

Cofnod y Trafodion The Record of Proceedings

[Y Pwyllgor Amgylchedd a Chynaliadwyedd](#)

[The Environment and Sustainability Committee](#)

4/11/2015

[Trawsgrifiadau'r Pwyllgor](#)
[Committee Transcripts](#)



Cynulliad
Cenedlaethol
Cymru

National
Assembly for
Wales

Cynnwys Contents

- 4 Cyflwyniad, Ymddiheuriadau a Dirprwyon
Introductions, Apologies and Substitutions
- 5 Cynnig o dan Reol Sefydlog 17.42 i Benderfynu Gwahardd y Cyhoedd
o'r Cyfarfod
Motion under Standing Order 17.42 to Resolve to Exclude the Public
from the Meeting
- 6 Ymchwiliad i 'Dyfodol Ynni Callach i Gymru?'
Inquiry into 'A Smarter Energy Future for Wales?'
- 31 Ymchwiliad i 'Dyfodol Ynni Craffach i Gymru?'
Inquiry into 'A Smarter Energy Future for Wales?'
- 48 Ymchwiliad i 'Dyfodol Ynni Callach i Gymru?'
Inquiry into 'A Smarter Energy Future for Wales?'

Cofnodir y trafodion yn yr iaith y llefarwyd hwy ynnddi yn y pwyllgor. Yn
ogystal, cynhwysir trawsgrifiad o'r cyfieithu ar y pryd.

The proceedings are recorded in the language in which they were spoken in
the committee. In addition, a transcription of the simultaneous interpretation
is included.

Aelodau'r pwyllgor yn bresennol
Committee members in attendance

Mick Antoniw	Llafur Labour
Jeff Cuthbert	Llafur Labour
Russell George	Ceidwadwyr Cymreig Welsh Conservatives
Llyr Gruffydd	Plaid Cymru The Party of Wales
Janet Haworth	Ceidwadwyr Cymreig Welsh Conservatives
Alun Ffred Jones	Plaid Cymru (Cadeirydd y Pwyllgor) The Party of Wales (Committee Chair)
Julie Morgan	Llafur Labour
William Powell	Democratiaid Rhyddfrydol Cymru Welsh Liberal Democrats
Jenny Rathbone	Llafur Labour
Joyce Watson	Llafur Labour

Eraill yn bresennol
Others in attendance

Craig Anderson	Prif Swyddog Gweithredol, Cymru Gynnes Chief Executive Officer, Warm Wales
Steve Curry	Rheolwr Adfywio Cymunedol, Cymoedd i'r Arfordir Community Regeneration Manager, Valleys to Coast
Mark Harris	Cynghorydd Cynllunio a Pholisi Cymru, Ffederasiwn yr Adeiladwyr Cartrefi Planning and Policy Advisor Wales, Home Builders Federation
Shea Jones	Swyddog Polisi, Cartrefi Cymunedol Cymru Policy Officer, Community Housing Cymru
Gill Kelleher	SPECIFIC, Canolfan Wybodaeth Arloesi, Prifysgol Abertawe SPECIFIC, Innovation Knowledge Centre, Swansea

University

Dr Caroline Kuzemko	Cymrawd Ymchwil, Coleg Gwyddorau Bywyd ac Amgylcheddol, Prifysgol Caerwysg Research Fellow, College of Life and Environmental Sciences, University of Exeter
Yr Athro/ Professor Gareth Wyn Jones	Athro Anrhydeddus, Ysgol Amgylchedd, Adnoddau Naturiol a Daearyddiaeth, Prifysgol Bangor Honorary Professor, School of Environment, Natural Resources and Geography, Bangor University

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

Chloe Corbyn	Y Gwasanaeth Ymchwil Research Service
Martha Da Gama Howells	Clerc Clerk
Alan Simpson	Cynghorydd Arbenigol Expert Adviser
Adam Vaughan	Dirprwy Glerc Deputy Clerk

*Dechreuodd y cyfarfod am 09:00.
The meeting began at 09:00.*

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

[1] **Alun Ffred Jones:** Croeso i chi i'r pwyllgor a jest ychydig o fanylion. Os bydd yna larwm tân, rydych chi'n gwybod beth i'w wneud. Gofalwch fod eich ffonau symudol chi ar 'dawel'. Mae croeso i bawb siarad yn Gymraeg neu yn Saesneg. A oes unrhyw ddatgan buddiant gan unrhyw un? Nag oes. Dyna ni. Ac ymddiheuriadau? Dim ymddiheuriadau.

Alun Ffred Jones: Welcome to you all to this committee meeting and just a few details. If the fire alarm sounds, you know what to do. Please do ensure that your mobile phones are on 'silent'. Everyone is welcome of course to speak in Welsh or in English. Are there any interests to declare? No. There we are. Any apologies? No apologies.

09:01

**Cynnig o dan Reol Sefydlog 17.42 i Benderfynu Gwahardd y Cyhoedd
o'r Cyfarfod**

**Motion under Standing Order 17.42 to Resolve to Exclude the Public
from the Meeting**

Cynnig:

Motion:

*bod y pwyllgor yn penderfynu that the committee resolves to
gwahardd y cyhoedd o'r cyfarfod ar exclude the public from the meeting
gyfer eitemau 3, 5 ac 8 yn unol â for items 3, 5 and 8 in accordance
Rheol Sefydlog 17.42(vi). with Standing Order 17.42(vi).*

Cynigiwyd y cynnig.

Motion moved.

[2] **Alun Ffred Jones:** A gaf gynnig felly ein bod ni'n mynd—? Rwy'n cynnig o dan Reol Sefydlog 17.42 y dylem benderfynu gwahardd y cyhoedd o eitem 3. A gaf gynnig? Diolch yn fawr iawn. Mae hynny hefyd ar gyfer eitemau 5 ac 8. Diolch yn fawr. Pawb yn gytûn? Reit.

Alun Ffred Jones: May I therefore move that we—? I propose a motion under Standing Order 17.42 that we should resolve to exclude the public from the meeting for item 3. May I move? Thank you very much. That was also for items 5 and 8. Thank you very much. Is everyone agreed? Right.

Derbyniwyd y cynnig.

Motion agreed.

Daeth rhan gyhoeddus y cyfarfod i ben am 09:01.

The public part of the meeting ended at 09:01.

Ailymgynullodd y pwyllgor yn gyhoeddus am 09:32.

The committee reconvened in public at 09:32.

**Ymchwiliad i 'Dyfodol Ynni Callach i Gymru'
Inquiry into 'A Smarter Energy Future for Wales?'**

[3] **Alun Ffred Jones:** Bore da. Good morning. Welcome to our committee.

Thank you for assisting us in our inquiry into ‘A Smarter Energy Future for Wales?’ You don’t need to touch the mikes when you speak. Otherwise, they might explode. No; that’s just a little joke I make. It’s well worn and not appreciated, I know. Can I just ask you to introduce yourselves to begin with, and to state your name and position? Then we’ll go into questions. Craig? Don’t touch the mike. The joke didn’t work, obviously. [*Laughter.*]

[4] **Mr Anderson:** First introduction. Good morning, everyone. Bore da. My name’s Craig Anderson. I’m chief executive officer of Warm Wales, the first community interest company in the UK dealing with the relief of fuel poverty. It was established in Wales in 2004. We’ve done £58 million-worth of work across 60,000 properties both in Wales and the south-west. We’re the strategic fuel poor partner for Wales and West Utilities—the gas carrier—dealing with relief of fuel poverty. My background: I’m an architect planner by profession, but I’ve worked in five local authorities, in Scotland, Wales—in Swansea—and in England, in two local authorities. So, I’ve got a reasonable 30-year understanding of the fuel poverty and regeneration sector. Thank you.

[5] **Alun Ffred Jones:** Diolch yn fawr. Thank you.

[6] **Ms Kelleher:** Good morning. I’m Gill Kelleher and I’m the policy and engagement manager for the Sustainable Product Engineering Centre for Innovation in Functional Coatings, which is an industry and academic industry-led partnership, looking at how you turn buildings into power stations, and basically taking existing technologies within the construction industry, and how you can actually functionalise a coating within a building and integrate it to store, release and generate power. I’ve got over 25 years of experience in the construction industry and I’ve recently just joined SPECIFIC because it’s so exciting, what’s happening in the world between construction and energy. I’m delighted to be here. Thank you for having me.

[7] **Alun Ffred Jones:** Diolch yn fawr.

[8] **Mr Jones:** Good morning. I’m Shea Jones from Community Housing Cymru. We’re the membership body for housing associations in Wales. We own and manage over 150,000 homes now. I’ve been with CHC as a policy officer now for around seven years, and my background before that was just working in research for universities.

[9] **Mr Curry:** Good morning. I’m Steve Curry from Valleys to Coast

Housing. We're the first large-scale stock transfer association in Wales. We've been actively involved in the Arbed scheme and other energy efficiency programmes for a number of years, and we have a vision to eradicate fuel poverty in Bridgend, hopefully by 2020, but as soon as possible. So, we're very keen to do more work in terms of energy efficiency in the future.

[10] **Alun Ffred Jones:** Thank you. We've got an hour, or slightly less than an hour, so, succinct questions and answers, if I may, in order to get through as much stuff as we can. Julie Morgan.

[11] **Julie Morgan:** Bore da. Can I ask each of you to tell us what your views are on the single most important energy efficiency measure that would help Wales meet its climate change and carbon reduction goals?

[12] **Mr Anderson:** Yes. I'm very happy to take that question. It's less about measures and more about resources. If you look at the state of play in Wales today, there are 360,000 homes still in fuel poverty, but beyond that, our mission is affordable energy for all. We've done a lot through the Arbed programme, through working with Nest in partnership and through extending gas to make energy more affordable. All of those measures are very useful, but there's not enough of them. That's the problem. There are 1.3 million homes, and 360,000, roughly, in fuel poverty, and at the current rate of progress, it would take somewhere in the region of between 20 and 30 years to tackle that problem. So, the only way we can really get on top of things is to introduce zero-cost loans for the very vulnerable and very low-interest loans—a bit like Germany, at 2 per cent—through local authority activity at the local level.

[13] **Alun Ffred Jones:** Excuse me. Can I just interrupt you? You said 20 to 30 years before we could get to the end of the problem at the present rate, but I've heard a figure of 76 years being quoted somewhere in the evidence.

[14] **Mr Anderson:** Well, it depends who you listen to. The data sets in our sector are very poor, and, if nothing else, it's looking at a combination of better data, so we've all got a better understanding of things, and finance. Unless we bring in loan finance, we will always be working to the denominator of grants, and grants, as we all know, are under pressure. It doesn't matter which party is in power, there's still that dilemma.

[15] So, if you look at the number of households in fuel poverty, four out of five are in the private sector—the private rented sector, which, very

shortly, will be the same size as the social housing sector. The social housing sector has seen large-scale investment through your good offices in making sure that enough investment goes in there, but we now need to do the same in the private sector. Without doing that, we'll never get on top of carbon, we'll never get on top of cost and we'll never get on top of the health agenda. That's probably the elephant in the room—the impact of the demographics, looking ahead to the number of people over 60 who will be the baby boomer generation coming through, and the fact that Wales has a very large percentage of very poorly insulated buildings. That means that we're going to see the health service under increasing pressure, so we need to find a way of bringing in more cash, insulate the buildings and start the schools programme to get the generational impact.

[16] **Alun Ffred Jones:** Are there any other comments on the same question?

[17] **Ms Kelleher:** I'd say that, basically, in terms of a single, most important measure within a building, the fact is that design is really missed out of the whole equation. Actually, you need to look at how you design and use your buildings in your community—your local infrastructure. Wales is leading the way in terms of its sustainable development goals and it has set a great framework there, which we can populate with some of the detail. We're looking for sustainable consumption, moving forward. Like this gentleman says, how we manage our resources, moving forward, is going to be critical, as well.

[18] If you actually reduce the amount of heat and energy that's needed within your buildings and within your communities, you've got a better chance of dealing with security of supply and addressing the challenges of the energy trilemma. So, certainly, if you can get the fabric of the building right to begin with, but again, look at how you optimise that building, at what cost to do it and whether it is better to redesign and rebuild somewhere else and look at how you can optimise through design. Unfortunately, given the joys of our regulation, when you actually do design and build what you want to build, it isn't built that way, which, again, goes into the area of compliance.

[19] **Julie Morgan:** Could you explain that?

[20] **Ms Kelleher:** Yes, certainly. Basically, if you design a building, you might want to build it using optimum building products and performance,

but you can't necessarily do that, because the compliance tools don't enable you to do that. So, through the standard assessment procedure and the simplified building energy model and tools like that. Yet, you know, industry is actually using other tools to overcome the challenges, but, in practice, it's incredibly difficult to deliver those solutions moving forward. So with SPECIFIC and other projects that have been done across the country and the world, we're actually looking at how you design and build these buildings.

[21] **Ms Kelleher (contd):**

[22] **Mr Jones:** I was just going to pick up on the figure you referred to earlier—the 70-odd years figure; that was the Bevan Foundation report figure. I think that was very much focused on actual investment in Wales and Nest in particular—however many years it would take Nest to tackle the problem. I think in addressing the original question, I would say that, looking at fuel poor households, who typically live in solid wall properties and off-gas properties, we very much welcome the approach of Welsh Government so far in looking at tackling low-income households and households that need support most. But, you need to move beyond those lower-cost measures and look at solid wall insulation and some of the wider measures which Arbed and other schemes are addressing. But we're not addressing what we need to be addressing at this moment in time. It is going to take years and the evidence gaps are quite weak.

[23] **Alun Ffred Jones:** So, the answer is—

[24] **Mr Curry:** I've got an answer, if I may. We've done some estimates, and 93 per cent of our customers are fuel poor. That's according to our estimates; they're as accurate as we can get. We've got experience of completely transforming people's lives from, you know, very poorly insulated, off-gas communities and making huge investments, alongside Welsh Government, to completely transform their lives. And the cost of energy's taken them out of fuel poverty. We can do it. The answer, really, simply, is whole house, whole community retrofit including the private sector. We've done that, and we can continue to do more along with our colleagues in the sector. New builds are a tiny percentage of the issue. New builds are coming in at a SAP rating of 80. There's 1 per cent churn per year in the stock. Most of the houses we're talking about, even in the future targets—2030, 2050—already exist. Whole house, whole community retrofit of existing housing stock is what we need to do.

[25] **Julie Morgan:** So, it's the existing stock that's the key area? And in terms of the progress that's been made on that at the moment, it's going to take a very long time.

[26] **Mr Curry:** We've been working with private sector colleagues and colleagues in Community Housing Cymru and the housing sector. We're bringing in private finance using the feed-in tariffs. We had a starting point of a whole stock photovoltaic programme. That's come to a crashing end with the, basically, falling off a cliff of the feed-in tariffs. Arbed has been a terrific programme for us to co-invest with, but it's been a little bit stop-start; I think we need a long term investment and a long term vision, and I think we can eradicate fuel poverty.

[27] **Alun Ffred Jones:** I'm just going to bring in Jeff here, but it was remiss of me—I should have introduced you to Alan Simpson, who is our special adviser, and who may decide to ask questions later on. His bark is worse than his bite, so they say. [*Laughter.*] Jeff, did you want to come in on this?

[28] **Jeff Cuthbert:** Yes, just very quickly. Gill, if I may, you made the point about the specifications for new build and the use of clearly sustainable materials. Now, what we've had said here by housing developers, particularly Redrow, is that it's all too expensive in Wales and consequently, in many parts of Wales, they're not prepared to build. What's your response to that?

[29] **Ms Kelleher:** There seem to be different views by many around how affordable it is that you can build a house. Some of you may have visited the SOLCER house recently. The SOLCER house is brilliant and I love it, because it demonstrates what can be done within five years. Five years ago, we built a house in consortia with Nottingham University, BASF, Tata Steel and other industry members—to build an energy-efficient home that incorporated renewables within the code for sustainable homes to see what could be built. We built a 'fabric first' approach house to go 44 per cent beyond Part L building regulations to demonstrate what could be done then. That was five years ago.

09:45

[30] We didn't want to go to code 6 because it wasn't affordable to incorporate renewables and make an affordable house that could be replicated. I'm delighted that the SOLCER house this year was launched to show that you can actually build a very energy-efficient home that went 44

per cent above building regulations Part L. It minimised the amount of heat and energy you need initially, and then we incorporated renewables—not only onto the building but actually integrated them in the building because technologies are now there to do that. It was built affordably. I think it was about £120,000, and that was last year that we started the project. So, I'm pleased to say the costs have already come down, and as we move forward those costs will be reduced significantly.

[31] So, in answer to your question, I believe that there is possibly a different way that we can build houses using the technologies we have, but unfortunately the way the supply chains operate, we need to look at how we can embrace some of the new technologies. That's my role within SPECIFIC—to look at how we can collaborate across the industries and demonstrate what's possible through new technologies coming forward. It's incredibly difficult to take a renewable technology and integrate it into a building and have it recognised within building regulations to say, 'Actually, this is the performance you've got and this is how it helps you deliver your carbon targets and your budgets to hit our carbon targets.' If the baselines aren't even right to begin with, how do you actually show what you've improved upon?

[32] This is why I think it's brilliant what Wales is doing around sustainable development goals, and it's already set and legislated on how it can do that. The UN's working on a programme of sustainable construction and buildings, again to look at how you can model and take these buildings forward.

[33] **Alun Ffred Jones:** A number of you want to come in on this. Do you want to follow that up?

[34] **Jeff Cuthbert:** No, no, that's fine.

[35] **Alun Ffred Jones:** Llyr, then Mick.

[36] **Llyr Gruffydd:** I just wanted to pick this up—because we started talking about the retrofitting stuff. We all know what the challenge is; we all know what we need to do. But, for me, the bottom line seems to be where we get the money to do it. So, I'd be interested in hearing a little bit about your thoughts around that. We've mentioned the 360,000 houses that need to be retrofitted. I've seen a price tag of over £2.5 billion for that. So, that's the key question from me: how do we pay for it?

[37] **Mr Anderson:** May I answer that one? It comes back again to priorities and looking at a focus. If you look at the numbers, which are too big, everybody shies away from them because they don't know how to tackle them. So, what I suggest is that we double the rate of current activity to make it manageable and we get loan assistance like Scotland's got. I'm going to Scotland next month—my home country, but Wales is my adopted country—and I think there is a real Celtic connection, we can make there.

[38] **Alun Ffred Jones:** What is the loan assistance? Can you just say that again? What is happening in Scotland that's—

[39] **Mr Anderson:** Scotland has a raft of low interest or zero-cost loans. The Government have sponsored that to be done at a national level. I think it is possible for local authorities—. There are some local authorities—Cardiff and Flintshire, which I'm working with just now—that are creating fuel poverty reduction hubs in both of those areas because those are councils that have a determination to do something about it. Councils have the ability with the Public Works Loan Board—. When I worked for local government—for 25 years—we would use it because the borrowing is very cheap. That's why, dare I say it—and please forgive me here, I'm going to mention Green Deal—Green Deal was an abject failure because the price of finance was wrong and people wouldn't take it up. There simply wasn't the payback.

[40] So, we can only get on top of the issue by more loan assistance. Grants will always be under pressure. I think the grants should go to the most deserving causes. There should be a compact for everybody on energy to show how they're addressing the needs of the health sector. If we don't do that, there are 12 to 15 cold-related conditions, and we will see our GP practices and our health service overwhelmed with the demographics. So, if I was leaving you with one message it would be around finance geared to health.

[41] **Alun Ffred Jones:** Does somebody want to come in on that? Shea.

[42] **Mr S. Jones:** Just to pick up on the health point, you'll be familiar with a couple of schemes in England—the boiler prescription schemes—where health are actually funding energy efficiency projects. Obviously, health is structured slightly differently—that's my understanding—in Wales, but actual clinical commissioning groups and other groups there are funding projects where they've actually evidenced the impact of energy-efficiency investment

on improvements in health.

[43] Beyond that, in terms of answering Llyr's question on funding, obviously, there is the opportunity for European funding. We're part of the fuel poverty coalition, and, as part of the election next year, one of our calls is, actually—. On the back of the energy company obligation and all those programmes coming from the UK Government, there are obviously levies on consumers' bills to pay for those programmes, so, what we're actually calling for is—all the money that consumers in Wales are paying as part of their bills for these levies, should we be using some of that money to plough it back into energy efficiency investment?

[44] **Alun Ffred Jones:** Alan apparently wants to come in on the issue of finance.

[45] **Mr Simpson:** Thank you, Chair. I just want to say, coming from Nottingham, that I am well aware of that pioneering work that you did at the university. I'm not really troubled about the technologies of transformation; it is the finance. It seems to me that, if you were to look internationally, there are so many different approaches. I'd just like to know from each of you what advice you'd give to the committee about your preferred route. It seems to me that the workable choices at the moment are Germany, which says we do it through their KfW bank, at zero interest or up to 2 per cent, de-risking the process, and they don't bother going through the energy companies; they say that energy companies just want to sell consumption. So, they have it KfW or Green Investment Bank-led.

[46] One of the other approaches in the USA is where states have the power to set conditions of performance on their DNOs. So, an obligation to deliver 5 per cent per year reductions in energy consumption has seen their DNOs coming in as investment partners in energy efficiency programmes, because that allows them to deliver. So, they can specify—

[47] **Alun Ffred Jones:** DNOs?

[48] **Mr Simpson:** Western Power Distribution is one.

[49] **Alun Ffred Jones:** Oh, yes.

[50] **Mr Simpson:** A third is to say that we will set licence conditions for the private sector, and you say that within three years we will not offer a licence

to rent to any property that doesn't reach band B, and we'll offer the finance support for you to get there, much like the clean air legislation that we had. The fourth would be for Wales to be able set its own carbon budgets that become, in a sense, the counterpoint of finance. So, if you were to recommend a starting point to the committee, where would it make most sense for Wales to begin on that?

[51] **Mr Curry:** Can I say that we've been working with the distribution network operator very closely? That was in, initially, a whole-stock power distribution programme. We're going to be able to gear up and do by Christmas, effectively—it's January when the FITs fall off the cliff—300 to 500; you know, very quick.

[52] **Mr Simpson:** Sorry, I'm not really wanting to know what you're doing. I'm wanting to know what you would recommend to the committee to take forward as a policy priority that would be transformative for Wales.

[53] **Mr Curry:** So, yes, for incentives for the DNO to partner, maybe to prioritise, community schemes as well. It's never been a better time to borrow money. We've just borrowed £30 million for investment in new properties. We can borrow money and I think the sector, again, as a long-term investment partner, seems a good one. We can borrow at low rates. I think some grants to start up and test some new technologies would be really, really useful. The private sector is there to invest. I think the incentives need to be there for the DNO, and, if there are some start-up grants that are available from Welsh Government to experiment with new techniques and new technologies, then—.

[54] **Alun Ffred Jones:** Okay.

[55] **Mr Jones:** I think the point that I'd make is, wherever the funding comes from, the transition to a low-carbon economy needs to be socially just. The way it's been structured, so far, via, as I said earlier, the energy company obligation and other programmes, it is very much so—it comes out of consumers' bills. We are in the position where, as the registered social landlord sector, unless we're actually in a position to fund a lot of these measures for our tenants, in some circumstances they're not getting the funding in the first place and then they're paying higher energy bills in the long term. So, I'd say not for the energy companies to lead such programmes in the first instance, and for there to be another vehicle or another agency to do that. Then, beyond that, I think continue the approach that we've taken so

far—I very much welcome the Arbed programme; while that’s delivered, obviously, it hasn’t delivered anywhere near enough—but then using that and using grants as a lever to get sectors to work together; the RSL sector, the private sector.

[56] **Alun Ffred Jones:** Arbed is a grant-led scheme, isn’t it, and it pays for—.

[57] **Mr Jones:** Yes.

[58] **Alun Ffred Jones:** Gill.

[59] **Ms Kelleher:** Obviously, finance is a critical issue and how we access that finance is fundamental. Yet there are pots of money, I believe, available through other investment funds out there, and at SPECIFIC we’re actually looking at how we tap into some of that, because there are some true business cases around how you actually model the social and economic impact within new community schemes for how you retrofit new buildings and your industrial buildings as well. So, I’d welcome the opportunity to pick that up later with you to share what we’re doing.

[60] Last year, I did some work for the Construction Products Association around—

[61] **Alun Ffred Jones:** Let me remind you, the question was: what your recommendations would be to the committee in terms of—?

[62] **Ms Kelleher:** Yes. There’s definitely a role for one of these finance methods and I’d like to discuss that separately.

[63] **Mr Anderson:** I thought you put it perfectly, the three choices. The first three, I think, were spot on. It’s basically having state backing for low-interest loans; it’s putting it in in a fashion that can be delivered; the DNO’s brought to the table, through Ofgem as the consumer champion, to make sure that the DNO’s—. Because the energy companies will never fully embrace it, because it’s not in their interests. With the best will in the world, their interest is shareholder value, which means selling energy. Our task is making sure that that’s affordable for everyone. So, there’s a dilemma in that issue.

[64] The only other focus, I would say, from your suggestions, which I

thought were very appropriate, and I think we could compare notes—. I'll be comparing notes, anyway, with Scotland, very shortly, so I'll be asking those same questions, to share best practice. That is the thing that's also missing in Wales; we don't have a forum for tackling energy—but energy in the round: energy, as it relates to health, energy as it relates to poverty. That would be very welcome.

[65] **Alun Ffred Jones:** It would be useful, after you've been to Scotland, if you could share some of the details of your discussions there. Right. Mick, did you want to come in?

[66] **Mick Antoniw:** Yes, I just wanted to come in on a very quick question. A number of you mentioned homes improvement, insulation and so on, and, of course, that is, effectively, run by the energy companies, to all intents and purposes, in terms of funding on levies and so on. But there's a lot of evidence that a lot of it has been ineffective and that it has, effectively, almost been run with houses being done that don't need doing and so on. There's a lot of evidence beginning to emerge of problems with that. Do you share any of those concerns? How would you see that ongoing programme actually carrying forward in a way that avoids the problems from the past?

[67] **Mr Curry:** Can I say—

[68] **Alun Ffred Jones:** Yes, Steve.

[69] **Mr Curry:** —I think the problem is we have people who join again—and we've seen plenty of that—because there's a grant around or there are some incentives around, and they'll do a job, they'll do it quick and they won't do it well. They've got no incentive to do that; they've got an incentive to do it quick and away they go and fill cavities with anything. I think you're referring to that; I saw that in previous meetings.

[70] **Mick Antoniw:** Yes.

[71] **Mr Curry:** If you've got a long-term investment partner, and, again, I'd suggest RSLs; as part of the community, we can offer these services at very much cheaper prices to the private sector, because of our economies of scale. We're a long-term investment partner in the community. We're not going to run away; we're not going to be able to run away. That's the way to deliver it. Firms will come and go; they will deliver things cheaply and they will walk through your roof tiles to fit a solar PV panel if they're getting the

feed-in tariffs, and tell you that they've done you a favour to give you free electricity. There are always going to be those problems. I think it's who is delivering it and that they are a long-term partner.

[72] **Mick Antoniw:** So, there could be significant improvement on what is currently being done by a change of the way it's done.

[73] **Mr Curry:** Yes.

[74] **Mick Antoniw:** Okay, fine.

[75] **Alun Ffred Jones:** Okay.

[76] **Joyce Watson:** Could I ask a question on that?

[77] **Alun Ffred Jones:** Well, Jenny's been waiting a long time.

[78] **Jenny Rathbone:** Two questions. One: why did it take Valleys to Coast Housing so long to get on to the photovoltaic schemes, because, obviously, the feed-in tariff has been there for a few years now? I wonder if you could just explain why it took so long. And the second thing is, now that we've got the SOLCER house, is it a complete no-brainer to insist that all new buildings meet nearly zero carbon energy requirements, otherwise we're just retrofitting—?

10:00

[79] **Alun Ffred Jones:** The first question is specifically addressed to you, I think.

[80] **Mr Curry:** Okay. I suppose the initial answer is that, unlike some people in the private sector, if a new opportunity comes along, we wouldn't be the first ones to think—and that's because of the construction of our board, which has tenants and councillors as members; they have a fairly conservative approach. We have made lots of investments in renewable energy, including taking advantage of FITs through Arbed and other programmes, so we use grant to invest in some things and, whilst we're there, we've invested our own money in a lot of photovoltaics, et cetera, for feed-in tariffs. So, there was an appetite, and we could do that. When we are able to, which we have done recently, bring in private sector finance to mix with ours, that we have an opportunity to do something like a whole stock

transfer—you know, we've recently borrowed money to invest in new housing, but we can invest in other things. We can then see that as a long-term opportunity that's going to pay back for our customers and for us.

[81] So, we're never going to be the first off the block to make some money; that's not really our role, but, as a partner—and this is all about a long-term partnership—we're an ideal partner. We have a vested interest in the community and a vested interest in reducing fuel poverty. We have the ability to borrow and to bring in some additional finance, so—. Yes, I think that's why—to use it as an investment. In terms of the new-build requirements, I'd just reiterate my point that new houses are coming in at a SAP rating of 80, and that the average house is between 55 and 59. The churn is 1 per cent a year. For me, the big solution in terms of fuel poverty, climate change and carbon reduction is all about retrofitting.

[82] **Jenny Rathbone:** Fair enough.

[83] **Alun Ffred Jones:** Does anybody want to pick up the second point? Perhaps I'll bring in Joyce here. Do you want to—? Because you're on the same theme, I think.

[84] **Joyce Watson:** Yes, it's about the materials being used, and you talked about investment in materials being used, but I've had some feedback that the materials being used aren't necessarily producing the right outcome and almost locking in all the moisture within a house and creating another problem, because houses have to breathe at some stage. So, I'm concerned that we're not fixing one problem to create another problem. That's not always the case, but it is the case that I know that money has been spent only to have to undo what's been done and do it again. So, have you got any information that you could share with us where you've come across those and, perhaps, resolved those issues, because you can't spend the same money twice, can you?

[85] **Mr Anderson:** Perhaps if, Chair, I could answer your question, when it comes to retrofitting buildings, the experience has been generally good. There have been difficulties, particularly cavities that have been filled inappropriately. We're in an area of high wind and rain, which means that the cavity should be checked before the treatment is done, and that hasn't always been the case, but the standards now are much higher, and everybody's very alert to it. So, as a continuing problem, it shouldn't be that much of a problem. That said, there's a lot of cavities being removed just

now and overlaid with external wall insulation to provide that rain screen on the outside.

[86] But the industry is maturing. We've introduced a new product to the market to seal the top of the wall heads, because that's the most vulnerable area—the EWi PRO. It's an insulated gutter system, so it removes cold bridging and transfers the water more effectively. I think, in years to come, we'll see quite a number of the external wall buildings failing.

[87] We have here in Wales, the UK's leading expert on external wall insulation, Colin King. For those of you who've met him, he doesn't mince his words; he will tell you—if you haven't had evidence from him, I'd suggest you have him here to tell you what the position is. Perhaps it's slightly difficult, in a way, because he's now an adviser directly to the Welsh Government. But certainly Colin and I have built a good understanding over the years. I think, if Colin was here, he'd probably be saying that Constructing Excellence in Wales is a vehicle for doing that, and we've developed a best-practice delivery vehicle, where the RSLs, ourselves and others can be encouraged to attend and to share, and to make sure that we're abreast of the latest developments. Ventilation is critical, because as you heat a building it basically absorbs more moisture. As the heat goes up, it takes more moisture in—

[88] **Alun Ffred Jones:** I'm going to stop you there because I'm very aware of time, and the concern of this committee, of course—what we're trying to find out—is how we can do things differently in order to improve the situation. While all this is very interesting and valuable in terms of information, I think that's where our focus should be. Now, William, you want to come in, and then obviously we want to come to skills and building regs as well.

[89] **William Powell:** I have one final question on finance before moving to issues around behaviour change. Has any consideration been given to potentially involving the European Investment Bank in a substantial bid for funds to take forward some of the priorities that you've identified, particularly given the sheer scale of the task that's been referred to?

[90] **Mr Anderson:** Perhaps if I could start on that, I wouldn't think that there's an issue going to Europe for money, unless there's grant attached to it. The ability of local authorities—. I think we've got to embed the energy agenda with local authorities and RSLs who are willing to support them, as

Steve was saying. So, we've got solutions on our doorstep. The rate of borrowing can be very low. If the European Investment Bank would come in with some exceptional deals, then great, but I wouldn't wait for it. I think we've got the mechanism now to direct our funding more effectively.

[91] **Mr Jones:** Just to say, we've questioned the Green Investment Bank and why they can't look at funding this type of stuff. Thinking back to the feed-in tariffs, when they first started out, and the stop and starts there, we went out to the banking sector to actually get funding for the social housing sector to fund a large amount of installations. No banks in the UK were interested in funding us. We managed to get a Belgian bank that stepped up to the plate to fund us, and then the endgame, really, was that there was the European banking crisis literally two months after we came round to signing an agreement, and then the feed-in tariffs dropped. So, we would have done a lot more on programmes like that if it wasn't such a stop-start process.

[92] **William Powell:** I am aware that, since about 2009-10, the EIB has been very substantially capitalised. They have done quite a lot of partnering up with local authorities and regions in England, and they're involved with Welsh Government on specific projects, also with the utility companies, and with projects of real scale. So, I would have thought it might well be worth exploring that. That was just my—

[93] **Ms Kelleher:** Certainly, under the energy efficiency directive, there are numerous different ways to tap into the cohesion policy funds as well, to actually bring some of this together and join it up across some of the directives, and certainly through the renovation road map, which has to be updated for November 2017, and, next year, we have to look at Part L revisions as well. So, you could actually have a nice transitional plan of, 'This is how we're actually going to do it', because some of the existing policies are now obviously being scaled back, and we need to look—and this is obviously in line with DECC as well—at how we have a plan going forward. Certainly, trust is a major issue, and there's a full review at the moment being undertaken by DECC to look at trust issues and compliance and how you tackle accreditation and certification and make sure what you get is what you get, and how it's done.

[94] **Alun Ffred Jones:** William, do you want to come in on something else?

[95] **William Powell:** Yes, please. Gill, you spoke earlier about the importance of the SOLCER house an exemplar, so that people can learn. What

do you think are the main barriers to behavioural change—to actually making progress in terms of driving down energy demand and increasing efficiency?

[96] **Ms Kelleher:** I think it's engagement with what is possible. I'm an early adopter, but not really a great early adopter, and it's something I'm thinking that I could do at home myself. It's basically just public engagement with what's possible and how we basically can take what technologies we have. Like you've said, we can do the technologies, but how do you deliver it? What's brilliant about SPECIFIC is it wants to now demonstrate how you can take these technologies, take the SOLCER house, and do 10 of them, and then do 100, and then do 1,000, and what we now want to do is ask how we scale that up. That is the biggest barrier. How do we get everybody together to do this?

[97] **Alun Ffred Jones:** What's stopping one of your members, or indeed a body like yours, from adopting the SOLCER house model, for example, in a new estate they were building? I understand the argument that retrofit is the most important thing, but surely this is also part of the process.

[98] **Mr Jones:** I think the SOLCER house sounds great, and we've got a couple of site visits, as a sector, to the project in the next couple of months. I think the biggest shame about the SOLCER house is, from my understanding, due to the funding requirements, you can't actually have people living in the house, on the back of the funding. So, that's critical in terms of behaviour change. You can build what you like, but it comes down to comfort, and if people can't live in it and test the systems, and so on, how do you judge that?

[99] **Alun Ffred Jones:** People can't live in it where it is at the moment, you mean.

[100] **Mr Jones:** Yes. Due to the actual project, the house they've delivered through the funding—

[101] **Alun Ffred Jones:** You could build it elsewhere, and I'm sure that people—.

[102] **Mr Jones:** We're very committed to high standards, as a sector. We do build to high standards already. Speaking to some of our members, there are competing regulations, to an extent. We build to higher standards than the private sector as it stands. We build to development quality requirements and

Secured by Design, and all those types of standards, and obviously we building to—

[103] **Alun Ffred Jones:** Are you answering my question about why can't you adopt the SOLCER house as a—

[104] **Mr Curry:** Can I come in? There are Pentan houses, and we're experimenting with those as being something that's very energy efficient, modern and affordable to build. A house that's up to passive standards does, at the moment, cost a hell of a lot more. A new home of any sort has a lot higher standard assessment procedure rating and energy efficiency than any other, and, at the same time, people—not right now in our stock—are living in homes that are single skin, prefabricated homes that haven't had the treatment and have abysmal ratings for SAP and cost a fortune. If people see that we're investing a huge amount, over the odds, if you like, in one or two new homes for a few people, it's not equitable.

[105] **Alun Ffred Jones:** We were given the fact that it actually costs £130,000.

[106] **Mr Curry:** But the stock is churned at 1 per cent a year. Most people live in homes that are already there.

[107] **Alun Ffred Jones:** I fully understand that point, but, in terms of new build, if you're not going to take up these new developments, what are we about?

[108] **Mr Curry:** I totally agree that, if there are incentives there for the market to take up and to make those things more widely adopted and more cost-effective, then obviously I have no problem with that being part of a mixed development.

[109] **Alun Ffred Jones:** Do people want to come in?

[110] **Julie Morgan:** Obviously, in Cardiff, there are going to be thousands of new homes built, because it's one of the fastest growing cities in the UK. So, that would seem to be an ideal opportunity for these standards to be adopted. So, what do you see as the barriers to that happening?

[111] **Mr Anderson:** Perhaps I could answer that question. If you look at the Design Commission for Wales, they are an independent champion there, and,

with the volume of development, there's nothing to stop you suggesting that the design commission takes more of a lead in that direction to make sure that the SOLCER message is finding its way through into new development. Frankly, I think the house builders have to be put on the spot, a bit like the energy companies had to be put on the spot, to say why they can't do it. The SOLCER house can be built for £1,000 per square metre, complete. I know that because we're working at the moment with an RSL—I can't name them because we're not far enough progressed with it—and also a private developer. I'm charged with taking the SOLCER into the commercial market. So, we now have passive house systems blended with SOLCER, because SOLCER goes beyond passive. It's actually about positive energy, it's about battery storage, it's about next generation, and Wales has got a lead there. So, we've got a great opportunity, with 40,000 homes happening in Cardiff, and Valleys to Coast and the development programme, and all RSLs. NPT homes has been doing SOLCER on retrofit of five houses, so we've got the message there that there's no reason why we can't apply the SOLCER message to retrofit. So, you've got new build and retrofit. We've got that on our doorstep now, and Wales has got a lead in that. We should be exploiting that.

[112] **Alun Ffred Jones:** Jenny.

[113] **Jenny Rathbone:** It's excellent that you're doing that, but why then is the social housing sector asking about incentives to do it, when it's within the envelope of what you have to employ to build housing anyway? So, if you're going to be building new housing, why not build it to the SOLCER standards?

10:15

[114] **Mr Curry:** The new housing that we normally build is normally in partnership with the private sector. I think those mixed communities are very much the way forward. We have our own standards, and sometimes they're quite close and sometime they differ slightly from the private sector. So, if the development is going to be led by the private sector, we would have no problem at all and we would actively encourage them to deliver the houses that offer the best energy efficiency possible. So, there's no problem there; it's just that we partner the private sector in developments, by and large. We are developing, as I say, some innovative models, and we've been looking at all sorts of systems where we blend thermal stores, battery stores, looking at all sorts of interesting techniques using energies et cetera to experiment

with ways to find the best energy efficiency and, indeed, energy positive models. So, we'd welcome a chance to invest more in trialling and piloting these methods, because some of them will work better than others. So, we really want to be involved in doing some more pilots, really.

[115] **Jenny Rathbone:** But, the private sector seemed dogged—. You're the commissioner, so why aren't you saying to the private sector, 'This is the standard that we want, and go and talk to the people in Swansea and Cardiff if you want to learn how to do it; it's not difficult'?

[116] **Mr Curry:** They will tell us, 'Right, okay, well that will cost you 20, 30 per cent more'—

[117] **Jenny Rathbone:** Then, surely, we have to find another way then, because it doesn't cost 20 or 30 per cent—

[118] **Mr Curry:** Yes, and so we are building a small number of houses using the Barnhaus technique and we'd want to do more, because the volume builders are not really using those techniques.

[119] **Alun Ffred Jones:** Obviously, this comes down to building regs to some degree. Do you want to ask a question, Joyce, on this?

[120] **Joyce Watson:** I do, and I also suggest that you go to Pembrokeshire where they have done some passive housing and they are letting them. They've built six houses, and they're letting them out at 20 per cent below the market rent. So, there are examples outside of Cardiff. I just thought I'd put that on the table, and it's also a private investor. So, anyway, I would like to come back to the building regs, and particularly your view on the Welsh Government's recent energy efficiency consultation.

[121] **Alun Ffred Jones:** Who's going to take this up? Anybody involved in this consultation?

[122] **Mr Jones:** You're talking about the energy efficiency summer one.

[123] **Joyce Watson:** Energy efficiency, yes. There was a consultation on the building regs.

[124] **Mr Jones:** We very much welcome—. I mean, in terms of separate and existing stock and new build, we very much welcome the energy efficiency

strategy from Welsh Government in the summer. There's a lot of focus in there on approaching energy investment programmes similar to the way they've been approached in the past by targeting low-income households. There's very much a focus on rural-proofing and recognising the issues we face in rural Wales in terms of the number of properties off gas and people paying more for their energy needs.

[125] In terms of Part L and the building regulations in terms of new build, we're in constant contact with our members about new build standards and costs of building to these standards. We very much welcome the SOLCER house and the approach taken there. I think, on the ground and the way things are currently working now, if you can scale up those sorts of homes, great. Have we got the right skills in Wales to do that in terms of design, and so on and their issues? As to the way the construction sector is working at the moment, when our members are going out to tender for different projects, there's not much in terms of choice. And very much so that there's changing standards in the sector, so we're building to development quality requirements and a range of other standards, and they're all being reviewed at the moment, and they compete in a way. So, if you're going to be building within acceptable cost guidance, you've got all these competing standards; you've got fire sprinklers coming in next year, for example, as well. So, with all these competing claims, can you be committed to all those things and still build within acceptable cost guidelines, basically, but we're committed to higher standards and if we can build to those higher standards within those costs, then great.

[126] **Alun Ffred Jones:** Did you want to come in, Alan?

[127] **Mr Simpson:** Yes. I just wanted to say, Chair, there's a danger of becoming really airy-fairy in this. You all know that the EU energy efficiency directive requires that by 2018 all social housing is going to have to be near zero energy standard. So, you know that. It's not an incentive; it's an obligation. And, you know that, by 2020, that's going to apply to the whole of new construction. So, why don't you just say to the committee, 'For goodness' sake, make that a requirement; if we have to be there in 2018, it would be helpful if Wales said, "We're not going to consider any planning applications for new developments that aren't based on meeting that 2018 standard now".' And, so, you change the ground rules. Rather than saying to the committee, 'Well, it's a bit complicated here and we're doing our best'—. If that's all, we end up still in the same bureaucratic soup that has left us stranded. What the committee's saying is just be clear what will drive the

change for Wales.

[128] **Mr Jones:** I totally agree. I think it's a matter of actually sitting down and working out at what stages we move towards that. So, in terms of being realistic, do we take a jump to much higher standards now, or do we put a proper time frame in place to reach that?

[129] **Alun Ffred Jones:** But have you been pestering the Government to move quicker towards these new standards?

[130] **Mr Jones:** I think we just need a debate, to be honest, and to sit down and—

[131] **Alun Ffred Jones:** But the summer's discussion surely was the debate, wasn't it, in terms of—? Or wasn't it, perhaps?

[132] **Mr Jones:** Yes, to an extent. The Welsh Government obviously consulted on Part L last year; there's going to be another review next year and we'll feed into that as and when.

[133] **Alun Ffred Jones:** Okay. Craig, do you want to come in on this?

[134] **Mr Anderson:** Yes. I feel fairly strongly on account of being an architect and a planner. The Merton rule came in several years ago, requiring renewables on buildings, and then it sort of got lost in translation. Wales was a leader in building regulations and that got lost in translation. We need to get back on track, and I wouldn't wait until 2020. The SOLCER message is clear enough now that Wales should be leading the way. We should be promoting it as a country. We should be having industries here and we should be getting out there, on the world stage, with a Welsh product, with Welsh expertise, fantastic research and people who are committed. So, we don't need to wait.

[135] **Alun Ffred Jones:** Jenny wants to come in.

[136] **Jenny Rathbone:** Can I just reiterate my earlier question, then?

[137] **Jenny Rathbone:** It is a no-brainer, then, to ensure that all new housing meets the SOLCER standards, or is there a deficit on the skills required? What are the barriers to instantly saying, 'This is the standard'?

[138] **Mr Anderson:** There is not a deficit of skills. The skills are there; we just need to channel it and we need to promote it. It's a great opportunity for us and we need to get out and start doing it. We need to get these pathfinders; registered social landlords—I'm already working with four of them who are pathfinders, on SOLCER, and I'm meeting with one of them tomorrow to get going with a project. If anything, if you could lend your support to saying, 'Why doesn't every RSL have 20 houses in the next year where they pioneer this?', and let's get going and share the practice across the country, we'll accelerate it and we'll get there before 2018.

[139] **Joyce Watson:** Can I ask a direct question? We have heard from the big building companies, 'We can't do this; we'll go and build somewhere else; it's too expensive', and Redrow being upfront with this and saying, 'We'll just pull out of Wales; just forget it, really—it's not going to happen.' Is it the case, then, that what's really going to drive it, ultimately, is going to be the policy that says, 'You can't do anything else', because that's what we really need to know?

[140] **Alun Ffred Jones:** So, who's going to take that?

[141] **Mr Anderson:** We need to stimulate the discussion. We need to have them around the table. I used to sit down with Redrow, when I was in Swansea, as development director, and we had all these people bellyaching about how they couldn't do things and we'd have a sensible discussion—'You're going to make money out of coming to Wales and investing; if you don't want to do it because the particular way that you like doing your business is cost-cutting, it's about your shareholder value, then that's for you—go to England and do it there'. But we should be welcoming. We should be having a discussion with construction companies that are prepared to do that in Wales. There are loads of them. Don't be put off by Redrow.

[142] **Joyce Watson:** I agree with you, because I'm the founding member and chair of the all-party group on construction. So, there are companies that are very willing to do this. There are skill sets that are easily transferrable to do it. So, how do we link those two things together so that we don't get, and I'll use your words, this super bureaucracy by listening to the wrong people, because the skills are the skills and they can be reapplied—

[143] **Alun Ffred Jones:** And the question is?

[144] **Joyce Watson:** —and the policy is the policy? So, how do we link the

skills and the policy together?

[145] **Mr Anderson:** By getting on with the pathfinders, by having every RSL committed to want to do it. There should be a compact. Well, Community Housing Cymru are already leading the way. They held a conference last month with Our Power, which is about energy and different ways of doing energy. So, you have the mechanism here in the room for doing it.

[146] **Alun Ffred Jones:** Bill, did you want to come in on anything?

[147] **William Powell:** No, my question has been dealt with.

[148] **Alun Ffred Jones:** We're coming towards the end of our morning's discussion. I want to give you an opportunity—. We are looking for the game-changers. We've talked a great deal. You say there's a lot of good work going on. I must admit from my point of view, when I look around my particular patch, I see buildings going up as they've always gone up, with slight improvements, a bit more insulation and so on. I don't see any big, big change. I may be wrong, of course. So, what other big changes that you think we could advocate in terms of Government or any other means to make a real difference? So, I'm open to—you can make your pitch now before you leave. Gill, you can kick off.

[149] **Ms Kelleher:** We've got a great opportunity to test the methodology and the specification for an energy efficient home. We have passive house standards and other standards. You know, if you design better than existing Part L now, get your fabric right, you know, go down the zero carbon hub route of fabric-first approach, get that specification, take it to the RSLs and say, 'This is 20 to build within each of your regions' and then actually test that methodology, work with the supply chain partners to say, 'This is what we're doing, this is what we want to achieve—how do we do it?', and then, you can actually look at the true problems and issues around the challenges, if there are challenges, and also you can look at the energy issues as well, the infrastructure of delivering those homes and the impact they have and ensure the design and the modelling tools fit and actually, you know, take you through that whole process. Then you'll get some real understanding and start to actually deliver what's possible.

[150] **Alun Ffred Jones:** Steve Curry, you mentioned the retrofit as being one of the big changes that need to happen.

[151] **Mr Curry:** We've invested alongside Welsh Government and transformed—

[152] **Alun Ffred Jones:** But what needs to change in order, you know, to get to where we want to be sooner than in 70 years or whatever?

[153] **Mr Curry:** I think there's a mixture in terms of planning regulation; there are all sorts of things and incentives. We would be a very willing partner and, you know, there's European money and other things available. We're an ideal testing ground—a long-term partner—and we can see the results with the most fuel-poor customers, and what works, and we're in a position to be able to roll that out and actually promote that in a community so there's appetite in the private market as well. So, we'd really welcome the chance to do a lot more.

[154] **Alun Ffred Jones:** Shea.

[155] **Mr Jones:** We haven't touched much on consumer matters today. There's a model in Scotland called Our Power, which Craig just referred to, which is basically the first non-profit operating energy supply company set up by a range of registered social landlords in Scotland who are looking at market entry next year. Their set-up has been funded by the Scottish Government and the Scottish social fund and they're very much focused on entry to market for fuel poverty customers. So, they're focused on that end of it but also focused on a lot of distribution and generation via renewables and other means. It's a really, really exciting model. They're asking us to work with them in Scotland—in potentially collaborating. But it's an option to do something like that, or to do something similar in Wales and look at a similar model.

[156] **Alun Ffred Jones:** Could you send any details you have of Our Power? Anything you know that might be useful for us would be great. Diolch yn fawr. Craig.

[157] **Mr Anderson:** I think the message that I'd like to leave you with is the need for us not to have a meeting like this now and again, every year or two years or whatever, but to embed it in a process of best practice where the right players are around the table. You have got Constructing Excellence in Wales, which is one element, but we need to engage with health and we need to engage with local authorities around a common agenda, which is about how we make our homes more affordable. And that in itself will bring bigger

change overall because you then take the finance into that. So, you have the players around the table with the pathfinder projects, and then the cost structure comes around it and the finance flows into it from local authorities because they see that there's a common agenda with an ambition and a drive and determination.

10:30

[158] **Alun Ffred Jones:** Are you proposing setting up a new body? Is that your—?

[159] **Mr Anderson:** It might be possible to do it through Constructing Excellence in Wales and have a retrofit—I think it's predominantly a retrofit. There are new builds as well, so we mustn't lose sight of that, but in terms of proportion of time, it's an 80:20—20 per cent of resources in new build, because that's the future and it's about engaging people and schools on that agenda as well, but the 80 per cent is in communities and working within communities, again with the schools agenda.

[160] It's an obvious thing, but we need serious players around the table who are prepared to invest and are committed and are not just talking the game by coming here to the committee and saying, 'We can't build in Wales'—that's ridiculous. They need to have the ambition and they need to deliver. You, as a regulatory body, but also as a promotional body, need to direct the debate and we need to up our game. So, a new forum for making sure that we share that best practice—that's what's missing. We don't have that forum yet. I think CHC would be a good initial lead on it and in building that because of the links into Welsh Government and with local authorities. Sorry to land that on you, Shea. [*Laughter.*]

[161] **Alun Ffred Jones:** Okay. Diolch yn fawr. Are there any last questions?

[162] A oes unrhyw gwestiynau? Are there any questions? Okay. May I Ocê. A gaf i ddiolch yn fawr iawn i thank you very much? chi?

[163] Can I thank you very much for coming before us and giving us your views? I'm sure they will be very useful in preparing our reports. Diolch yn fawr iawn. Thank you.

Daeth rhan gyhoeddus y cyfarfod i ben am 10:31.

The public part of the meeting ended at 10:31.

Ailymgynullodd y pwyllgor yn gyhoeddus am 10:50.

The committee reconvened in public at 10:50.

Ymchwiliad i 'Dyfodol Ynni Craffach i Gymru?' Inquiry into 'A Smarter Energy Future for Wales?'

[164] **Alun Ffred Jones:** Can we bring the committee to order? Welcome, Mark Harris, from the Home Builders Federation, to provide his evidence. Welcome. I'm going to ask you to give your name and your title—as I've just done now [*Laughter.*] Then we'll proceed to have a discussion as part of our inquiry into 'A Smarter Energy Future for Wales?' So, can I ask you just to state your name for the record, please?

[165] **Mr Harris:** Mark Harris. I'm policy and planning advisor for the Home Builders Federation in Wales.

[166] **Alun Ffred Jones:** Great. Diolch yn fawr iawn. Russell George.

[167] **Russell George:** Good morning. Home builders in Wales—and the rest of the UK for that matter, but it's particularly Wales, obviously, we're interested in—how are you preparing to meet the requirements to build nearly carbon zero new homes by 2020?

[168] **Mr Harris:** We don't see it as a Welsh issue necessarily, because obviously that is a European requirement that applies to the UK. A significant amount of the houses built in Wales are built by the national house builders, and most of those house builders are based in England, so it's only really Redrow who are a Welsh-based company—there are smaller companies based in Wales. So, you know, we can look at it as not necessarily a Welsh issue. But, obviously, we're aware of the requirements and one of the issues that we see at the moment, as we understand it, is that there is this need to define what 'nearly zero carbon' is. Although there's a definition within the EU guidance, member states can set their own definition. As I understand it, one of the issues that the UK has, compared to some other places in Europe—sorry, I'm just looking through my notes—is around the primary energy issue. Primary energy is around how energy is produced and where it comes from, and how it then gets into homes. Because we generate less green energy in the UK, that puts us at a disadvantage when you work out the calculation. But, we believe as an industry that we're actually very close,

currently, in how we're building, to potentially the levels that the standard will be set at.

[169] **Russell George:** What do you think the definition should be, yourself, of a nearly carbon zero new home?

[170] **Mr Harris:** I think, as I say, the issue is around understanding the whole life cycle of the energy. So, rather than necessarily concentrating on just the performance of the house, it's understanding the energy that's being used by the house, how that's generated, and also the energy that's then used within the house and the energy used by the people living in the houses. So, it's not just concentrating, necessarily, on the dwelling, but looking at the bigger picture.

[171] **Russell George:** Can I ask you to talk to the point of the balance between the extra costs associated with the extra requirements and having an affordable house that's affordable for developers to build and for people to buy and get them on the housing ladder? Can you talk to that balance and your views around that?

[172] **Mr Harris:** Obviously, there is an issue that we're currently looking at in Wales that it is more expensive to build in Wales, we believe. And, that's not just physically more expensive—

[173] **Alun Ffred Jones:** Why would that be?

[174] **Mr Harris:** It's not just that it's physically more expensive to build, but the price that you get for your dwelling is less, compared to comparable dwellings in other parts of the UK. I mean, there are obviously hotspots in England, but even if you compare to the north-east of England, you get more pounds per square foot for the same dwelling—

[175] **Russell George:** So, to just check what you're saying, you're saying that it costs the same to build a house, but the market means you'll get less—

[176] **Mr Harris:** Yes, you get less—

[177] **Russell George:** It's a market issue.

[178] **Mr Harris:** It's the market, yes. So, we would have concerns over any,

certainly significant, increases in the cost to build in Wales. It's about competitiveness there. It's also important to remember that this is one of potentially many costs. It's the cumulative impact. So, we are continually being hit by various things that require us to change things and they cost more. So, it's understanding the cumulative impact.

[179] **Russell George:** One final question, Chair, if I can. Also, your view on this: if a home is built that's going to be more energy efficient, there's going to be a value to that in itself as well, surely.

[180] **Mr Harris:** I think you'd like to think there is, but I guess the value is only achieved if—. That perception of better value is only achieved if the customer either wants it or is willing to pay for it. So, if it costs more to build that home then, yes, you would be looking to pass that cost on to the purchaser. So, obviously, the purchaser has the choice of a less energy-efficient home costing x amount and vice versa. So, I think there's a lot to do with education and understanding. More recently, I think, to be fair, the green agenda's become more about how much it saves in your pocket, rather than how you're saving the world, because people are more likely to listen to how much it saves in their pocket. I think in my written evidence I have already given you some figures that we've published, showing how much cheaper a modern house built now, at current standards, is to heat: it's 50 per cent cheaper to heat than a Victorian house. There are some other figures in there.

[181] **Russell George:** But, presumably you would support any initiative as well where there was help or support, or Government intervention, or a loan to help to build a more efficient home, if that payback then could come over the next 10 or 20 years in saving energy.

[182] **Mr Harris:** Yes, we're not against improving the efficiency of homes. So, yes, if there are any incentives to help us do that, then yes, we'd be willing to consider it.

[183] **Alun Ffred Jones:** Llyr, then Mick and then Jeff.

[184] **Llyr Gruffydd:** You mentioned earlier, I think, that you thought that the industry is very close to achieving the level of carbon reduction that we all want to see. So, what will it take to achieve it?

[185] **Mr Harris:** I don't know the details, if I'm honest, but I think whenever

you introduce new materials and new ways of building, there's always a need to upskill staff and a need to look at the detail. I think there are things that will improve over time and improve with improvements in technology, and improvements with products that deal with issues that have been identified. I know that the National House-Building Council, who warranty a lot of modern houses, do a lot of work around providing detailed information to people who construct houses on how they need to put the house together in a certain way to ensure that they maximise the benefits of the products they're using.

[186] **Llyr Gruffydd:** My concern is that it hasn't already happened. We've heard from a number of sources that the technology is there, it's deliverable, it can be done and at a comparable cost as well. So, do you not think that an element of compulsion would actually facilitate that happening because, as far as I'm concerned, it should already be happening, surely?

[187] **Mr Harris:** Obviously, I think you've been collecting various bits of evidence, but we are not aware of definitive evidence, and facts and figures, that support necessarily that it costs the same, or that it's not significantly more expensive. I think we've also got concerns about future maintenance of some of these things. I think there's a difference between, I suppose, what's often referred to as a fabric-first approach, where you use better insulation and better methods of construction, and maybe what's seen as more of a bolt-on, where you just sort of add things on that add energy. I took the opportunity to visit the SOLCER house on Monday and was shown round by the lead architect. I think, to be fair, there they've got a compromise between fabric and bolt-on, which seems a more sensible approach.

[188] **Jeff Cuthbert:** Sorry, but could you repeat that? A compromise between what?

[189] **Mr Harris:** Fabric and bolt-on.

[190] **Jeff Cuthbert:** Oh, right.

[191] **Jenny Rathbone:** Can you explain what you mean by that, please?

[192] **Mr Harris:** Bolt-on is where you take a standard house and you, for example, retrofit solar panels to the roof. Fabric is where you increase the level of insulation.

11:00

[193] You may be going for a better quality double-glazed window and the seal around the window's better, so that you increase the energy efficiency and reduce heat leakage from the house.

[194] **Jenny Rathbone:** So, you're not impressed with the design—the timber frames, the low-carbon cement and all the other features.

[195] **Mr Harris:** The question that we have over the design is that—and I was able to ask some quite detailed questions when I was there on Monday—it's quite critical, for it to work efficiently, for it to look like it does. So, if there's an acceptance that every future house in Wales will have a render finish, will have that type of roof, will have small windows on the north elevation, and you will look to maximise houses facing south, and all the things that maximise the potential of that dwelling, then obviously that will have an impact on what the houses of Wales look like.

[196] **Alun Ffred Jones:** Llyr, you wanted to come in.

[197] **Llyr Gruffydd:** Yes, you also mentioned that an element of incentivisation would probably be helpful; so, we've got the carrot and the stick approach, potentially. Could you describe what some of those carrots might look like?

[198] **Mr Harris:** Clearly, if it's shown that a particular type of technology in the situation is the best—and obviously that will vary in certain locations—and then we can show that there is a specific additional cost to that technology, the obvious answer, I guess, is that there's a financial contribution there. It may be that there are other things that can be done around help with upskilling, which I think we'll come onto in some of the later questions, so that there are the people out there to be able to understand and fit each product successfully. And, you know, a better understanding of some of the maintenance issues. I know that a comment that has been made to me, while I've been trying to gather some information, is that it's a very rapidly changing industry, and colleagues have given examples where they have sales people coming in saying, 'These are the best solar panels; spec these', and you go out and you spec them and then, three months later, they'll be going, 'Oh, those panels are rubbish; there's a new panel out now'. So, maybe some guidance and help with understanding the industry and where it's going would also be helpful.

[199] **Alun Ffred Jones:** Mick.

[200] **Mick Antoniw:** Isn't the crux of the problem, though, for your members that what they want to do is maintain their levels of profit margins and, what they're doing, that is the prime issue that affects them in terms of what they can or would want to do?

[201] **Mr Harris:** I can't deny that as a statement, but I do think it needs maybe some further comment. At the end of the day, the house building industry and the companies are businesses. I question whether or not a business coming in and wanting to do something get questioned over the fact that they're making profit and employing people. The industry always seems to be picked on as, 'Oh, you're only out to make profit'. Well, we're a business; we employ people; we have to pay wages; we have to make the business work. Clearly, if you are a business, you'll get to a point where it no longer becomes cost-effective to either build a product or make a product because of what you can sell it for—there is no profit. Maybe the discussion is around what the level of profit is, and I think sometimes it's maybe misunderstood what the level of profit is within the industry.

[202] **Mick Antoniw:** What is the target level of profit that house builders would work on, then?

[203] **Mr Harris:** The target that you've probably all heard is sort of mid-20 per cent, but that's pure profit. So, then you've got the running of the business to come off that. My members are telling me that, in recent years, certainly 16 per cent or 17 per cent is the sort of profit that you actually achieve.

[204] **Mick Antoniw:** That's four times the profit level that is being sought by major global retailers.

[205] **Mr Harris:** Yes, I don't know the details of the profit that other businesses make.

[206] **Mick Antoniw:** You've answered my question.

[207] **Alun Ffred Jones:** Thank you. Jeff, I think, is next; and then Jenny and Joyce.

[208] **Jeff Cuthbert:** Well, it's largely been covered. I will mention the main issue here about energy-efficient homes, but I think when you say 'more expensive in Wales' let's be a little bit clearer: people are very keen to build in Cardiff and in parts of my constituency of Caerphilly, in the southern end near to Cardiff and the M4—the planning applications are awash there—but not further north. So, that's a separate issue. But, in terms of the cost, and it follows on from the point that Llyr made, what is the difference, do you think, from the house builders' point of view, between the cost of building a good energy efficient house and, shall we say, a normal, current run-of-the-mill house, now, of the same size?

[209] **Mr Harris:** We're aware of the figures that are quoted in the documentation currently available on the SOLCER house, and, to be fair, the £1,000 a square metre that they quote is similar to the current build costs for a new-build property. So, on the face of it, it doesn't look like—. My understanding is that those figures aren't firmed-up figures; there's still work ongoing. I guess, because it was the first of its type, we need to understand what makes up those figures. But, obviously, those figures rely on the property being built in that way. I'll give you maybe one example that will highlight it. The roof of the SOLCER house, if you actually go into the loft space, the roof is the solar panels, so there's no felt, there are no battens and there are no tiles. So, obviously, they've saved the money of putting on a traditional roof, which has helped to offset the cost of the solar panels. You know, that house has got to last 100 years. We know that solar panels only last 25 years, so, in 25 years' time, what happens? Does that roof have to be taken off to replace the solar panels?

[210] **Alun Ffred Jones:** How long do tiles last?

[211] **Mr Harris:** A hundred years, a tile will last. So, there are some upfront savings that we accept, but we need to maybe understand the lifetime of the property and what the potential costs are.

[212] **Jeff Cuthbert:** All of which is dependent upon advances in technology.

[213] **Mr Harris:** Yes. I mean, the cost of the panel is not necessarily the issue there, but, if the panel is your roof covering and it has to be replaced, that means you've got to come in, create a scaffold box around the whole property, create a tent over the property to maintain the water tightness of the property, and that's down to the homeowner; the homeowner's got to arrange for his roof to be replaced every 25 years. So, it's those potential

hidden costs.

[214] **Jeff Cuthbert:** But is there anything that suggests, forcibly, at the moment, that building houses of that specification is significantly more expensive than existing properties?

[215] **Mr Harris:** No, there's not, on the information that we currently have, but, obviously, the effect, if you're looking at then value for money and the effectiveness—. For instance, you could build that property in a very different orientation and it probably would generate very little power. Yes, it would be energy efficient, but it wouldn't generate power. So, it's remembering whether you accept that all houses are going to have to look like that and be orientated in a certain way, which will affect the ability to meet local design criteria and other criteria that other people put into the planning system in terms of layouts.

[216] **Jeff Cuthbert:** Okay.

[217] **Alun Ffred Jones:** Jenny, did you—

[218] **Jenny Rathbone:** Yes. In terms of the future generations Act, yes, all homes will need to be north-south facing, because we need to optimise—. It doesn't really matter whether it's the front or the back, as long as you have that aspect. What is the problem with that?

[219] **Mr Harris:** Well, it's not necessarily a problem, except that it doesn't necessarily always have to be north-south; you can get lesser energy produced from other directions as well. It's just, if you drive on to any housing estate, you'll drive around roads, and the orientation of properties will change. So if, suddenly, you have to take a square and put every house south facing and then try and fit the roads around and try and fit—. It doesn't necessarily work.

[220] **Jenny Rathbone:** I don't want to get into too much detail on that, but, certainly, in Germany, that is what's happened: they've optimised the orientation of the house in order to maximise the energy generation capacity. I just wanted to go back to—

[221] **Alun Ffred Jones:** Can I just—. No, sorry; carry on. It's all right, carry on.

[222] **Mr Harris:** What I would say is that, yes, you could do that, but, potentially, taking a normal, standard site, you would end up building fewer houses on the site, because you're looking to space them out and maximise their orientation. So, yes, you could do it, but you'd get a lower density, so that means that, if you want then to meet the housing need and build the houses we need, you need more land, potentially. So, there may be a knock-on effect of that.

[223] **Jenny Rathbone:** Okay. It's a bit complicated to pursue that argument, but I understand what you're saying. I just wanted to go back to your statement earlier. You said that it wasn't competitive to build in Wales compared with, say, the north east. I just wondered how it was that, if your members don't want to build SOLCER-type houses, there aren't other companies coming in to do that, and how will you respond if the social housing sector starts to deliver energy-neutral housing that people can—instead of having to pay huge sums of money for fuel bills, they're actually making money?

[224] **Mr Harris:** If customers came to our sales offices and said, 'Your houses aren't energy efficient enough; we're not going to buy them. We've got the choice to go down the road and buy an energy efficient house, and that's what we're going to do', then it's business sense: you're going to do what the customer wants. Clearly, housing associations' houses have customers, but they're not paying customers as such. They don't buy the house. The house is built for them, and they move in, and they benefit from the benefits of the house.

[225] We're saying, along with many others, that there is a need to build a lot more houses in Wales, and we accept as an industry that we can't do that on our own. Within reason, we're happy for smaller and other businesses to come in and build more houses, and, if someone comes in and takes the lead in the market with these type of properties, and we find that they're selling really well and that customers want them, then the industry will follow, because it makes good business sense.

[226] **Jenny Rathbone:** Aren't you about to miss the boat? Because you're going to have to do this anyway by 2018 for public housing.

[227] **Mr Harris:** I apologise that I don't know the exact details of it, and I'm happy to try and submit some further evidence, if that will help, but we believe that we're very close with how we build anyway. So, we think we don't

have to do that much more with our standard house types to achieve what we believe should be the nearly zero carbon level that the UK set. What we're concerned by is that we're suddenly told, 'You can only build the SOLCER house, and you can't build any other type of house'.

[228] **Jenny Rathbone:** We're not talking about the specific design. We're talking about the level of energy efficiency, and indeed its ability to produce more energy than it uses.

[229] **Mr Harris:** Yes, but, as I think I've said earlier, there are two elements there. The energy efficiency is about the fabric, and how you build it—the materials, and the craftsmanship, which is something we can deal with. The energy production is more about the actual specific design and the orientation and the products that are used. So, for instance, again, looking at the SOLCER house, the north-facing element of it has very small windows to minimise the heat loss.

[230] **Jenny Rathbone:** Except the architect told us that they could have actually had bigger windows, it was just—

[231] **Alun Ffred Jones:** I think we're going into too much detail.

[232] **Jenny Rathbone:** Yes, I agree.

[233] **Mr Harris:** Yes. Sorry.

[234] **Alun Ffred Jones:** Joyce, and then Bill.

[235] **Joyce Watson:** Thank you. I want to just ask very briefly, because I want to move on, about this idea of energy consumption, and the type of energy that the house might consume that you just started talking about. I think that passive houses fit into that. So, how the energy is produced, and how cheap and cost-effective it might be: it could be solar energy, wind energy; it could be any of those sources. How, as businesses, would you be assisted if those aspects that you talked about, the difference between energy usage and energy production, were in the mix when we define a zero carbon house?

11:15

[236] **Mr Harris:** Yes, I guess it's about a sort of—I'm trying to think of the

right word. In my head I'm saying 'whole house'. It's that sort of overall approach. Yes, you can make the fabric and the building energy efficient. It's been shown that you can actually make the property make energy, but, if the people who move in there think, 'Well, our property's energy efficient and we're making energy', and then just have hundreds of electrical items in there that they leave on all the time, because they think, 'Well, we're producing energy, so we don't need to worry', in that bigger picture, you're not achieving the overall goal. I guess it's looking at the impact this has.

[237] I, very quickly, got some figures this morning, and I couldn't do it for Wales, but, in the UK, there are 25 million houses. If you look at the houses built in the last 10 years, it's only 6 per cent of those dwellings. So, yes, it's going to have an impact, but whether or not there are other energy users and other energy wasters that are having a much bigger percentage impact on our energy usage in Wales—. Could they be looked at as well?

[238] **Joyce Watson:** I want to move on and ask you for your views on the upcoming review of Part L of the building regulations, and what you think they should be seeking to achieve.

[239] **Mr Harris:** We obviously don't know the details of what they're looking at yet. We're currently working with Welsh Government building control on some reviews they're doing at the moment. I think, in England, one of the decisions that's been made is, well, the industry is coming out of recession, it's starting to boom again and we've identified that we need to build more houses, so let's try and give a bit of a level playing field for a while, keep things static for a while so people can just get on with the business of building houses. So, I think the concerns are that, if you keep reviewing things and keep changing things—and this comes back to, I suppose, the competitive issue—. What we're saying, and I've already said that I think it's 80 per cent of new dwellings that are built by the nationals—. Out of the five nationals in Wales, four of those are based in England. So, their decision about where they spend money on sites is being made in England. If their guys in Wales are saying, 'Well, there's another review coming in a year, we've got this coming in, we've got that coming in, and we're not sure about this', it just creates a level of uncertainty about whether it's the right place to invest that money. So, we're not saying what they're doing in England necessarily has to be copied in Wales, but let's bear in mind what they're doing so that we don't radically go and do different things, because it potentially will create that level of uncertainty.

[240] **Joyce Watson:** Just on that, is it not the case, though, that the majority of house building in Wales is actually done by smaller firms? If we looked at the overall picture of house building in Wales, would it not come out—and, if you haven't got the answer, we'll accept it in writing—that the majority of houses that are built in Wales, new build, are built by smaller companies? You might build the biggest scale, but it's not quite the same as building the majority.

[241] **Mr Harris:** The figures that I quote from are the NHBC's. Now, not all properties are registered with the NHBC, but those figures show that we're building 80 per cent—

[242] **Joyce Watson:** But that's your own personal membership.

[243] **Mr Harris:** Well, NHBC is a governing body. Not my membership, no; that's the private house builders—.

[244] **Joyce Watson:** Okay. Thank you.

[245] **Alun Ffred Jones:** Sorry, do you want to—?

[246] **Joyce Watson:** Yes, I just want to—. I want to also—. You've talked a lot about barriers, really, and how they might be overcome. I want to unpick, really, this whole idea that's been put on the table about England versus Wales and this boundary that exists, and that you might go off into the sunset and build elsewhere. How do we overcome the barriers that you say are there, so that we can actually bring you with us—because that's what we want to do—to deliver what has to be delivered by 2020? There's no question about it; that's what has to happen.

[247] **Mr Harris:** Yes. I guess the point I'm making there is that it's not just Wales that's got to deliver by 2020—it's the UK. And the houses we're building in Wales are, in many respects, the same as the houses that are being built in the UK. There are some slight differences, but very, very minor—more around ground conditions and things like that—so it doesn't really affect the energy efficiency of the dwelling. I guess if it becomes obvious that England are just ignoring it and not doing anything about it, then I accept that we should do something about it, but what I'm saying is let's at least not necessarily jump in and try and be massively different, unless there's a reason to do that, but let's look at what other nations are doing—what England are doing, what other nations in Europe are doing—

because they've also got to meet this target. And as I think I mentioned at the beginning, part of the calculations comes back to where the energy originally comes from, and some of the European countries have put themselves in a very good position by putting a lot of resources into green energy, and therefore because they generate clean energy there's less of a requirement to do other things at the other end of the energy chain.

[248] **Alun Ffred Jones:** A couple of people want to come in. Llyr, do you want to come in on this?

[249] **Llyr Gruffydd:** Just on this, I'm just wondering whether you saw any commercial advantage in moving first on this—you know, the first mover advantage stuff—because it's something that we could export then to other parts.

[250] **Mr Harris:** I think there is that potential, and, on the face of it, yes, but obviously that has—. I mean, there are two arguments, I guess, to that. One is the customer side, so if the people buying houses think it's a benefit, then, yes, we'll go with that. I'm not sure what the figures are in terms of how many people make that choice between buying in England and Wales. It obviously does happen, so there is a market there. I think, later on in the questions, it mentions the skills agenda and training, and things like that. Without jumping ahead on those, yes, there is potential there to create a market in Wales for training. I suppose the potential risk—and this may be me being a pessimist—is that you upskill and train everybody in Wales, England then follow you and all the skilled labour leaves Wales to go and work in England, because there are more houses being built there and possibly more money being paid for the labour, and we actually generate ourselves a problem in Wales because we lose the labour that we've trained.

[251] **Joyce Watson:** How would that make a difference to now? You're training builders now, and the CITB and the levy cover—. You know, you pay into a levy anyway, and there are issues about that, I know. But, how is that any different, because builders are trained to deliver what they've got to deliver at the time? I'm not sure I accept that.

[252] **Mr Harris:** In the longer term, it probably isn't that different, because it's the labour force that builds the houses and they have the option to go where they want. In the short term, possibly, when it's seen more as a particular skill and you're starting on this new journey of building houses in a different way, then there's going to be a premium—

[253] **Alun Ffred Jones:** Well, all that is conjecture. So, William, just to finish off, and then Alan would just like to–

[254] **William Powell:** Thank you, Chair. We've moved on to area of questions that I was keen to pursue already, in terms of the skills agenda. What are the main implications for the companies that you represent in terms of the challenge of zero carbon, Passivhaus and building energy positive homes?

[255] **Mr Harris:** Our industry does use a lot of subcontractors. It doesn't use that much direct employment, so you're relying on companies. I guess the issue is around the certainty of where we're going with the types of products and types of technology we're using. So, people will only commit time, money and effort into setting up the training courses for the skill that's needed if they know there are guaranteed jobs for a reasonable length of time, and I think we've seen that around the sprinklers. The closer that's come, we've seen Neath Port Talbot have taken up the skill training and set it up and are doing very well with that, because they know it's coming in on a date, and they know it's going to be there forever.

[256] **William Powell:** It's got a certainty to it.

[257] **Mr Harris:** Yes. We have seen, for instance, the solar industry with the original feed-in tariff completely burned; the feed-in tariff got halved and there was the impact on the industry. So, skill training takes time and you need the certainty of those jobs for the future to make it work, really, and be effective.

[258] **William Powell:** You referred earlier to the possible brain and skills drain of workers being tempted across into England by the scale of work and maybe the length of time that work would be available on a certain basis. Do you think that there's any connection there between the fact that, in large parts, certainly, of central Wales, many of the key providers are already colleges in England, in the Marches and further into England, that potentially then lead people across, leaving us with a dearth of skills?

[259] **Mr Harris:** I think there are issues around the boundary, and yes, I guess, linked to that is the certainty of a job in the future. I guess—. If Wales becomes different to England, radically different, then there's an argument that the training will need to be specific to both. So, you end up potentially in a scenario where you need to train in Wales to work in Wales.

[260] **Alun Ffred Jones:** Not such a bad idea. Jeff, do you want to come in on this issue?

[261] **Jeff Cuthbert:** Yes, on this point. It's the nature of the construction industry that people move to where the projects are, and we wouldn't want to restrict people from going wherever their skills can command a good salary. We remember *Auf Wiedersehen, Pet*.

[262] **Alun Ffred Jones:** Some of us remember. [*Laughter.*]

[263] **Jeff Cuthbert:** That's what I meant. Obviously, not the ladies, clearly. [*Laughter.*] But, look, this is my main point: what is the industry doing to be proactive here? Any industry must make sure that it identifies the skills that are likely to be required for future development as technology moves on. I trust that the construction industry is no different. We get a mixed message sometimes. ConstructionSkills have suggested there is a skills gap that the industry has to address. Is that being done in terms of identifying training and apprenticeship opportunities that take account of these new technologies?

[264] **Mr Harris:** I think there is a lot being done around skills and training, and I think we accept as an industry that we are on catch-up with that. Specifically around the new technologies, I guess, as I've said, the incentive isn't necessarily there to do the skill training until you know that it's a specific requirement. So, I use the fire sprinklers as an example; because we know they're coming in on a date, there has been an increased level of skill training and upskilling ready for that implementation date. I guess, you know, 2020, no, it isn't a long way away—

[265] **Jeff Cuthbert:** No, it isn't at all.

[266] **Mr Harris:** But how many businesses do actually plan that far ahead? I don't know.

[267] **Jeff Cuthbert:** What are you doing as a federation, then? Surely, wouldn't you see this as part of your responsibility—to guide your members to taking this matter seriously? Because you can't deny it's going to happen.

[268] **Mr Harris:** No. That is part of our role, yes, advising members on what the changes in legislation are going to be, and what we can do to react to

that. As I say, we know there's that 2020 requirement, but until the definition is there and it's understood how you meet that definition—. Another example—and it's one of the questions as well—is that a lot of work was done on carbon offsetting in England, and understanding that, and then the Government just said, 'Actually, we're not going to bother with carbon offsetting.' It may come back; it may not. So, you have to react to the clarity of when things are coming in.

[269] **Alun Ffred Jones:** Okay?

[270] **Jeff Cuthbert:** Yes, that's fine.

[271] **Alun Ffred Jones:** Okay. Just to round off this session, I'm just going to ask Alan Simpson—he's our special adviser—to ask the final question.

[272] **Mr Simpson:** Thank you, Chair. Just three fairly quick ones, I think, Mark. The first relates to the point that Jenny raised, and that is: would he accept that, in terms of their configuration of houses and estates, actually, there are shedloads of countries that build houses on a grid system, and wriggly roads are a style issue more than anything else. There's nothing unusual about building towards optimal configuration of properties. So, that would be the first question, which I think is a fairly short answer.

11.30

[273] **Mr Harris:** Yes, obviously, if it's done elsewhere we can't deny that it can be done. I mean, obviously, there are other people who need to be brought on board: the highway engineers, the planners and all the other people who influence the layout. So, as long as that's understood.

[274] **Mr Simpson:** Great. That takes me on to the second one, which is you said in your first answer—your comment about the SOLCER house, separating them from the fabric issues within building technologies and the bolt-on issues. That used to be said about toilets. We used to have discussions in this country about the provision of sanitation, whether that was to go in a building or whether it was something to do with the municipal responsibilities. Now, I would hope that it would be taken as a given that you couldn't get a property application looked at if it didn't have toilet facilities. Do you think that the industry actually has problems in engaging with what will be the realities of tomorrow's construction requirements? It has to begin with ceasing to call these 'bolt-on'—the idea that tomorrow's housing is all

going to have to be 'energy plus'. Is there a sub-contextual problem that you have in the sector?

[275] **Mr Harris:** I think the issue is around it's such a fast-moving industry and things change so quickly. As I say, I went to visit a SOLCER house, and I consider myself to be a fairly green person outside of my job, and in previous jobs I've been involved with the external cladding of existing properties and so on, but the technology, for instance, that's used in the SOLCER house, with the metal screen that traps the air, I'd never, ever heard of that before. I'd never seen mention of it, and that's fairly critical to the design of the house.

[276] **Mr Simpson:** That wasn't the question that I was asking. I mean, actually, we have the same in sanitation: we have short-flush toilets and we have all sorts of toilet designs. That's the step on from accepting that that is the new norm, and I was just—well, maybe I'm asking you to feed back to the sector that it needs to reset its own thinking about what has to cease to be—

[277] **Alun Ffred Jones:** I have to move you along.

[278] **Mr Simpson:** Okay. Final question: I don't have a problem about companies making a profit. I'd rather you were in business than not. But would it help the debate if we were to separate out the interests of builders from the interests of land hoarders, and, providing this was backed with an obligation to do back-to-back deals, would it help if Wales had the ability to fast-track compulsory purchase of land in order to facilitate precisely the sort of buildings that Members in the committee have been urging you to take on board? Would that separate out the interests between those who are builders and those who are sitting on land banks?

[279] **Mr Harris:** It's a big step, a big change from where we are now, but, certainly, ultimately, if you have a known cost in the building industry at the beginning of your project, you pass that on to the landowner. Now, you get to a point where the landowner, the costs you're passing on to him, he'll go, 'Well, it's not worth me selling the land, because I'm not going to make the profit that my mate made last year when he sold the land', and that's how it works.

[280] **Mr Simpson:** It was really to explore where they are one and the same person, and whether Wales would be best served if it had the ability at some level of governance to compulsory purchase the land in order to get into

proper discussions with those of you who are builders about the properties to go on it.

[281] **Mr Harris:** Well, yes, if that would get you over the hurdle of landowners not being willing to sell land because the relevant level can't be achieved, then, yes, clearly, that would help.

[282] **Alun Ffred Jones:** Okay, well, diolch yn fawr iawn. Thank you very much, Mr Harris, for coming in and giving us your evidence. It will be very useful in our deliberations in our inquiry. Diolch yn fawr iawn. Thank you very much. We're moving straight ahead to the next session.

11:35

Ymchwiliad i 'Dyfodol Ynni Callach i Gymru?' Inquiry into 'A Smarter Energy Future for Wales?'

[283] **Alun Ffred Jones:** We're moving straight ahead to the next session.

[284] Felly, byddwn ni'n croesawu'r ddau dyst nesaf i'r bwrdd mewn munud. Rwy'n croesawu yr Athro Gareth Wyn Jones a Dr Caroline Kuzemko. A gaf i ofyn i chi, yn gyntaf, i nodi eich enw a'ch swydd?

Therefore, we will welcome the next two witnesses to the table in a minute. I welcome Professor Gareth Wyn Jones and Dr Caroline Kuzemko. Could I ask you, first of all, to give us your name and your position?

[285] Then we'll go straight into questions.

[286] **Dr Kuzemko:** Thank you for inviting me here today. My name Dr Caroline Kuzemko and I'm a senior research fellow at the energy policy group in the University of Exeter.

[287] **Professor Jones:** I'm Gareth Wyn Jones. I am an emeritus professor in Bangor University. I was chairman—

[288] Roeddwn i'n gadeirydd—beth ydw i'n ei wneud yn siarad Saesneg? [Chwerthin.] Roeddwn i'n gadeirydd is-bwyllgor ar ddefnydd tir a newid hinsawdd i'r Comisiwn Cymru ar y Newid yn yr Hinsawdd. Rydw i wedi

What am I doing speaking English? [Laughter.] I was chair of the sub-committee on land use and climate change at the Climate Change Commission for Wales. I am now retired and I take an interest in this

ymddeol rŵan ac rwy'n cymryd area of work.
diddordeb yn y maes.

[289] **Alun Ffred Jones:** Diolch yn fawr iawn. Yn amlwg, rydych yn ymwybodol o'n hymchwiliad ni a'r gwaith yr ydym yn ei wneud. Rydym yn chwilio am ffyrdd newydd o ddelio gydag ynni ac arbed ynni ac rydym yn chwilio am arweiniad, a dweud y gwir, fel pwyllgor, er mwyn i ni gael adroddiad a fydd yn rhoi llwybr neu her i'r Llywodraeth nesaf. Dyna'r gobaith, beth bynnag. Mae Llyr Gruffydd yn mynd i ddechrau.

Alun Ffred Jones: Thank you very much. Obviously, you are aware of our inquiry and of the work that we're carrying out. We are looking for new ways of dealing with energy and energy saving and we are looking for guidance, really, as a committee, so that we can put forward a report that will set out a path or a challenge for the next Government. That's the hope, anyway. Llyr Gruffydd will begin.

[290] **Llyr Gruffydd:** Diolch yn fawr, Cadeirydd. Mae gen i gwestiwn i'r Athro Gareth Wyn Jones. Yn eich papur chi, pan rŵm ni'n sôn am y *mix* ynni neu am y gwrthdaro neu'r angen i gael gwell cydbwysedd rhwng cynhyrchiant mawr canolog a chynhyrchiant mwy lleol wedi'i wasgaru, efallai, yn fwy cytbwys, rydych yn sôn bod yna ddau ffactor allweddol, sef diffinio beth sy'n bosibl yn dechnegol—ac rwy'n sylwi eich bod yn cyfeirio at yr angen i greu rhyw fath o atlas ynni, fel y byddai rhywun efallai yn ei ddisgrifio, a beth sydd yn bosibl yn nhirwedd Cymru—ac hefyd yr elfen yma o beth fuasai'n dderbyniol i gymdeithas. Efallai y byddwn yn gofyn i chi, i gychwyn, i sôn ychydig am beth rych chi'n meddwl byddai'n helpu i drawsnewid y ffordd y mae pobl yn ystyried eu cyfraniad nhw, beth y mae ynni'n gallu ei gyfrannu a sut ddylai ynni gael ei gynhyrchu.

Llyr Gruffydd: Thank you, Chair. I just had a question for Professor Gareth Wyn Jones. In your paper, when we talk about the energy mix or the need to get a better balance between large-scale central production and more local-based production that is dispersed on a more equitable level, you say that there are two key factors, namely defining what is possible technically—and I notice that you referred to the need to create some sort of energy atlas, as some might describe it, and what is possible in the Welsh landscape—and also this element of what would be acceptable for society. I would perhaps ask you to begin by talking a little bit about what you think would help to transform how people perceive their contribution, what energy can contribute and how energy should be produced.

[291] **Yr Athro Wyn Jones:** Mae yna sawl elfen. Yn y lle cyntaf, y mwyaf lleol y mae'r ynni a'r mwyaf clos ydy'r cysylltiad rhwng y bobl a'u hynni, y mwyaf derbyniol, rwy'n credu, y bydd ynni adnewyddol iddyn nhw. Mae'r ymateb yng nghanolbarth Cymru i dyrbinau, rwy'n meddwl, yn adlewyrchu hyn—nid yw'r syniad eich bod chi'n aberthu er mwyn i bobl eraill gael ynni gwynt rhad yn dderbyniol. Yn Nenmarc, mae tua 90 y cant o ynni gwynt mewn perchnogaeth leol. Rwy'n meddwl fod yr elfen seicolegol yn gwneud gwahaniaeth mawr.

[292] Yn ail, yn ein tŷ ni, rydym ni wedi rhoi system ffotofoltäig ac ynysu a nawr rwy'n mynd o gwmpas yn rhoi'r goleuadau i ffwrdd. Hynny ydy, mae yna elfen personol—os ydych yn cynhyrchu eich ynni eich hun yn eich tŷ eich hun, rydych yn cymryd lot mwy o sylw ohono. Felly, mae'r elfen honno.

[293] Parthed beth yr ydym wedi'i glywed o'r blaen, mae annog pobl i safio ynni yn effeithlon yn economaidd a hefyd yn effeithlon yn amgylcheddol ac mae'n rhan bwysig iawn o'r hafaliad. Beth yr wyf fi wedi bod yn ei drafod ac yn ysgrifennu amdano—i ddod â ffigurau gerbron, mae Cymru'n defnyddio o gwmpas 100 TWh y flwyddyn o ynni; dim ond 20 y cant o hwnnw sydd fel trydan. Os ydym yn gallu dod â'r 100 hwnnw i lawr i o gwmpas 60—ac mae'r

Professor Jones: There are many elements. First of all, the more local the energy is and the closer the connections are between the people and their energy, the more acceptable, I believe, that renewable energy would be for them. The response in mid Wales to wind turbines, I believe, reflects this—the idea that you have to sacrifice for other people to gain from wind energy is not acceptable. In Denmark, around 90 per cent of wind energy is in local ownership. I think that there is a psychological element there that makes a great difference.

Secondly, we've put photovoltaics in our house, and insulation, and now I go around switching the lights off. There's that personal element there—if you produce your own energy in your own home, then you will pay more attention to it. So, there's that element too.

Regarding what we have heard before, encouraging people to save energy is an economically effective way of doing things and is also environmentally effective, and it's a very important part of the equation. What I have been discussing and writing about—in terms of figures, Wales uses about 100 TWh of energy every year; only 20 per cent of that is as electricity. If we can bring that sum of 100 TWh down to about 60—and Germany and Denmark have

amcanion yn uwch yn yr Almaen ac yn Nenmarc—oherwydd mae 60 TWh wedyn yn bendant o fewn ein gafael ni efo ynni adnewyddol lleol Cymreig, a chanran helaeth ohono yn dod o fewn yr elfen gymdeithasol leol. Rwy'n meddwl fod hynny'n gwednewid yr holl sefyllfa ac mae'n ychwanegu at gyfoeth yng Nghymru, yn y trefi ac yng nghefn gwlad.

even higher targets—because 60 TWh is certainly within our ability in terms of having local renewable energy in Wales, and for a large proportion of that to come from that local and community level. I think that that would transform the situation and would add to the wealth in the towns and the countryside in Wales.

[294] **Alun Ffred Jones:** Diolch yn fawr iawn. Caroline, do you want to comment on this?

[295] **Dr Kuzemko:** Well, I would just concur that energy efficiency demand reduction, but also demand-side response—which is flexibility of demand in energy—is going to be very, very important in the transition, and I would think it should be the most important strand of the transition to a smarter and more sustainable economy. So, our research is focusing on governance for, specifically, demand management—that side of things. But, just to come back to the flexibility question, the more dispersed your energy system is, the more flexible you need your demand to be, so I think it's important that we remember that flexibility side of things as well. We've been doing some work on electricity markets, actually, in particular, in the US—in Pennsylvania and the New Jersey area—and they are doing a lot of very high-level work to make sure that flexibility is paid for in electricity markets in the way that supply would be paid for. So, there is some work going on at the moment, but it's very progressive and it's not happening in that many places yet.

[296] **Alun Ffred Jones:** Joyce.

[297] **Joyce Watson:** Good morning, Professor Jones. I just want to pick up on one point, if I can, that you made, about locally-produced energy. You talked, particularly, about wind farms and, therefore, being less likely to produce an objection. I'd like to ask you to think about the voices that get heard—the loudest voices, that is—who might not actually be that concerned about paying more for their energy, because they might be able to afford it, against the silent voices who might have greater need.

[298] **Professor Jones:** I'm certain you're correct. When I was with the Countryside Council for Wales, in the early days of wind energy we did a

survey in two communities in mid Wales. The person who worked for me at the time was convinced that we'd find that the great majority were tremendously anti-windfarms. It turned out that 65 to 70 per cent—I don't remember the exact number—were all in favour. But, there was a minority that made a big noise. So, there is an issue there of the silent majority being far less antagonistic to them than you would anticipate from the media. The figures are available; CCW had these surveys done.

[299] **Joyce Watson:** Can we have them?

[300] **Alun Ffred Jones:** Oeddet ti eisiau dod yn ôl, Llyr? **Alun Ffred Jones:** Did you want to come back, Llyr?

[301] **Llyr Gruffydd:** Na. Mae'n iawn. **Llyr Gruffydd:** No. It's fine.

[302] **Alun Ffred Jones:** Julie. Sorry, Russell—on this point.

[303] **Russell George:** I take your point about a silent majority, but there were 2,000 people standing outside the Senedd when the petition took place. The point I'm making, though, which is relevant, is that perhaps it's not so much an anti-windfarm issue, it's the infrastructure that comes with it. I think if the question is put—. I think, perhaps, the issues in mid Wales largely revolve around people not being made aware of what this actually meant for the community. I think that's the point.

[304] **Professor Jones:** I'm old enough to recall the electricity coming into our community in Denbighshire—Llansannan—and the excitement of the 1950s when the first pylons were put up—'Modernisation: great!' Nowadays, the reaction is very different, because we now see it as an imposition, which we didn't initially.

[305] I think what people don't realise, which I've tried to emphasise, is that when we decarbonise our energy, we're also going to increase the amount of electricity we use. Even if we become more efficient in electricity—and there's obviously big potential—then, if we decarbonise transport, which we have to do because it's a much bigger element than electricity now, then we're going to increase the demand for electricity. Now, the more that is satisfied locally, then the less new infrastructure we have to build. But then, as you say, you've got to then have the smart grid management systems to go with it. That's why it's an integrated vision—whole—which you can follow, but people don't appreciate that. I don't think the average punter realises that

we're going to have to increase the amount of electricity we use in order to decarbonise our energy system, and the implications of that in terms of infrastructure. That would be a very useful thing to be made public.

11:45

[306] **Alun Ffred Jones:** Llyr.

[307] **Llyr Gruffydd:** Mae'r *approach* integredig yma yn sicr yn angenrheidiol, ond, wrth gwrs, nid yw'r pwerau fan hyn i allu gweithredu'r wleidyddiaeth y tu ôl i hynny ar lefel integredig, ac felly mae'n rhaid cydnabod, tra bod y grid heb gael ei ddatganoli, a tra bod y mecanweithiau cyllido heb gael eu datganoli, bod y dasg, os nad yn anodd, bron iawn yn amhosibl. A fyddech yn cytuno â hynny?

Llyr Gruffydd: This integrated approach is certainly vital, but the powers aren't in this place to be able to implement the politics behind this in an integrated manner, so we have to acknowledge that, whilst the grid isn't devolved, and whilst the planning mechanisms are not devolved, then the task is, if not impossible, very difficult. Would you agree with that?

[308] **Yr Athro Wyn Jones:** Ydy. Mae yna wendidau yn y setliad presennol.

Professor Jones: Yes. There are weaknesses in the current settlement.

[309] **Llyr Gruffydd:** Ie, ond y pwynt yr ydw i yn ei wneud, wrth gwrs, ydy bod yn rhaid i ni weithredu o fewn—. Gallwn ni fynegi uchelgais, o safbwynt beth yr ydym eisiau ei gyflawni, ond mae'n rhaid i ni, fel pwyllgor, weithredu o fewn y setliad sydd gennym ni, ac felly rydym ni'n chwilio am atebion y gallwn ni eu delifro yn y cyd-destun presennol.

Llyr Huws Gruffydd: Yes, but the point that I am making, of course, is that we have to act within—. We can express a vision in terms of what we want to achieve, but we, as a committee, need to operate within the settlement that we have, so we're searching for answers that we can deliver in the current context.

[310] **Yr Athro Wyn Jones:** Oes, ond rwy'n credu bod yna enghreifftiau; roeddwn yn siarad gynnau am ryw gwmni Robin Hood Energy yn Nottingham sydd efo grid lleol, ac

Professor Jones: Yes, but I do think that there are examples; I was talking earlier about the Robin Hood Energy company in Nottingham that has a local grid, and I was listening earlier

roeddwn yn gwranddo gynnu ar y sefyllfa yn yr Alban, lle mae yna gwmni wedi'i osod i fyny i wneud grid lleol. Nid wyf yn meddwl eich bod yn ddi-rym, ac rwy'n credu bod yna lawer iawn y gallwch chi ei wneud yn lleol. Cymerwch Llŷn, er enghraifft—mae yna awydd i wneud hyn ym Mhen Llŷn ar lefel leol, a buaswn yn meddwl bod modd rhoi anogaeth iddyn nhw a lot o lefydd eraill, nid jest mewn ardaloedd gwledig ond mewn ardaloedd trefol, hefyd. Rwy'n meddwl bod yr arweiniad yr ydych chi'n ei roi, a dweud 'Dyma'r dymuniad', ac wedyn annog cymdeithasau a chymdeithas leol i wneud pethau—. Mae yna ormod o falu awyr.

to the situation in Scotland, where a company has been set up to have a local grid. So, I don't think that you are without powers, and I think that there's a great deal that you can do locally. Take the Llŷn peninsula, for example—there's a wish to do this in Pen Llŷn on a local level, and I would imagine that that would be true of many other places, and not just rural areas but urban areas, also. I think that the leadership that you give, and if you say 'This is what we wish to do', and then encourage organisations and society to act—. There has been too much talking, basically.

[311] **Alun Ffred Jones:** Caroline, would you like to add—

[312] **Dr Kuzemko:** On the point of leadership, I do think that it is incredibly important. I know that one of your questions was around whether you should set targets or not. Although I think that targets on their own are reasonably useless, because you need the policies and the strategies underneath to drive the delivery of those targets, I think that if Wales were of a mind to, some specific targets around efficiency and demand reduction, like you have in California, like you have in France, like you have in Germany and like you have in lots of places, would give some sign of leadership and the kind of direction that you want to go in. I think that that's very important, but, obviously, underneath that, you have some pretty complex layers, don't you, because you have all sorts of GB-based policies and rules and regulations, many of which probably need to be changed if we're going to really meet a proper low-carbon future—or, I should say, a sustainable future.

[313] So, I think it's the bit underneath the targets, where there are layers and layers of complexity. Our group has been working for three years now on analysing GB rules and regulations around electricity and heat markets. There are five of us, and we're just beginning to get beneath the surface of it, but it's an incredibly dense and complex landscape, and there's issue after issue

that you find as you go through. But, for me, the main problem is standing back out of that and thinking about the question of leadership, which I think we don't have on the GB side at the moment. I think Scotland is trying to show a little more leadership—I think Wales could do the same thing. Cornwall has got an energy element in its devolution Bill, which I think is quite interesting, and other local authorities—. Robin Hood Energy in Nottingham—that's making a statement. I think most people understand the message behind that statement.

[314] **Alun Ffred Jones:** I think you mentioned in your evidence that targets are useful, but then you have to back that up with specific strategies. I think you referred to Germany in that; am I right?

[315] **Dr Kuzemko:** Well, yes; I guess German energy governance is pretty well progressed now. So, they are at a stage where they are having to make phase 2-type decisions, if you know what I mean. So, they have so much distributed renewables, and the ownership of it so dispersed. So, they're having to make new policies about what to do about electricity markets that have had zero wholesale prices. It is very uncomfortable for the big four, but the Government don't mind that it's uncomfortable for the big four because their direction is set to 2050 on all sorts of levels and targets. What they do that's interesting that we don't seem to do here at the GB level is tie their policies to the targets. So, you're running with a policy, it's working for three, four or whatever-it-is years, but once you see that there is a real change in the markets, you're going to have to address the policy changes because the target has to be met, which is why they've been doing so much work on coal recently and trying to phase that out, albeit, obviously, they haven't delivered what progressive energy groups wanted in Germany, but they have made that step and they are addressing it. So, the policies are always linked to meeting the targets.

[316] **Alun Ffred Jones:** Jenny.

[317] **Jenny Rathbone:** Given that the UK Government—the Department of Energy and Climate Change—seems to have dismantled most of the green incentives, do you think that Wales has now missed the boat in terms of getting citizens to engage in community energy projects and that, therefore, the house as power station—is that another way forward, because of the demonstration effect there? Or how do we seize the opportunities of community energy without subsidies?

[318] **Dr Kuzemko:** Yes, I mean, clearly, the changes are incredibly un-useful, particularly at that sort of community and small-scale kind of level. So, what the solution for that is in the medium term is unclear to me, definitely. But if you move the emphasis back on efficiency—. I mean, that's the distributed energy side of it, isn't it, but if you move the focus back on energy efficiency, I think that there is more possibility in that kind of area, and I think there's more possibility in terms of just building up a bit of trust again. If you want consumers—they're not consumers, they're voters; they're householders—. If you want them to become more involved in what's going on, you need to build that trust element back up again.

[319] There are some energy companies that haven't been very helpful on the trust front who have very low customer satisfaction. You have large quantities of customers sitting on standard variable tariffs that are much higher than their other tariffs, so they're paying a much higher percentage of the cost of what's been done so far in terms of changing transmission, distribution, policies, et cetera. But there are some companies that are coming through now that are more interesting. Some of them make a profit but they have a specific ethical element to the business, like Good Energy or Ecotricity, who only sell renewables, obviously on the electricity side.

[320] Then, you have some not-for-profits emerging on the local authority level, which are very interesting. Some work through a company called OVO, who have something called a white label contract. OVO is the company that has the formal agreement with Ofgem, and they have to take on the full burden of the supplier licence and the codes and, believe you me, it's a very big burden and it has been a barrier to entry. So, OVO have that relationship with Ofgem, but then the local authority goes through kind of onto OVO's books in terms of their customers and OVO provide certain services, but the local authority can brand it as Robin Hood Energy, although it hasn't used that contract. Robin Hood have their own full supplier licence with Ofgem. But other local authorities that are going through OVO can decide on the tariffs, they can decide not to make any profit, they can decide how they want to brand it in terms of affordability for the people in the community. So, I think that builds more trust and I think that gives customers more interest in, 'Oh, well, actually, why am I sitting with this big six guy when I could be with my local community and paying considerably less money per annum?'

[321] **Jenny Rathbone:** How does that get round the requirement—? OVO has to sell it to the national grid, and then the national grid sells it back to the distributors who give it to the customers—

[322] **Dr Kuzemko:** So, these are just supply retail contracts.

[323] **Jenny Rathbone:** So, is OVO able to both receive the energy and sell it back to the designated community?

[324] **Dr Kuzemko:** OVO does all its buying on the market, so it's not going to be a generator at all. It's just a retailer, so they just go to the markets for their supply.

[325] **Alun Ffred Jones:** Julie.

[326] **Julie Morgan:** Jenny has covered the question I was going to ask, actually, but you spoke about gaining trust and I think you mentioned the most vulnerable customers in your evidence, so how do you think the trust can be gained of those very vulnerable people?

[327] **Dr Kuzemko:** I think that getting the most vulnerable people off the types of tariffs that are most harmful would be a really good first step. So, some of them are on Economy 7 meters, and they're paying pre-payment tariffs, which are more expensive for them. So, getting those—. I think what you need for that is knowledge about who all these people are. I think that that has been not very well shared by energy companies. So, I think the entrance of these new independents to the market is interesting in that way because we're going to be, through them, finding out more about who the vulnerable customers are. But local authorities, I think, have to be incredibly useful in providing decent evidence of who the vulnerable people are, getting them off the pre-payments and putting them on a smart meter. Soon, we're all going to have to have smart meters, but that would sort of get around the fear that energy companies have that they're not going to be paying. So, smart meters would just replace the Economy 7 meters and, obviously, getting vulnerable customers off the standard variable tariffs, because a lot of them are just people who haven't switched, even since liberalisation. So, they've just sat on these much higher tariffs. We need to know who these householders are.

[328] **Julie Morgan:** So, you see local authorities as being key in all of this.

[329] **Dr Kuzemko:** Yes, I do. Absolutely. I know in Cornwall, on the energy efficiency side, part of their devolution deal has been to take back control over how the ECO is targeted and which households are approached, because

they don't feel that the nationally held datasets that the GB ECO policy has been based on have been particularly accurate for them. So, they've taken back control over that so that, through local authorities and communities, they can target the right households.

[330] **Joyce Watson:** Can I ask a question about smart meters?

[331] **Alun Ffred Jones:** Just a minute—just to come back on that issue in Cornwall, what have Cornwall done?

[332] **Dr Kuzemko:** It's part of their devolution deal. They've just done a devolution deal. They just made the comment that they felt that the nationally held datasets that the ECO uses to target particular households was not very accurate for their area. So, they just decided that they would take back the targeting—which households would be targeted through the ECO—using their own local knowledge, and local authorities, obviously, to make those decisions.

[333] **Alun Ffred Jones:** What's the situation in Wales? Does anybody know? No. Okay. Joyce.

[334] **Joyce Watson:** I just want to—. Perhaps it's my misunderstanding—you talked about putting people on smart meters as being a solution, probably so that they can control what they're using. I have a problem with smart meters—I'll put it on the table now—because they also have a choice, then, of switching things off because they know their usage and they might be running short of money. So, I would like you to expand how you avoid that self-disconnection, if you like, because you're switching everything off in any case. I can't see that it's useful.

[335] **Dr Kuzemko:** Well, I referred to it just in the case of getting customers off pre-payment meters. I mean, the argument that energy companies put forward is that you have to have the pre-payment meter because otherwise certain households will default and not pay. So, I was just trying to get around that argument that they might put forward by suggesting a smart meter instead. I don't have an answer, I'm afraid, to what you've identified, which may well happen, of course, in some instances.

[336] **Joyce Watson:** It will happen. There's no doubt about it. When people know that they're running out of money they're going to switch stuff off. Anyway, that was my question, but you've given me the clarity. Thanks.

[337] **Alun Ffred Jones:** William Powell.

[338] **William Powell:** Thank you, Chair. Moving to the issue of public investment, what is the scope, in your view, for an injection of public investment to support the development of innovation in terms of encouraging local renewable energy generation?

[339] **Professor Jones:** That's a big question. It's at various levels, isn't it? There is the level of the actual control of the grid, smart grids, energy storage and all these other things that are coming on board, and we don't have a lot of expertise in Wales. What expertise there is, it tends to be in the companies. I would like to suggest that it would be very desirable to set up a small centre of technical expertise—one in the north, say, in Glyndŵr, and one in the south, say, in Swansea—for grid management; and in the fullness of time, energy and electricity storage as part of that. So, I think there is a case for setting up units that provide expertise at a technical level. Also, I think we lack advisory networks for people wanting to set up community schemes. There are many more advisers available in Scotland than there are in Wales. So, that would be useful. The other useful thing would be to decrease the bureaucracy, so that there was a very clear policy steer that community energy schemes should not, by default, be disputed, but should if possible be agreed, whereas the situation now is rather the opposite. There's a rather negative framework for action.

12:00

[340] **William Powell:** Would you welcome a fresh technical advice note on that very issue, to give local authorities confidence?

[341] **Professor Jones:** Yes, I would. There are specific issues. There's a famous issue in Wrexham where they were trying to put up an anaerobic digester—Calon Wen, the milk company. They were wanting to bring in food waste to increase the energy density, and they've had endless problems with this, because the local authority then deemed it was an industrial process to bring in food waste to supplement an anaerobic digester using slurry from an organic farm. That was refused initially, and this is just a lack of imagination in the system. So, I think technical advice saying that this is the Government policy would be very useful.

[342] **Dr Kuzemko:** Are you asking about the role of public money,

generally, in energy transitions or the scope for it, currently, in GB?

[343] **William Powell:** I think the desirable level to actually make a meaningful difference in the future, rather than what the case is now.

[344] **Dr Kuzemko:** Right. I think that—. I don't know what the overall level should be. I mean, you see quotes everywhere, don't you, as to what it should be, but I do think that the focus on efficiency and demand reduction and flexibility would be the cheapest route, because then you don't have to do so much spending—big transmission spend—and you don't have to have huge new nuclear power stations that are very expensive. So, I think that a focus on that route would lower the overall amount needed, but I would also make the point—and I know that it's difficult in an era of fiscal austerity—that the public sector can access funding at rates lower than commercial rates, and that was the problem with the Green Deal, frankly, because they put it at commercial rates and people didn't take it up; it just didn't work. Obviously, the comparison is Germany, and I hate to hark back again, but their sustainability bank lends at 1 or 2 per cent for those kinds of, you know, basic insulation et cetera.

[345] **Alun Ffred Jones:** Is that backed by Government, then? Is that how it's so cheap?

[346] **Dr Kuzemko:** Kind of. It was originally, but they are directed by Government to lend in sustainability projects. They are also directed to lend at lower rates and, to be honest, rates are pretty low in Germany at the moment, anyway. They are also directed to recycle any money back into sustainability projects, so as moneys are paid back in, they must be recycled out again and to more sustainability projects.

[347] **Alun Ffred Jones:** So, was that bank set up specifically for that purpose?

[348] **Dr Kuzemko:** No, no. It was set up a long—. It was a Marshall plan thing; it was set up ages ago. It just happens to be incredibly well capitalised.

[349] **William Powell:** That's a bizarre idea [*Laughter.*]

[350] **Dr Kuzemko:** Yes. They could have done it here. [*Laughter.*]

[351] **William Powell:** Just one other issue, Chair: do you think that the

creation of energy parks, backed by public investment, would also have a significant contribution to make?

[352] **Professor Jones:** I'm not sure. I'm not sure the record of—. What do you mean by an energy park?

[353] **William Powell:** I'm aware you've got the infrastructure in place to have a diverse mix of different renewables in a particular zone where you've got the appropriate grid infrastructure, and, potentially, a local settlement and planning regime that facilitates it.

[354] **Professor Jones:** I don't quite know how to answer that, really, because it seems to me that the characteristic of renewables is that they are specific for localities. So, where you would put micro-hydro is not necessarily where you would put solar. Well, any energy park would have to be a very extended concept for it to make any sense at all, so, not just locating them all in one place—

[355] **Alun Ffred Jones:** Perhaps we could change the national parks into energy parks. [*Laughter.*]

[356] **Professor Jones:** That would be an excellent idea. [*Laughter.*] But, to go back to the point you were making, within your constituency, sir, there's a very good example of this business of the rate at which you can loan money. With the Hafod y Llan scheme, the National Trust centrally was loaning the money to the scheme at 5 per cent, but if you look at the scheme in Abergwyngregyn, they are actually having to borrow money much more expensively for a community scheme. I think they're paying 7 per cent—and I'm a shareholder, so I'm getting 7 per cent—which is ridiculous, really, for a community micro-hydro scheme. They should be allowed to borrow much more cheaply. The same was true when we talked about anaerobic digestors. When we talked to the farmers, they were prepared to borrow money on the commercial market, but their problem there was that they needed some guarantee system, and if the Government would act as guarantors, then they would be prepared to make the investments. So, there are lots of ways in which Government, at very modest cost, can actually help with the processes you've been describing.

[357] **Alun Ffred Jones:** Who wanted to come in there? Russell.

[358] **Russell George:** I think you mentioned earlier about the planning

process being a barrier as well for small-scale energy schemes. Am I right that you said that?

[359] **Professor Jones:** I did say that. I've said it before.

[360] **Russell George:** I must have read it. Can you just go a little bit more into detail, now? Is it the lack of experience of local authorities, is it a lack of political will, is it third-party organisations, like Natural Resources Wales? What are the obstacles, specifically?

[361] **Professor Jones:** I think the obstacles vary under different circumstances. I had a colleague down in the Teifi valley who was trying to restart an old water mill, and I lodged correspondence with this committee on the number of permissions that had to be achieved in order to restart a windmill in a river flowing into the Teifi. I can tell you now that they gave up, even though there was an existing installation there, because of all the permissions that were required. They made it very difficult. But, if you talk to the Anafon scheme, the people in Abergwyngregyn, they will tell you that Natural Resources Wales was extremely helpful, and the problem was not with Natural Resources Wales in that case, the problem was with the lawyers and other people—. They had to go to Shresbury to get a legal company to give them advice, and they said they were incredibly slow and incredibly inefficient.

[362] **Alun Ffred Jones:** Be very careful what you say; we have a lawyer here. [*Laughter.*]

[363] **Professor Jones:** Oh, yes, lawyers are always reasonable. I'm sorry, I missed out that. [*Laughter.*]

[364] So, it depends on circumstances.

[365] **Russell George:** But how do we overcome that? It's too big a question, really, isn't it?

[366] **Professor Jones:** As I understand it, in Scotland, with small schemes below 50 MW, there is a presumed consent, and that would be very helpful because it's a signal, isn't it, of presumed consent for a small micro-hydro scheme? There's a presumed consent, unless there is a very specific reason for saying, 'No, there is another important environmental interest that has to be protected'.

[367] **Russell George:** That's usually what happens; that's usually the obstacle that comes before—

[368] **Professor Jones:** It's the other way around at the moment. There is a presumption that, 'We will not consent'. So, there are things like this that you could do.

[369] **Russell George:** The other question I had, on a separate note, was: you mentioned advisers as well, and that we need more advisers, but who should facilitate that? Should that be local authorities, the Welsh Government, or NRW? Who should facilitate that advisory role to community groups?

[370] **Professor Jones:** I don't have a strong view, but I would have thought that consortia of local authorities would probably be the best location for them—so, work through the local authorities. But, that's just a thought. I don't know what you think.

[371] **Dr Kuzemko:** I personally think that a transition to a low-carbon future is a very long-term and quite complex process, and the more knowledge capacity that you have to make sure that that process goes ahead—. There'll be balances that will need to be struck all the way through, and you need to understand both sides of each argument as each situation arises. You see this in countries that are a little bit further down the road—the process can be quite political. So, the more knowledge capacity that you have at your hand, so that you can say, 'No, I don't accept that argument because we happen to have our own information that says x or y', and it also has to do with the availability of data, which is something that you've talked about. And in Denmark, for example, they have a data hub and all data to do with energy—market supply, demand, transmission, distribution, everything—is publicly held in the data hub. Clearly, you have to have some expertise to access the data and understand what it means, but I would recommend that you have as much advisory as you can possibly afford to have. I would also recommend that you work with non-government organisations and universities and institutes that are of a like mind and who also want to see a more progressive future.

[372] **Alun Ffred Jones:** What does the data hub in Denmark provide? What does it hold?

[373] **Dr Kuzemko:** All the information about how the electricity and gas

markets are trading, prices, demand, where demand is coming from, where supply is coming from—all the nitty-gritty, tiny little detail-y things that you need to know if you want to make some big changes.

[374] **Mr Simpson:** Real-time information?

[375] **Dr Kuzemko:** I don't know if it's real time or not, but I can check for you.

[376] **Alun Ffred Jones:** Joyce, you wanted to ask, then Jeff.

[377] **Joyce Watson:** Following on from that and, indeed, from the question I was going to ask, if you've got those real-time data—if they are real-time data—about where energy exists and where it's needed, would it be of value—I'm trying to link this to what we were doing in the earlier part of our inquiry on passive housing or any other form of energy-efficient housing—would there be an advantage in linking these two things together, and how to proceed with that? Let's take an example: we've got a local energy provider that's looking at producing energy and keeping energy in local hands. Should we link that up at the same time—coming back to what you said earlier—with a policy that says 'And we want low-energy-use housing or zero-energy-use housing', so that the two co-exist?

[378] **Dr Kuzemko:** I think that would be sensible, but I suppose the point would be just to know how the demand profile is changing within each locality. So, if you're really talking about this distributed or dispersed energy future, it will make much more sense if you know what your supply is, which will actually depend on the weather in many instances. So, it will be about forecasting the weather—that's what they're finding out in Germany. All the distribution network operators now are just becoming weather forecasters, because they need to know what's going to be happening in terms of their systems—the load they're going to be carrying. So, I think you would need to have—. I agree completely with the zero carbon homes idea and moving forward in that direction, but I think you will need to know what your supply is, but also what your demand is going to be at points in time during the day, and particularly those peak kind of hours where you'll need the flexibility.

[379] **Alun Ffred Jones:** But, that's already known by the National Grid.

[380] **Dr Kuzemko:** Yes, which is a private company.

[381] **Professor Jones:** I agree totally, but there are two other elements in the equation. One, of course, is energy storage. As you know, the companies are now coming in with new battery systems that can be in houses, but you also need energy storage on a bigger scale than that. Of course, we've got the biggest one in Dinorwig, and that is important.

[382] And the other thing, which I hadn't appreciated until recently from talking to engineers, is that there is a very important consideration, which is the inertia in the system. So, you actually have to have large generators, because if you have lots of photovoltaics, for instance, once the sun goes in the electrons stop flowing. Whereas if you have a big generator, it still goes round and still generates an inertia in the system, which is actually important to keep the grid going. So, there are technical issues involved in this at both a local level and a macro, international level, because it's pan-European at this stage. So, there are these issues there.

[383] The other thing we haven't talked about at all, to date, is transportation and moving to electrical cars, which is another part of the equation, which is why you've got to have a very large-scale plan that you're following over a 10 to 20-year period. And then the thought is that the car batteries will form a storage system onto which you can draw, let's say in the late evening, when the commuters are home, and then you use the batteries as a storage system.

12:15

[384] So, it's a completely different way of looking at energy. Britain is, you know, I almost say light years behind, but that's a little bit unfair; we're very much behind the curve compared with many other countries. You visited Germany, didn't you, as a group, so you've seen the difference?

[385] **Joyce Watson:** Thank you.

[386] **Alun Ffred Jones:** Jeff.

[387] **Jeff Cuthbert:** Yes, I think this is an opportune time. You mentioned knowledge. I want to talk in terms of knowledge and skills. You will have heard me—I think you were in the room when I asked the Home Builders Federation the question. In your view, do you think we have a significant skills gap in Wales in terms of these new technologies? Do you think that higher education, further education, are properly geared up for it? I

remember when we went to the European Commission; the view was that, generally across Europe, there are skills gaps, although there are some very good projects under way. What is your view on where we are in terms of the ability to physically deliver these technologies?

[388] **Dr Kuzemko:** I'm afraid I can't comment specifically on Wales, because I don't know what you have in place here in terms of skills and training. And, I can only speak anecdotally about GB. I live in the midlands and we recently built a low-emissions house, but also—

[389] **Jeff Cuthbert:** A what, sorry?

[390] **Dr Kuzemko:** A low-emissions house. So, we put all sorts of fancy stuff into it, and now, six years on, when we need anything to be maintained in our house, the regular boiler man or whoever will come and go, 'I tell you what this is'—

[391] **Jeff Cuthbert:** And whistle between their teeth probably.

[392] **Dr Kuzemko:** 'And all because the climate's changing', kind of thing. [*Laughter.*] So, we have not, as yet, found anybody who can understand the system that has been put in. So, I do think the maintenance-type supply chains around both the efficiency side, but also the renewable side, are lacking in the UK. It's partly because supporters have come and gone, and policies have come and gone, and there hasn't been enough consistency in terms of the message. I know that a lot of the critique of energy efficiency policy is that it hasn't established a really proper market. When you have a proper market, then you have the costs of these things coming down as well. We have wet solar, so solar panels for heating and hot water, and we wanted to put electricity solar on as well, but the cost of it is so high, and when I talked to people in Germany who were looking at doing the same kind of thing, it was about half the cost. And it's not the cost of the panel; it's the cost of all of the supply chain that goes around it—the skills and the expertise. So, only on an anecdotal level, I would suggest that we are quite far behind.

[393] On that question of skills, it makes me think of jobs, and what surprised me when I went to Germany is that I had assumed that the jobs were on the renewable side, the solar in particular, where they had quite a strong industrial policy around that, but the jobs were on the energy-efficiency side. So, they had hundreds of thousands of new jobs around

insulation, the supply chains around it, et cetera, et cetera. It's a proper jobs thing, and if you want to get people buying in to a change, you do have to show that there can be employment around it as well, and you need the skills and the training for the employment.

[394] **Janet Haworth:** I have one question, which comes to mind from what the Home Builders Federation was saying, and it was almost a nightmare scenario when I think about it. They were talking about solar panels; they were talking about how long a solar panel will last, and that when you need to replace those solar panels, you will need to replace a substantial part of your roof. Now, today's average price for replacing a roof is about £8,000. It does make me think that, in a few years' time, will we see people whose solar panels are no longer efficient, who can't afford to replace their roof, and will they be in even more serious fuel poverty than they were at the beginning? Is that something we need to think about as a kind of unintended consequence? These solar panels do not have a significant lifespan.

[395] **Alun Ffred Jones:** I don't think—I think I'm correcting you—. I think he referred to the SOLCER experience of perhaps in the future having to replace the whole roof. I don't think replacing the panels actually means that you have to replace the whole roof.

[396] **Janet Haworth:** Well, I was just interested in your views on this.

[397] **Professor Jones:** Well, there are different types of installation. We've put PVs on our house. We were an early adopter, so we had no grants at all—or, hardly any—so, we've been unlucky, shall we say. But, on our PVs, there's an under-tray of plastic below, and replacing those PVs doesn't require replacing the roof. There are other systems, which are actually better, in which the PVs are raised above the roof, because solar panels work better at lower temperatures, so you don't want to actually have them embedded in the roof, if possible—from a photochemical perspective now—you want them raised so there's air circulation. I'm sure that's a solvable problem. I don't think it's a technical issue that should worry this committee, and I'm sure a competent technician could solve it quite readily so there's an easy replaceability. He was making a lot of it. I was listening to him, and I thought, 'Come off it'. It's not a big problem.

[398] **Alun Ffred Jones:** We're coming to the end of our—.

[399] **Professor Jones:** Can I just say about the training? It's fantastic—Coleg

Menai have put all this work into training people up for nuclear; there's no equivalent on the renewable energy side. If we put a fraction of the effort that they've put, in Anglesey, into training up for nuclear into renewables, I'm sure the return would be much greater.

[400] **Janet Haworth:** Could I just come back on that? Because I think there's also an opportunity for cross-skilling, isn't there? We shouldn't really just be talking about nuclear engineers; we should be talking about energy engineers who are able to work across different disciplines.

[401] **Professor Jones:** Yes. Glyndŵr have a course on renewable energy as a degree, but the take-up has gone down because of the policy vacillations that were referred to by Mr Cuthbert.

[402] **Janet Haworth:** But is it possible to do that cross-skilling within the energy field? I'm talking about producing energy engineers.

[403] **Professor Jones:** There's a lot one could do. This is why these meetings are so important, because you can set a pattern of what should happen.

[404] **Alun Ffred Jones:** Caroline, obviously, was in agreement with you on your first point so I won't ask her the same question. Now then, before you leave, I want you to give us an indication of what you think should be done in order to achieve the changes we are seeking to outline in our report. But Alan wants to come in on a—.

[405] **Mr Simpson:** I've just got two questions, Chair, and one sort of separate point. For Caroline, you mentioned the RobinHoodenergy company—they're going to give evidence to the committee a bit later in the process—and we've also heard about Our Power Energy in Scotland, but Wales actually has a model of a not-for-profit utility company in the form of Welsh Water. Do you think there's a case for recommending an Owain Glyndŵr energy company, a not-for-profit, Welsh holding company, that attempts to do exactly what is being done in other parts of the country? And, if so, would it also be helpful if the Welsh Government were in a position to set carbon budgets in the way that, in Germany, it's not just about having more localised powers, but the duties to meet national targets within local frameworks too? So, that would be my question for you.

[406] **Dr Kuzemko:** Yes. Of course, in Germany, you have federal targets, but

then, each Land has its own set of targets too, and some Länder are more progressive and some are, frankly, not very progressive at all. So, there's plenty of precedent for having targets at different kinds of constitutional levels. I wouldn't personally just set carbon budgets, as in emissions reduction budgets, but I would have targets around how much less you want to consume, more specific targets than those—which is what a lot of other countries are doing now, they're being more specific about—. Having emissions reductions as a target could mean a hundred different things, but if, below that, you say, 'Well, actually, what this is going to mean for us is distributed resources, less consumption or more flexible', or whatever you want it to be—I would be more specific at that kind of level.

[407] **Mr Simpson:** Perhaps it would be helpful if you just let the committee have a shopping list of those specific things.

[408] **Dr Kuzemko:** Sure. Yes. I've got some of them here, but I can send some more.

[409] **Mr Simpson:** And my question for Professor Jones. I have to confess, Chair, I had the privilege of a breakfast conversation earlier, which was fabulous for me. You made the point—

[410] **Alun Ffred Jones:** So, you've corrupted the witness.

[411] **Mr Simpson:** I think I must have done, yes, or vice versa. *[Laughter.]* You made the point in one of your opening comments about the benefits to society. When coal was king, people who produced the coal got free coal. Coal lorries rolled down the street and you—. Is the point that you're making a compelling case for Wales to claim the right to have local energy markets, where the energy produced in a locality isn't just owned by the community of shareholders but can be sold back to the community at lower prices? So, in terms of steps going forward, is that something that the committee should look for? My second part of that question to you is: across the EU there are now 6,500 smart cities aiming to become their own virtual power stations and really drive that transformation agenda. Would you just like to mention to the committee something of your thoughts about this eisteddfods idea for Wales?

[412] **Professor Jones:** It's partly that, but also there's another macro-concern. I've great sympathy with what you're saying, but it appears to be at a UK level that the policy is to go nuclear and to use foreign capital, to which

we then have to pay interest for the next 30 or 40 years, and so you're tying in an extraordinarily expensive system when, in fact, the technology on the renewables side is actually getting more and more efficient and more and more cheap. So, that seems to me a curious policy, shall we say.

[413] **Mr Simpson:** But what is it that this committee should be recommending that Wales does?

[414] **Professor Jones:** I would set up two or three pilots that you would fund around Wales, some rural and some urban, where you would look at the practicality of a local grid and a local municipalised grid company. I'm not sufficient in technical expertise to know where those should be, nor which communities are likely to really react to it. Possibly Wrexham, when they had the PV factory—Sharp was there. If you go to a Wrexham housing estate, it's full of PVs, which is great. So, I would go for two or three communities in Wales and then have, as we talked over breakfast, an eisteddfod-type situation—a competition around how others could emulate that and seek both efficiency and generation within their own communities, or closely adjacent to those communities. But start with two or three pilots to see what could work and what might then take off.

[415] **Alun Ffred Jones:** Okay. That's your parting shot. Do you want to leave us with a last thought, Caroline?

[416] **Dr Kuzemko:** It just reminds me of the old municipal services of Victorian times, when municipalities provided bundled water, heat and light services. There is precedent for this, and there's a movement back towards that also in Germany at the moment. So, I think it would be—. But it requires capacity at the municipal level.

[417] **Alun Ffred Jones:** Reit. A gaf i **Alun Ffred Jones:** Right. May I thank ddiolch yn fawr iawn ichi? you very much?

[418] May I thank both of you for coming in, and for your evidence?

[419] **Dr Kuzemko:** Pleasure.

[420] **Alun Ffred Jones:** It will prove very useful as we try to put our inquiry into shape later on. Diolch yn fawr iawn. Thank you.

[421] I have a feeling that there is a desire to leave this room from the

Members. [*Laughter.*] Our next meeting is on next Thursday.

Daeth rhan gyhoeddus y cyfarfod i ben am 12:29.

The public part of the meeting ended at 12:29.