



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

**Y Pwyllgor Cynaliadwyedd  
The Sustainability Committee**

**Dydd Iau, 11 Hydref 2007  
Thursday, 11 October 2007**

**Cynnwys**  
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Cofnodir y trafodion hyn yn yr iaith y llefarwyd hwy ynddi yn y pwyllgor. Yn ogystal, cynhwysir cyfieithiad Saesneg o gyfraniadau yn y Gymraeg.

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**

Lorraine Barrett	Llafur Labour
Mick Bates	Democratiaid Rhyddfrydol Cymru (Cadeirydd y Pwyllgor) Welsh Liberal Democrats (Committee Chair)
Alun Davies	Llafur Labour
Alun Ffred Jones	Plaid Cymru The Party of Wales
Darren Millar	Ceidwadwyr Cymreig Welsh Conservatives
Karen Sinclair	Llafur Labour
Brynle Williams	Ceidwadwyr Cymreig Welsh Conservatives
Leanne Wood	Plaid Cymru The Party of Wales

**Eraill yn bresennol**  
**Others in attendance**

Tim Helweg-Larsen	Zero Carbon Britain
Gordon James	Cyfarwyddwr, Cyfeillion y Ddaear Cymru Director, Friends of the Earth Cymru
Peter Jones	Cyswllt Amgylchedd Cymru Wales Environment Link

**Swyddogion Gwasanaeth Seneddol y Cynulliad yn bresennol**  
**Assembly Parliamentary Service officials in attendance**

Joanne Clinton	Dirprwy Glerc Deputy Clerk
Dr Virginia Hawkins	Clerc Clerk

*Dechreuodd y cyfarfod am 9.37 a.m.*  
*The meeting began at 9.37 a.m.*

**Cyflwyniad, Ymddiheuriadau a Dirprwyon**  
**Introduction, Apologies and Substitutions**

[1] **Mick Bates:** Bore da, good morning, and welcome to the Sustainability Committee. I have a few housekeeping announcements to make before we start the meeting. In the event of a fire alarm, leave the room by the marked fire exits and follow the instructions from the ushers and other staff. There is no test scheduled for today. Please ensure that all mobile phones, pagers, and BlackBerrys are switched off, as they interfere with the broadcasting equipment. The guilty ones are now checking.

[2] The Assembly operates through the medium of both Welsh and English. Headphones

are provided through which instantaneous translation may be received. For anyone that is hard of hearing, the headphones may also be used to amplify the sound. The interpretation is on channel 1, and the verbatim, for the purpose of amplification, on channel 0. The switch is on the right of the handset. Please do not touch the buttons on the microphones, as this can disable the system. You should ensure that the red light is on before speaking.

[3] We have an apology from Lesley Griffiths. Are there any others? I see that there are not.

**Ymchwiliad i Leihau Gollyngiadau Carbon yng Nghymru: Cyfeillion y Ddaear  
Cymru**  
**Inquiry into Carbon Reduction in Wales: Friends of the Earth Cymru**

[4] **Mick Bates:** At the meeting on 20 September, the committee agreed to conduct an inquiry into carbon reduction in Wales, and agreed the terms of reference. We are now holding our first evidence session, on how residential carbon could be reduced, and we have invited a number of organisations to give evidence. It is my great pleasure this morning to welcome Gordon James, the director of Friends of the Earth Cymru. Croseo cynnes i chi. I invite you, Gordon, to give a brief synopsis of the paper that you have submitted—you could take about five minutes on that—and then we will ask you a series of questions to gain a better understanding of how we can proceed in Wales to reduce the carbon emitted from residential properties.

[5] **Mr James:** Thank you, Mick, and thank you for inviting me here today. We are pleased that the committee is looking at this issue. The Climate Change Bill was introduced two years ago because we were concerned that climate change indicators showed that the situation was very serious, but the political response was far too slow. We felt that the Government needed some levers that would force it to introduce appropriate measures. That is why we established the target of 3 per cent a year for carbon reductions. When we introduced the Big Ask campaign, we asked for a 60 per cent reduction by 2050. We have now upped that to 80 per cent, because we find that the science is more worrying all the time. We have underestimated the impacts of climate change; the impacts are more intense and are happening sooner than anticipated. I refer to that in my paper, so I will not say much more about it now.

9.40 a.m.

[6] Despite the very strong science, there will be sceptics. There was a story in the news yesterday and today about a judge accusing Al Gore's film of containing inaccuracies. Last night's news programme on Radio 4 included an interview with an expert from Oxford University who said that the judge is simply wrong. The judge referred to one item that is in my paper, which is that scientists are now very concerned that the ice sheets in Greenland and the Antarctic are disintegrating far more quickly than they previously thought. There is a great deal of scientific evidence for that. The Intergovernmental Panel on Climate Change did not include it. The panel does a great deal of good work and tremendous science, but it is rather conservative because it must have the agreement of 113 countries on every sentence of the final summary report. However, the situation is extremely worrying; it is the biggest threat that civilisation has ever faced. We do not have much time, and we have a small window of opportunity to tackle this problem.

[7] Politicians around the world are taking it seriously. In the UK, we have seen Tony Blair give climate change a great deal of international publicity. Unfortunately, during his tenure, carbon dioxide emissions increased. In Wales, we are very pleased that Assembly Members voted unanimously earlier this year to make climate change the top priority of this

Assembly. In the 'One Wales' document, you have included a 3 per cent target. I say in my paper that I believe that the wording of the policy is too weak because it talks about an 'aim' to make these cuts. The sentence is badly written and it is difficult to know what it means exactly. I think that my English teacher in school would not have been very happy with the grammar. However, in the original Climate Change Bill, which was supported by the majority of MPs, there is a much firmer commitment to reducing carbon dioxide. It says that

'It shall be a duty of the Prime Minister to take steps to ensure that United Kingdom emissions of carbon dioxide in any one year do not exceed the national annual target figure'.

[8] It states that the national annual target figure shall be

'for each subsequent year, three per cent below the value in the preceding year'.

[9] That is a much tougher statement, and we would like to see a much tougher statement in the 'One Wales' document. If it is just an aim, people will think, 'Well, we will try, but if we fail, so what? We only said we would try to achieve it.'

[10] Turning to the devolution issue, when we produced the Big Ask campaign and the Climate Change Bill was published, we in the Friends of the Earth Cymru office said that things are different in Wales, because we do not have the devolved power. Therefore, we need a clear understanding of what we can achieve in Wales. We need to know what cuts we can achieve with existing powers and what powers need to be devolved to achieve the overall 3 per cent cut. I mentioned this to Mick in a meeting shortly after the elections. We have looked at various methods. The Welsh Assembly Government will produce an energy route-map before long, but I think that we could also do with a constitutional route-map to show people how we can achieve these cuts, because there is so much confusion. I have been in a few meetings with legal experts and even they are confused as to what we can do, so that really needs to be clarified.

[11] Emissions in Wales are higher than they were in 1990. The standard model is the production model—how much we emit from Wales. We have heard many complaints about this. People say that it is not fair because we have a very high industrial base in Wales, but, in fact, if you look at emission reduction since 1990, the industrial sector is the one sector that has been successful in reducing emissions, and, overall in the UK, there has been a reduction of 18 per cent. It is hoped that this sector could be tackled more effectively again in future because of the emissions trading scheme to which the Environment Agency referred last week.

[12] One of the problems facing Wales is electricity generation, which has increased quite a lot. One of our recommendations, which we have been making for years, is that we devolve the powers to Wales to control applications for power stations over 50 MW, because we are seeing more power stations coming on-stream, and they are not using combined heat and power. The situation with climate change is so serious that CHP is a standard practice in many countries. We are wasting huge amounts of energy and emitting far too much carbon dioxide because we are not even proposing to look at CHP, according to the UK Government. If that power was devolved, I think that the Welsh Assembly Government would be in favour of looking at CHP.

[13] We hear that it is not fair that we have a production model in Wales, because some of the electricity—up to 90 per cent—is used in England, as is some of the steel made in Wales. However, people do not say that the emissions in, for example, China are high because they manufacture goods for the rich west. A vast amount of liquefied natural gas will be imported into Milford Haven, therefore will we say that the carbon dioxide emissions in Qatar and middle-eastern countries, where 25 per cent of the energy content of the gas is lost in the

process of extraction and of liquefying the gas, should come to Wales? I doubt that we will. So, the standard practice is the production model. We appreciate the concerns of the Assembly in the sense that it does not have power over power stations and industrial emissions. However, there is an alternative approach, which I have mentioned in my paper. This is the weighted approach. You can look at the big emitters in the UK, such as steelworks, power stations and so on, take the total and then spread it out per capita according to the population. So, Wales would take its per capita proportion of the emissions from the big emitters. That is one solution that the Welsh Assembly Government could apply.

[14] We have heard a lot about the industrial sector being a difficult sector to tackle, but, in reality, the difficult sectors to tackle have been transport and the residential sector, where emissions have risen and are persistently high. In the residential sector, emissions have risen by around 18 per cent in Wales since 1990. They are beginning to level off according to the latest data. That might be partly due to the mild weather. We have a big challenge. We hear a lot about behavioural change, which is important to an extent. In our submission to the Select Committee on Welsh Affairs, we said that we want to see a lot of energy advice centres around Wales so that people have local access to them, as they do with citizens advice bureaux. Climate change is such an important issue that we have to give people information at a local level about what the problem is and what they can do in their own lives to address the problem by lowering their own levels of energy use. However, behavioural change is limited. You find that, despite all of the big improvements that we have made on energy efficiency, we have not reduced carbon dioxide emissions, because we are all buying more appliances, and we are all using more energy and so on.

[15] Therefore, the big lever is political policy. You are the people who can introduce Measures that can make big changes overnight. For example, you could demand that all new and refurbished buildings have solar panels and ban inefficient light bulbs. There is so much that can be done by politicians using their levers. We are disappointed by the effect of the Home Energy Conservation Act 1995 in Wales; it has been a dismal failure as we have achieved only 8 per cent against a 30 per cent target. Has any local authority suffered financial penalties for failing with regard to the agreements between the Welsh Assembly Government and local authorities? Most local authorities have not even employed a full-time HECA officer. This is the most important issue of the day. So, there is tremendous scope for far more political activity in Wales. We would like to see more funding for the home energy efficiency scheme, which addresses poverty, social issues and environmental issues.

[16] **Mick Bates:** Thank you. If you could draw your remarks to a close.

[17] **Mr James:** We are all aware of the climate change crisis, but the political response is totally inadequate. Carbon dioxide emissions continue to rise in Wales and England, and, globally, they are rising faster than ever. We face a major challenge. What we need more than ever before is brave politicians who can take tough action and introduce radical measures to turn things around, because we really do not have much time.

[18] **Mick Bates:** Thank you very much for your paper and your synopsis, and for the challenges presented in your concluding remarks. I hope, at the end of our deliberations, that our recommendations will meet your challenge. I also thank you, on behalf of the committee, for the work that you undertake as an organisation.

[19] You mentioned some of the powers and the need for a constitutional route-map. That is an interesting point. Looking at building regulations, the power over which we hope to take on board, what would be the effect, Gordon, if we did not take full power over building regulations?

9.50 a.m.

[20] **Mr James:** We would drift, as we are drifting at the moment. We are making energy efficiency improvements, but the domestic sector is still using more energy—although it is levelling off a bit at the moment, temporarily, perhaps. We need to improve building regulations so that we have higher conservation standards in our buildings, as they do in Denmark and Scandinavian countries, as a matter of routine. When you talk to people from Denmark about our buildings in the UK, they consider them to be a bit of a joke. We need to implement the regulations. It is a scandal that building regulations have not been implemented by building inspectors in almost 40 per cent of new buildings, but not a single building inspector has ever been prosecuted. One reason, we are told, is that they come under pressure from sectors of the building industry, and we find that there are vested interests that oppose measures to address climate change.

[21] However, this provides Wales with a great opportunity to take a lead. We have taken the lead on a lot of things—with our limited powers we led the world in banning GM crops; we have done it, and we have shown that we have done it. The Government in Wales is the first to set a 3 per cent target; although it is inadequate in many respects, at least we have got it. We have a sustainable development commitment, so we have been a world leader in that. The vision of the Welsh Assembly Government is for Wales to be a world leader on clean energy. What a great opportunity to devolve building regulations in order to set high standards to become more like Denmark—and less like England, possibly—to ensure that those standards are applied, and to get the message through at the local authority level as well. The application of the Home Energy Conservation Act 1995 has been so disappointing.

[22] **Mick Bates:** There are a quite a lot of questions and a lot of interest in your paper, so I would be grateful if you could keep your answers fairly succinct.

[23] **Mr James:** Okay.

[24] **Brynle Williams:** Good morning, Gordon. Can you give me specific examples of where devolution has benefited the Welsh environment?

[25] **Mr James:** The waste strategy has been successful; we have greatly improved recycling, at a greater rate than in England. Our GM policy, as a result of devolution, has been a world leader, and it is very encouraging that we had a unanimous vote by Assembly Members to make climate change the top priority. I do not think that that has happened in any other legislature in the world.

[26] **Brynle Williams:** May I follow on from that, Chair?

[27] **Mick Bates:** Very briefly.

[28] **Brynle Williams:** That was fascinating. Moving on to electricity generation, I know little about combined heat and power, but I have a great interest in it. How can we get over the Nimby syndrome? How do we get over the attitude of, ‘We do not want a CHP plant near our houses’? It is prohibiting a lot of action to protect the environment, and we must get over it. How do you think that that can be done?

[29] **Mr James:** A CHP plant is a lot cleaner than a conventional electricity-generating plant, and there are great opportunities. For example, in Milford Haven and with the proposed power station at Pembroke, there is a readily available source and a demand for heating—two oil refineries and two liquified natural gas storage and pumping stations. The Pembroke power station one would waste the equivalent of half the electricity used in Wales. It is a scandal that we should not allow to happen. If I remember correctly, the Labour Party had a policy in the 1990s that all gas-fired power stations had to be CHP, which it introduced

because it wanted to protect the coal industry. If that was its policy in the 1990s to protect the coal industry, surely that should be our Government's policy now in response to climate change. I have never heard of a Nimby reaction against CHP; I think that, wherever it has been employed, it is very popular and people are proud that energy is being used more efficiently. It is one of the most obvious and straightforward ways of reducing carbon dioxide emissions and using energy more efficiently. The LNG power station at Uskmouth will be built as CHP-ready, but why just CHP-ready? It should be operating CHP now, not ready to do so for the future. There is a demand in that area.

[30] **Alun Davies:** Mwynheais wrando ar eich cyflwyniad, Gordon. Yn eich papur, yr ydych yn trafod cytundeb 'Cymru'n Un' ac yn sôn am y targedau mae'r Llywodraeth wedi'u gosod.

**Alun Davies:** I enjoyed listening to your presentation, Gordon. In your paper, you discuss the 'One Wales' agreement, and make reference to the targets that the Government has set out.

[31] Yn ystod eich cyflwyniad bu ichi sôn am y meysydd polisi a ddatganolwyd a'r rhai na chafodd eu datganoli—yr ydym wedi trafod rheoliadau adeiladu y bore yma. Pam ei bod mor bwysig fod y Llywodraeth yn diffinio'r meysydd polisi a ddatganolwyd? O'n safbwynt ni, dylem fod yn cydweithio, gan fod gan Lywodraeth y Deyrnas Unedig rôl bwysig iawn, a bydd ganddi rôl bwysig yn y dyfodol hyd yn oed, mewn meysydd polisi a ddatganolwyd.

In your presentation you mentioned devolved and non-devolved policy areas—we have discussed building regulations this morning. Why is it so important for the Government to define the devolved policy areas? From our perspective, we should be working together, because the United Kingdom Government has a very important role, and it will have an important role in the future too, in non-devolved policy areas.

[32] **Mr James:** Yr hyn a welsom yn y gorffennol yw nad yw pobl yn siŵr pa bwerau sydd gennym yng Nghymru. Os edrychwch ar yr hyn a ddigwyddodd gyda'r polisi cynyddau GM, yr oedd pawb yn dweud nad oedd gobaith gennym, ond dywedodd un bargyfreithiwr bod ffordd ymlaen. Nid wyf yn siŵr os wyf yn ateb y cwestiwn yn gywir.

**Mr James:** We have seen in the past that people are uncertain about what powers we have in Wales. If you look at what happened with the GM crops policy, everyone said that we did not stand a chance, but one barrister said that there was a way forward. I am not sure that I am answering the question appropriately.

[33] **Alun Davies:** Yr wyf yn cytuno â'r hyn yr ydych yn ei ddweud am bolisi cynyddau GM, ond a yw Deddf Llywodraeth Cymru 2006 wedi newid hynny ac yn egluro meysydd polisi sydd wedi eu datganoli?

**Alun Davies:** I agree with what you say about the GM crops policy, but has the Government of Wales Act 2006 changed that and clarified devolved policy areas?

[34] **Mr James:** Nac ydyw; mae llawer o bobl nad ydynt yn deall pa bolisiau sydd gennym. Mewn gweithdy yn y Senedd a oedd yn edrych ar ddeddfwriaeth a phwerau Llywodraeth newydd y Cynulliad, dywedodd un bargyfreithiwr fod llawer o bethau y gallem eu gwneud pe bai pobl yn sylweddoli fod y pwerau gennym yn barod. Dywedodd bargyfreithiwr arall nad oedd yn gwybod hynny. Dyna pam bod yn rhaid inni egluro pa bwerau sydd gennym. Yr wyf wedi bod mewn dau neu dri chyfarfod gydag arbenigwyr cyfreithiol ac nid ydynt yn sicr

**Mr James:** No; many people do not understand what policies we have. In a workshop in the Senedd that looked at legislation and the new Assembly Government's powers, one barrister said that there were many things that we could do if people realised that we already had the powers. Another barrister said that he did not know that. That is why we must explain what powers we have. I have been to two or three meetings with legal experts and they are uncertain themselves as to what we can do with the powers that we already have, and



beth y gallwn ei wneud gyda'r pwerau sydd gennym yn barod, a sut i drosglwyddo pwerau eraill i Gymru i'n helpu i ostwng allyriadau carbon deuocsid.

how to transfer other powers to Wales to assist us in reducing carbon dioxide emissions.

[35] **Alun Davies:** Felly, pam eich bod mor bendant am ddatganoli rheoliadau adeiladu, er enghraifft? Am bolisi yr ydym yn sôn, nid am weithredu.

**Alun Davies:** So, why are you so determined to see building regulations, for example, being devolved? We are talking about policy, not implementation.

[36] **Mr James:** Mae rheoliadau adeiladu yn rhoi cyfle i ni wneud llawer yn well na'r hyn a wneir yn Lloegr a'r Alban. Hoffwn weld y Llywodraeth yng Nghymru yn cyflwyno safonau tebyg i Ddenmarc, er enghraifft. Yn Lloegr, mae'r rheoliadau adeiladu wedi'u gwella ond maent yn bell y tu ôl i'r hyn sydd i'w gweld mewn gwledydd eraill. Nid ydynt yn sicrhau ein bod yn gweithredu'r rheoliadau yn ddigon da. Mae cyfle i ni wneud yn well yng Nghymru.

**Mr James:** Building regulations provide us with an opportunity to do much better than is done in England and Scotland. I would like to see the Welsh Government introduce standards that are similar to those in Denmark, for example. Building regulations have improved in England, but they are far behind what is seen in other countries. They do not ensure that we adequately implement the regulations. There is an opportunity for us to do better in Wales.

[37] **Mick Bates:** Diolch, Gordon.

**Mick Bates:** Thank you, Gordon.

[38] I was fascinated by the earlier comment that 40 per cent of new buildings are not inspected.

[39] **Mr James:** The survey done by the Building Research Establishment quotes a figure of 43 per cent, I think, where inspectors had not applied the building regulations; in some houses they found rolls of insulation in the attic that had not been rolled out.

[40] **Mick Bates:** If you could send us a link to that information, I would be most grateful. Darren, do you want to come in?

[41] **Darren Millar:** In your presentation, you mentioned the problems that 'One Wales' has in terms of establishing the aim of 3 per cent rather than setting it as a firm target. You indicated that you would like to see that being firmed up in some way. You also mentioned the urgent need to devolve building regulations and responsibility for 50 MW plus power generation schemes to the Assembly. Do you think that the Welsh Assembly Government is doing enough to acquire those powers? Have you had any discussions about it? I assume that you have asked questions in the past of the Welsh Assembly Government about it.

[42] **Mr James:** If you look at Assembly Government documents relating to energy policy, it has been talking since 2001 about devolving building regulations and powers over 50 MW power stations. I understand that a study will be released shortly about the state of negotiations on devolving building regulations, but I have also been told by someone in the corridors of power who knows much more about these issues than I do, that the powers on 50 MW power stations will not be devolved, because Westminster wants to be able to decide on nuclear power in Wales; that is a big stumbling block.

10.00 a.m.

[43] However, over the years, most of the AMs with whom I have spoken have told me that they would like to see more powers devolved on these issues. I am told that, behind the scenes, a great deal of negotiation is going on to deliver this. It is disappointing that it is

taking so long, but I hope that with the Government of Wales Act 2006 and the confidence in the new Assembly, we will see some movement in these areas.

[44] **Leanne Wood:** You say that it is important for the Welsh Assembly Government to work with heavy industry and power-generation industries to reduce emissions in those sectors. Power generation is the largest source of carbon emissions in Wales, yet we keep coming back to the fact that we have no power to specify emission limits on new stations of over 50 MW. Therefore, the Welsh Assembly Government could not specify CHP stations, so how do you reconcile the Welsh Assembly Government's proposition to work with the power-generation industries to reduce emissions with the inability to specify emission limits?

[45] **Mr James:** I think that it is up to the people who drafted this document to explain precisely what they mean when they say that they will work closely with the power sector, because the one promising angle is the European Union emission trading scheme. That has been disappointing up until now and the power companies have not been set targets that are tough enough, but that will be addressed in the future. I am hopeful that we will see progress in this field. However, I do not think that the Welsh Assembly Government has much influence on the power sector. You can see that in what is currently happening with the new gas-fired power stations, where they clearly should be combined heat and power stations, but the power companies are being allowed to proceed and build them without combining those, so I think that we have little influence and it will take something like European legislation under the carbon emission trading scheme to bring about change.

[46] **Mick Bates:** Leanne, are you happy with that?

[47] **Leanne Wood:** Yes.

[48] **Mick Bates:** I have a couple of brief questions, but I will let Karen come in first.

[49] **Karen Sinclair:** I have a supplementary question on that point. I spent an interesting few hours with Warm Wales, which was working in Wrexham. Have you heard about its work? It has worked with a few local authorities in Wales in conjunction with those authorities and npower to promote insulation and central heating. The benefit for npower is that it reduces its emissions.

[50] **Mr James:** The power companies are obliged by the Government to contribute to energy-efficiency improvements and energy-efficiency commitments. So, that is happening. You mentioned the scheme in Wrexham. As well as my work with Friends of the Earth, I have been involved over the years with the ECO centre in west Wales, where they do a tremendous job. However, these people spend half their time fundraising in order to keep going so that they can simply exist. That situation is wrong. If we are to take climate change seriously, we need a network of these centres around Wales that are properly funded so that they can deliver good advice and help to inform people about climate change and how they can address the problem.

[51] We have heard all sorts of people, including Tony Blair, talk about the fact that we have a 10-year window of opportunity in which to tackle climate change; that was back in 2005, so we have until 2015 at the moment and global carbon dioxide emissions are rising faster than ever. If we fail to achieve that target by 2015, what happens to our children? When people bring children into the world, it is the most important thing in life and they want those children to have the best possible future, but what will happen in 10 years' time when people bring children into the world and they realise that there is a big black cloud called climate change hanging over their future. There is nothing more important than tackling that. Surely, as a Government in Wales and in the UK, we should fund these centres. We have established that they do a good job and one of the first things that we should do is provide such a service

to communities throughout Wales.

[52] **Karen Sinclair:** In Scotland, combined heat and power stations are being constructed where devolved powers are available to do that.

[53] **Mr James:** I am not sure what the situation is in Scotland regarding CHP. I know that it is taking a stronger stance than the UK Government on some areas, but I am sorry, I cannot answer that. I could make some inquiries for you, however.

[54] **Karen Sinclair:** That would be useful.

[55] **Darren Millar:** In her question, Leanne made reference to heavy industry as well as power generation. In your presentation, you talked about the industrial sector as a sector that had taken significant steps forward, securing an 18 per cent reduction in the past few years. Is part of that reduction due to the decline of the manufacturing industry rather than the introduction of more efficient working practices? If we can produce steel, for example, in Wales more efficiently and with lower carbon dioxide emissions than other parts of the world, because of our working practices and the technology available to us, should we keep that production in Wales, even if we have a high emissions industry, rather than ship it out to China where it might be far less efficient and more damaging to the global environment? What do you make of that argument?

[56] **Mr James:** On the first part of your question, yes, the decline in emissions in the industrial sector is partly due to the decline in manufacturing. However, big efficiency improvements have also been made, and I think that the Carbon Trust, which gave evidence to you last week, has played an important role in that sector.

[57] On efficiency, a few years ago, I answered the door at home, and found myself faced with a television camera and a reporter. The reporter was saying that, because of European regulations to tighten up the quality of fuel and to insist on lower sulphur fuel, we would lose jobs in Milford Haven, but he was wrong. Milford Haven was one of the most advanced refineries in Europe and could deliver low-sulphur fuel. The refineries that went out of business were those in eastern Europe and in the Mediterranean countries that were more old-fashioned. There is a strong argument that, if you stay efficient, you stay ahead of the game. That is always our best policy.

[58] **Mick Bates:** Thank you. That is a very important point, because reducing carbon can be a massive economic driver, which we sometimes forget.

[59] **Brynle Williams:** I fynd yn ôl at gynhyrchu trydan, yr oedd y pwynt a wnaethoch yn bwysig, er nad yw pawb yn sylweddoli pa mor bwysig ydyw. Mae'n drist ofnadwy nad yw'r orsaf bŵer newydd yn rhoi gwres a phŵer cyfunedig. A yw hyn oherwydd na fydd yn creu digon o elw i'r cynhyrchwr, neu oherwydd y bydd yn cynyddu'r gost yn ormodol i bobl leol? Rhaid talu am bŵer un ffordd neu'r llall.

**Brynle Williams:** To go back to electricity production, the point that you made was important, though not everyone realises just how important it is. It is terribly sad that this new power station does not provide combined heat and power. Is that because it will not produce enough profit for the producer, or because there would be too great an increase in cost for local people? Power has to be paid for in one way or another.

[60] A fyddech chi'n cytuno bod angen annog gwleidyddion i fod yn ddewrach? Yr wyf yn sicr bod angen i ni fod yn fwy dewr. A gaem wres a phŵer cyfunedig pe bai gennym bwerau dros osodiadau sy'n

Do you agree that we need to persuade politicians to be braver? I think that we certainly need to be braver. Would we get combined heat and power if we had the powers over installations that produce more

cynhyrchu mwy na 50 MW o drydan, 500 MW neu beth bynnag yw'r ffigur? than 50 MW of electricity, 500 MW or whatever the figure is?

[61] **Mr James:** Hanner can MW yw'r ffigur. **Mr James:** The figure is 50 MW.

[62] **Brynle Williams:** Mae'n drist ofnadwy nad ydym yn ei gael ac fel y pwysleiswch, nid oes gennym ddigon o amser i'w drafod. **Brynle Williams:** It is terribly sad that we do not get it and, as you emphasise, we do not have enough time to discuss it.

[63] **Mr James:** Gallaf roi ateb cyflym. Mae'n haws gadael y cyfan i un orsaf bŵer fawr. Pe baem yn cael gwres a phŵer cyfunedig yn sir Benfro, byddai'n rhaid cael pedair gorsaf bŵer llai o faint—un Texaco, un Total, un South Hook ac un ar derminws LNG. Byddai angen pedair gorsaf fach. Mae'n haws i'r cwmni ddweud, 'Rhoddwn un fawr yn y fan hon', ond byddai'r Llywodraeth yn dweud, 'Na, ni allwch wneud hynny; rhaid i chi wneud hyn mewn ffordd well'. **Mr James:** I can give a quick answer. It is easier to leave it all to one big power station. In Pembrokeshire, if we were to have CHP we would need four smaller power stations—one at Texaco, one at Total, one at South Hook and one at the LNG terminal. Four small stations would be needed. It is easier for the company to say, 'We will put a big one here', but the Government would say, 'No, you cannot do that; you have to do it in a better way'.

[64] **Lorraine Barrett:** I am looking at the question about the consumption model, or the production model, and I have been trying to get my head around it. Could you give us a synopsis of both models, and the perceived advantages of using the consumption model?

[65] **Mr James:** The basis of the consumption model is that we pay the carbon cost of only what we actually consume. If toys are made in China, we should pay the carbon cost of the manufacturing process of making those toys. If we import food from Mediterranean countries, we should pay the carbon cost of producing that food there. However, if we produce steel in Wales and export it for use elsewhere—and the same goes for the refineries, such as the one in Milford Haven—the countries that use those products would then pay the carbon cost. Does that make sense?

[66] **Lorraine Barrett:** This is great. I am really glad that I asked the question.

10.10 a.m.

[67] **Mr James:** However, the standard practice is to look at the production costs—that is, what a country produces. I think that that is fair, quite frankly, because we are all starting at the same level. If we want a 3 per cent cut, that is the level that we will start at. It will be challenging to reduce those emissions in the industrial sector, but it will be just as challenging, if not more so, to reduce emissions in other parts of the UK, where there is no industrial sector, that is, in the domestic, transport and service sectors. Those sectors' emissions have remained high far more persistently than those of the industrial sector.

[68] There is a third model that would make it easier for the Assembly: the weighted model. Under that model, if an area has big emitters, as we do in Wales, we can look at all the big emitters in the UK, total their emissions, spread them out per head of population and allocate them per head of population to Wales and different areas. That is another way forward, because I know that the Welsh Assembly Government is concerned about applying the target of 3 per cent to total production across the board in Wales. This is a sort of stopgap measure that we could adopt until we have devolved powers to take control of all our

emissions.

[69] **Lorraine Barrett:** So, as I understand it, if Wales is a large emitter, it is not fair that we take the penalty for that; it should be shared out, because what is produced in Wales is used elsewhere.

[70] **Mr James:** You can get into a very complicated argument. There was a documentary on television the other day about supermarkets putting a carbon cost on their products. One supermarket said that cost it £0.25 million just to work out the carbon costs of two products, because it had to take into account international movements. So, it can be very complicated. If we are going to use this model, are we also going to say to Qatar in the middle east that we will pay its carbon bill for all that liquefied natural gas? That is what it would mean at the end of the day, and then Wales's levels would go up again. There is the same argument with China. Do we say to China that it should not worry, as we will take the carbon cost of what it produces that we benefit from? That would then lessen the pressure on China to reduce its emissions.

[71] **Lorraine Barrett:** That was very helpful. Thank you.

[72] **Karen Sinclair:** I have some questions on that, because the consumption question with regard to production costs leads to apportioning not blame exactly, but responsibility in a different way. However, I do wonder about the production model, because we have a disproportionately large industrial base and large rural areas. If it is all worked out per capita, the fact that we have a small population base puts us at a disproportionate disadvantage. The fact that Wales is so rural means that car travel is essential in certain areas, compared with the more populated areas and cities in the UK generally where transport links, which we can encourage people to use, are far easier to access.

[73] **Mr James:** Actually, the transport contribution in Wales is far less than it is in England. I forget the figures, but I think that it is between 11 and 12 per cent—

[74] **Karen Sinclair:** Is that proportionate?

[75] **Mr James:** Yes. As a proportion of the total, transport accounts for significantly less in Wales than it does in the UK as a whole. The Assembly does have a problem in that we have a concentration of manufacturing and power generation in Wales. That is why we are suggesting the weighted model as a way of getting around that.

[76] **Karen Sinclair:** Perhaps this is a daft question, but what would the effect be if this were worked out on the basis of acreage, or land mass?

[77] **Mr James:** Quite frankly, it would be meaningless.

[78] **Karen Sinclair:** Well, this is a question that I want the answer to.

[79] **Mr James:** That is fine. Carbon emissions are due to human activity, so we have to relate this to the number of humans and what they are doing, rather than acreage. We emit carbon because of our activities. The problem is human activity, and so we must calculate this per capita.

[80] **Karen Sinclair:** Okay, thanks.

[81] **Brynle Williams:** What advantages does Friends of the Earth Cymru anticipate will arise from Welsh-based microgeneration as a result of Wales running an incentive programme?

[82] **Mr James:** There is tremendous potential for microgeneration. However, there are problems with that, too, such as small-scale CHP, which has had some technical development problems. There has also been some Nimbyism with regard to small-scale microgeneration—indeed, there has been with regard to large-scale renewable energy projects, too. There is huge untapped potential, which we would like to see developed. It is not cost-effective at present. One way to make it more cost-effective is to have a feed-in tariff system, as in countries such as Germany, where you are guaranteed a good price for the electricity that you feed into the grid for 15 or 20 years. That gives you long-term stability and confidence, and has been hugely successful in those countries. We will introduce that in our paper when you assess the power-generation aspects of this issue. That is one way forward.

[83] We also think that it needs funding. Over the years, lots of public money has gone into nuclear power, but, in the future, cleaning up the mess that nuclear power has created will cost us £70 billion. For goodness' sake, if we had only invested that money into renewable energy systems, we would be far better off today. There is a strong argument in favour of investment in these systems to help people to generate their own cleaner electricity. An awful lot of people want to play their part and contribute to reducing carbon dioxide emissions and we should enable them to do that by making small-scale systems more available.

[84] **Brynle Williams:** To follow on from that, briefly, what are your views on using water? That is the one thing that we have plenty of in Wales. Are we using enough of that for hydrogeneration?

[85] **Mr James:** I have a couple of points to make on this. First, I have a very good friend who works in the Environment Agency and who is trying to promote rivers for hydropower. Progress has been almost nil, because there is massive opposition from the angling lobby. Whatever renewable energy system you propose, someone will object to it. The University of Manchester Institute of Science and Technology published a study many years ago that showed that the potential of Welsh rivers is actually pretty small. The big water resource available to Wales is offshore, so that would be tidal power. That is the area with real potential. There are some opportunities onshore with river schemes. When I worked on the west Wales ecosystem, we had a hydroengineer working with us who looked at a few sites. However, only a few sites were suitable.

[86] **Brynle Williams:** What about lagoons?

[87] **Mr James:** We are all very much in favour of tidal lagoons. I noted that my good friend, Peter Davies, from the Sustainable Development Commission, referred to the Severn barrage in his evidence last week. We certainly think that that is a mistake, but it has been in the Welsh Assembly Government's policy on energy for a number of years, and the Government seems determined to proceed. I have a feeling that no matter how strong our arguments are, it will not be swayed. However, we think that it is a mistake, because it will take too long. That is one of the main reasons why we oppose the barrage. We think that lagoons could deliver for us sooner. Time is crucial in addressing climate change. We simply do not have the time to delay; we have to act now.

[88] **Alun Ffred Jones:** Hoffwn droi at effeithlonrwydd ynni yn y cartref, ond, cyn hynny, hoffwn sôn ychydig am y ffigurau. Yn ail adran eich tystiolaeth, ar dudalen 5, mae datganiad am lefelau gollyngiadau carbon deuocsid rhwng 1990 a 2004, a cheir sôn am gynnydd o 16 y cant o'r cartref, 15 y cant o gynhyrchu trydan a 9 y cant o faes

**Alun Ffred Jones:** I want to turn to energy efficiency in the home, but, before that, I want to talk a little about the figures. In the second section of your evidence, on page 5, there is a statement about carbon dioxide emissions between 1990 and 2004, and it states that there was an increase of 16 per cent in domestic emissions, 15 per cent from

trafnidiaeth. A yw'r rhain yn ffigurau absoliwt? Ai dyna'r cynnydd absoliwt?

electricity generation, and 9 per cent in the transport sector. Are these absolute figures? Is that the absolute increase?

[89] **Mr James:** Dyna'r ffigurau yr ydym yn eu defnyddio; ffigurau gan Adran yr Amgylchedd, Bwyd a Materion Gwledig ydynt, a dyna'r ffigurau gorau sydd ar gael.

**Mr James:** Those are the figures that we use; they are Department for Environment, Food and Rural Affairs figures, and they are the best figures available.

[90] **Alun Ffred Jones:** A ydynt yn berthnasol i Gymru yn unig, neu i Brydain?

**Alun Ffred Jones:** Do the figures relate to Wales only, or to Britain?

[91] **Mr James:** Pa ffigurau ydych yn cyfeirio atynt?

**Mr James:** Which figures are you referring to?

[92] **Alun Ffred Jones:** Y ffigurau ar dudalen 5, yn yr ail adran.

**Alun Ffred Jones:** The figures on page 5, in the second section.

[93] **Mr James:** Ai'r ail bwynt ar waelod y paragraff sydd gennych?

**Mr James:** Do you mean the second point at the bottom of the paragraph?

[94] **Alun Ffred Jones:** Ie.

**Alun Ffred Jones:** Yes.

[95] **Mr James:** Arhoswch funud imi edrych arnynt.

**Mr James:** Wait a minute for me to look at them.

[96] **Alun Ffred Jones:** Nid oes ots. Gofynnais ai ffigurau absoliwt yw'r rhain.

**Alun Ffred Jones:** It does not matter. I asked whether they are absolute figures.

[97] **Mr James:** Yng Nghymru, mae lefelau gollyngiadau carbon deuocsid fwy na 2 y cant yn uwch nag oeddent yn 1990. Ffigurau DEFRA ar gyfer Cymru yw'r rhain.

**Mr James:** In Wales, carbon dioxide emission levels are more than 2 per cent higher than they were in 1990. These are DEFRA figures for Wales.

[98] **Alun Ffred Jones:** I symud ymlaen at y ffigurau arbed ynni, neu effeithlonrwydd ynni, yn y cartref, bu ichi ddweud ein bod wedi methu â chyrraedd y targed i leihau allyriant 30 y cant, a'n bod mewn gwirionedd ond wedi cyrraedd ychydig dros 8 y cant. Yr ydych yn feirniadol o lywodraeth leol yn arbennig. Pa fath o gymhellion ariannol neu gynlluniau y credwch all weithio i sicrhau ein bod yn mynd i'r afael â'r sefyllfa?

**Alun Ffred Jones:** To move on to the figures relating to energy savings, or energy efficiency, in the home, you said that we have failed to reach the target of reducing emissions by 30 per cent, and that we have, in reality, only attained just over 8 per cent. You are critical of local government in particular. What kind of financial incentives or schemes do you think could work to ensure that we tackle the situation?

10.20 a.m.

[99] **Mr James:** Yr ydym wedi cael cytundebau rhwng y Llywodraeth a llywodraeth leol. Credaf y bydd yn rhaid i'r Llywodraeth ddweud wrth awdurdodau lleol, 'Os nad ydych yn cyrraedd y targed hwn, bydd yn rhaid i ni eich cosbi yn ariannol'.

**Mr James:** There have been agreements between the Government and local government. I think that the Government must tell local authorities, 'If you do not reach this target, we will have to penalise you financially'.

[100] **Alun Ffred Jones:** Ond, i fod yn

**Alun Ffred Jones:** But, to be fair, local

deg, nid llywodraeth leol sy'n gyfrifol am bob tŷ.

government is not responsible for every household.

[101] **Mr James:** Ond dyna mae wedi ei gytuno i'w wneud o dan Ddeddf Arbed Ynni yn y Cartref 1995. Ni ysgrifennodd y Ddeddf honno gyda Cynog Dafis. Yr oedd pawb yn cytuno ei bod yn bosibl gwneud hynny.

**Mr James:** But that is what it has agreed to do under the Home Energy Conservation Act 1995. We drafted that Act with Cynog Dafis. Everyone agreed that it would be possible to do that.

[102] **Alun Ffred Jones:** Mae'n amlwg nad yw'r cynlluniau presennol yn cyrraedd y targed hwnnw. Pa gynlluniau newydd neu gymhellion ariannol sydd eu hangen i gyrraedd y targed?

**Alun Ffred Jones:** It is clear that the current schemes do not reach that target. What new schemes or financial incentives are required to reach the target?

[103] **Mr James:** I ddechrau, gall awdurdodau lleol gyflogi digon o swyddogion i sicrhau y gwneir y gwaith yn iawn—ar hyn o bryd, nid ydynt yn gwneud hynny—a bod ganddynt ddigon o arian i wneud hynny. Gall awdurdodau lleol wella ymwybyddiaeth mewn cymunedau lleol o ran sut y gall pobl leihau faint o ynni maent yn ei ddefnyddio yn eu cartrefi. Mae llawer o fesurau eithaf syml y gellid eu rhoi ar waith i wella'r sefyllfa. Pan gytunodd awdurdodau ar y Ddeddf Arbed Ynni yn y Cartref, yr oeddent i gyd yn credu ei bod yn bosibl cyrraedd y targed o 3 y cant. Siaradon nhw am hyn am sbel. Nid yw'n ffigur a dynnwyd allan o'r awyr. Nid oes yr un awdurdod wedi cael ei gosbi am fethu cyrraedd y targed, ac mae rhai yn bell o gyrraedd y targed; dyna sydd mor siomedig. A yw hynny'n ateb eich cwestiwn?

**Mr James:** First, local authorities should employ a sufficient number of officers to ensure that the work is carried out properly—at the moment, they are not doing that—and that they have sufficient funding to do so. Local authorities can improve awareness in local communities as regards how people can reduce the amount of energy that they use in their homes. There are many quite simple measures that they can undertake to improve the situation. When the authorities agreed to the Home Energy Conservation Act, they all believed that it was possible to reach the target of 3 per cent. They discussed this for some time. It was not a figure that was plucked from the air. Not one authority has been penalised for failing to reach that target, and some have missed it by a mile; that is what is so disappointing. Does that answer your question?

[104] **Alun Ffred Jones:** Yr ydych yn ateb y cwestiwn, ond nid ydych yn dweud pa fesurau ychwanegol sydd eu hangen. Dywedwch fod angen cyflogi mwy o swyddogion; nid wyf yn siŵr os bydd cyflogi swyddog i yrru o gwmpas mewn car yn eich helpu i gyrraedd y targed. A oes mesurau penodol ychwanegol o'r newydd sydd eu hangen i geisio cyrraedd y targed?

**Alun Ffred Jones:** You are answering the question, but you have not said what additional measures are needed. You say that more officers need to be employed; I am not sure that employing an officer to drive around in a car will help to reach the target. Are there any new, additional, specific measures that are required to try to reach the target?

[105] **Mr James:** A ydych yn gofyn beth gall Llywodraeth y Cynulliad ei wneud neu beth gall llywodraeth leol ei wneud?

**Mr James:** Are you asking what the Assembly Government can do or what local government can do?

[106] **Alun Ffred Jones:** Yr wyf yn gofyn am y ddau gyda'i gilydd.

**Alun Ffred Jones:** I am asking about both together.

[107] **Mr James:** Credaf y dylai Llywodraeth y Cynulliad gosbi'n ariannol

**Mr James:** I believe that the Assembly Government should penalise local councils



gynghorau lleol sy'n methu'r targed. Bydd hynny'n rhoi llawer mwy o bwyslais ar eu gorfodi i gyrraedd y targed. Dyna beth y gallwn ei wneud i ddechrau. Hwy yw'r arbenigwyr o ran sut y gallwn wneud hyn. Yr wyf wedi awgrymu rhai mesurau y gallant eu rhoi ar waith. Os cytunodd yr awdurdodau y byddent yn cyrraedd y targed, maent yn siŵr o wybod sut y gallant wneud hynny. Efallai y dylent ddod yma i ateb y cwestiwn hwnnw.

financially for missing the target. That would put much greater pressure on them to force them to attain the target. That is what could be done in the first instance. They are the experts on how we can do this. I have suggested some measures that they can take. If the authorities agreed that they would attain the target, they are bound to know how they can do that. Perhaps they should come here to answer that question.

[108] **Alun Ffred Jones:** I fod yn deg, byddwn yn awgrymu mai'r gwleidyddion yn San Steffan a gytunodd ar y targed, ac nid swyddogion llywodraeth leol na chynghorwyr. Diolch yn fawr am yr ateb, beth bynnag.

**Alun Ffred Jones:** To be fair, I would suggest that it was the politicians in Westminster who agreed that target, not local authority officers or councillors. Thank you for your answer, anyway.

[109] **Mick Bates:** The Welsh Local Government Association will be coming in, so it may help to resolve some of that.

[110] **Alun Ffred Jones:** It will be over the moon.

[111] **Mick Bates:** It was an interesting discussion. Darren has a question.

[112] **Darren Millar:** On that point, you mentioned the fact that not all Welsh local authorities employ a full-time home energy conservation adviser; many of them are part-time and this is often tagged onto the end of other tasks that they already perform. What is the evidence that those authorities that have a full-time member of staff who is dedicated to this have made significant inroads into reducing domestic carbon emissions?

[113] **Mr James:** The Wales Audit Office's recent report looked at this very carefully and exposed the deficiencies. The Home Energy Conservation Association forum for Wales has submitted evidence, I believe, and it is the expert on this. Its chairperson gave an address to the latest National Assembly sustainable energy group meeting and produced this data. The situation is that local authorities cannot have taken this seriously. If they had taken this obligation seriously, surely the first thing that they would have done would have been to employ a full-time HECA officer to try to implement these measures. My complaint is that they do not seem to have tried; they have not given it sufficient importance. We have been hearing about how important climate change is for years now. I was involved with the West Wales ECO Centre back in the 1980s, and we were saying exactly the same thing then. We were saying what the Energy Saving Trust told you last week—if people did this, that, and that, they could save £200 a year, they could cut their fuel bills, and they could cut their carbon dioxide emissions. We have been saying that for years, but it has not been applied with any sort of political determination, which is extremely disappointing.

[114] To go back to Alun's question, the fact that local authorities have not even employed full-time HECA officers, and that the levels that some of them have achieved are so low, show that they have not taken it seriously. Other local authorities have done much better, which shows that they could all have done far better. HECA has come to an end, and the Assembly needs to look at this and introduce another programme that will ensure that these energy-efficiency savings are maximised by local authorities in Wales.

[115] **Darren Millar:** What you are telling me, Gordon, is that there is a link—those authorities that employ a full-time HECA officer have a better performance in reducing

carbon emissions in the domestic environment than others?

[116] **Mr James:** I believe so—I am sorry, I do not have that data in front of me. It is in the Wales Audit Office’s report, which was produced about a month ago; it is very detailed and thorough.

[117] **Darren Millar:** Alun Ffred asked you about what other things local authorities could do. One thing that you mention in your report is that you recommend the introduction of council tax rebates for households that install energy saving and energy-efficiency measures. What do you believe the bureaucratic burden of that might be, and do you believe that it would be appropriate, given the level of benefit that would come back? Also, how would you be able to police it, and what about homeowners who have already taken action—how would you ensure that they were also able to access some kind of financial incentive, because they have been more responsible in the past?

[118] **Mr James:** This is a measure that can be introduced; it has been recommended nationally for the Government to introduce in its budget, and it has been looked at closely. Our national office has commissioned a report from one of the country’s top energy conservation experts at Oxford University. I was due to have a draft of that a week last Monday, but there has been a delay; I am sorry that I have not been able to submit that. I hope that I can submit it at a later date, although the paper said that supplementary information had to be submitted by the week before last. If that is produced, I believe that it would be able to answer those points for you.

[119] However, what we have seen throughout England—and I believe that you are going to have evidence from Woking Borough Council and Merton Borough Council—are several local authorities applying initiatives such as this, including the council tax rebate, as well as many other initiatives. What is disappointing is that not a single local authority in Wales, to my knowledge, has taken any similar kind of initiative.

[120] **Darren Millar:** That is not true. Conwy County Borough Council introduced a scheme last year whereby people could have a small discount on their council tax if they took advantage of loft insulation, for example, or a new boiler system installed by British Gas. The difficulty was that it tied them to a particular provider of an energy-efficiency measure—insulation, or cavity wall insulation, or a new boiler—and, in some cases, it was more expensive for them to go to that provider than going to someone else. Therefore, there are difficulties involved. It also penalises those who, 12 months before, or just before the new council tax year started, had had something installed.

[121] **Mr James:** You could possibly restrict it to the council tax year. I will look into this and see what information I can find about where and how it is applied. With any measure that we want to introduce to tackle climate change, people will say that it raises unacceptable difficulties. Even on low-energy light bulbs, people are now saying that there is too much mercury in them, and that, when they are disposed of in landfill sites, they increase the mercury. Whatever we say, someone will say, ‘Oh, no, you cannot do that, there is a problem’. These problems must be overcome as we face such a massive crisis. Given the challenge of climate change, we must overcome these problems. However, I will try to find information about where the council tax rebates have been applied, and get back to you.

[122] **Mick Bates:** Thank you. In drawing this evidence-taking session to a close, I will thank you very much, and end with this horrible question, Gordon—you have put forward many suggestions, so do you have any idea how much it would cost if all your suggestions were implemented?

10.30 a.m.

[123] **Mr James:** I have a good idea of what it will cost if we do not implement measures to tackle climate change. As Peter Wilkinson from the Environment Agency said last week, if we do not address climate change very urgently, there will simply not be an economy. I think that that is a valid point. I have not costed this; I am not in a position to do so, but one of the great things about energy saving is that it saves money. It is the best example that we have of sustainable development in practice, whereby you reduce people's fuel bills, fuel use and, therefore, emissions. You address fuel poverty, you improve health, you create work in the local community for local people and you keep that money in the local community, instead of it going to fossil fuel companies in Texas where it will fund George Bush to oppose climate change measures.

[124] **Mick Bates:** On that uncontroversial note, we move on to the second witness of this morning, Peter Jones, who works for RSPB Cymru and is here representing Wales Environment Link. I extend a warm welcome to you, Peter. I ask you to give a brief—a maximum of five minutes—synopsis of your paper, which we have already received. Then, as you already know, there will be questions from the members of the committee.

[125] **Mr Jones:** I thank the committee for inviting Wales Environment Link to contribute to this inquiry into carbon emission reduction in Wales. I am never sure whether it is advantageous or disadvantageous to come second, especially after Friends of the Earth, but I will do my best. At least I have had prior notice of one or two difficult questions and have had more time to think about the answers than had I gone first.

[126] First, I would like to stress that this is Wales Environment Link's collective response; it is a response on behalf of 30 or so environmental non-governmental organisations, both big and small, across Wales. Necessarily, therefore, while I would hesitate to call it a lowest-common-denominator response—I hope that it is not—as a collective response, it is a cautious and, dare I say, conservative response to the kind of issues that you are addressing in your questionnaire. That leads me to make the observation that I fully concur with Gordon's opening remarks in relation to the seriousness of the global climate change problem that we all face.

[127] In terms of collective responses, some of you may have found the time to read the Inter-governmental Panel on Climate Change's fourth assessment report, or reports, rather, which were published in stages earlier this year. You will be aware that, compared with the third assessment report that came out in 2001, the IPCC has upgraded its estimation of the human contribution to global climate change from 'likely' in 2001 to 'very likely' in 2007. This is quite a significant move on behalf of a body that includes representatives from all around the planet, including the United States and Australia, which—I hope that it is not controversial to say this—have been doing their best to limit what the IPCC is allowed to say publicly on this matter. So, the IPCC report is a collective and cautious response too, rather like ours for Wales Environment Link, perhaps.

[128] I am not a representative for a publishing company, but I draw your attention to two books in relation to the climate change issue that, if you have not read them already, I strongly recommend that you do. The first is *Six Degrees: Our Future on a Hotter Planet* by Mark Lynas, which was published earlier this year and which brings out the full scale of the potential climate change and environmental catastrophe that the planet faces. It is called *Six Degrees*, because he takes you, one by one, through a 1 degree increase, a 2 degree increase and so forth. It pessimistically concludes that 3 degrees is the likely minimum average global surface temperature rise that we can expect the planet to experience as we move further into this century, with the potential for possible runaway global warming from the natural consequences to the human-induced 3 degrees Celsius rise. The other book that I would recommend, which was published a few years ago, is appropriately called *How We Can Save*

*the Planet* and is by Mayer Hillman. Among other cases, in that book he sets out clearly the argument for carbon rationing or carbon allowances as a means of bringing down carbon consumption by us as individuals in the UK and globally. That fits into the contraction and convergence model for trying to bring down global carbon emissions. I strongly recommend both studies to give you a full understanding of the seriousness of the problem and the radical nature of the solutions that will have to be put in place if we are to succeed as a country and a planet in bringing climate change under control, and quickly.

[129] Moving on to your inquiry, against that background, we have tried, in our response, to stick to the eight questions that you have asked, although we strongly focused, it is fair to say, on the first two general questions. As I say in our response, Wales Environment Link would not pretend to have a detailed knowledge of the housing sector, the problems that it might face, and the potential solutions that it could offer to reduce carbon emissions, although I hope that we have suggested a few in our response.

[130] In preparing our submission, as chair of the energy and transport working group for Wales Environment Link, I was staggered by the limited nature of the powers available under the Government of Wales Act 2006 to the Assembly Government to do much of an effective nature in the field of climate change mitigation and, of course, energy and transport policy more generally. I had rather expected, before I studied the Act in detail, based on press accounts, to believe that a brave new world was opening up as a consequence of the 2006 Act in terms of what the Assembly, potentially at least, would acquire legislative competence to do. I was sadly disappointed. I am sure that you are all familiar with the exceptions—‘exceptions’ is a wonderful word—set out in Schedule 7 to the Government of Wales Act, which pretty well excludes virtually anything that you might wish to do in taking direct responsibility for these problems.

[131] I draw your attention to the fact that Schedule 5, rather oddly, does not include any of these exceptions, and Schedule 5 is supposed to be the section of the Government of Wales Act 2006 that sets out the areas within which you can seek to acquire legislative competence and then introduce Measures under the Act to pursue whatever it is that you wish to do. There appear to be no exceptions to what you can do under Schedule 5, but when you get to Schedule 7, which relates to Acts of the Assembly, a power that you would only acquire following a successful referendum of the Welsh people, then these exceptions suddenly appear. I am not sure whether this is just a drafting error or some subtle game that the drafters of the Government of Wales Act 2006 were playing with you. I am sure that we all know what it means in practice, but I would just draw it to your attention as a committee.

[132] However, there are many things that you can do. For example, you have had discussions this morning about microgeneration. I stress again that the Assembly Government’s microgeneration action plan is probably one of the better documents, if not the best, that it has introduced in recent times. Microgeneration is exceedingly important. Okay, it is unlikely to make a major contribution, certainly in the short term, to electricity and heat generation in Wales, but its application, certainly on the scale suggested in the action plan, I hope, would help to bring home to people in Wales the seriousness of the energy crisis that we are beginning to face, and the link from the energy crisis to climate change, and a better understanding that each and every one of them has personal responsibility for what all of us should be doing to treat energy as a scarce resource and climate change as a serious problem to which we are all contributing.

[133] The second area that I draw attention to relates to powers in relation to local authorities. Again, I think that you have some discussion of that already this morning. It appears to be one of the small areas under Schedule 7 that you are empowered to intervene in and do something about. As we say in our response, the Assembly Government needs to think very hard about hypothecating grants to local authorities, conditional on the implementation

of various measures to bring down carbon emissions in their respective areas.

[134] The third issue that I draw your attention to is fundamental, and it is something that the Assembly Government can do a lot more about and, indeed, some of us have been arguing for years that it should have been doing something about it. That issue is raising public awareness. I realise that it is easy to be negative about it and say, ‘Oh yes, people listen, they hear what you say and they carry on behaving exactly as they have always done. I am not going to do anything because the guy next door is unlikely to do it’, and so on. However, raising awareness is fundamental to the consumer culture in which we live. We believe that it is the consumer culture that is the fundamental driver of the pressure on energy and carbon emissions that results from that process. We need to bring home to people the need to change the way in which they think about energy and the way in which they use energy.

10.40 a.m.

[135] I believe that the Welsh Assembly Government has a particular role to play in this regard. I am fully aware of the efforts of the Energy Saving Trust and the Carbon Trust, which I respect and welcome, but the Welsh Assembly Government has a much higher profile and it should be using it. The last question asked of Gordon was how much it would cost. We may want to discuss that in a moment, but the Welsh Assembly Government needs to put a massive amount of resources into a programme of public awareness raising in Wales of the nature and seriousness of the problem faced. This relates particularly to your discussions about households, because it is in the households of every one of us that we have the potential to do things such as using energy-saving light bulbs and turning off the television at night. I hope that you have seen the statistics that show the major savings that can be made if we did these things, hence the importance of public awareness raising in relation to these potential energy-saving opportunities. There would be another cost, because associated with this would have to come a willingness on the part of the Assembly Government to fund incentives to encourage people to do what currently they seem unable or unwilling to do. So, there would be a double cost—the cost of the awareness-raising campaign and the cost of the back-up incentives or grants to enable people to deliver on those things.

[136] We need a culture change. As politicians, you are afraid of the electorate because you know that the electorate is not as aware of these issues as you are, and has not fully understood the problem in the way that I hope you do around this table. Therefore, there is a responsibility—it is a two-way process—to make the electorate aware, and the electorate will hopefully then begin to demand from you the types of policies that you would want to be empowered to implement. That is a key consideration—empowerment of the people leading to empowerment of politicians such as you.

[137] **Mick Bates:** May I ask you to bring your remarks to a close?

[138] **Mr Jones:** Finally, we are Wales Environment Link, and while we talk very much about the impact of climate change on human species, I hope that we will not forget that climate change has a major implication for planetary biodiversity. I work for the RSPB, and I am wearing my birds tie, but it is not just birds that are under threat, of course, but wildlife in general and the habitats and natural environment on which they depend.

[139] Some of you may be aware of an article that appeared in the scientific journal *Nature* in January 2004, which was based on research conducted in Australia and elsewhere that suggested that by 2050, on the basis of present trends, up to a third of known land-based species would be destined for extinction. We are in the sixth major extinction period on this planet and we, the human species, are the cause of it. We must bear that in mind when thinking about the seriousness of the issues that we are considering.

[140] **Mick Bates:** Thank you, Peter, for opening this session. I ask you to pass on our thanks to all the organisations that contributed towards your response. Moving on to Members' questions, Karen will start by referring to the competencies defined.

[141] **Karen Sinclair:** Can you give us your rationale behind why it is important that the areas of competence are defined?

[142] **Mr Jones:** It is important that they are defined because if the Welsh Assembly Government is to have an effective strategy, the first thing that it needs to understand is what it can actually do. I do not think that, as yet, what the signatories to the 'One Wales' document believe they are entitled to do comes through very strongly. So, an essential first step would be to set out what that is. As I mentioned in my opening remarks, as a source document, we have the Government of Wales Act 2006 and the restrictions that it seems to put in place across quite a wide range of possible policy areas. So, it behoves the Welsh Assembly Government to say not what it cannot do but what it can do and, having said what it can do, what it proposes to do in each of those areas.

[143] **Alun Davies:** I wholly disagree with your view of the Government of Wales legislation; I think that it opens up an enormous range of new powers to us to act in this policy area and in many others. In your paper and presentation this morning, you have not been very explicit in explaining what you mean by the additional powers that we might need to seek. So, can you explain to us what legislative competence Orders you feel we should be seeking and which matters you believe they should be related to?

[144] **Mr Jones:** What we have tried to do in this paper is draw attention to the exceptions under Schedule 7 that, as I understand the Act—and I am no constitutional expert—define the legislative boundaries beyond which the Welsh Assembly Government, both now and even post a successful referendum, would not be permitted to go. In relation to climate change policy, energy generation, transport and so forth, it is clear that these restrictions are major and impose severe limits, in our view, on the ability of the Welsh Assembly Government, at present and after 2011, to act in the more robust ways that might be thought appropriate for the seriousness of the problem. Therefore, what we have tried to do in our submission to the committee is suggest, within the boundaries that Schedule 7 appears to put in place, what you nevertheless can do. As I understand matters, currently, the Government of Wales Act 2006 empowers the Assembly to acquire legislative competence within those policy areas for which it has already enjoyed secondary legislative competence. So, it gives you primary law-making powers within the existing areas of Assembly power but it does not extend the boundaries of the Assembly beyond what they were before the Government of Wales Act 2006. So, yes, it gives you primary powers but only within the area where you already had secondary powers.

[145] **Alun Davies:** Mr Jones, we understand the legislation, and you can take that as read, so we do not need to run through all the issues that remain outstanding. My question related to the positive aspects that we can address at present. Any Act of Parliament can be amended by another Act of Parliament, so this is not set in stone; it is a developing, unwritten constitution, and I am sure that we will see further developments in the future. So, we do not need to have a seminar on constitutional policy. I am concerned to address the positive, practical policy objectives that we can follow at present to address carbon reduction. You have said that you would like to see us move in that direction. Can you outline what exactly you mean by that?

[146] **Mr Jones:** I have already referred to public awareness raising, which does not require additional powers on the part of the Assembly, and which is an important culture-change part of anything that you do, regardless of whatever else you might decide to do. It would also create a public opinion out there that supports what you are proposing to do. Beyond that, the

possibility of LCOs might exist in areas like microgeneration, and I mentioned earlier the possibility for incentivising and perhaps regulating actions at local authority level. The point that I am trying to make is that, in my view—and this is a disappointed and pessimistic view—the capacity of what can be done, namely the areas within which legislative competence can be extended under the Government of Wales Act 2006, is far less than one would have hoped to see. Therefore, the likelihood of Measures that can be enacted within the restrictions, such as the 50 MW restriction and the building regulations restrictions that we have already talked about this morning, are quite significant. I will await, with interest, the energy route-map, when it eventually appears—I think that we have been waiting at least two years for it. However, even its earlier versions, and the energy efficiency action plan that accompanied it back in 2005, were very limited in what they suggested could be done, as opposed to setting out what should be done. The problem is the gap between what needs to be done and what the Assembly Government appears to have the powers to do.

10.50 a.m.

[147] **Alun Davies:** Is it your contention, Mr Jones, that the final draft of the Climate Change Bill, which we expect to see published in the next few weeks, should be a means of devolving more responsibilities to Cardiff?

[148] **Mr Jones:** I certainly think that the new climate change commission, when it is put in place, will have an early responsibility, as we say in our paper, to try to work out what a programme of action for Wales to address climate change, within the powers of the Assembly Government, needs to be. We need to have regard to the Climate Change Bill, which, now that an election is safely out of the way, will hopefully find its way through Parliament over the next few months to be enacted early next year; the Assembly Government will also need to play its role in contributing to the UK's implementation of the targets in that, when it becomes an Act. So, these are two areas where I would expect to see action taking place. It remains to be seen how the climate change commission will work—we do not know who will be on it yet, and it is not clear to me, or to others, I suspect, as to quite what its role will be, although it will clearly have an advisory role.

[149] **Mick Bates:** Thank you, Peter. That discussion was enlightening, and summed up that powers of exhortation do not equate to competence.

[150] **Leanne Wood:** You say that the 'One Wales' emissions target fails on two fronts: first, that it is restricted to areas of devolved competence and, secondly, that it is an aim to achieve rather than to deliver by 2011. Do you accept that there is not much point in the Government saying that it can achieve something in areas where it has no control? Can you tell us why Wales Environment Link considers the 'One Wales' target to be insufficient to enable Wales to make its full contribution to meeting UK targets?

[151] **Mr Jones:** On the second part of that question—the essence of it—we have, I hope, established the areas of competence, although we await the Assembly Government's definition of what they are. The areas of competence are limited and far more limited than, perhaps, some of us would have expected or hoped. Clearly, 3 per cent of a rather limited competence will be significantly less than 3 per cent of total carbon emissions across Wales from all sources.

[152] **Alun Davies:** I have not accepted that, Mr Jones

[153] **Mr Jones:** I understand that. I fully accept that the Assembly Government can only work within its areas of competence and, therefore, in terms of what it can do directly, it can only set out to achieve targets within that area of competence. Whether that target should be 3 per cent or some other figure, which, perhaps, reflects the relatively small part of the total

Welsh carbon emissions that come from the public sector and within the remit of the Assembly Government, I am not sure. However, in terms of setting that contribution within overall UK greenhouse gas and carbon dioxide emission reduction targets, 3 per cent within the competency of the Assembly Government will be insignificant and far less than what is needed to deliver on the UK targets, including the likely targets to be put in place in next year's climate change Act. Therefore, this target is quite clearly insufficient in those terms.

[154] Sorry, I have forgotten what the first part of your question was.

[155] **Leanne Wood:** I was just saying that there is no point in a Government making a statement that it can deliver something over which it has no control. Following on from what you have just said, what would you say are the environmental implications of the 'One Wales' target, given that it is an aim rather than a commitment to deliver? If it is so insignificant, are you saying that there is no point bothering?

[156] **Mr Jones:** No, I am not saying that at all. I am just trying to be honest, I hope, and recognise the limitations of the Assembly Government's powers in this particular policy field. However, as I remarked at the end of my earlier comments, the implications of climate change for biodiversity globally, and here in Wales, are very serious and not just for humans. Therefore, we in Wales Environment Link want to see robust policies and targets being put in place while fully accepting that robust targets are one thing, but an ability to deliver on them is something else. That is why I return again to my general theme of public awareness raising. The Assembly Government can do that and it does not require new powers to enable it to do so. Raising awareness has not, so far, been done on anything like the scale that is necessary if people are to begin to understand the nature and scale of the problem that we all face. People need to acquire the understanding and willingness to do something about it in their own lives each and every day, whether at home, at work, while travelling or whatever it may be. This is of fundamental importance and you can, as an Assembly Government, do something in that area.

[157] **Darren Millar:** You refer in your submission to a contraction and convergence model. Can you give us as short an explanation as possible of what that would be?

[158] **Mr Jones:** Yes, I was afraid that you might ask me that. This concept has been developed initially to look at carbon emission reduction globally. It is based on the recognition that carbon emissions per capita vary enormously depending on whether you are in the United States, the European Union or in Somalia, to take some obvious examples. It endeavours to calculate a mean, namely what level of average global carbon emission reduction we need to aim at if carbon emissions are to be brought below the level by which they are currently adding to the level of carbon dioxide in the atmosphere. There are various estimates of what that might be, but the general assumption is that we need to reduce current global carbon emissions by around 50 per cent. To reduce global carbon emissions by around 50 per cent does not mean that you ask the United States to reduce its emissions by 50 per cent, or Somalia to reduce its by 50 per cent; it means that you ask the United States, the United Kingdom and Wales to reduce their emissions by a much higher figure and ask the Somalias of this world to reduce theirs by a much lower figure, so that over an agreed period of time, we can arrive at an overall global reduction of 50 per cent. So, that is the meaning of contraction and convergence. It is an attempt to introduce fairness into the distribution of responsibility for carbon emission reduction.

[159] **Darren Millar:** You also talk about contraction and convergence within the United Kingdom, whereby different parts of the United Kingdom, and perhaps you also mean different parts of Wales as a nation, could have different targets for carbon reduction. What would be the difficulties in implementing that? How could you deliver it?



[160] **Mr Jones:** I am not sure whether we are serious in suggesting that it should be implemented. It is an attempt to draw attention more to our problem, as we have been discussing this morning, that because of, in particular, high industrial emissions, Wales, per capita, has a higher carbon emission figure than is true of the United Kingdom average. In addressing that problem, it is also a question of trying to take account of the different levels of per capita gross domestic product as between Wales and some parts of the rest of the United Kingdom, particularly London and the south-east outside London. We are simply posing the question of how fair it is to ask Wales to reduce its carbon emissions by a standard figure that is applicable to the whole of the United Kingdom when there are other parts of the United Kingdom—the united states of the United Kingdom, if you like, in the south-east—that are emitting, by virtue of their higher consumption levels, carbon emissions that are significantly above the per capita figure as compared with those that people individually in their households and so on can be held responsible for in Wales.

11.00 a.m.

[161] The practical considerations in terms of implementing such a project, even assuming that you could persuade a Government to do so, would be enormous—not least the practicalities that we still face in trying to regionalise carbon-emission measures, in trying to measure Welsh emissions, and trying to measure emissions at local government level in Wales. I am not suggesting that this would be an easy thing to do; it is just an attempt to draw attention to the potential unfairness of standard, across-the-board, carbon emission reduction targets.

[162] **Mick Bates:** Thank you; I think that we have got the point.

[163] **Brynle Williams:** Going on from that, there is obviously a need to reconcile heavy industry in Wales with the need to reduce emissions. Can you expand on that?

[164] **Mr Jones:** In terms of industrial emissions—I am sure that the Welsh Assembly Government and others are doing it anyway—we must continue to work on trying to improve the carbon efficiency of production methods. I know that Corus in Port Talbot, for example, is working on that and that process must continue. We cannot ask Corus to close down its operation at Port Talbot, or anybody else for that matter, to reduce Welsh production-based carbon emissions. We can only continue to strive for a greater level of efficiency so that the carbon output per unit of economic output continues to fall, as it has been falling.

[165] Coming back to the discussion that you had earlier about the production versus consumption models of measuring carbon emissions, Corus and its carbon emissions, and those of other manufacturers in Wales that export outside our borders, and not just to England, are driven by global demand—by demand from China and India, which have huge expanding manufacturing economies. That is the problem that we face. It brings attention back to contraction and convergence again. There is a fundamental problem with economic growth as the driver of energy use and carbon emissions, keeping within the natural resource constraints of the planet, and how we can then square economic stability in Wales, the UK and across the industrialised world with bringing down carbon emissions while, at the same time, enabling China, India and the rest to improve their material consumption.

[166] The scale of the problem is enormous. All that I am trying to do in this paper, in a very small way, is draw attention to these kinds of issues. I do not pretend that there is a simple solution: Corus needs to continue to produce steel and China continues to need steel to manufacture the goods that we then import back, in the main. How do we square that with carbon emission reduction?

[167] **Alun Ffred Jones:** If I may, I will start with something slightly controversial.

Looking back over the eight years of the Assembly and the attempts to reduce carbon dioxide emissions, how do you rate the performance of the Assembly Government on a scale of one to 10—10 being very good and one being useless?

[168] **Mr Jones:** Oh my God.

[169] **Mick Bates:** Is there a zero on that scale?

[170] **Alun Ffred Jones:** There is a 'one'.

[171] **Mr Jones:** That is an incredibly difficult question; thank you, Alun.

[172] **Alun Ffred Jones:** Would you prefer not to answer?

[173] **Mr Jones:** No. What I will say is that Assembly Governments have worked hard in terms of producing a number of policy and strategy documents: there has been the climate change programme, energy documents, the environment strategy that addresses climate change, and, above all else, the sustainable development scheme and action plan that endeavour to put in place programmes for, among other things, climate change mitigation in Wales. In terms of aspiration, if I can sub-divide your scale in that way, I think that I would give the Government a high mark—maybe eight out of 10 for trying. In terms of actual delivery, the figures, unfortunately, speak for themselves. That is not necessarily entirely the fault of the Welsh Assembly Government, of course, because it goes back to the point that I raised earlier about the limits on its powers. Also, I would criticise the Assembly Government for not having accepted the promptings of the Royal Society for the Protection of Birds and others to launch a public-awareness-raising campaign in an effort to reduce individual emissions across Wales. In terms of delivery, I would probably have to give it two or three out of 10.

[174] **Alun Ffred Jones:** You mention the difficulties with the Government of Wales settlement, and the limits on the powers of the Assembly, and under point 7 of your submission, you list some ideas about powers that the Welsh Assembly Government could ask for. Which of these legislative powers do you think would be the most important in tackling the issue, given the constraints of the Act?

[175] **Mr Jones:** In point 7, we draw attention to the apparent competence under the Act in relation to,

'the powers and duties of local authorities and their members and officers'.

[176] This is one area where, if you coupled a public awareness campaign with hypothecated funding to local authorities and appropriate targeting, it is possible that local authorities, with public understanding, could make a significant contribution to household carbon-emission reduction in particular across Wales. In the household sector, a great deal of responsibility devolves down to the 22 local authorities, and I sometimes feel that we have neglected them, in terms of thinking about an overall strategy for sustainable development and climate change mitigation in Wales—and I include myself in that neglect. This area needs to be looked at more closely to see what could be done.

[177] We talked this morning about possible council tax remission for people who implement various measures. I would add to that the fact that outright grants play an important role, too. Yesterday, I was looking at the work that is being done by the mayor of London, and I refer in the paper to his climate change action plan, under point 6. He has introduced a programme called Action Today to Protect Tomorrow, which includes, for example, 100 per cent grants for home insulation for people on low incomes and benefits, and

includes what are described in the document as ‘very high subsidies’—I do not know what the figure is—for all other people to induce them to take the necessary steps towards improving the insulation in their homes and reducing their carbon emissions. It is that kind of thing that the Welsh Assembly Government could usefully be doing within its existing powers.

[178] **Mick Bates:** I turn to Lorraine, finally, following on neatly from that, to ask how much—

[179] **Mr Jones:** Oh God, the question. I thought that I was going to escape it. [*Laughter.*]

[180] **Lorraine Barrett:** Approximately, what expenditure would be required to implement the Wales Environmental Link’s policy suggestions?

[181] **Mr Jones:** I will not take Gordon’s very sensible get-out answer. The idea of the awareness-raising campaign was mooted as long ago as 2001-02, as I think Mick will recall. Some of you might remember that Christine Hutchins with the charity One World Trust first pushed this idea. At the time, she came up with a three-year programme of around £3 million to cover the costs of advertising and so on. It always struck me as rather a low figure, and I suspect that, today, and given the scale of the problem and the size of the programme that we might need to implement, the budget would have to be considerably more than that. I can only guess, but I would think that we need in the region of £10 million for awareness-raising.

[182] Beyond that, it is very difficult indeed to induce people to place microgeneration technologies in their homes, and so on, and it will require an exercise to work out quite what it would cost. However, again, I would think that it would be well within the affordable means of the Assembly Government over a period of time. We are not talking about delivering this all in one year, but over a number of years. Therefore, I would have thought that we would be talking about £20 million to £50 million, over time. I would have thought that such sums ought to be found by the Assembly Government, given the purposes behind such expenditure. However, that is just a guess.

[183] **Mick Bates:** Stern recommended up to 2 per cent of GDP.

[184] **Darren Millar:** I have a brief question related to awareness-raising. In the submission that we received from the Energy Saving Trust, Helen Northmore seemed to suggest that it is not only about raising awareness among adults, but about capturing the imagination of children when they are quite young to ensure that the message is reinforced throughout their education, as that will lead to behaviour changes in the home. I used a phrase that was perhaps not the best choice of words, but I said that they could become almost like little Hitlers around the home, telling mum and dad how to do things. Do you think that it would be useful for some of that cash to be focused on education so that schools could also reinforce the message clearly?

11.10 a.m.

[185] **Mr Jones:** The simple answer is ‘yes’, for two reasons. The first is that the RSPB has seconded Claire Fowler from our organisation to the Assembly Government, to develop and now to implement—successfully, I hope—a programme of sustainable development education in schools. That will look at global citizenship and, within that, energy efficiency and climate change mitigation will play an important part. The second reason is that, when my daughter was 13 years old, she came home from school one day and said, ‘Dad, we have been talking about recycling at school, but we are not recycling, are we? We have to start recycling’. We started recycling and have been doing so ever since.

[186] **Mick Bates:** On that note, Peter, I thank you for your evidence and answers. I also

thank committee members. We will resume in 15 minutes' time.

*Gohiriwyd y cyfarfod rhwng 11.11 a.m. ac 11.31 a.m.  
The meeting adjourned between 11.11 a.m. and 11.31 a.m.*

**Ystyried Deiseb PO61(GR) am y Nodyn Cyngor Technegol Mwynau: Glo  
Consideration of Petition PO61(GR) on the Minerals Technical Advice Note:  
Coal**

[187] **Mick Bates:** We are ready to resume, but we will take item 4 first, because one of the witnesses from the Centre for Alternative Technology—who was due to give evidence on item 3, the inquiry into carbon reduction in Wales—is unfortunately on a train from Machynlleth, and the train has broken down. At least it is emitting less carbon. [*Laughter.*]

[188] The background to item 4, as many of you know, is that a Petitions Committee was established under the Government of Wales Act 2006. It has been receiving petitions and, at its meeting on 21 September, it agreed to refer petition PO61(GR) on the coal MTAN to this committee for further opinions. The petitioners are calling for a strict presumption against opencast mining, and a minimum separation distance of 500m from homes. The consultation on the draft coal MTAN ended on 28 April 2006, and further research into the relationship between coal resource and communities in Wales was commissioned on the basis of the responses that were received. The findings of the research are to be presented to the Welsh Assembly Government this month, and the final coal MTAN is to be published after that. A more detailed paper on the petition, which has been circulated to Members in advance, asks the committee to discuss an appropriate way forward. Does anyone have an opinion on how we proceed with the petition? I see not.

[189] In that case, I will make a suggestion. This is extremely controversial, and planning decisions have already been made that we cannot impact upon, and so they cannot form part of this discussion. However, from the brief background that I have given you, you can see that the issue has been going on for some time, and I see three possible courses of action. One is simply to note the petition. The second would be for me to write to the Minister on behalf of the committee, asking her at what stage she expects the full coal MTAN to be produced, and drawing her attention to the fact that there is some urgency surrounding this, given that the original consultation was in 2006. The third course of action that I can think of—and I am sure that you will think of others—is that I write a letter to the Minister for planning, but also include an invitation to attend one of our meetings so that we can scrutinise the actions that the Government has taken since 2006. Obviously, there was a different Government in power at that stage, but we could look at how the paper is being prepared, based on the consultation documents that the Government received, and we could ask for the publication date of the technical advice note. It would also be important for us to invite the petitioners to present their case to us in more detail, and so that could be placed as an item on a future agenda of ours. The Minister is attending our meeting on 8 November, so, if the Minister were willing, we could see whether that would be an acceptable time. Those are the outline issues. If you have anything to add, I will take points.

[190] **Alun Davies:** Thank you, Mick. I agree strongly that we need to invite the petitioners to make their case on this issue. However, at the same time, we need clarification from Government as to its timescale. As you say, the consultation was completed some time ago, and, as a result, I would anticipate that it is getting ready to publish the new guidance. It appears that the only purpose in our discussing this is if we seek to influence that process, and, if so, we need to ensure that we have the opportunity to do so. That means bringing the petitioners and the Minister to a meeting of this committee in order for us to examine the issues, produce a report, and then ensure that that is taken account of as part of the process.

[191] I had experience during the summer of a petition being received by the Enterprise and Learning Committee. The committee determined that it would like to discuss it in more detail, but the Minister made a statement in the meantime. The Deputy First Minister has indicated that that was not good timing and not the way that he would seek to operate in future. It is important, if we are determining and examining issues raised by petitioners, that that process is seen to be integral to the whole process of Government decision making, and that Government does not then go ahead and announce decisions prior to our having an opportunity to discuss the issues.

[192] **Mick Bates:** I take that point—it is an excellent point. I believe that we would cover that in my second suggestion, which would be a letter asking the Minister for the timetable of events. I would be equally interested in the additional point that, in that letter, we invite her, and the petitioners, to give evidence so that, as a committee, we would be in a better position to offer advice.

[193] **Lorraine Barrett:** I believe that it is a mixture of your options 2 and 3, and taking on board what Alun Davies has just said. The petitions system is new to us, and we could have a petition coming to us at every meeting. Therefore, we need to find a way of dealing with this methodically, given our workload, which is already set in the programme. So I agree that it makes sense to get as much information as we can from the Minister, and then to decide how to proceed and whether we need to take evidence from the Minister and petitioners—I have no problem with that, but we need to manage it. We cannot just say to petitioners, ‘Oh, yes, come in, we’ll take on board what you’re saying’. Let us do it methodically and find out what is going on, what the programme is, and what the plans are, and do it properly, rather than just paying lip service to it, and maybe not being able to deliver anything at the end of the day.

[194] **Mick Bates:** That is a valid point. We are not the body to deliver—we are part of the democratic scrutiny that a petitioner wants. That is where a letter to the Minister and a timetable comes in, and then, if possible, some scrutiny. Therefore, what you may be suggesting, Lorraine, is that we write the letter as soon as possible, then bring the Minister’s response back for discussion before we make a final decision on whether we invite the petitioners and the Minister before the committee.

[195] **Darren Millar:** The paper before us notes that the findings of the new research are expected to be presented to the Government in October. It will be important to gauge the Minister’s reaction to that, and if she is coming to us in November anyway, that will give us the opportunity to hear what her reaction might be. I agree with Alun that it is important that we ensure that the petitioners have the opportunity to present their case more fully, because the information accompanying the petition is limited; only then can we offer any kind of informed advice as to what action the Minister might be able to take. Therefore, I agree with Alun and Lorraine that it is a combination of the two. However, if we get the Minister in, we must also allow the petitioners the same opportunity to present their case.

[196] **Alun Ffred Jones:** Is there not a danger that this is tokenism? The draft TAN is out, and the Minister will soon make an announcement on it; having had the official consultation, she will make a decision and publish it, and that will be that, will it not? I am not opposed to having the petitioners come here of course, but we may be offering them false hope, because if we cannot influence the process, are we merely giving them a stage on which to present their case? I am not against that, but we have to be clear about what we are doing, otherwise we will be misleading them.

11.40 a.m.

[197] **Mick Bates:** That is why the first option was to say that we note the petition. I think

that it was Lorraine who said that we are in a learning process. Eventually, I am certain that there will be a firmer protocol on how the Petitions Committee and then scrutiny committees deal with this. I was just suggesting that we write to the Minister in the first instance. The second option is simply to find out what the timetable is. That may then afford us the opportunity to ask direct questions to the petitioners and the Minister, which may be helpful for both parties. I am not for one minute suggesting that we are part of the consultative process, which has already taken place, but we can bring to light the intentions of the Minister based on all the work that has been done and in what seems to me to be some considerable time since the initial consultation took place. I think that that is our role.

[198] **Alun Ffred Jones:** I have the transcript of the Petitions Committee meeting, which is hilarious really. It says:

‘I do not see why we cannot pass it on to the committee and for the committee to then pass it back to us’.

[199] Well, that is just great.

[200] **Mick Bates:** I think that it would be frivolous to do that. That is why, in the first instance, we should examine the options. If we then decide that that is not how we should take on future petitions, we will review the process. We are learning, but we have to understand that, although there is a level of expectation, we can only scrutinise the Minister on her role and what she is doing. Are there any new points on this?

[201] **Karen Sinclair:** The Petitions Committee is very new, and it is finding its way. Protocols must be worked out. If we write to the Minister and, as Alun and other Members have said, the deadline is imminent, all we can do is note the petition, realistically. If petitions are being taken on board and accepted as a legitimate way to move things forward, it has to be in the context of what is possible. Otherwise, it is quite a disingenuous way of dealing with people who have done an awful lot of work.

[202] **Mick Bates:** Absolutely. Are there any new issues?

[203] **Darren Millar:** Clearly, the Minister is still allowing her existing position to be influenced, not just by the consultation, which ended last year, but by the new research that has been done, which we are hoping to see published in October. If that is the case, there is still time to influence the Minister’s decision and to give her advice as a committee, based on the evidence that we have received. It is extremely important that we do not write ourselves off as people without influence in this. I am sure that the Minister will consider carefully any representations that we put forward.

[204] **Alun Davies:** The point that I would seek to make follows on from Alun Ffred’s contribution. The petitions process, and the process by which petitions are considered subsequent to them being accepted by the Petitions Committee, must form a part of the Government’s decision making. Otherwise, the petitions process and the process of public engagement in this institution or the institution of government are undermined. As part of that, I would argue that, in terms of scrutinising the issue, and not simply the Minister, we would have a role to play in influencing the Minister’s decision. If we do not have that role, I would question whether the petitions are worth the paper on which they are written.

[205] **Mick Bates:** I hope that we have reached an understanding that we want to do something. Our first action will be to write to the Minister to ask for a timetable of events. We will suggest in that letter that we would like, if necessary, to discuss the issue further in committee with the petitioners and the Minister. I will bring her response to the committee, and, in light of that response, we may choose at that stage to invite the petitioners and the

Minister to the committee. We have a bit of flexibility after option 2. Are people happy with that? I see that you are. Thank you.

11.44 a.m.

**Ymchwiliad i Leihau Gollyngiadau Carbon yng Nghymru: Y Ganolfan  
Dechnoleg Amgen**  
**Inquiry into Carbon Reduction in Wales: Centre for Alternative Technology**

[206] **Mick Bates:** It gives me great pleasure to introduce Tim Helweg-Larsen from Zero Carbon Britain. Unfortunately, as I mentioned earlier, Peter Harper, the head of research and innovation, is unable to be here. I understand that he was responsible for the part of your document that refers to housing and, as we are particularly concerned at this stage with the reduction of residential carbon emissions, it is unfortunate that he is not here. If points are raised in the questions that you feel would be best answered by Peter, I suggest that you take back those points and provide us with a written answer. That would be perfectly acceptable.

[207] **Mr Helweg-Larsen:** That would be great.

[208] **Mick Bates:** In that case, it may be that the questions will be more general. I invite you to give a brief synopsis—a maximum of five minutes—of what you would like to tell us and then there will be questions from Members.

[209] **Mr Helweg-Larsen:** Thank you very much. Peter is not here and I do not think that he will make it before the end of the session, therefore I am going to do a combination of introducing the work that we have done and read a little from some of the text that Peter put together, which is included in your written submission.

[210] Essentially, we have worked over the last year or so on putting together an energy strategy for Britain as a whole. We wanted to integrate climate science with policies and a technology path that can take us to a zero-carbon Britain. We did not set out with zero carbon as the objective—we wanted to see how much we could power down energy consumption and how much we could power up renewable energy. We wanted to look, sector by sector, at the ways in which we could make savings and technology by technology at where we could find renewable energy. Our framing constraints or context are obviously climate change, peak oil, which has been mentioned in other terms today, and global equity. Even if we are looking at a national policy on energy, we need to relate it to those wider issues.

[211] From watching the committee on the video screens, I know that the seriousness of the climate science was mentioned in earlier evidence. I will add to that briefly. I think that it is necessary, because we placed ‘zero carbon’ as our strapline, which is a step further than a 40 per cent, 80 per cent or 90 per cent reduction, and it therefore requires a flip in approach. Once you get all the way to zero, you are left saying, ‘Are we dead yet?’. The answer that our report gives is, ‘No, we are not’. There is life beyond carbon and it can be exciting.

[212] We go to zero carbon because of our reading of the climate science. We have been looking at the work of the Intergovernmental Panel on Climate Change and at the work of the contributing authors, rather than just the summary documents. As we have heard already, the political process, which is the final hurdle that the Intergovernmental Panel on Climate Change’s publications go through, is detrimental. We have been getting a lot of advice from a chap called David Wasdell, who is one of the reviewers of the reports. He was in a position to see the final draft from the climate scientists and to compare it with the final published draft. His critique is that references to acceleration, non-linearity and runaway, in terms of the different components that make up climate change, had been systematically stripped out by

the time the end document was published. In our reading as the general public, as it were, and from hearing how the press reiterates the findings of the IPCC work, we are generally left with the feeling that climate change is something that we can go into and it will get worse, but we can come back out of it and it will be all right. David Wasdell would explain it as thinking of being in an elevator going down under ground—that you can go down in the elevator and can always run back up. Climate change is not like that. There are accelerating feedback mechanisms in this and it is a little bit like having an escalator that accelerates the further down that you go. If you have taken five steps, you might be able to run back up, but if you take 10, you are going to have to really run to get back up to the top, and if you take 15, the thing is moving so fast that there is no way that you can get back up to the top. That is the climate change situation that we are dealing with. The carbon emissions and the greenhouse gas emissions that we are contributing are simply the detonator of the larger climate system—the larger climate explosion. We have to make sure that we do not detonate that larger system.

[213] I am going to read very briefly from the text that Peter has provided because I think that he has a neat piece in here that summarises some of our key findings and the implications for Wales. Perhaps I can then move on to your questions. The policy implications are of a completely different order to those that we have just got used to, like the ones from Stern or from the IPCC. The implications rock the boat. We would be taking an emergency war-style transition in which ordinary politics and economics are, to some degree at least, suspended. If this really become necessary, it would be better that we had a few years to prepare for it and undertook it in a planned and controlled fashion than being forced into this suddenly by world events.

11.50 a.m.

[214] In our report, ‘Zero Carbon Britain’, we attempt to outline what this transition might mean for Britain as a whole. The report identifies the necessary targets and it describes by way of illustration one of many possible strategies to get there. The key elements are: maximum diplomatic pressure for a global agreement on an action plan for planet safety; the acceptance of contraction and convergence as a global framework for the reduction of greenhouse gas emissions; a cap on UK carbon emissions, and shrinking them to zero; the harnessing of market forces to drive that raze-out of carbon; and doing this with the allocation of tradable energy quotas—carbon permits—to ensure fair access to energy for all. We need to look at the power-down of primary energy demand through systematic efficiency improvements. We need to be looking at the power-up of low-carbon energy sources.

[215] These framing tenets bring with them implications: a gradual change in personal behaviour as emissions quotas decline year by year; an unprecedented development in new energy infrastructure; a highly electric economy involving strength of national grid and a great deal of local generation—most renewable generation technologies produce electricity straight off—particularly intensive developments in marine energy resources, including off-shore wind, wave and tidal technologies; householders and business enterprises will be intimately involved in energy load management, which will be crucial; transport shifting largely to electric propulsion and serving as an energy storage medium for the grid, that is, car batteries will work for the grid as well as for the vehicles; a rapid shift to new zero carbon buildings; comprehensive retrofits of existing housing stock; the shortening of supply chains; and the relocation of the supply of many goods, especially food.

[216] What might this mean for Wales? We have taken an all-Britain look at this, and if we start looking at Wales, let us candidly admit that, in normal terms of conduct of public affairs here in Cardiff and in ordinary homes throughout the principality, the implications of our work are completely off the radar. This does not release us from the obligation to call attention to them, but we have to think how, practically, they can best be carried forward. Some kind of adaptor plug between present-day reality and the other reality, which we believe



is just around the corner, is needed. We understand, of course, that, at least for a while, there will be no extra money to actively pursue these issues, but perhaps a start can be made by altering or extending the terms of reference of those bodies in Wales already charged with addressing the implications of a low-carbon economy. Hitherto, their brief has been to articulate a model based on the out-dated assumptions behind the Kyoto protocol and the Stern review. Understandably, they choose reasonable targets, such as how to shave off 10 per cent here and there without upsetting anybody, or how to achieve 20 per cent penetration of renewables in the electricity supply mix. These were appropriate under the old dispensation, and these groups have done excellent work, but now we need to roll up our sleeves and explore the implications for a new paradigm, and the Assembly Government should firmly instruct them to do so.

[217] **Mick Bates:** I would ask you to draw your remarks to a close now, so that Members can ask questions.

[218] **Mr Helweg-Larsen:** Okay. In conclusion, we see that Wales has the opportunity, given its lower population density and its manageable size, to act as a demonstration for Britain as a whole. If Wales can take the early steps towards zero carbon not only in buildings and houses, but in the energy supplies to them, we can provide education and a demonstration for the rest of Britain and Europe.

[219] **Darren Millar:** In the submission, and in your presentation, you mention the ‘climate bomb’ that is ticking away. Essentially, you say that the fuse is lit but that you still have just about enough time to put it out before the bomb goes off. That is an almost apocalyptic view that, if we do not put out the fuse, things will accelerate beyond anything that we can control or influence. Can you explain the science behind that? What sort of timescale are we looking at, and how much carbon reduction do we need to achieve in order to put the fuse out?

[220] **Mr Helweg-Larson:** There are perhaps three things for me to touch upon there. The first is to say that all of this is mixed in with uncertainties. How far are we down the burning of that fuse? We do not know. Have we passed the point of no return? We do not honestly know. However, what we can see are the general systems in place for climate change. I will talk about energy moving in and out of the atmosphere, and I will talk about feedback mechanisms. Right at the heart of our understanding of climate science is the balance of energy that comes into and goes out of our atmosphere. Too often we lick our finger, stick it in the air, and ask, ‘What is the temperature? Is the planet warming?’. The temperature is just the outcome of the flows of energy. When our planet was in a steady state, we had an equal amount of energy coming in and going out. Adding these extra blankets of greenhouse gases means that we now have ‘radiative forcing’, which is just a fancy term for more energy coming in than going out. Our atmosphere is cumulative, like a bathtub, and most of what goes up, stays up. That means that a good portion of any extra emissions we make, perhaps all of them, will reside up in the atmosphere. So, we are only adding to the blankets up there; we are not taking anything away, and we are not getting back to the point where energy can go out as easily as it can come in. The implication is that if you keep these extra blankets of greenhouse gases up there, temperatures will rise as the energy keeps coming in. We will increase the energy contained in the atmosphere until that energy can punch its way out through those blankets as powerfully as it comes in. Then we will reach a new stage of equilibrium, but with a higher temperature on the planet, which is no good to us.

[221] The feedback mechanisms relate to this climate bomb analogy. There are a number of mechanisms happening right now. One of the simplest to understand is that as the planet warms, we are melting ice caps, and so there is less snow in Europe, and we have shorter ski seasons in the Alps, for instance. As there is less snow and ice cover on the planet, there is less highly reflective material to bounce solar radiation back into space. If it is not being bounced back into space, it is staying within our earth’s climate system, and so we are heating

the planet further. So, it is a positively reinforcing system—not positive in the sense that it is a good thing, but the change is reinforced.

[222] Another good example—or terrifying example, I suppose—is that, as we warm our planet through greenhouse gases and, at the same time, deforest the planet, there is a real threat that we will turn large belts of forest, including the Amazon rainforest, from being carbon sinks that draw down carbon, into carbon sources. The way the Amazon rainforest works is that the wet air comes in from the east, falls as rain on the eastern side of the Amazon, evaporates, floats across further, and falls again as rain. That cycle happens about seven times, transporting the rain across the Amazon. If that falters because of deforestation, or because of increased forest fires through longer, dryer seasons, then we only need to break that first piece of the Amazon to prevent the water from getting through to the rest of it. It would mean that, in possibly as little as a decade, the Amazon could release its body of carbon through aggregated forest fires.

[223] So, we have these positive feedback mechanisms, and the point is that they are happening right now, and we do not know at what point they will run away with themselves, but when they do, the carbon implications and greenhouse gas implications are far bigger than anything that we cause through our own emissions.

[224] **Leanne Wood:** One of the things that I like in your paper is the idea of Wales becoming a first-mover country. What natural advantages does Wales have that would enable us to be one of these first-mover countries?

12.00 p.m.

[225] **Mr Helweg-Larsen:** The focus here is principally on buildings, but one of the amazing things is that we have a coastline that provides amazing wind opportunity. I do not know quite where it ranks, but it has either the third or fourth greatest wind resource in Europe. Scotland is at number one, and Northern Ireland is number two. Wales has to be up there at the top. So, our wind resource is phenomenal. As we point out in the report, Wales has a similar population to Denmark and we could be a leader in these technologies. We do not need to be any bigger, but we just need to start implementing them. We already have a ready market in terms of the rest of Britain and, through inter-connectors, Europe. So, we have the advantage, and we just need to get into developing offshore renewable technologies fast.

[226] With regard to engineering, the advantage comes because, with wind turbines, if you double wind speed, you get eight times the power. It is a cubic relationship. The fact that we have more than marginally better winds than other parts means that we have a huge opportunity in that regard.

[227] With regard to what we could do on building stock, the fact that Wales has gone for zero carbon homes earlier than the UK as a whole means that we have already taken steps down the road for that first-mover advantage. I am not a building expert, but I believe that planning allows extra obligations to be put in through the planning process—I think that it is under Section 106. We could implement the higher standards of passive house or silver and gold standards over and above UK building regulations as obligations on Welsh construction. That would immediately give us that first-mover advantage.

[228] **Alun Davies:** I would like to refer to what you said about what this means for Wales. You start by saying that, in terms of normal public discourse, all of this is off the radar. A couple of paragraphs later, you say that you are looking to create a zero carbon Wales forum that is protected from what you describe as ‘political, bureaucratic or media agendas’. Surely that is contradictory, because if you want to engage the population as a whole in this debate

that we are having this morning and on other occasions, you do not want that to be protected space, but you want it to be a highly populated space.

[229] **Mr Helweg-Larsen:** It may be that there is contradiction there, but I think that the distinction that we are trying to make is that, at the moment, the urgency of action is not on the radar. There is a lot of discussion about climate change, but there is not a guttural feel of what runaway climate change would mean. I do not think that that is felt by most planners, for example. We need to get to a point where it is, so that planning happens like that.

[230] In terms of our second point about the need for a forum, we are talking about the possibility of going further and faster through taking a smaller group—Wales as opposed to the whole of the UK—to implement things faster. We do not want to be constrained in our thinking by the larger public discourse. It would be an integral part of the whole thing eventually, but there is a real value in getting key ideas out there and not watering down our message because of what newspapers feel they need to print today.

[231] **Alun Davies:** Do you seriously believe that any of this is achievable without the active support of the nation as a whole?

[232] **Mr Helweg-Larsen:** No, not at all. I think that it needs the full support of the population. It will need full political backing. Why do we make that statement? Because we need to do the thinking that lays the groundwork for that to happen. I suppose the discourse needs to happen in parallel, but it must not be at the expense of planning what can be done and what needs to be done.

[233] **Alun Ffred Jones:** Following on from that, you talked about building and you talk in your submission about transport, which you say is often ignored in supposedly green developments. You also say that new settlements should address the entire carbon emissions spectrum of a community. What exactly do you mean by that in practical terms?

[234] **Mr Helweg-Larsen:** That may be a better question for Peter, who might have specific examples. However, I can add that we found, when writing the Zero Carbon Britain report, that you cannot look at one sector without involving the others. We have tried to look at transport, buildings, industry; in fact, all of these are integrated.

[235] **Karen Sinclair:** You have a rather radical approach to upgrading the housing stock. What would be the carbon payback time of demolishing an inefficient old dwelling and building a zero-carbon replacement?

[236] **Mr Helweg-Larsen:** Do you mean the payback in terms of the carbon emissions that are saved?

[237] **Karen Sinclair:** Yes.

[238] **Mr Helweg-Larsen:** It is not a section that I worked on, but I think that it is around two to four years. That will not apply to all buildings, but the buildings that you would demolish and rebuild would be a portion that had been singled out as those that would be the most appropriate and that would have the best payback, where that payback was being compared with otherwise very poor carbon losses in future—buildings that are very difficult to retrofit.

[239] **Karen Sinclair:** As I said, it is a really radical approach. Is there any option, in your opinion, other than demolishing the hardest-to-heat properties?

[240] **Mr Helweg-Larsen:** Yes, there are other options but, to us, this seems to be the most

pragmatic option. Our key constraint is carbon/energy. We have a limited amount of energy that we can invest in projects—in buildings and in running buildings—and we must ensure that we get the best return on our investment. There are many buildings that we can retrofit, there are opportunities for new builds, but for some buildings the best return on investment, based on energy and carbon terms, would mean demolishing them and starting again.

[241] **Alun Davies:** Leading on from that, you have spoken about the changes that we need to make in Wales—and you mentioned building regulations again—but you do not specify exactly what legislative powers you believe would be required for Wales to require solar-powered water heating for new buildings and the refitting of older buildings. How exactly do you see legislative powers being devolved to Wales that would enable us to achieve some of the objectives that you have set for us?

[242] **Mr Helweg-Larsen:** I am going to dodge that slightly with the ‘Peter’ answer.

[243] **Alun Davies:** It is a very good dodge.

[244] **Mr Helweg-Larsen:** Having talked to him about this, one of the key things that he identified was the section 106 provision. There is the opportunity to place extra obligations on builders and developers, and we see that this could be done on a wholesale basis, rather than dealing with individual cases. There could be a general policy for applying section 106 agreements to solar-powered water ordinances. That could apply not just to installing solar panels, but to a whole raft of building regulations that go beyond, to Britain as a whole.

[245] **Mick Bates:** As you put it in your paper, planning officers might become heroes. I thought that that was a wonderful statement.

[246] **Brynle Williams:** You made reference to the ideal sites for wind power being Scotland and Wales. There seems to be a conflict of opinion about that, and I have seen some evidence recently that this is not so. Regrettably, we seem to be covering Wales with windmills at the expense of looking at alternatives. You touched on wave power and lagoons, so can you expand on those?

[247] **Mr Helweg-Larsen:** First, on wind power, we must make a distinction between onshore and offshore wind. We are much more supportive of offshore than onshore wind power, not particularly because of Nimbyism, although that is an issue, but simply because you get stronger winds offshore. From an energy perspective, that is where you go.

12.10 p.m.

[248] In terms of the balance between offshore wind and marine technologies, we absolutely should be looking into wave, tidal stream and the collection of marine technologies. Wind power has progressed faster than wave power, simply because the marine environment is much more demanding. You have not only the corrosive water, but there is more power there and it is a bigger challenge to access that power. Water is 1,000 times denser than air, so moving water has 1,000 times more power to it, and the technologies that are proving most successful now—most of which are only at prototype stage—are not the ones that were designed to be most efficient, but the ones that were designed to survive. We need to look into that, but in mapping out the future energy pathway, as we have done in Zero Carbon Britain, while wanting to put as much energy as we could into it, we have recognised that those technologies will come on-stream later, because offshore wind is already much more mature, so we need to go for it.

[249] **Mick Bates:** We will scrutinise witnesses about energy production, but this is about residential issues. Brynle, I think that you have a question about meters.

[250] **Brynle Williams:** I do. This intrigues me: can you expand on what a cunning meter is? I am aware of the smart meter, but the cunning meter intrigues me.

[251] **Mr Helweg-Larson:** I have to pull out the ‘Peter’ answer on that one.

[252] **Brynle Williams:** It is that cunning, is it?

[253] **Mr Helweg-Larson:** I do not know if there is a particular distinction. You are familiar with smart meters.

[254] **Brynle Williams:** I am reasonably familiar with them.

[255] **Mr Helweg-Larson:** To touch on smart meters generally, we see them as being hugely useful, because they give rapid feedback to individuals, which we are lacking at the moment. We have put measures that provide feedback in our recommendations and key among them are systems of carbon permits so that we experience and feel the constraints on our energy and carbon use. Meters, crucially, provide that.

[256] **Mick Bates:** The Retail Association is coming to the next meeting next week, specifically to discuss smart meters.

[257] **Darren Millar:** As well as talking about zero-carbon housing in the report, you also talk about renewable energy contributions from the housing stock. You seem to indicate that the target should not be more than 10 per cent. Is there any particular reason for that?

[258] **Mr Helweg-Larson:** Essentially, we want to see renewables promoted according to the most efficient. Renewable generation will be promoted most efficiently if we set up an overarching scheme, such as tradable energy quotas, where there are benefits for all producers, whether they are home producers of energy with photovoltaics on their roofs or companies with large-scale windfarms. If we can put in the right incentives, the cheapest renewable technologies will come to the surface. If we constrain ourselves with something like a 10 per cent rule, that may stop us from putting too much money into poor returns. We are very much in favour of solar hot-water systems on roofs. In the report, we have extensive use of photovoltaics in buildings, but, it is worth noting that, however extensive our use is, even if it is as big as possible, that still amounts to a tiny fraction of the total energy mix required for the country. We would not want to dupe ourselves into thinking that we will supply all of our electricity needs through PVs on roofs.

[259] **Darren Millar:** What you are essentially saying is that, because of economies of scale, the larger the project, generally, the better.

[260] **Mr Helweg-Larson:** Yes; there are caveats to that—one of which is that we need to find ways of securing as much community ownership as possible. I have just come back from the island of Samsø in Denmark, which you might have heard about: it exports more energy than it imports. The crucial policy measure in Denmark, of which Samsø has made the most effective use, is that of feed-in tariffs, but they are feed-in tariffs that are focused on communities, guaranteeing a sale price in the early years of production. Denmark is now facing a problem where, having initiated so many good wind installations, as the installations are getting increasingly larger and corporate, they are moving their feed-in tariffs away from being community-based and are now subject to community backlash, so they are having difficulty in putting in more turbines. So, we must look out for that.

[261] **Mick Bates:** Thank you, that was fascinating. Perhaps we will have to go to the island of Samsø. What do you mean by the term ‘zero carbon’?

[262] **Mr Helweg-Larsen:** We had this conversation over coffee but, for everyone's benefit, zero carbon emissions from fossil fuels is what we focus on in the report. We are keen to make clear in the report that moving to zero carbon emissions from fossil fuels does not solve the whole problem—there are other carbon emissions such as cement and land use change, and there are other greenhouse gas emissions such as fertiliser for bio-fuels causing nitrogen oxide, which can cause more greenhouse gas problems than we can solve. So, we are keeping a watching brief on the larger measures that can be used to address climate change; we may need to look at some forms of sequestration, hopefully not by pumping oil wells to produce more oil, but we need to keep a larger perspective. Zero carbon is the first step that we can take in what needs to be quite an aggressive programme to address climate change effectively.

[263] **Mick Bates:** Thank you, Tim. I think that there were three points on which we will receive full answers from Peter.

[264] I thank Members for their attendance this morning. The next meeting will be held next Thursday at 9.30 a.m., when we will take evidence on carbon reduction from the Energy Retail Association, the London Borough of Merton, Woking Borough Council and the EU Sustainability Housing in Europe project; that will be quite an evidence session. The next session after that will be with the Welsh Local Government Association.

*Daeth y cyfarfod i ben am 12.17 p.m.  
The meeting ended at 12.17 p.m.*