.m.

[20] **Lord Elis-Thomas:** In this committee's line of business, we come across a few things that the public does not seem to want in specific areas. How do you think that elected members should respond to that, both at local authority level and at this level?

[21] **Mr Parish:** I believe that elected members should look at the evidence, which I think is fairly clear. A decision should be based on the best evidence available. There seems to be a lot of evidence that is slanted toward either side of the argument, unfortunately. However, where Government bodies provide evidence, I think that the Welsh Government, the Assembly and local government members should support that evidence. It is clear that you will have a difficult job in ever convincing certain elements in other public groups, whatever the evidence. It is about making a policy statement based on the best evidence available, sticking with it and informing constituents of the reasons for the decision—the pluses and minuses. It is very difficult to do that, especially when my members have an election coming up in a few months. There are pressures, which we understand, but I believe that the evidence is there and that elected members need to support it. At the moment, Welsh Government policy does that, and I hope that it will continue to do so.

[22] **Rebecca Evans:** Why do you think that the public in other parts of Europe finds energy from waste projects more acceptable? Do you have any examples of ways in which communities are encouraged to buy into schemes through community benefits?

[23] **Dr Esteves:** I will start with AD. Other countries have accepted AD better, as they have wind energy and other technologies. I think that it comes from a perception that the scheme will potentially lead to homes losing value in the UK—it is very much related to property value and so on. The other aspect is training. You will probably see a number of local authorities across Europe with quite a lot of engineers and scientists on the ground. They have a different feeling about the technology and how it can be implemented. I think that it is possibly due to the powers of the environmental assessment that is, perhaps, undertaken in some countries. I should not say that there is a lighter approach, but if it is something that will bring benefits, the scheme is first of all seen as something that should be implemented, unless shown otherwise. In the UK, it may be the other way around: the scheme has to show that it is not going to bring problems.

[24] It is common for people not to like waste treatment facilities; by their very nature, they are not pretty. However, with incineration in particular, there have been massive developments in clean-up technologies, and these facilities are less polluting, perhaps, than the fireworks that people tend to go to new year celebrations to see. From an AD perspective, a lot has been done on odour control, appearance and environmental and aesthetic impact. More should be done. There are a number of controls that can be implemented to minimise odour. Once these plants are on the ground, if they are built, designed and operated carefully, they will not emit any odours and will not have the impact that people might think that they would have. I think that acceptance of the schemes would then be greater.

[25] There are two angles: there is education and ensuring that people are aware of what these plants do, because in some cases they are not aware. Part of our remit when we were set up was to do that, and we have held a number of training courses for planning officers, regulators and so on. That has helped. However, more work is required. Maybe the media could help to support those developments. I am Portuguese, and I remember an advert that asked, 'Why do I not have a bring site near my home?', rather than, 'I do not want one'. It is important that that conversion between thoughts takes place.

[26] **Mr Parish:** I do not think, historically, that we have been very good at talking to our constituents. We have not been open enough. We have not invited them in. We have not made them fully aware of what is being provided, of the advantages and disadvantages. European countries have done that. If you are lucky enough to go to Vienna, you will see a massive waste to energy plant in the middle of the city. It provides district heating. There are many more advantages to having the schemes than not. Another plant in Holland has a big board with all the technical data outside, so that the public can go up to have a look at it. Those things are coming. The plants that have just been built in England are far more customer friendly. They have visitor centres. They invite the communities in and make them fully aware of what they do and why they do it. I do not think that we have done that. In local government, when we were building landfill sites even 30 years ago, we did not involve the community. We just picked a hole in the ground and built it. That change of culture is happening, but perhaps it needs to happen even more. It has happened in European countries, although I would not say that waste to energy plants are fully accepted by the people living near them—I do not think that anybody wants large vehicles travelling past their houses, day in, day out. I do not think that anyone wants a crematorium near them, if truth be told. There are other processes, for example, meat factories, that are in the same category. Waste has a stigma from the past, which the public still accepts, I am afraid.

[27] **Dr Esteves:** I would like to add, from an energy recovery point of view, that in terms of heat, you will see northern European countries where both incineration and AD mostly recover their heat, and there are benefits straight to the community. Communities see it benefitting them directly. I think that the acceptance is much greater from that point of view.

[28] **Antoinette Sandbach:** Dr Esteves, in your evidence you highlight that there are only two AD digesters in Wales at the moment. One of them is in Wrexham, north Wales, run by Farm Renewable Environmental Energy Ltd. It has patented a technology to remove the grit from waste. What efforts are you making to disseminate the patented technology that FRE Energy has in north Wales and beyond?

[29] **Dr Esteves:** There are a number of patented technologies that relate to grit. This is one of them. It is important to disseminate the work. A patent is only worth the number of plants that you can actually sell, in my view. It is really important. We do a number of dissemination events. We have done them in the north and south. We are collaborating with it, for example, on recovering nutrients from its digestates, and recovering nutrients and volatile fatty acids, which are intermediate within digesters, not just for methane production, but for bioplastic production. So, we are bringing the best technologies to where they should start. This is important. Research and development is important within AD and incineration, because the technology is there and delivering. However, there is a lot of work that can be done to improve it, such as grit removal, small-scale combined heat and power units, monitoring control, development of enzymes for improving lignocellulosic material degradation. So, this is what is required. Implementation is important, but the research and development backing, and all of those developments are important as well.

[30] **Antoinette Sandbach:** Given your contact with FRE Energy, what lessons can be learnt from the problems it has had over planning? I do not know whether you have seen today's *Daily Post*—

[31] **Dr Esteves:** No, I have not today.

[32] **Antoinette Sandbach:** 'Let battle commence' is the headline. This is, as you say, a technology that allows for fertiliser, which is then injected back into an organic farm. It has the support of local people, but the block seems to be in the planning system. So, what lessons can you tell this committee that you think need to be learned as a result of the FRE Energy

case?

[33] **Dr Esteves:** In a number of cases, it is believed that waste should not be brought to farms or to national parks. However, it is right, if there is a good case for them, as it is important that these plants are well distributed. There is no point in building too much capacity in one place while there is a lack in others. In addition, the close proximity of wastes and digestate outlets and so on are massively important.

[34] Specifically on FRE Energy, we have supported its planning application in terms of some of the volume of the material being waste. You will see across Europe that probably over 60% of AD plants are built on farms, because they have a direct outlet for the digestate, which is of massive benefit. I am not saying that industrial AD plants are not as suitable, but each plant needs to be looked at individually and supported. If the amount of trucks is not significant and if there are no restrictions on heavy goods vehicles coming to site, I cannot see a problem with them being all over the country.

[35] **Antoinette Sandbach:** I saw that, in your appendix A, you listed the dissemination events that are taking place, but none seem to be in north Wales. Given that your European funding includes dissemination of both technical and non-technical data, what steps have you taken to educate the north Wales local councils about the benefits of AD? Maybe Mr Parish could also answer.

[36] **Mr Parish:** I have a point on that. Our annual general meeting is on 20 April, and it might be held close to north Wales. It will focus on food waste, which will include presentations on the dissemination of AD. We appreciate that, as an institution, and because we are a Welsh body, we try to do that in north, mid and south Wales. So, there is already a planned event that should contribute to that.

[37] **Antoinette Sandbach:** Are you thinking of visiting the FRE Energy site, one of two anaerobic digesters in north Wales, to show them that technology?

[38] **Mr Parish:** Not at the open meeting, but we organise visits for members and non-members. We have visited BiogenGreenfinch already and we will go to see that one.

[39] **Dr Esteves:** In north Wales, we held an event a month and a half ago in Bangor, together with Swansea University and Bangor University. We also held an event in Aberystwyth, and, specifically on planning, we have held two at Llandrindod, to bring the north and south together. However, I agree that this work should continue, and we will do whatever we can to support those developments.

[40] **Antoinette Sandbach:** How much funding do you get under the European regional development fund to promote AD, or rather, how much funding is the University of Glamorgan receiving for this ERDF project?

[41] **Dr Esteves:** From 2008, it has been about £700,000, of which £120,000 is directly to support small and medium-sized enterprises in the convergence region. Wrexham is not part of that, so, effectively, ERDF would not support us directly in supporting FRE Energy, although Welsh Government support, which is much lower than that, is provided on a whole-Wales basis.

[42] **Antoinette Sandbach:** Having been there myself, I was surprised, because the public perception of AD is that it is smelly. How can you get the footfall through to show that that perception is wrong?

10.00 a.m.

[43] **Dr Esteves:** It is difficult because, with videos, you cannot carry the smell, or the absence of a smell, around with you to demonstrate it. In 2007, we gathered evidence throughout Europe on a number of plants with an emphasis on municipal streams, because that is where the funding was coming from. We filmed and we provided the scale, the benefits that were brought to the communities and any lessons learned, because lessons are learnt in 20 to 30 years of experience in dealing with AD. The report was disseminated and sent to the Welsh Government and all local authorities. It is a long report, so it is likely that not many people have read it. We continue to provide case studies. Visits are certainly something that people enjoy. As part of the biomethane regions project, where 11 countries, 16 partners and a number of energy agencies across Europe are involved, we have done a number of dissemination events and we can bring a number of planning officers who want to go abroad or to a plant in the UK so that they can see for themselves what is available.

[44] It is slightly different to dealing with agricultural plants, where manures are the main feedstock. We are in an agricultural setting, so that odour is around anyway. That is one type of plant, and then you have others that pretty much bring in the municipal streams, which are slightly different plants. You can mix them both; there is not an issue with that. However, once you bring in many other things, you must have controls for them. You must bring the reception tanks, for example, that other plants did not bring from the start. It is important—and I continue to say this to the industry—to build a flexible plant, which incurs costs, but it provides the opportunity to bring in other materials that may not be the ones that we would bring in on day one, but we may want to in future. Once you start building something additional, people's perception is that it is not working because you are having to do something else, but that is not really what it is about. Building a flexible platform from the start is important. From that perspective and the regulatory point of view, as well as environmental controls, the industry should be made aware that these plants, by having the most bullet-proof designs and operation regimes, will show to the public that there are no issues with them, rather than utilising the step approach that we have seen across the UK. It started like that some 30 years ago, and then they realised that you need this and that, such as monitoring control, reception tanks and all the control, and everything adds to the cost. That is the first thing: the platform should be there from the start. When you add things, generally, the public will be concerned that it may not work and they will ask what is happening. That is something that they perhaps have not benefitted from, by not building it from the start.

[45] **Lord Elis-Thomas:** I have Julie James, Llyr Huws Gruffydd on the other side and I think that all Members want to contribute. You are clearly having an influence on this committee with your evidence. We will start with Julie.

[46] **Julie James:** Good morning, both. I should say that we are old friends, so it is very nice to see you here this morning. I wanted to turn to municipal waste procurement and have a view from both of you about how you think that those AD procurements are going. You mention in your paper the difficulties of securing the organic waste stream, the conflict, perhaps, with 'Towards Zero Waste' and the difficulty of that. You have also told us a little about the difficulties of the concentration of municipal waste and the lack of commercial and industrial waste. Could you expand on that for the committee and tell us exactly where we are and what you think the prospects are for the future on that? I would like to hear the views of both of you on that.

[47] **Dr Esteves:** That is quite an unfair question to ask me, Julie, because, although I am aware of the procurement process, I am not built into it, which is probably a good thing. I would say that it has been a slow process—for a number of reasons, I guess. I think that ultimately it will work. I think that there was a need to build hubs to build treatment capacity, and it would have been very difficult to leave each local authority to work its way through to full capacity. From their perspective, I think that it has been positive. I think that there is

some allowance to bring in commercial and industrial waste. From what I have heard—this is certainly not official in any way—whatever additional commercial and industrial capacity is brought in, cannot accrue more value or involve charging a lower gate fee than a municipal stream, which seems to be fair. The issue is that uncertainty—what else is going to be available in that location? From that perspective, we were flooded with requests for information and support in 2008, and then, as soon as the procurement process started, it was very much a case of wait and see, because, until the plants are available, it is very difficult to gather the amount of tonnage. That said, it is about how well-connected the developer of the plants is with the local area, because the developer may have set up initial contracts with a number of providers that indicate that it is okay to build a plant. A number of them are in that position, but they have had quite a number of difficulties in achieving planning.

[48] In terms of merchant providers, that is probably a bit of a negative. The other thing is the certainty of waste flows: where are they and what characteristics do they have? I think that a lot of work is required there. There was a survey in 2008, I believe, by Urban Mines, but it is quite difficult from the database produced to attribute a value and say that in a certain location there will be food or commercial and industrial waste that is of a certain quality and frequency throughout the year and so on. So, from a commercial and industrial point of view, there is a need for there to be a bit more hard work there in visualising what is on the ground. People allude to values of around 500,000 tonnes, but we need confirmation of those. Also, you see that industry will consider waste one day and other waste by-products, and other waste as animal feed, and it is very difficult to say, 'That is what we have to work with'. We are working with a company on wheat feed, for which in the last two years there has been massive demand for animal feed. Therefore, what we were hoping to achieve in terms of AD is probably not going to take place because the market is buoyant for something else. So it is a continual change of economies and of the way of operating. I will leave it there.

[49] **Mr Parish:** Certainly, our perception is that the partnership procurements on the municipal side are going very well. Officers who have worked for a long time in local government might say they were going extremely well. For AD it is more encouraging, because there is at least one more recent commercial AD plant that was set up for commercial waste only, but I think that the linkage is the supply of material. It is a commercial operation to build any plant and, unless you can guarantee the feedstock, very few companies are going to invest because of the risk. That is the issue, and the Welsh Government has provided the backing and the policy for local government to allow that feedstock, but there is a huge amount of biodegradable waste outside the local government and municipal environment. It is about the market risk: companies have to make business decisions and, at the moment, the economic climate is not such that you can adopt a build-it-and-they-will-come attitude, I am afraid. They will want guaranteed contracts.

[50] **Julie James:** I would like to follow that up, because, from the Government's point of view, there are a couple of things that we need to be clear about. First, do you think that the recovery inside the municipal waste stream of food waste or organic waste is good enough and what can we do to improve it? Secondly, do you think that the Government should start to look at compulsion for commercial and industrial wastes, and diversion from landfill targets and so on, in the same way as has been done for public sector waste? Would that assist the process of making the plants more viable?

[51] **Dr Esteves:** Certainly, yes. I do not know how far you could go. Textile and other industries may have moved abroad, and their lifetime or their projected time as a business may, in most cases, be short. However, in the food and drink industry, where you have a history of so many years of operation and so much market income, there may be room to impose, almost, some kind of an agreement that is more or less a longer-term agreement, because if it is on a six-month basis or on a yearly basis, when you go to the banks you cannot get funds to build these plants. That is certainly a problem. I was going to mention something

else, but—

[52] **Mr Parish:** I think that the Chartered Institution of Wastes Management has a strange view on this, because we are an England-and-Wales body and statutory targets do not apply in England.

[53] **Lord Elis-Thomas:** I am glad that you think that that is a strange thing. [*Laughter.*]

[54] **Mr Parish:** However, I will give a personal view on that. I strongly believe that if the municipal sector has statutory targets that all waste producers should have statutory targets. I cannot see the logic in making targets statutory in one sector. Well, I can understand the logic, but you know what I mean.

[55] **Julie James:** To go back to the bit on the municipal waste stream, do you think that there is enough recovery in it at the moment and what could we do to improve it? I am anticipating your saying 'no'.

[56] **Mr Parish:** I actually do think that, should the Welsh Government's plans be carried through, there will be enough recovery. It is not there now, as the infrastructure is not there, but the plans are in place to get that infrastructure in, and when that happens there will be enough recovery. One of the quirks that Sandra did not mention is that, in implementing dedicated kitchen and biodegradable food collections, we are achieving waste minimisation in municipal waste. The feedstock is reducing, which is brilliant, because that is the top of the hierarchy, but it affects the contracts a little bit.

[57] **Dr Esteves:** I think that we are at the point where we are not quite sure whether it is reducing or whether it is not being captured. So, a better understanding of that is important. My understanding is that some local authorities are better at capturing it than others. A number of them are rolling out this collection. What you have is a change in the whole operation. It is not that you were already doing it and that you are just adding on the AD plants; you are collecting differently. In some cases you are collecting and it goes into the same bin, and then, when people realise that, they ask, 'Why am I doing all this work?' Sometimes there is a need for clarity and to explain to people, 'We are planning to do this for a year or a year and a half to quantify wastes, to ensure that people are doing the right thing and that there are no contamination issues' and to explain what the plans are.

[58] For example, I live in a local authority in which no-one has told me why it is doing that, and that is important, because I can tell my family why, obviously, but I cannot go down the road and explain to everyone. Across Europe we have seen that campaigns are the most important element. You do not have campaigns only at the start; you have them regularly, because people tend to become slack. Sometimes, even where you put the bin in your kitchen can be important, that could be something that could be thought about, because if it is a bit too far away and the other bin is closer, then people will think, 'Well, I want to watch the television' or whatever and not bother. All of that is important. Inspection is one approach that could be used. There could be lower costs for those who comply. However, I do not know how much of a greater economic burden that would mean for the whole system.

10.15 a.m.

[59] **Julie James:** I would like to follow up that last point. In some of the European countries where there are very high rates of recycling, those rates are achieved because it is compulsory to recycle. I have lived in many countries where it is compulsory to recycle certain items. How do you both feel about a system either of carrots—you have suggested perhaps lowering taxes for those who do it—or sticks? How would that work, both in the municipal and commercial sectors? We could do something with business rates if businesses

comply with certain targets, for example.

[60] **Dr Esteves:** I think that could be applied. I cannot tell you whether the carrot or stick would need to be used, because I do not know about the economic framework for local authorities. You need to tell people that, by doing something in a certain way, they are benefitting—either through a reduction or because there will not be an increase. That is really important for people. The same thing is true of recyclates. Let us show people that x amount of cans and paper and so on has a value that is of direct benefit, either to a particular individual, or because it brings something new to the community—activities for children, or whatever. That information needs to be disseminated. People need to be aware that they are doing something that is of benefit.

[61] **Mr Parish:** I would certainly support more use of the carrot than of the stick. If sticks were going to be used, they would need to be put in place through primary legislation. I am perhaps getting a little too personal in my job, but the customer would need to know why they were being brought in and the reasons for them. I think that education and raising awareness are the way forward at this time. However, if we are failing to meet the goals of the Welsh Government, then that might be something that the Assembly needs to think about seriously over the next few years.

[62] **Lord Elis-Thomas:** We will certainly think about it in this committee.

[63] **Llyr Huws Gruffydd:** Rydych wedi cyffwrdd ar y mater o gynhyrchu gwastraff er mwyn ei losgi ac mae pwnt sylfaenol ynglŷn â'r angen i greu *feedstock* i'w losgi. A ydych yn meddwl bod hynny braidd yn anghynnaladwy?

Llyr Huws Gruffydd: You have touched on the matter of producing waste in order to burn it and there is a fundamental point about the need to create feedstock in order to burn it. Do you think that that is rather unsustainable?

[64] **Mr Parish:** Obviously, any waste facility needs a feedstock, whether it is an AD, energy from waste incineration, or recycling plant; any plant needs a feedstock. Procurements in Wales are being carried out on the basis that a 70% recycling target will have been met and that there is then still feedstock available. For emerging facilities, going back to the commercial and industrial combustible material, I do not think that feedstock is a problem. You only have to look at the vast amount of combustible material that is still going into landfill, which will not be there in five or 10 years' time. It will either go to somewhere in England, or it will go to facilities in Wales that will take non-municipal combustible material.

[65] There are issues with minimum tonnages, but, as I said, in the municipal sector any procurement for waste to energy projects has come through the market, because no procurement exercise that has been carried out has specified it at the start; the market has driven the solution, not the procurement body. Other than the fact that there are state aid issues, where local authorities bring in municipal waste where grants are available to pay for the plant, I do not see feedstock as an issue. There is more feedstock in controlled waste that is combustible than there will ever be facilities for in Wales, unless there is a major change of policy.

[66] **Llyr Huws Gruffydd:** 'Ever' is a very long time, but there we are.

[67] Rwyf eisiau dod yn ôl at bwynt a gododd Dr Esteves yn gynharach. Roeddech yn sôn bod potensial mawr i ffermydd yng Nghymru o ran y dechnoleg treulio anerobig, ond nad oedd y gefnogaeth, yr anogaeth a'r *incentives* yno i fanteisio ar y potensial

I want to come back to a point that Dr Esteves raised earlier. You mentioned that there was great potential for farms in Wales in terms of anaerobic digestion technology, but that the support, encouragement and incentives were not there to capitalise on that

hwennw. Beth felly yw'r *incentives* sydd eu potential. What incentives are therefore hangen? needed?

[68] **Dr Esteves:** We have farms in Wales that are small in size compared with Danish farms, for example. We have the possibility of co-operative building or to incentivise smaller scale facilities. From a smaller scale facility point of view, capital support could be given because the biggest difficulty is getting the initial capital to get it off the ground. Even if that capital would have to be paid back in some way, or partially, in the long term, at least when you went to a lending body you would already have 30% or 40% of the capital guaranteed. You would also have a lot in terms of energy provision over the years.

[69] What we have seen is that the incentives keep changing, which is not ideal. It is very difficult for someone planning a site to survey the feedstocks, to get everyone to chip in the funding and to get things agreed within two years and then to find, by the time they build it, that the whole economic framework has changed. That has been a stumbling block from the initial stage with renewable obligation certificates, because the process was market-led and could therefore change at any time; there was no certainty. When there was the possibility of feed-in tariffs, it was not totally certain whether things would get reduced, and so on. There was also the payback of a certain amount of capital support if it had been given, because you could not get the full feed-in tariff if you had both, due to state aid issues and so on.

[70] It is about the whole economic climate, and I do not know how other countries do it. Sweden certainly does very well in terms of its incentives from an energy point of view, as well as from a capital point of view, such as car parking and infrastructure in terms of refuelling. The rules must be the same for everyone, but I do not know how other countries do it to incentivise certain developments. Perhaps we should take a closer look at that.

[71] Referring back to the tonnage, in terms of incineration capacity, there should be a very good overview of what overall tonnage is available in Wales and what proportion will not follow a recycling, digestion or composting route, or otherwise, and only build capacity that influences the rest of that percentage. If you build a business plan for AD that works on the basis of 20,000 tonnes or 30,000 tonnes per annum and you get less, there are economic issues with that, but you can recover the gas. It is slightly different with an incineration plant, due to tonnage as well as the calorific value of the materials, because if you do not give it fuel, it stops burning and you will need to re-start it and provide more fuel. So, there are slightly different issues with AD and incineration from that perspective. However, that is not to say that finding feedstocks is not hard for AD. We are supporting a company down south that had a contract for so many tonnes and it is getting significantly less than it initially thought it would. So, it now needs to look for other sources of feedstocks. AD is so integrated from an agriculture point of view, and the digestate and the energy as well as the whole waste framework that it makes it very hard for anyone to develop something, because quite a lot of development work is required for that.

[72] **David Rees:** On that point, would you therefore look for AD to be more focused, in terms of the carbon footprint aspect, on the local feedstock that is generated, particularly given that other areas have feedstock coming from a great distance? So, should AD be more focused on local feedstock?

[73] **Dr Esteves:** Just to give you an idea, across Europe, an average plant perhaps has 30,000 tonnes of food waste coming from municipal, commercial and industrial feedstock, although it can operate at a lower level—in terms of the technology and its biochemistry, it can occur on a very small scale. However, there is an issue regarding the surrounding infrastructure and regulatory framework—the monitoring and control. I like small AD plants if they can be controlled in the same way as the larger ones. So, the economies of scale also apply to AD. You see plants of around 20,000 tonnes, which are just about workable. They

can perhaps go down to 10,000 tonnes, but, with anything lower than that, you will have to start compromising on what you can put in that plant and on all of the monitors, the controls and the access roads, because the tonnage is not there to fulfil the economics of the plant.

[74] We are starting to see a number of smaller scale developments. In fact, we are just at the contract stage for another project, which is a small-scale AD system for the fishing industry and other industries, such as the hotel industry. There is development with regard to gas use and whether you need gas and electricity integration or not. Those contracts are expensive in many cases; you need to upgrade the grid and so on. There is a question about whether you have an outlet for heat, for example. If you do, then the plants can get really small because you are just dealing with a boiler as the outlet for the biogas. If you grow and your outlet is for electricity generation, then you start looking at combined heat and power units with an annual contract and so on. It is the whole environmental and economic framework of AD that will start pushing you to slightly larger tonnages, but certainly not as large as those for incineration, where you are looking at 100,000 to 200,000 tonnes. So, AD plants are much smaller facilities. However, in Germany, for example, there is a 20 MW crop facility for AD, which is a massive plant. You can have whole sites of smaller plants, but, from an economic point of view, they must be more carefully judged.

[75] **David Rees:** How do you feel the regulatory side of the process—in terms of the Countryside Council for Wales and the Environment Agency—is currently operating with regard to involving statutory consultees in any development?

[76] **Dr Esteves:** There was a planning task group a couple of years ago, which Julie was on as well. There is a need for people to discuss and to be more open about certain plants. From a permitting point of view, and, in fact, from an Environment Agency point of view, there is quite a lot of support for AD. Its main concern is odour control at a local level. There has been the development of standard permits, which places less of an economic burden on permits, as well as making the process more straightforward and quicker, rather than having to wait a number of months. So, things are progressing.

[77] On planning, the initial discussion about whether or not there is a need for an impact assessment should be a bit more straightforward from the start. You can be years at the planning stage, which costs a lot of money—money that businesses do not have at the moment.

[78] **David Rees:** That is for AD, but what about energy from waste, particularly incineration? What is your view regarding statutory consultees, the permitting bodies and local authorities and the planning aspects of dealing with that?

10.30 a.m.

[79] **Mr Parish:** I do not see any problems with the main thermal process for energy from waste. It is the most regulated process that you can get in this country. It is well-regulated, it is well-controlled and there is lots of legislation to control it. Planning wise, I am not a planner, but if you take it on pure planning requirements, there are no problems. Recently, in the last few years, there has been a planning application in Cardiff, and it was not that difficult for the merchant facility to obtain it.

[80] **David Rees:** So, whereas we have had evidence from other renewable energy sectors saying that they have had difficulties with the planning process, particularly with the timescale, you do not feel that you have come across that.

[81] **Mr Parish:** If you use the Cardiff city example, I do not think that the timescale was an issue at all, to be honest with you. There are many recorded issues with planning

permissions outside Wales where it has taken 10 years to get planning permission. I would say that the main reason for that is not the planning system, but dealing with the public opposition and the decision-making process of the planning authority.

[82] **Russell George:** I wonder if you could make some comments on connection to the grid, the challenges involved and the concerns that you have regarding connecting electricity from the technologies to the national grid. What conversations have you had on that? Do you have any comments to make on that?

[83] **Dr Esteves:** From an AD perspective, in some locations you need the grid to be strengthened because the capacity is not there to start with. The industry tells me that it is a slow and expensive process—you may be looking at expenditure of £1 million for a connection to the grid in some cases, where the plant may cost £5 million or £6 million overall. So, it can be quite a large burden. In terms of timescales, they also tell me that there can be quite a long period of time before they are told whether it will be possible. There is also an issue around connection, because you may have the plant and be producing gas—you are generating electricity—but you are not necessarily connected, so you are losing that income. So, from an electricity point of view, that certainly takes place.

[84] Something that we have not talked about here is the potential for gas grid injection and transport fuel. In terms of gas grid injection, I have seen quite a lot of willingness from Wales and West Utilities to come forward and support those developments and we are meeting on a regular basis. On transport fuel, there is a need to bring in those incentives, because it is not paired up with electricity. The incentives for electricity are higher than those for transport fuel and, from a life-cycle perspective, transport fuel would win in a lot of cases in terms of fossil fuel benefits, especially if the heat from a CHP unit could not be used. We are involved in a feasibility study with Gwynedd Council in terms of using biomethane as a transport fuel and I hope that there will be a demonstration up there. I am really hoping for that. It is about getting from feedstocks to plants and where to inject, because there will be more benefits economically to inject to the gas grid and then utilise that biomethane for transport than to use it as transport fuel directly. So, looking at the uses of biogas that can be converted to biomethane, a cleaner methane route should be sought and have all the same weighting, at least economically. Otherwise, you are going to see plants going very much in the direction of CHP, because it is worth more for them to do that.

[85] Specifically in north Wales, there could be a nice opportunity to inject in and around Wrexham with the water company, which will hopefully have an injection point for the gas grid. However, due to regulation, it would be difficult to bring in other biogases that are produced from other plants. So, looking at all this and seeing the potential for changing small paragraphs in legislation would be quite useful, because there could be a really good demonstration project up there; I am not sure if it will take place due to a number of reasons, but hopefully it will.

[86] **Russell George:** What are your experiences of dealing with distribution network operators?

[87] **Dr Esteves:** I have not had a lot of experience of that, and my information comes from third parties. Generally, I think that it is a slow process that can be costly. The costs that apply are not standardised, at least in my view; again, these are not concrete facts. You should be able to say ‘I am this distance away and need a connection point’ and it should always cost you so much; or, if something needs to be upgraded, it should always cost you so much. More clarity and standardisation of those costs is needed, because it seems that, in some cases, the cost is £60,000 and in others it is £1 million, and it is difficult to say why that is.

[88] **Vaughan Gething:** We are pushed for time, so— [*Interruption.*]

[89] **Lord Elis-Thomas:** I am extending this session, because it is so interesting; you know how I am. [*Laughter.*]

[90] **Vaughan Gething:** I have been interested to hear what you have said on a number of topics, including incineration, because the example in Cardiff to which you referred is in my constituency. I am not sure that I understand your definition of controlled waste. You said that there should be enough combustible controlled waste to match the demand of that particular plant and others. I am also interested in the heat by-product of incineration, because my understanding is that, with that plant, there is potential to use excess hot water—run-off hot water—but that that is not built into the plan. The excess hot water is not going to be used at the moment, but it appears to me that, if we are to have these plants, we should make the best use of them. I am not clear as to why that is not happening, and I am interested in your views on whether there should be a requirement to plan for the use of that excess product, to ensure that it is used properly.

[91] I am also interested in the point that Rebecca Evans raised about public perception. I have said this before to Members individually, but in Copenhagen they are about to build a new incineration plant along with a dry ski slope on the edge of the city. You could not get a more different view of public acceptance of energy from waste through incineration than that. You have touched on this before, but why is the public perception battle different in other countries? Equally, the figures are stark on the huge difference in district heating in other European countries—particularly Denmark; why is that? What could we do here if we wanted to achieve something different? I am not only asking why they have got it right, but also what we could be doing now to make better use of what appears to be a more efficient way of going about things?

[92] **Mr Parish:** First of all, I will try to answer on the definition of waste without putting on an anorak and my legislation hat. The Control of Pollution Act 1974 defined waste. There was no real regulation of waste management before that; the Public Health Act 1936 did everything. It defined waste as controlled waste—that is a legal definition—and it comprises of household, commercial and industrial waste. It does not include agricultural waste, which is covered by other legislation. It covers any waste produced by people in a domestic or commercial setting—the waste from this building is commercial waste—or through an industrial process that is not defined by other legislation. Municipal waste comprises about 15% of controlled waste; it is quite a small percentage of the total amount of controlled waste in Wales. Local authorities have legal responsibilities for dealing with municipal waste from the household or waste that is commercial in nature, but only where commercial producers of waste have asked that of them. If commercial premises do not ask a local authority to deal with their waste, it is not local authority waste. All of the waste that we produce in this country other than agricultural waste and waste from the nuclear industry—there are some sources that are outside of the legislation—is covered by that definition of waste.

[93] If I have not explained that properly, please ask me to do it again. It is one of those things that I know very well but I do not get asked about very often nowadays, to be honest. Does that answer that part of the question?

[94] **Julie James:** Chair, I would just add that controlled waste is all waste that is not contaminated, clinical or agricultural. So, I have put it the other way around.

[95] **Mr Parish:** Clinical is in there, Julie.

[96] **Julie James:** However, it is easier to think of it in lay people's terms like that. So, it is everything that is not defined as something else.

[97] **Dr Esteves:** Plastics and agricultural waste have become controlled now, as well.

[98] **Julie James:** Yes, but just for the purposes of the committee, because we could have—

[99] **Dr Esteves:** A long discussion—

[100] **Julie James:** We could have a discussion of an hour and a half about it. For the ordinary person's understanding, it is pretty much all waste that is not defined as something else.

[101] **Lord Elis-Thomas:** It is all in the papers in front of me, but I will not bother you with it now.

[102] **Julie James:** I can repeat it off by heart.

[103] **Vaughan Gething:** It is the levels of controlled waste that are going to be available—or the residual waste, as it were. The point is forcefully put to me and other Members that this is incentivising keeping waste available to go into incineration, rather than dealing with it through another process, whether it is reuse, recycling, anaerobic digestion or other forms of biomass. Is there really enough residual waste that we could not use anywhere else to maintain the incineration capacity that is being asked for, and is coming through in some of the waste management plans that we are seeing?

[104] **Mr Parish:** As far as controlled waste is concerned, there is a huge amount of residual waste out there, much of it still being landfilled. Ideally, if we focus on the top of the hierarchy and stop waste, we will not need any waste facilities, whatsoever. If we build them now and we are successful in reaching zero waste, which does not mean any waste at all, some of those plants will be over capacity. That is as long as the statutory regulation and achievement is for controlled waste, not just municipal waste. If it remains at municipal level, there will always be capacity for these plants.

[105] **Vaughan Gething:** That is helpful. The other point is—

[106] **Mr Parish:** First of all, I was not asked this, but as far as a modern waste to energy plant is concerned, connecting to the grid is no problem. The plant would not be built unless that had been sorted out. As a result of the overall costs of plants, financial issues do not come into it; the benefits far outweigh the cost for a large plant that will operate for 20-odd years. All modern plants are built with chip capacity. They all have a switch on them, which enables them to use the steam. The problem is the source or the heat sink: where does that steam go? This is why other countries, which had waste to energy plants before us—we were still doing straight incineration when other countries had already moved to waste to energy plants—have built housing close to the plant, in order to use the heat. They had more foresight than this country. It was part of the planning process. To retro-fit is difficult, but it is possible, but in Scandinavian countries, planning is given for communities with an incinerator, or waste to energy plant. So, all their heat requirements and electricity elements are covered in an integrated proposal. That has been going on for 20 or 30 years in European countries, which is also why there is more acceptance. The other thing is that there are far higher taxes on heating materials in those countries, so it makes economic sense as well.

[107] I was lucky enough to have a look at two modern plants last month, one in Slough and the other in Newhaven. To be simplistic, both those plants have switches on them that allow them to use the heat, but they do not have anywhere to use the heat. That is the problem for any modern plant. They are built on existing industrial estates, where electricity supply to the rest of the buildings is already installed. In your constituency—no, Barry is just outside

your constituency, is it not?

[108] **Vaughan Gething:** Yes.

10.45 a.m.

[109] **Mr Parish:** In Barry, there is the Dow Corning plant that is screaming out for a waste to energy plant. I know that from representations to the local authority. It has a huge heating bill and it would love to have a waste to energy plant—not that the council would, incidentally—because it would phenomenally reduce its running costs.

[110] **Lord Elis-Thomas:** These are planning issues.

[111] **Mr Parish:** Yes, they are.

[112] **Lord Elis-Thomas:** This committee might want to address them in a recommendation. If you could help us with a little more on that, it might be—

[113] **Vaughan Gething:** That is my point. Where you build new incineration, energy from waste plants, you will have this by-product. So, are we just going to say ‘It’s just going to be waste; you’re just going to have to deal with the fact that this hot water is going nowhere’? Is there a way, if we are to have these plants, to make use of them? Are there things that we can do within the planning system that would require that? If there are, what are they and how easy would they be to deliver? There are commercial premises around the plant in Cardiff, and it is not that far away from residential premises, which is part of the reason why there has been fairly significant opposition, a lot of which is based on the transport issue.

[114] **Mr Parish:** I tend to agree with that. Transport is a huge issue. The problem is retrofit. Looking at the proposal in Cardiff, if the timing had been right, it would have been an ideal heat source for the sports village. However, they have to run together. In planning terms—you will know this better than me—the needs of the sports village were not considered in relation to the needs of the authority in dealing with its waste. There needs to be far more joined-up thinking, and the planning system can go a long way to do that, but it will not be a decision that can be made overnight. Long-term planning is involved.

[115] **Lord Elis-Thomas:** I have to bring Mick in, because he has been so patient—

[116] **Julie James:** Chair, I do not want to ask a question, but may I add one piece of evidence?

[117] **Lord Elis-Thomas:** Yes, please.

[118] **Julie James:** At the moment, an outlet for heat is a planning consideration, but it is not an overriding planning consideration. It is one of the issues that are considered in a planning application, but the fact that you do not have a customer for the heat does not kill the planning application. It does in some countries, but not here.

[119] **Dr Esteves:** That is right. The Scandinavian countries have a significant heat demand, but there is also a big difference. In the UK, you are looking at the private sector delivering an incinerator very much on a profit basis, whereas in Scandinavian countries, that is not the case; there, it is done on a community basis, covering costs and employment and delivering low gate fees for waste treatment as well as heat output. So, the whole emphasis is different.

[120] **Lord Elis-Thomas:** That is a whole sustainable development approach, if we take

that seriously.

[121] **Mick Antoniw:** I have a relatively brief question to try to clarify part of your written evidence. On page 10 of our papers, you refer to the development of technology as still rapidly evolving and that, to maximise the environmental and economic benefits and reduce impacts, there are certain areas of research going on. You also say that part of that research often lacks academic rigour and is done in uncontrolled conditions, and you refer to the short-term nature of the studies and the inconclusive results. Can you explain exactly what is happening? It sounds to me as though a lot of development is taking place, but that a lot of the research and analysis is unreliable.

[122] **Dr Esteves:** About 15 years ago, one anaerobic digestion experiment could take a year, or maybe one and a half years. The general retention time of a digester for solids may be around 30 to 40 days, sometimes longer. In order to identify the impact of adding something to it or changing something, for example, you will require about three retention times. So, by the time that you have done one experiment and then another one, it can take forever. You would then repeat the experiment. In the conferences that I have attended in the last few years, I see that that emphasis has changed slightly. Quite a lot of very small projects are being delivered that are not always conclusive, because they were not done under totally controlled situations. I am not saying that full-scale operations can operate in laboratory controlled conditions, because they cannot. You have variations coming in all of the time, for example, with the variety of waste, but you need to understand the principles of things. You may look at the literature on trace element addition, for example, you may find results indicating that addition is positive, not clear or not positive from different studies. The evidence that I wanted to put across was that it is important that the industry contributes to the research and development; however, industry tends not to contribute to long-term projects and will not contribute to things that are done in controlled and modified conditions so that a better understanding of the biochemistry occurs. The industry will contribute, but only to short-term studies, and it will want conclusions from those. In fact, it wants a conclusion before the study is done. *[Laughter.]* There is a need for the Government to support industry so that conclusions will not be reached from just a month's study that has been performed on a very small scale.

[123] **Mick Antoniw:** Do you envisage any particular risks from the unreliability of the evidence on which some of the technology is proceeding?

[124] **Dr Esteves:** There are risks in building plants where certain feedstocks have not been categorised that well. You may find that the feedstock brings too much ammonia or does not bring the elements that you were thinking of mixing. There could also be operational issues. These are continual learning processes. I would rather have that learning process done in laboratories and at pilot scale, and only afterwards implemented in full scale. Anaerobic digestion delivers, but it can deliver a lot more. It is like buying a car 20 years ago and driving it from here to London; cars have changed and are now more efficient. There is an improvement that is required for AD. In fact, we need to get other products, not just methane, but things such as membranes can extract fertilisers, instead of having to truck all the water to take it to agriculture, smaller volumes could be trucked around. There are always developments in these technologies. AD plants can deliver now, but they will be able to deliver better in the future.

[125] **Lord Elis-Thomas:** Thank you, Dr Esteves and Clifford Parish, for your contribution. Please send us any further material that may come to mind. I would be particularly interested in the demonstration project that may or may not take place in the north-east. That would be of interest as, I am sure, would some other issues that Members would have picked up. Diolch yn fawr.

[126] **Dr Esteves:** Thank you for the opportunity.

[127] **Russell George:** I would like to put on record, as a member of the Petitions Committee, that we have a petition on energy from waste. The petitioners have submitted a number of questions that they would like to ask, but, really, they are addressed to the committee rather than the witnesses. They may be listening to the proceedings today, and I did not want them to feel that their questions had not been asked. With your permission, Chair, I would like to suggest that they listen to today's proceedings and write to you with their considerations of what they have heard today for the committee to consider.

[128] **Lord Elis-Thomas:** I am very grateful to you, as a member of both this committee and the Petitions Committee, for raising that issue. If you receive any communication at the Petitions Committee, you are welcome to pass it on to us. We would then respond and ensure that any questions that are asked are considered by us as part of the evidence.

[129] **Russell George:** I am grateful for that.

[130] **Lord Elis-Thomas:** There will then be a response, either from this committee or from the Petitions Committee.

10.55 a.m.

**Ymchwiliad i bolisi ynni a chynllunio yng Nghymru—Tystiolaeth ar fïomas
Inquiry into energy policy and planning in Wales—Evidence on biomass**

[131] **Yr Arglwydd Elis-Thomas:** Croeso **Lord Elis-Thomas:** Welcome back, Kath. yn ôl, Kath.

[132] You are both very welcome—Darren Williams and Kath McNulty. Who would like to open the session? Do you have any further presentation? Kath, you have been here before, so perhaps you would like to start. We are very interested, obviously, in the commercial aspects that we will discuss with you.

[133] **Ms McNulty:** I was invited by the Environment and Sustainability Committee to respond to the consultation in September. I did not respond at the time simply because the Confederation of Forest Industries does not really have a policy on what level the decision making should happen at. However, I appreciate your invitation to be here today, I have looked at the responses that you have received so far, and it does seem that many of them were from people who had views on windfarms. I would urge you, and urge the Government, not to make a rash decision to move away from windfarms and to look again at biomass, without considering a balanced mix of renewables, because there are resource issues with biomass. My colleague Darren will certainly say more about that in a few moments' time.

[134] I would like to remind you about the resource issues with biomass. Forestry in Wales supports 10,000 jobs directly, a further 8,500 indirectly and contributes £841 million to the economy. Most of the timber resources in Wales are currently being used. In 2010, ConFor commissioned a study to look at the biomass resource over time. We looked at the period from 2007 to 2025 to see how much spare capacity there was to support the new biomass industry. We found that, from 2020, the biomass supply will decrease, unless we are able to bring more forests and resources on-stream. Certainly, in Wales we have an excellent target of 100,000 ha by 2030—perhaps I will say more about that in a minute—but we will not be able to meet the biomass demand.

[135] Jobs in the industry are actually tenfold more than what you would get if you just

burned that wood. However, you can use materials such as brash, branches, and sawmill co-products—that is, chips and sawdust—as well as waste wood, of course, to produce heat or energy. You have to take into consideration how far you are transporting that material, and again that is something that Darren will elaborate on, because the further you transport it, the more carbon dioxide you release into the atmosphere through transport. You have to think about being local—as close to source as possible—with these schemes.

[136] Carbon is stored in wood, so, ultimately, the best way of using that carbon and that wood is in solid wood products, which means increasing the use of timber in construction in Wales rather than burning it. At the end of the day, once that house has passed its sell-by date, you can always burn the wood at that point, as waste wood. What I would appreciate, if your committee could do this, is that you recommend to the Government that, instead of getting stuck on how we go forward with renewable energy, we actually focus in terms of biomass on making sure that we have a biomass supply into the future.

11.00 a.m.

[137] We can do that by planting new trees and new woodlands. We have a target of 100,000 ha by 2030 and we have the Glastir woodland creation grant, so we have a grant scheme as well. However, we are finding a number of problems with that. The Countryside Council for Wales's officers are often reluctant to allow new planting. Secondly, there is also an issue with the next rural development plan. It seems that you will no longer be able to claim income forgone for revenue lost by covering your land with trees, and that is an issue that a lot of people in Wales are concerned about. Thirdly, at this point in time, all the farmers who have land in Tir Gofal or in any of the legacy agri-environment schemes are not allowed to plant trees on their land. So, those three points are hindering new woodland creation, which is part of the Government's target.

[138] We could bring all the unmanaged woodlands in Wales into management. A huge amount of woodland in Wales—90,000 ha—is unmanaged. Many of those woodlands are on farms and that work could be combined with farmers installing heating schemes in their houses or villages, and we could use those trees and start to manage those woodlands so that the thinnings could go into those schemes.

[139] Glastir woodland management grants are replacing Better Woodlands for Wales grants. At the moment, due to the way in which the scheme was set up, it will result in fewer woodlands being managed. This is a serious issue; we have raised it with the Minister for environment, John Griffiths, and we will be raising it shortly with Alun Davies. If there is anything that you can do in relation to that, Glastir woodland management grants need to be looked at again.

[140] Encouraging the use of Welsh timber in housing projects in construction in Wales is another issue. I am sure that you are all familiar with Tŷ Unnos, but that is only one kind of application. There is a huge amount that we can do. Please support that industry. In my notes I have a little note about agricultural crops, but I will leave it to Darren to talk about agricultural crops and biomass.

[141] So, my conclusion is that we can bring more biomass to market, but we need to be careful about how much is there and how much we require. It is more important that we store our carbon in solid wood than that we burn it. We need to ensure that we do not just burn all of the woodlands that we have in Wales and that we use them to the best effect to store carbon and ensure that we have heat and construction materials in the future.

[142] **Lord Elis-Thomas:** Your point on Glastir was very well made to this committee and we will pursue it. I am also aware that you have sourced most excellent timber from a forest

not far from where I live and have used it in your beautiful cottage. So, you are setting a good example.

[143] I now welcome Darren Williams. Would you like to say something about what your business, Eco2, does, to ensure that we are fully aware of the variety of businesses that we are talking about?

[144] **Mr Williams:** Thank you for inviting me here. The first thing that I should do is apologise that my paper does not really address the reason you want me here—it does not discuss biomass much. However, it is probably relevant to the business description.

[145] Eco2 is a small renewable energy development business. This is its tenth year in business and we are quite proud of lasting that long in a difficult climate. Next year, I will have been in the renewables industry for 20 years, and I am 44, so my whole career has been in the development of renewable energy projects.

[146] Eco2 started as a subsidiary of an electricity-supply business based in Cardiff, and we had aspirations to generate 20 MW of wind energy and a three-year business plan. The supply business was going to give us the power purchase agreements, and that was it. David and I started the business and were looking forward to it, because we had had a dogged time trying to do biomass and waste projects in another company. That was tough given the change in legislation at the time.

[147] So, we embarked on this effort on wind. We really wanted to do wind because biomass was too tough, and it was just at the start of the banks trying to get to grips with the renewables obligation certificate regime—at the time, there was 1 ROC for everything. However, ROCs only work for wind. We never thought that a biomass project could get off the ground. In 2003, we were introduced by the Welsh Government to a group of guys in Port Talbot who were looking to develop a biomass project. That was the Western Bioenergy project. We managed to get that project financed in 2005, and it was built and completed in 2008. I am pleased to say—I will be hauled over the coals if I am wrong—that I think that it is still the best performing biomass plant in Europe. So, it really is a great success story.

[148] **Lord Elis-Thomas:** It cannot be better than the boiler that we have at the back here. *[Laughter.]*

[149] **Mr Williams:** I am sure that it is not, but it is a good one. It has given us a good reputation in the industry, which is important when you are looking to borrow money from banks. It has been good to have a good news story in biomass, given that biomass projects have had a torrid time from a financing point of view.

[150] We then hit a few stumbling blocks in our wind development activity. I will not go into detail, because my paper gives an indication of that. However, what we did then, in 2006, is that we said, ‘Right, we have experience’—we had been involved in getting on for 250 MW of biomass generation at that time, throughout the world, but with a lot in the UK—‘so let’s use that and steal a march on the game.’ At that time, 1.5 ROCs had been introduced, and so we decided to target the sector. Our particular experience was in straw, in that we had built the UK’s first straw-fired power station in Cambridgeshire under the previous company, so that was the sector that we targeted. So, we embarked on that in 2006 and we have managed to get one over the line, which I will go on to shortly. We were rolling along quite nicely and then, of course, the credit crunch hit. So, there has been a delay that has hit everyone; you must factor that into the equation in terms of the time that it is taking to do our projects.

[151] On the project that I referred to as being a success, just before Christmas, we raised

equity and bank funding for a 38.5 MW straw-fired power station in Sleaford, Lincolnshire. We raised £170 million, and that project is now under construction. We are managing the construction and will subsequently manage the operation. So, biomass is really important for us; it is where our core business is. We still do a bit of wind here and there and build up our portfolio, but we feel that we have the expertise in biomass to make it in the marketplace.

[152] Kath talked about fuel and she hit the nail on the head. The three important things about a biomass project are fuel, fuel and fuel. There is a lot of information, and, in preparation for today, I looked at a few documents. One of them was the ‘UK Biomass Strategy’ of 2007, which suggested that there is about 18 million tonnes of biomass in the UK, which would equate to about 2.7 GW of installed capacity. Turning to Wales, the Wales energy route-map suggested that 350 MW to 700 MW of biomass capacity could be installed in Wales and make a contribution to the renewable energy target. Then, coming a bit closer to today, the bioenergy action plan takes a more realistic view on how much fuel is available, and suggests that around 230 MW of biomass capacity could be installed in Wales.

[153] Unfortunately, the assessment of resource is not that useful in trying to do a project, because, while the resources are out there—and, as Kath said, there are other industries competing for this material—getting the contracts is the hard bit. Getting the contracts that allow the banks to put money in is the really hard bit, because, first, you need a bankable entity on the other side, and a lot of the biomass suppliers are small individual companies, such as waste recycling companies. Secondly, you need contracts of a long-term nature—you typically need them to be for at least the term of the bank debt—we have a target for 12 years of bank debt—or a little bit beyond that. Thirdly, the banks need capacity over and above your contract at a multiple sufficient to give it comfort that, if one of your suppliers falls away, you will be able to get hold of more biomass. So, the reality is that we will never be able to get up to the full capacity of the available biomass, in the UK or in Wales, because we will always need that headroom to give the banks sufficient comfort to put the money in. Having said all of that, we are still developing biomass projects. It sounds as if I am all doom and gloom, but I think that there is a great industry for biomass in the UK and certainly in Wales.

[154] My biggest concern at the moment is the UK Government’s preoccupation with large-scale projects in relation to utilities. The ROC banding review took a long time to come out last year. It cost us five months in the funding of the Sleaford project. The delay in that banding review coming out cost us about £1 million. While what it came out with was right for us, some of the messages are causing us concern, in that the Government seems to be targeting the conversion of coal plants to biomass and coal-firing plants. One clear message that comes out of the ROC banding review is that the Government is not really supporting large-scale dedicated biomass projects now—at least, that is my reading of it; it might mean something different.

[155] There is a preoccupation with large-scale generation, which relies wholly on imports. I struggle to see how the UK will benefit sufficiently from imported biomass. That puts money into the countries where the fuel comes from. It also raises the same issue as that we have with regard to importing all of our gas at the moment. It feels like the wrong thing to do. However, I would say that, because Eco2’s philosophy is to locate projects in the area in which the biomass is produced. The fact that the biomass comes from within relatively close proximity to the plant means that local jobs are created in fuel supply. It also means that we are not paying too much for transport—every time you touch biomass, it costs money. Perhaps more importantly, it also allows us to use the heat from the project. With large-scale projects with dedicated coal-conversion, you will never use the heat; you will not be able to put in place the heat infrastructure to make sufficient use of the heat. Therefore, my first plea to the Welsh Government is to counsel UK policymakers that the answer does not lie solely in these big imported fuel projects.

[156] The other thing that we need to consider when looking at biomass projects is the availability of funding. There is not as much of an issue with coal-conversion plants and co-firing plants, because the utility companies will raise commercial finance for them and will not need to worry about debt. However, for the project that we did just before Christmas, we raised about £110 million in bank debt. We worked with four banks, because none of them would look at a ticket size of more than £35 million. For a 450 MW project or a 300 MW project that needs £400 million or £500 million, the banks will still have a ticket size limit and there simply are not enough banks in the UK to do it, and there are certainly not enough banks with biomass experience.

[157] So, I would like to make two points. First, we should look at utilising what we can within the UK. Let us look at indigenous projects using indigenous fuel, and let us look at using the heat generated by them. Secondly, let us be a bit cautious about how many projects are going to come forward, because there simply is not the debt in the marketplace to build them.

[158] **Lord Elis-Thomas:** Thank you very much. David Rees will kick off the questions, then Antoinette and Julie.

[159] **David Rees:** Good morning. I was very interested in what you had to say about the sustainability of biomass plants and their local sustainability in particular, because my constituency has Prenergy based in it, which uses wood pellets that are all imported from Canada at the moment. There is also a plant in Margam, which seems to source most of its biomass locally. Have you made any calculations as to the size of plant you can have if you want projects that are locally sustainable?

11.15 a.m.

[160] **Mr Williams:** Without giving too many of our trade secrets away, we have a target size. For straw projects, we typically target 35 MW to 40 MW, because we situate our straw projects in Lincolnshire and the eastern side of the country, which is the bread basket of the UK. In that area, around 4 million tonnes of surplus straw is produced. Every 40 MW project needs about 230,000 to 240,000 tonnes. So, theoretically, there is enough room for about 16 plants, but, in reality, it will be probably about four, because of what I talked about earlier.

[161] It is a little different for plants that use wood. For us, it varies throughout the country. The wood market is really hot at the moment, and there are many biomass projects out there. Many existing wood users, such as the board industry and other users, feel as if they are competing for the same fuel. I do not think that they are, but there is a general concern about that. To make plants financeable, you need at least 15 MW; to make them work with the wood available in the area, I would say the maximum is about 25 MW, but that is purely my feeling for it. At that scale, you do not have too much heat that needs to be offloaded, and it makes it workable so that you can provide a fairly decent heat supply from a plant of around 20 MW. That ups the efficiency to the levels where we need them to be.

[162] **David Rees:** I assume that that would be clean wood?

[163] **Mr Williams:** No. Inevitably, there is not enough clean wood to do what we need with regard to biomass in the UK. We have to open our eyes to recycled fibre and things from the waste streams. There are also different grades. How dirty is dirty? Without being too condescending to other developers, you would struggle to have a technology that can burn anything. Waste to energy plants are able to burn anything because they take in a waste stream that is highly variable—you do not know what you will get. However, those plants operate at low availability because they need to be constantly fixed, and they are very

expensive because they have to use such high-quality metals internally. To get high availability and high efficiency from a biomass plant, you have to be quite tight in your specification of what you will take. Recycled wood that is slightly out of specification will eat your boiler like nobody's business; it will reduce the availability of your plant. A plant that is designed to use waste wood could use cleaner material, but then that would not be economically viable, because clean wood is more expensive than waste wood. So, you will probably have projects that will target certain material sectors and certain qualities of material.

[164] **David Rees:** How do you find the permitting authorities and planning authorities in relation to both types of plants in that case?

[165] **Mr Williams:** After whingeing in my paper about planning in relation to wind in Wales, I think that planning in relation to biomass is okay, when you look at the number of biomass projects that have planning permission in Wales. The reality is that you are building something that has a traffic issue to begin with, because you are bringing in fuel, and that produces emissions. Those two issues will always raise concerns among local people that must be addressed, and it is up to the developers to address those. Even tighter emission regulations are coming forward from Europe—I do not know whether you are aware of that, but the emissions directive will be phased in over the next few years. Fundamentally, emissions are not a problem. With the right technology and the right clean-up equipment, emissions are not the issue, but, from a planning point of view, you will always have to explain that to planning committees and the local population. I do not have a problem with the rigour of the process that biomass projects are put through, because I am confident that we have all the answers. Planning in relation to biomass has been an okay experience for us. Neath and Port Talbot council was incredibly supportive of the Western Bioenergy project, and that project happened as a result of that local planning authority's enthusiasm for it, not, as in the case of some wind projects, in spite of the local planning authority. The biomass projects deserve to be put through a rigorous process; they should be tested thoroughly.

[166] **David Rees:** There is concern about the larger ones.

[167] **Mr Williams:** On the larger ones, emissions-wise, again, I do not think that is the big issue because, if you throw enough money at it, you can clean up the gas. I believe that there was a fire at Tilbury this week and that raises some other questions, of course. One of the other funny things about wood is that, especially if it is a bit damp and you leave it in a big pile for a while, it heats itself up and, eventually, if you leave it long enough, it will spontaneously combust. I do not think that was the issue at Tilbury; I do not know the details, but that is inevitably going to raise concerns about the tens of thousands of tonnes that a large-scale project would need stored on site. More fundamentally, my issue with the large-scale projects—and, again, it is a personal issue—is that they are importing material and they are never going to make use of the heat. You also get less bang for your buck from an employment point of view, because, relatively speaking, you need fewer people—the economy of scale works in everything. I think that having centralised, large-scale biomass generation is to waste an opportunity. The whole point of biomass generation and renewable energy is that you distribute your power generation and your heat so that you are not having losses on the network and you do not have to put in new, massive power lines to transport the electricity. It is being used where it is produced.

[168] **David Rees:** I have a final question for Kath. With regard to the traditional wood industries, do you see wood for biomass as an extra economic benefit? Given that there are parts of trees that are not usable in the traditional wood industries, can you get economic benefit from them by using them in biomass plants?

[169] **Ms McNulty:** Absolutely, and certainly woodland owners see the competition

between traditional timber users and the biomass projects as being really good news because it means that prices go up. Certainly, the two work together. The concern from the timber industry is that, because of the subsidies through the renewables obligation, biomass companies, especially the larger ones, would have an unfair buying power over the timber businesses in Wales, which are actually quite small scale in the scheme of things. Does that answer the question?

[170] **David Rees:** Yes.

[171] **Ms McNulty:** I will just add, David, that for woodland management to be financially viable, you are talking about 10 ha; you need a woodland of 10 ha for it to make sense. So, if you are dealing with smaller farm woodlands, then you could possibly work across several farms, but the costs of management will go up. The other thing, and correct me if I am wrong, Darren, is that I would work on the basis of a 50-mile maximum limit for transporting material for it to be considered locally sustainable. Would you agree with that?

[172] **Mr Williams:** It does not quite work out that way if it is transported by train, but you need a certain scale to make it worthwhile to transport material by train. For transport by truck, that would be close to our target; in fact, we have a target of 30 miles.

[173] **Ms McNulty:** So, for example, a scheme in the Valleys, where there is a lot of timber, would make much more sense than one in the north end of Anglesey.

[174] **Antoinette Sandbach:** Kath, you said that a 10 ha woodland is the minimum size. You also talked about the importance of using wood as a building material to lock up carbon, with it then being able to be used for biomass later on. What species do the Glastir scheme need to support in order to support wood that has a longer life, as it were, in terms of being used for building material and then, potentially, being used for biomass? Are those species supported by the proposed Glastir scheme or not? Finally, I assume that you are familiar with Clifford Jones Timber Limited in Ruthin. Can you explain how it uses the wood product and the by-product for the biomass production?

[175] **Ms McNulty:** The industry in Wales relies pretty much entirely on softwood. Dafydd came to my house and he saw that my kitchen is made entirely from Welsh hardwood, but that is a much more difficult process. It is very small scale. We have issues with the grey squirrel, which does huge amounts of damage to our hardwood and it means that owners lose interest. It is so difficult to manage and control the grey squirrel that they give up. So, our broadleaved trees in Wales are mostly habitat or scrub and they do not amount to much. The Woodland Trust does a lot of work protecting veteran trees, which is absolutely excellent, but in terms of producing timber and money and jobs for the economy, unfortunately, they do not do much. So, as the situation stands, we rely mostly on our Sitka spruce and other softwood species.

[176] Glastir is an agri-environment scheme and so it has to deliver environmental benefits. Therefore, it is difficult, it seems, to justify managing woodlands that, in the future, may yield financial benefits. England and Scotland have got around this and I am having a conversation with people in the Welsh Government about what actually constitutes environmental improvement. I would argue that, if you have a 100% Sitka spruce forest and you are changing 30% or so to broadleaved or mixed woodland, protecting the river habitats, you are making considerable environmental improvements. So, that is one of the discussions that need to take place. At the moment, unfortunately, Glastir woodland management will not bring more woodland into management. It will not continue to support woodlands that are currently being managed. Therefore, from a biomass point of view, and from a resource point of view in the future, I think that there is a real risk that Glastir woodland management grants will be damaging.

[177] **Antoinette Sandbach:** In terms of the Clifford Jones company, for example, could you indicate how that works to lock-up carbon and what it does with the by-product?

[178] **Ms McNulty:** The Clifford Jones company started off as a fencing manufacturer in north Wales and realised that a by-product of what it was making was sawdust. First, it tried sticking the sawdust together and making a kind of long briquette. I do not know whether any of you have used them, but those briquettes are amazing—you need to be careful that you do not put too many on a fire, because you will cook. From then on, Alan Jones, who manages the company, was able to access Government money through the wood energy business scheme and to put in quite a large plant manufacturing pellets. He has done that very successfully, although I believe that he has gone quite grey in the process. He produces an excellent quality product, which he sends all over the UK, and I believe that he might also export some. So, he has done extremely well.

[179] **Antoinette Sandbach:** In terms of sustainability, is that the kind of business support that you see supporting small-scale biomass, rather than large-scale biomass? Perhaps Darren Williams could answer that question.

[180] **Mr Williams:** I have to confess to not knowing too much about small-scale biomass, but, inevitably, you need the material in a form that can be used by small-scale boilers and a pellet or briquette is the only option. The renewable energy industry has to be a mix, and the small scale can sit alongside the large scale. Certainly, when we do our biomass projects we never envisage cutting down trees to put them into the plant, because, from a financial point of view, you do not want to compete with the markets that use that material, because they can probably pay a bit more.

11.30 a.m.

[181] You mentioned the renewable subsidy for biomass, and 1.5 ROCs is just enough to get a plant financed. However, even then, you have to keep very tight control of your fuel costs. There has to be room for utilising recycled products. Sawdust would be your worst nightmare in a big plant, because you cannot control its combustion. However, utilising sawdust to make pellets or briquettes for smaller-scale domestic or commercial biomass boilers is brilliant and that is exactly what we should be doing.

[182] **Antoinette Sandbach:** Kath, you talked about the management of woodlands. How long does it take for a Sitka spruce to grow to a size at which it can be used?

[183] **Ms McNulty:** That is a very good question, Antoinette.

[184] **Antoinette Sandbach:** Also, in terms of managing woodlands, what are the by-product opportunities? You have briefly mentioned brash, but until recently that was not used, so perhaps you could indicate where there are opportunities to create more biomass from woodlands, if they are managed.

[185] **Ms McNulty:** Sorry, I have forgotten the first question.

[186] **Antoinette Sandbach:** How long does it take Sitka spruce to grow?

[187] **Ms McNulty:** Sorry about that. I got home at 11.30 p.m. last night and set off at 5 a.m. this morning, so I am feeling a bit tired. Sorry about that, Antoinette.

[188] **Lord Elis-Thomas:** You can always write to us when you feel better. [*Laughter.*]

[189] **Ms McNulty:** Sitka spruce certainly have an advantage. You are talking about a 45-year rotation. With oak, you are talking about 80 years, at a minimum. So the speed of growth of Sitka spruce is much greater. We talk about yield classes, and for the Sitka spruce you could easily have 24, so that is increasing by 24 tonnes per hectare each year, so the increment is massive. For oak in Wales, it is about 8. There is a big difference between a growth rate of 8 and one of 24. You need to look at Sitka spruce plantations and softwood plantations as being crops, in the same way as a field of wheat, except that the timescale is quite different. You can use that forest for recreation, but, ultimately, it is there to provide a resource for the country for the future. Instead of cutting it down every year, you cut it down every 45 years. What was your second question?

[190] **Antoinette Sandbach:** It was on by-products, so, brash, and I think that you also spoke about thinnings. I also asked what the implications are if the woodlands are not managed.

[191] **Ms McNulty:** When biomass plants started opening—Darren's was a good example—woodland owners looked at how they could maximise their products. In the past, brash has been used to cushion and protect the soil from heavy vehicles, for example. However, not all of it was needed and some could be recovered. We have developed a system that brings brash together in a bale—you end up with something that looks like a witch's broomstick. Those bales are then burned to produce heat and thus electricity, but not all plants are able to use brash bales. We have also looked at extracting roots and using those, but we need to be careful about the nutrient cycle. Darren was telling me earlier that the plant in Lincolnshire will put the ash from the straw that it has burned back on the soil. So some of the nutrients will be replaced, and perhaps in a way that is easier for the soil to absorb. Was there a third point?

[192] **Antoinette Sandbach:** I think that that was it, actually. Thank you.

[193] **Mr Williams:** The one thing about brash, because we do use brash in the Western Bioenergy project—just to give you a flavour of how unnecessarily complex the whole thing is—is that you have to be very careful about the number of pine needles left in the brash bales because they contain chlorine, which is what damages the boiler. Also, believe it or not, when you apply to Ofgem for your ROCs, you have to discount the energy contained in the plastic twine on the brash bundles. That is audited; you have to do a calculation based on how much twine is on the brash bundles and discount that off your energy production in your application to Ofgem. There are issues with everything. We use it, and it took us a while to get used to using it. However, again, that was what the plant was designed to do. That was our thought process with the Forestry Commission; we were trying to use the stuff that is not grown for use by an existing manufacturer.

[194] **Julie James:** I am interested in how we could adjust to some of the interesting issues that you have raised in terms of regulation, planning and so on. The ROCs and FIT regimes are currently pretty blunt tools, as you have described, but they could be used more creatively to encourage local diversified energy and discourage imported energy, by allowing more ROCs, for example, for smaller projects. The Welsh Government does not have control over that at the moment, although it would very much like to have it. In addition, are there incentives in the planning system? So, first, do you agree that we could incentivise it like that, should we ever get hold of the control, or lobby the UK Government to do something similar?

[195] My second question is on planning and permitting controls to encourage different uses. I am interested to know your thoughts on incentive schemes for using trees to make houses, using waste to produce energy, and biomass and compost, given that quite a lot of in-vessel composters use woodland waste for compost production. What can the committee recommend that the Government does, with regard to its planning regulations and its

incentive schemes, to encourage the sorts of things that we have heard about? I would very much like to encourage small diversified plants using local biomass, not imported biomass.

[196] Thirdly, to state a personal position, I do not agree with putting land that could be used for food production into production for biomass fuels. I apologise for this complex question—I have been told off by my questioning instructor—but how can we disincentivise that use and incentivise the proper use of the land that is appropriate for woodland cropping, for example?

[197] **Lord Elis-Thomas:** I thought that that was a very good question. [*Laughter.*]

[198] **Mr Williams:** I will answer the last question first, given that it is probably the most contentious one. In reality, I do not think that there is going to be a competition between fuel and food. The reason for that is that our straw project, for example, uses a by-product of food production. The reason that that by-product is there is that wheat prices are so high—and I cannot see wheat prices falling much—that growing it is the best thing that farmers can do. I do not see the world's population decreasing in the foreseeable future, and there are issues with regard to climate change and food production in many different countries—I know this is a wide subject—but all of the efforts to put in energy crops have not been that successful, because they tie farmers in too long into growing a single material. For example, once *Miscanthus*, an elephant grass, is planted, farmers struggle to get rid of it, which stops them being able to adapt to produce other food material. The other thing is that farmers always used to look to use the awful land on which they would never grow wheat to put the energy crops, which meant that those crops failed.

[199] If you look at all of the market information, and certainly the 'UK Biomass Strategy' in 2007, you will see that they were trying to plant something like 100,000 tonnes of energy crops and that they had started in 1997. I do not think that energy crops, in the UK, will be a viable solution in the long term; they will never compete. We can look at other countries—

[200] **Julie James:** So, you do not think that we should incentivise or de-incentivise? Are you saying that it is happening naturally?

[201] **Mr Williams:** We must be careful about the ROC mechanism. If you increase the use of energy crops, say by giving them 2.5 ROCs, or something ridiculous like that, then you would be in danger. At the current levels in the UK, we are okay. When you look at imported projects—I am banging on about them again—it is a different story. Our UK subsidy for large-scale imported projects, which includes the whole remit of projects that import, means that there is a real danger of this fuel-instead-of-food problem for other countries. Our subsidy is quite high because our costs are high in the UK, so we need the subsidy to get these projects to work, but they are going to other countries to buy cheaper fuel. There is a real danger that, if we get that wrong, then other countries will struggle with this fuel-or-food debate. I do not think that it is an issue in the UK; I agree with you that we have to protect our food production, but I think that the economics do that.

[202] **Ms McNulty:** May I add to that? From a woodland point of view, you could take an acre of quality farmland that would be ideal for growing quality trees, but that acre is worth £5,000. If you put trees on it, it has lost £1,000 instantly, just because you have planted those trees on it. It makes forestation schemes very expensive. The issue that we have here is that woodland could cope with the land that is not as good—that is, grassland that has not been reseeded for a long time—but that land is often classified by CCW as being very good habitat. I can understand that, but if you compare the habitat of that grassland with the habitat that you would get if it were woodland, you would see that you would be gaining something by planting trees on those more marginal bits of land. So, in terms of forestry happening on prime agricultural land, that will not happen—it simply does not make sense economically.

[203] **Julie James:** I asked the question because I live in a place where a large number of the farmers around me have taken to planting Christmas trees, which I have a major personal problem with—although not, I stress, with the farmers. It seems to me to be quite a problem. I know that that is not forestry in the traditional sense, but a Christmas tree epitomises a number of the problems that we have just been discussing, really. It does not lock the carbon up for very long, and it is not much use afterwards, and people do not recycle them, and so on. That has been on prime agricultural land.

[204] **Ms McNulty:** It is interesting what happens to that land as well because, once they have put Christmas trees on it, can they claim that that is an agricultural crop, or does it mean that that land has become forested?

[205] **Julie James:** They are claiming it as an agricultural crop because it is cropped annually.

[206] **Ms McNulty:** So, they could take those trees off and go back to farming.

[207] **Julie James:** Theoretically, yes.

[208] **Mr Williams:** The second part of the question was about ROCs, and I am sure that they could be adjusted. As you rightly say, ROCs are a pretty blunt instrument in supporting renewables, and one size has to fit all to a certain extent. However, there is a strong case for encouraging sub-50 MW projects and perhaps even sub-5 MW projects. For the sub-50 MW projects, I would leave the ROCs as they are; I do not think that any more is needed. It is tough to do projects at 1.5 ROCs, but if you give it any more, it will create the problems that Kath was talking about, with competition between fuel and other uses.

[209] Going back to large-scale projects, the ROC banding review states that, for co-firing, you get your ROC and then you get 0.5 ROC for an energy crop and 0.5 ROC for heat and, potentially, that creates the issue that you alluded to in your third point. I just think that that cannot be right. I do not know the economics of the large-scale plants because I stay away from them, but the economies of scale must mean that there is a danger of giving them large windfalls. There has to be a reason why RWE npower is converting its coal plants to biomass, and it must be because of the potential windfall that it will get. Last time I checked it was not struggling for profits, was it? RWE npower does pretty well overall, so I think that there is a reason why it is doing it, and there is a danger of the support mechanism being too lucrative.

[210] **Julie James:** I have a follow-up point on that—it is a sort of technical area. One of the other issues that we have had in front of the committee on a large number of projects is the juxtaposition of the permitting regime and the planning regime.

11.45 a.m.

[211] Some of the issues with biomass relate to the classification of the mass going in as a product, such as whether it is a waste stream, what permitting regime you have to cope with and so on—let us not go into the complexities or we will be here for three weeks. Are there things that we could look at to simplify or incentivise particular uses via the permitting scheme? For example, if you use tree by-products, you use a particular permitting regime, but if you use whole trees, there is a slightly different regime. I know that the Environment Agency has started to look at some of that, but does the industry, and ConFor, have a view on how that works?

[212] **Ms McNulty:** I am not very familiar with that at the permit level. I am afraid that I do not know much about it.

[213] **Mr Williams:** From our point of view, there is already a link in the planning applications that we have done. Very often, at planning meetings, the Environment Agency has attended and has stated the case for the project. The principle is fine, but there is a danger that it gives another reason for projects to be turned down. What you are talking about is a positive thing and encouraging projects to come forward. Whenever you make planning policy changes or environmental policy changes to do that, there is a danger of them going the other way and being utilised to stop everything. So, it would need to be done very carefully. As I have said, there is a fair bit of rigour in the planning process. We have to ensure that that is duplicated everywhere and that the same rigour is applied everywhere. However, we are taken to task on every single project, but I then feel comfortable in building the project because we have demonstrated that there will be no planning or environmental issues for anyone.

[214] **Llyr Huws Gruffydd:** My impression has always been that the public perception of biomass has been pretty positive, but we have seen comments from the RSPB about overextraction and habitat decline, Friends of the Earth has made very strong representations, the Welsh Government anticipates that 50% of biomass will need to be imported, and there is a debate about fuel versus food, and so on. So, I am interested to hear your experience of public perception and acceptance of biomass.

[215] **Mr Williams:** In answering the question, I remind you that we have also undertaken wind projects. Generally, in the areas in which we have done our projects, they have been accepted, but then our straw-fired projects are using a by-product of farming. Most people who live in Lincolnshire are either involved in farming or know someone who works in the farming industry. So, while people who live close to the plant will, quite rightly, have concerns about something new that involves stuff going up a stack and will object, we have seen only pockets of around 10 or 15 people objecting to the projects. That is the sum total of the objections that we have had.

[216] When you look at the wider picture, there appears to be general support for it, because we are injecting cash into the economy. So, generally, people think it is a good idea, but I do not think that people know much about biomass. It is only when they see a planning application that they start to think that they do not want that nearby. However, our experience is that it has been acceptable. We certainly have not had the same experience that we have had in relation to wind power, where thousands of people have written to the local authority to object. However, that can change, because there are groups and Friends of the Earth, for example, is mad keen on wind and tidal projects. As I said earlier, the reality is that we need a mix. We are not going to do everything that we need to do with wind energy, marine energy or with the Severn barrage; we need a mixture of everything. There will always be groups of people who will object, but our experience has been that it is okay.

[217] With regard to waste wood projects, they are in a different category. However, with the projects that we are doing in this field, we try to build on industrial sites where there is a large heat user. You mentioned the renewable heat incentive, and it would be nice if the RHI benefited the project, rather than disincentivised the supply of heat, which is what it does now, because its level does not work. Our future biomass projects, other than straw, will probably be biomass out of the waste stream on industrial sites where there are large heat users, because we think that that is the only thing that will get planning approval. It would be acceptable to local people, because it would be protecting jobs on a number of fronts, and we feel that it is generally the right thing to do.

[218] **Llyr Huws Gruffydd:** It is largely an economic factor, then.

[219] **Mr Williams:** Not for us. We will try to supply heat from our straw projects.

Unfortunately, they are in a more rural location, so the towns are not big enough to do it and there is no manufacturing nearby. However, we will try to provide heat to the local swimming pool and so on. The regime for heat support is really hard and it hurts our economic situation at the moment, but we are doing it, partly because we feel that it is the right thing to do with the material that we have. That sounds like a strange thing for a developer to say, in that money is the be all and end all to us, but we want to do what is right as well. As I said earlier, biomass is a valuable material, because you not only get electricity out of it; heat and other fuels can come out of it as well. It is a brilliant commodity, and we should make the best use of it, not simply burn it and just produce power to make the quickest buck that we can.

[220] **Ms McNulty:** Llyr, do you think that it may be partly down to scale?

[221] **Llyr Huws Gruffydd:** Probably, yes.

[222] **Ms McNulty:** If you have a big company such as Drax burning biomass, it might be less popular than a local village scheme. The same applies to wind turbines, I suppose.

[223] **Yr Arglwydd Elis-Thomas:** Diolch yn fawr i chi'ch dau. Siaradaf gyda Kath yn Gymraeg, gan ei bod yn amlieithog, ac wedi dysgu Cymraeg yn dda iawn. Diolch yn fawr am y dystiolaeth. Diolch yn fawr i Darren am y profiad masnachol o waith y cwmni a llongyfarchiadau ar y cynnydd yn y gwaith hwnnw y tu mewn a'r tu fas i Gymru. Os ydych yn meddwl am unrhyw beth arall yr hoffech ei ddweud wrthym cyn y byddwn yn dod i ysgrifennu ein hadroddiad, gadewch inni wybod. Byddwn yn ei groesawu. Byddem yn sicr yn derbyn y ddadl bod angen amrywiaeth o ffynonellau ynni, gan gynnwys niwclear, wrth gwrs—mae'n rhaid imi ddweud hynny—er mwyn sicrhau ein bod yn datgarboneiddio'r grid a chwrdd ag anghenion cynaliadwyedd ac yn y blaen. Felly, diolch yn fawr i chi am ddod â chyfraniad unigryw o safbwynt eich diwydiant.

Lord Elis-Thomas: Thank you both very much. I will speak with Kath in Welsh, because she is multilingual, and has learnt Welsh very well. Thank you for the evidence. Thank you to Darren for his company's commercial experience, and congratulations on progress in that work in Wales and beyond. If you think of anything else that you would like to tell us before we come to write our report, let us know. We will welcome any comments. We would certainly accept the argument that there is a need for a mix of energy sources, including nuclear, of course—I have to say that—in order to ensure that we decarbonise the grid and meet sustainability needs and so on. Therefore, thank you both for your unique contributions from the viewpoint of your industry.

[224] **Ms McNulty:** Mae'n ddrwg gennyf, Dafydd, a yw'n bosibl inni anfon y papurau atoch?

Ms McNulty: I am sorry, Dafydd, is it possible for us to send the papers to you?

[225] **Yr Arglwydd Elis-Thomas:** Wrth gwrs, ar bob cyfrif.

Lord Elis-Thomas: Of course, by all means.

11.53 a.m.

Canllawiau Statudol Drafft ynghylch Tir Halogedig Draft Contaminated Land Statutory Guidance

[226] **Yr Arglwydd Elis-Thomas:** Y cefndir yw bod Llywodraeth Cymru wedi gosod rheoliadau ar 7 Chwefror eleni ac mae canllawiau drafft ochr yn ochr â hwy. Rwy'n

Lord Elis-Thomas: The background is that the Welsh Government laid regulations on 7 February this year, alongside which there is draft guidance. I am grateful for the advice

ddiolchgar am y cyngor rwyf wedi ei gael ynglŷn â'r ffordd briodol o ddelio â'r rhain gan ein cler. Mae gennym felly sefyllfa lle bydd y Pwyllgor Materion Cyfansoddiadol a Deddfwriaethol yn ystyried y rheoliadau yn y ffordd arferol, ond nid yw'n ofynnol i'r canllawiau drafft gael eu hystyried gan y Pwyllgor Materion Cyfansoddiadol a Deddfwriaethol. Felly, y Pwyllgor Amgylchedd a Chynaliadwyedd yw'r pwyllgor mwyaf addas i ystyried y canllawiau drafft.

that I have received on the appropriate way of dealing with this from our clerk. We therefore find ourselves in a situation in which the Constitutional and Legislative Affairs Committee will consider the regulations in the usual way, but the Constitutional and Legislative Affairs Committee is not required to consider the draft guidance. Therefore, the Environment and Sustainability Committee is the most appropriate committee to consider the draft guidance.

[227] Mae Sefydliad Siartredig Iechyd yr Amgylchedd Cymru wedi mynegi nifer o bryderon ynglŷn â'r canllawiau drafft, ac rydym wedi cael dadansoddiad gan y gwasanaeth ymchwil—rwy'n ddiolchgar i Graham am arwain ar hyn—am y pryderon. Mae cymhariaeth yn cael ei gwneud rhwng nodiadau esboniadol Llywodraeth Cymru a'r gofidiau a fynegwyd, fel bod modd ystyried y pryderon. Felly, a oes sylwadau ar y papur sydd wedi'i ddarparu am y canllawiau drafft?

The Chartered Institute of Environmental Health Wales has expressed a number of concerns about the draft guidance, and we have an analysis from the research service—I am grateful to Graham for taking the lead on this—on the concerns. A comparison is made between the Welsh Government's explanatory notes and the concerns expressed to us, so that it is possible to consider the concerns. So, are there any comments on the paper that has been provided on the draft guidance?

[228] **Antoinette Sandbach:** May I say, Chair, that I do not think that that particular item is in the papers?

[229] **Lord Elis-Thomas:** It is item 4. Alun, do you want to say anything?

[230] **Mr Davidson:** That is correct; it was circulated later than the initial pack of papers. It was circulated on Monday or Tuesday of this week.

[231] **Lord Elis-Thomas:** The issue here is that this is a rapid response situation, because we are dealing with draft guidance that relates to the table.

[232] **David Rees:** I have had a look at it, and I do not think that it is worthy of a response from us. I think that it is more of an issue of a letter to the Minister, which is the first point that Alun made in his outline, indicating the concerns more than anything else. I do not think that it merits a report from this committee.

[233] **Lord Elis-Thomas:** What would you feel about that, Graham?

[234] **Mr Winter:** I think that that is a sensible approach, so that the concerns have been recognised.

[235] **Lord Elis-Thomas:** I agree. It is important that, when we receive representations, we can function as a committee that takes account of the policy issues, whereas legislative matters are clearly for the Constitutional and Legislative Affairs Committee. Is that agreed? A phrase that I like to use is: is that the view of you all? I see that it is. Diolch yn fawr.

11.57 a.m.

Papurau i'w Nodi
Papers to Note

[236] **Yr Arglwydd Elis-Thomas:** Yn gyntaf y mae cofnodion y cyfarfodydd ar 9 a 22 Chwefror, ac yna mae llythyr oddi wrth Weinidog yr Amgylchedd a Datblygu Cynaliadwy am wybodaeth ychwanegol am yr achos busnes dros un corff amgylcheddol. Nid oes llawer o newyddion i ni, a dweud y gwir. Credaf ein bod wedi dilyn y maes yn eithaf gofalus, a diolch am hynny.

Lord Elis-Thomas: First up are the minutes of the meetings on 9 and 22 February, followed by a letter from the Minister for Environment and Sustainable Development on additional information about the business case for a single environmental body. There is not a lot of news for us, really. I believe that we have followed this area with care, and I am grateful for that.

[237] Bydd y pwyllgor yn cyfarfod nesaf heddiw am 1.30 p.m., ar ôl i ni gael dathliad Gŵyl Ddewi bach gyda Llywydd y Cynulliad. Mae'n bleserus ein bod ni, fel Aelodau'r Cynulliad, yn gweithio'n galed ar Wyl Ddewi ar faterion o bwys i bobl Cymru. Diolch yn fawr.

The committee will next meet later today at 1.30 p.m., after we have had a small St David's Day celebration with the Presiding Officer. It is a pleasant experience to find us, as Assembly Members, working hard on St David's Day on issues of importance to the people of Wales. Thank you.

Daeth y cyfarfod i ben am 11.58 a.m.
The meeting ended at 11.58 a.m.