HOUSE OF COMMONS

Business, Energy and Industrial Strategy Committee

Oral evidence: My BEIS inquiry, HC 142

Thursday 16 July 2020

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Watch the meeting

Members present: Darren Jones (Chair); Alan Brown; Judith Cummins; Richard Fuller; Paul Howell; Mark Pawsey; Alexander Stafford.

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Witnesses

I: Signe Norberg, Public Affairs Manager, Aldersgate Group.

II: Dr Jan Rosenow, Principal and European Programme Director, Regulatory Assistance Project.

III: Dr Luke Warren, Chief Executive Officer, Carbon Capture & Storage Association.

IV: Andrew Large, Chair, Energy Intensives Users Group.

V: Hannah Dillon, Head of Campaign, Zero Carbon Campaign.

VI: Daniel Quiggin, Senior Research Fellow, Energy Environment and Resources Programme, Chatham House.

VII: Dhara Vyas, Head of Future Energy Services, Citizens Advice.

VIII: Professor Nick Robins, Professor in Practice for Sustainable Finance, Grantham Research Institute, LSE.

IX: Matthew Copeland, Policy Manager, National Energy Action.

X: Councillor Claire Holland, Chair, Transport and Environment Committee, London Council, and Deputy Leader, Lambeth Council.

XI: Professor Paul Ekins, Director, Professor of Resources and Environmental Policy, UCL Institute for Sustainable Resources.

HOUSE OF COMMONS

Examination of witness

Witness: Signe Norberg.

Q1 **Chair:** Welcome to this session of the Business, Energy and Industrial Strategy Committee. Today we are very excited to be hearing the "My BEIS" pitches—the "Dragons' Den" version of our Select Committee hearings. I have always made it clear as the Committee Chair that I want this Committee to act as a vehicle for the country to engage in the debate here in Parliament, as well as to hold Ministers to account. This has been a fantastic exercise, where we have had over 200 submissions from stakeholders across the country pitching for some of the Committee's capacity and resource to pursue ideas. We have managed to whittle that down to 11 pitches today across a number of themes. We will be covering digitising the economy, heating and hydrogen, industrial decarbonisation, carbon pricing, net zero and the just transition, and delivering on net zero—a whole host of issues, with 11 pitches to follow.

The session will be pretty quick paced. Each pitcher gets five minutes; I am afraid I have been told that I have to keep a timer and intervene if we run over. Then there will be some questions from colleagues. At the end of the session, the Committee will take that away and confirm in the weeks ahead how we will pursue some of these issues.

Without further ado, I am very pleased to move to our first pitch, which is from Signe Norberg, who is the public affairs manager from the Aldersgate Group. Welcome, Signe.

Signe Norberg: Thank you so much. Is it useful if I just begin?

Chair: No, I will count you in, just so I can press the timer. You will be speaking about digitising the UK economy, and you are from the Aldersgate Group. The floor is yours for five minutes.

Signe Norberg: Thank you very much. I am here today to argue that the Committee should look at digitising the economy. This is because it is a critical area for all parts of the economy. It is something that impacts on businesses, consumers, supply chains and employees alike. The Committee should examine the impact of digitising the economy, focusing particularly on the opportunities for businesses to harness these technologies, the role that they play in reducing carbon emissions, and the implications that this holds for the current and future workforce, including addressing digital illiteracy in the UK today. By examining the topic in this way, it will enable the Committee to produce recommendations for Government on how it should rebuild the economy in an inclusive way, level up across the country, and highlight key policy and investment opportunities that are required to make this happen.

We need to recognise that this is a transformation that is already well under way. With the impact of covid, we have seen that there has been an increase in remote working and a decrease in office working. Similarly, we have seen changes in how businesses operate. Just on Tuesday, we heard from the online grocer Ocado that it was looking at the transformation

towards online grocery shopping as being permanent and as something that is part of the future landscape. That is something that needs to be properly understood. Although these are only a few examples of the ways in which things have changed recently, it is something that holds true across the economy. By understanding the impact that this has on businesses, employees and the requirements for the future, we can properly enable these opportunities to be spread across the country.

As I will try to make clear today, there are considerable opportunities with having this transformation under way, particularly when it comes to decarbonising the economy more generally and achieving our net zero target. We need only look at transformations within smart energy and urban transport to see how these hold opportunities for reducing our carbon footprint and meeting our net zero target.

Smart meters alone can reduce carbon emissions by 25%. Even if there is moderate uptake of them in the near future, they can generate 20,000 jobs across the UK, particularly when it comes to the installation and maintenance of charging points as part of the network across the country. We really need to understand what opportunities this has for businesses and for employees—future and current—because it is people who are at the heart of all this: people who work for these companies, people who will work for them, but also people who will participate in their services and goods purchasing. To make sure that they are not left behind, there needs to be an adequate support base for current workers to educate, reskill and upskill themselves to be a part of this new economy.

Similarly, there needs to be a detailed understanding around the pipeline and future skills that are required for employees and businesses to harness these opportunities. As part of that, it is crucial to look at the issue of digital illiteracy, because today around 11 million adults and about 10% of the workforce lack basic digital skills. If this is not explicitly addressed as we also look to increase these opportunities, there is a risk that they will not be able to participate going forward. I urge the Committee to look at how we can tackle these issues but also examine what current and past initiatives have been able to achieve. What recommendations have been done? Looking at the role of the industrial strategy and similar initiatives of the past, are these strategies sufficient for the current context in which we find ourselves? Is further support required? What are the policy and regulatory changes that might need to be put in place to ensure that we can really capitalise on these opportunities as we go forward? Equally, are there innovations already in the market today that can be scaled up so that we can see these opportunities spread across the country and really make sure that everyone is part of this transformation?

Finally, I want to briefly touch on broadband and 5G. They obviously play a significant part in this but, as the DCMS Committee is already conducting an inquiry into this, we would strongly urge the Committee to focus on the issues that I have highlighted here today, to really make sure that, alongside the issue of meeting broadband roll-out targets, we understand

the impact on businesses specifically and their employees, what that looks like, how we can support the employees going forward, and what role Government has in this. Thank you very much.

Q2 **Chair:** Thank you—you were within one second of your five minutes, so congratulations on your pace. One question from me. You have identified that there are basic building blocks around digital infrastructure or digital skills, and then perhaps the more sophisticated use cases on top of that. You have rightly noted that what we try not to do as a Committee is duplicate or repeat work that other Committees are doing. The DCMS Committee is looking at the digital infrastructure point. From a business perspective, where do you think we could add real value on top of the basic infrastructure points that you have mentioned today?

Signe Norberg: Do you mean what is needed beyond an infrastructure? That is an important part of the equation, for sure, but equally I think there is something that is quite real and tangible in the current context around human capital and the skills that accompany this. That should really go hand in hand with considerations of future infrastructure capacity and roll-out. There is also something around business practices and looking at how SMEs can be part of this and at what they may need in addition to what is already being provided to make sure that they can be part of this and that their employees, retrospectively, are also considered and are able to be re-educated and upskilled so that they can be part of the transformations that are ahead.

Chair: Thank you for that. Are there any subsequent questions from colleagues on the Committee? If so, you might need to wave at me because of this slightly informal approach to questioning. Alan Brown is waving. He got in in the nick of time.

Q3 **Alan Brown:** Sorry, I was a wee bit slow off the mark there. Signe, thanks for that. In terms of looking at infrastructure and digitising that aspect, should we be looking at the universal service obligation and how adequate that is, and at what it is going to do in terms of roll-out of 5G and superfast broadband?

Signe Norberg: I think there is an opportunity to consider that as part of the whole. It is very important that this issue is looked at realistically so that it can encapsulate maybe associated issues that are not directly associated with digitalisation. It is something that we can look at if there are unintended consequences or considerations that come as part of this move towards digital technology. I hope I have sufficiently answered your question.

Alan Brown: That's fine. Thank you.

Signe Norberg: Richard Fuller, did you want to come in?

Q4 **Richard Fuller:** Just with a quick question, if I may. With increasing unemployment likely, should there be a particular focus on whether the Government should lean into this, by looking at the ways in which technologies can change employment patterns, or should we go more

slowly? Is a moral question part of the research that we could do?

Signe Norberg: That is an interesting question. There is undoubtedly a question as to how things will change, and I think that examining that and understanding what the current challenges are will be important. I think that it is about ensuring that no one is in effect left behind and we can make sure that everyone can participate. And, if there are changes in work patterns, how can they best be supported, but, similarly, are there additional considerations that come as part of that?

Chair: Great. Thank you, colleagues, and thank you, Signe, for your pitch. You are released, although you are welcome to stay and hear the other pitches. Thank you so much for your time.

Examination of witness

Witness: Dr Jan Rosenow.

Q5 **Chair:** We now move to Dr Jan Rosenow, who is from the Regulatory Assistance Project and will make the first pitch today on our heating and hydrogen theme, on decarbonising heat. Dr Rosenow, welcome to the Committee.

Dr Rosenow: Thank you. Good morning.

Chair: I am pressing reset on my clock. You have five minutes from now.

Dr Rosenow: My pitch to you is about heating. Heating is among the toughest challenges facing climate policy in the UK. Why is heating so important? Twenty per cent. of the UK's carbon emissions are from heating our buildings—mostly our homes. That is more than all the emissions from all petrol and diesel cars put together. And almost all the heat that we currently use in buildings is from fossil fuels—mainly natural gas. Less than 5% of all the heat being used is from low-carbon sources in homes.

To meet the Government's net zero target for 2050, we will need to decarbonise all homes and buildings fully by 2050. That means that we need to do two things. First, we need to increase the energy efficiency of our buildings; and secondly, we need to replace all our fossil heating systems with low-carbon heating.

It was really great to see the Chancellor announce last week that £3 billion will be spent on energy efficiency upgrades. That is a step in the right direction, but it must not be a one-off investment. Progress in the past has been disappointingly slow, particularly over the last decade. The market for energy efficiency retrofits has collapsed after the failure of the green deal to deliver. As a result, current retrofit rates are completely inadequate for achieving even a significant portion of the required level of decarbonisation to meet the 2050 target.

Almost all the UK's homes will require upgrading by 2050. That equates to almost 20,000 homes per week. We currently manage to do only a small fraction of that: about 3,700 homes are improved every week with significant energy efficiency measures that are supported by Government programmes. The replacement of fossil fuel-based heating systems is happening at an even slower pace. In 2018, only 27,000 heat pumps were installed across the UK. That is a fraction of the 1.7 million gas boilers that we installed in the same year. At the current rate, it would take more than 700 years to reach the 19 million heat pumps that the Committee on Climate Change suggests are needed to reach the net zero goal. That means that there is a clear case for urgent Government intervention. The existing policy framework is clearly not fit for purpose and has failed to deliver against expectations.

As far as I am aware, there has never, ever been an inquiry into this topic by this or any other Committee, and it is critical that the Government be held to account on this issue. Such an inquiry would be particularly timely. The Government have announced a heat strategy for later this year. That will determine the way forward regarding heat in the UK. Last week, the Secretary of State confirmed that the heat strategy is still on track for delivery in the autumn. This Committee should scrutinise the plans in detail to ensure that Parliament is involved in the discussion about the way forward.

Let me end on a positive note, as I am aware that a lot of this sounds rather gloomy. Decarbonising heating is not a problem for which we do not have technological or policy solutions. Let me tell you briefly about my own story before I conclude. We—that is, my family and I—have reduced emissions from heating in our own home, which was built in 1880, by almost three quarters, and our heating bills are now 60% lower than they used to be. This can be replicated across the UK, and many other countries—for example, Sweden—have gone much further and faster and managed to radically reduce emissions from heating; but it requires full policy ambition to make this happen. The UK can do it and I believe the Committee ought to hold the Government to account on its forthcoming heating strategy and launch its first ever inquiry into this topic. If we get this right, this could create tens of thousands of new jobs, especially in parts of the country that urgently need them in recovering from covid-19. Thank you very much for your attention, and I look forward to your questions.

Chair: Thank you for your pitch. You finished with a minute to go, which will give us some time for extra questions. I will go to Mark Pawsey, first, please.

Q6 **Mark Pawsey:** Thank you, Dr Rosenow. You told us that a number of unsuccessful attempts had been made to deal with this very serious problem, so do you think the inquiry or the work that the Committee should do should look backwards as well as forwards, or should we ignore what has happened in the past?

Dr Rosenow: I think it is both. I think there is a lot to be learned from past policy success and failure. I think the green deal offers some important learnings, and the obligations on energy companies to install energy efficiency measures, and the renewable heat incentive, which is coming to an end next year—all of these are also interesting learning opportunities. Looking forward, I completely agree with that, and we can learn a lot from other places that have done this. We will not just be able to translate that into concrete policies directly, but we can certainly learn from what has worked elsewhere, and I think the Committee would be in a good place to ask some of those questions, both on past experience and on the future.

Q7 **Mark Pawsey:** Can you tell us which countries have successfully decarbonised the heating of their buildings? Who might we look at first, in an inquiry?

Dr Rosenow: The most successful countries in Europe that have done this are the Scandinavian countries. I have mentioned Sweden already. Finland is a good example as well. Norway and Denmark are the most successful in terms of the speed and the scale of decarbonisation, but you may also want to look a bit further and look at places such as California, which is currently at full speed ahead to transition away from fossil fuels for heat.

Q8 **Mark Pawsey:** You also spoke about the need to link the decarbonisation of heat with energy efficiency and improve the energy efficiency of our buildings. Which of the two activities would you say was the more important?

Dr Rosenow: We need both. We can't do decarbonisation simply by installing new heating systems, or do energy efficiency without installing new heating systems.

Q9 **Mark Pawsey:** What are the challenges in the UK? In what you have written to us, you have told us about the silo effect that occurs within UK Government Departments. How might we come forward with some proposals that would deal with that?

Dr Rosenow: That's exactly right. In the past we had dedicated energy efficiency policies and renewable heat policies, and they haven't always been fully in sync, so I think an integrated policy approach is what is needed. That means having a strategy which the Government is actually working on, but it needs to be scrutinised and it needs to be ambitious enough to deliver on the targets.

Q10 **Mark Pawsey:** Would we be able to do some work that would input into Government thinking, or is it your view that Government have decided on a course of action and that's that?

Dr Rosenow: I think there is still scope to put into Government thinking at this point. I think it is important that as many people as possible are involved in those discussions, to really get those learnings from past failures and successes into the thinking of the Government.

Q11 **Mark Pawsey:** And what would be the prize? If we get this right, what

does the UK achieve?

Dr Rosenow: I think we create lots and lots of jobs, especially in areas of the country that urgently need them. We will have less air pollution in cities, which is a great benefit, and more comfort. People will live in more comfortable buildings, healthier buildings, and they will simply be more pleasant to live in. I think that is a key benefit that is often overlooked. It is not all about carbon. This is really about an infrastructure programme for the UK to upgrade building stock, which is among the leakiest in all of Europe.

Mark Pawsey: Thank you, Dr Rosenow, and thank you, Chairman.

Chair: Thank you, Mark. Are there any additional questions from colleagues?

Q12 **Alan Brown:** Thanks, Dr Jan. How important is it that we look at the overall cost of decarbonisation in terms of both the change in heating system and energy efficiency? You mentioned learning lessons from the green deal, and I presume we would need to look at that as part of funding going forward and what a system of grants would look like. Again, I am aware that a lot of people are fuel-poor, and it is about making sure we tackle them.

Can I ask one more question about heat decarbonisation? The Committee has received submissions from fuel suppliers who are advocating a step-change policy for those who are off the gas grid and may, for example, be using oil heating systems. They are advocating a step change by first using a carbon-based fuel with lower emissions and then working towards full decarbonisation of those off-gas grid properties. Is that a serious policy consideration we could look at, or should we go straight for net zero?

Dr Rosenow: The off-gas properties you mentioned are particularly interesting, because they often offer the best cost-benefit ratio for installing an alternative heating system, because it is very expensive to use heating oil to run your heating system. That could be one of the early segments where we really roll out new heating systems and upgrade buildings to make them more energy-efficient.

Your first question, on what kind of policy we would need, deserves a lengthy inquiry by the Committee. We certainly need to ensure that it is not just a programme for the able-to-pay; it needs to benefit everybody, and especially the fuel-poor, who we must not leave behind on more expensive and more carbon-intensive fuels.

Chair: One final quick question and quick answer from Paul Howell.

Q13 **Paul Howell:** Alan has covered a number of my points, but one is: is this about evolution or revolution, or is it about geographic spreads, where you do one town one way and somewhere else another way? I am aware of a town in one of the Nordic countries where heat is dealt with completely using thermal heat from underground. What are you advocating on that? Is it just about how we put the whole picture

together?

Dr Rosenow: What you mention is what is called an area-based approach, and I think that is right, especially in technologies such as district heat. There was a piece in the media this morning that you may have seen about district heating and using waste heat for heating our homes. Clearly, we cannot leave that decision to individual households by themselves; that requires another actor—the local authority and the Government—to step in and make those decisions in collaboration with households.

Chair: Thank you for your pitch and your time this morning.

Examination of witness

Witness: Dr Luke Warren.

Q14 **Chair:** We move on to the second pitch under this theme of heating and hydrogen. We have Dr Luke Warren, the CEO of the Carbon Capture & Storage Association. Good morning, Dr Warren.

Dr Warren: Good morning.

Chair: You have five minutes, starting from now.

Dr Warren: Good morning, Committee, and thank you very much for inviting me to present to you today on the future of hydrogen. When I talk about the future of hydrogen, I specifically want to refer to the future of low-carbon hydrogen. There are two main ways in which we produce low-carbon hydrogen. The area I work on is where you reform natural gas, breaking apart natural gas molecules to produce hydrogen and carbon dioxide. You store the carbon dioxide permanently and you have low-carbon hydrogen. You can also use low-carbon electricity—for example, renewables—to electrolyse water and produce hydrogen. The UK already has a world-class offshore wind sector and we have a goal of becoming a world-class CCUS sector, so we are very well placed to become a major producer of low-carbon hydrogen. That is important, because globally what we have seen is a tremendous increase in interest in developing low-carbon hydrogen. It is now very much recognised as being a really essential technology if we are to deliver on the goals of the Paris agreement.

I believe that the hydrogen agenda would benefit very much from the Committee's attention, for a number of reasons. First, there are very significant environmental benefits that could accrue to the UK from the development of low-carbon hydrogen. We have made excellent progress in decarbonising our power sector over the last decade, but the next decade and the decade after that will present us with new challenges, and we need new solutions. Hydrogen will be one of those. In particular, it will play a very important role in those sectors where it will be hard to electrify.

We have heard about the challenges with heating. In industry and buildings, we use a lot of natural gas, and hydrogen presents us with an opportunity to replace it with a low-carbon fuel. There will be parts of the transport fleet—HGVs, shipping, and so on—where we cannot use batteries, and again hydrogen will play a role. In the power sector, we still use a lot of gas to help to balance supply and demand. Again, there is a role for hydrogen.

There are also wider environmental benefits. When hydrogen is used in a process, it combines with oxygen in the atmosphere to produce water, so you do not have the production of some of the other emissions that can cause significant local air quality concerns.

We also see hydrogen as playing an important role in the Government's post-covid recovery. Around the country today, there are a number of industrial-scale hydrogen production facilities associated with carbon capture, use and storage infrastructure. They are under development today. They want to move forward into construction so that they can be operating by the mid-2020s. Those projects are located in our key industrial regions—the east coast of Scotland, Teesside, Yorkshire and Humber, the north-west and south Wales. They represent important low-carbon infrastructure investments that can help those regions to transition to a net-zero economy.

I also want to touch on the impact that covid has had on the UK's world-class oil and gas industry. Our industry is really struggling, and the development of an ambitious domestic CCUS and hydrogen programme can help it diversify into the low-carbon industries of the future. The oil and gas supply chain has the capability and skills needed to develop these technologies at scale.

I also want to touch on international progress. We have seen some very welcome developments in the UK. There was an announcement of £33 million for a hydrogen supply competition, and a more recent announcement of £100 million for a hydrogen production fund, but I want to contrast that with some of the more recent developments that are happening elsewhere. In June, Germany announced its new hydrogen strategy; it will be spending £9 billion in realising it. In April, the Netherlands also launched a hydrogen strategy. It now has an investment instrument that can support the development of low-carbon hydrogen, which will be operational around the turn of the year, and it is looking to develop industrial hydrogen infrastructure in its key industrial ports.

Just last week, the European Commission came forward with its hydrogen strategy, which it sees as playing an absolutely central role in its delivery of the European green deal and its covid recovery measures. This is an area where there is rapidly expanding international activity, and we risk being left behind in this space.

We see a number of areas where Government policy in hydrogen could be developed and improved. First, we urgently need the Government to come forward with a clean hydrogen strategy.

Secondly, we need to think about how a post-covid recovery package can also stimulate the development of a low-carbon hydrogen sector and how that can help to put us on the road to delivering net zero. Thirdly, we should be thinking about how hydrogen plays into our wider industrial strategy, and about where the opportunities are, as well as developing the domestic supply chain to export some of these skills and experiences to emerging overseas markets.

Finally, we have COP26 coming up, and there is a real opportunity there to demonstrate international leadership on the development of hydrogen, and show practical solutions for how other countries can also start to decarbonise their economies.

Chair: Thank you Dr, Warren. I hope I have not given away that I am too kind a Chair, but I gave you an extra 20 seconds. I will have to try to limit some of the questions, I am afraid. I am coming to Alan Brown first.

Q15 **Alan Brown:** Thanks, Chair, and thanks for that, Luke. The Committee is looking at this, and obviously the main focus is hydrogen, but you talked about carbon capture and various clusters. Would we be looking at the other clusters that are in the pipeline at the moment and are part of your organisation? Would that be an integral part of what we need to look at?

Dr Warren: I am conscious that the Committee did some excellent work recently on carbon capture, use and storage, so I am not sure you would necessarily want to go back and look specifically at this issue. The progress on CCUS is one of the very important enablers of the development of a low-carbon hydrogen economy. It would certainly be helpful to check in on the progress on your recommendations in your previous inquiry.

Q16 **Alan Brown:** That is interesting. The focus is very much on hydrogen, then. I assume that, as you said earlier, looking at decarbonising of heat, we really need to combine what comes out of the energy White Paper, in terms of Government policy, and the heat decarbonisation strategy, and how hydrogen plays into that in the long term.

Dr Warren: Yes, absolutely. One of the issues with hydrogen is that it potentially delivers so much value to our economy. It can decarbonise so many different parts: heating, transport, power, industry, and so on. At the moment, we do not seem to have within this county a very holistic view about how we want to enable this sector, what we are trying to achieve and what we need to do over the near term. There are some very clear areas there where the Committee could add a lot of value to the conversation.

Q17 **Paul Howell:** Just to follow up on that, what I heard in the presentation was that there is plenty going on with hydrogen in the UK, but there are potentially bigger and better issues going on in different places around the world. Is it a fair comment to say that what we should be looking at is making sure we are up to speed with all the opportunities that are there, as opposed to just the ones that have been pursued so far?

Dr Warren: Do you mean that we should be focused on trying to access these overseas markets first?

Paul Howell: No, it is about trying to understand the direction of travel of other countries—whether they are ahead of us on the curve of how you can use hydrogen, where you can use it and so on—to make sure we are at the front of the developmental curve, as opposed to chasing it.

Dr Warren: Interestingly, the UK has been a thought leader on how hydrogen can contribute to decarbonisation. Some excellent work on hydrogen decarbonisation has been done in the north of England and in the north-west, but where we have come off the pace slightly has been in implementing policy over the past year or so. We have the thought leadership; we just need to get the policy in place so we can start to move these projects forward, and then our feeling is that we can be in the vanguard of this sector.

Paul Howell: Being from the north-east, I fully understand what is happening on Teesside and the like. The way I interpreted your presentation was that other things were missing, so thanks for that clarity.

Q18 **Mark Pawsey:** I want to ask about the opportunities in the transport sector. Are we in danger of being left behind on that? You spoke about the opportunities for heavy commercial vehicles, trains and maritime. If we do not invest soon, will the opportunity have passed?

Dr Warren: There is always that risk. One of the attractions of hydrogen is that the international supply chain is still under development. This comes back to the point about the industrial strategy: there is an opportunity for us to try and capture some of the international supply chain here. If we can develop an ambitious domestic hydrogen policy, we can hopefully put in place a framework that attracts companies to invest their manufacturing facilities and their offices here in the UK, in order to supply that market. That will then hopefully provide the opportunities for us to access some of these overseas markets. I certainly would not want us to be complacent about the idea that we will be able to attract the industry to locate here even if we do not make significant progress in the near term.

Q19 **Mark Pawsey:** But the investment is huge, isn't it? Isn't it easier to simply import trains or vehicles that are manufactured abroad, rather than invest in the infrastructure and make the capital investment to get that off the ground here, or would you argue that we need to move quickly?

Dr Warren: We absolutely need to move quickly. The other point is that a lot of this is about infrastructure investment, which is not something you can necessarily just buy overseas. This is not like buying solar panels, for example, where we can wait for another country to buy the technology down the cost curve. It is really important to develop our own infrastructure and start to develop some of the economies of scale here, which then enable us to develop this at a lower cost.

Chair: Thank you, Dr Warren, for your time this morning.

Examination of witness

Witness: Andrew Large.

Q20 **Chair:** We have three pitches on our third theme for today, which is industrial decarbonisation. The first is from Andrew Large, who is the chair of the Energy Intensive Users Group. Good morning, Mr Large. You have five minutes, starting from now.

Andrew Large: The Energy Intensive Users Group represents the UK's foundation industries, including steel, chemicals and fertilisers, paper, glass, cement, lime, ceramics and industrial gases. Those industries produce essential inputs to UK climate solutions in all sectors. They make an annual contribution of £15 billion to the UK economy, supporting 200,000 jobs directly and 800,000 jobs indirectly. Today, we ask for an inquiry into the benefits of targeting the reduction of total UK carbon consumption and to consider how such a framework could be implemented to allow for effective policy making to achieve a real net zero.

As we work towards economic recovery, the Government's mantra is, "Jobs, jobs, jobs." The foundation industries must be central to that recovery, building sustainable green jobs for the future.

We are entirely supportive of the net zero ambition. Our sectors are taking positive and innovative steps and making significant progress. Carbon emissions fell by 43% for manufacturing between 1990 and 2017. The carbon intensity of UK paper making, for example, has reduced by 61% since 1990. Yet these improvements are being undercut by the Government's policy on carbon emissions targets.

If we want our manufacturing to be competitive in a low-carbon, resource-efficient world, there must be a level playing field with our competitors in other countries. ONS data shows that UK territorial carbon emissions peaked in 1972. However, once imported emissions, such as those produced in the manufacture abroad of goods that the UK then imports, are considered, total UK emissions kept rising for many years after, and only peaked in 2007.

The ONS shows that imported emissions are 62% of the UK's carbon footprint. The biggest source of these imported emissions is China, followed by the EU and then the United States.

Under the Government's current policy of reducing territorial emissions, UK progress to net zero is accelerated by offshoring energy-intensive businesses. That puts tens of thousands of jobs at risk, while our contribution to global carbon emissions from the goods we import continues.

If we are serious about tackling climate change, we must look at the bigger picture and accept responsibility for the emissions we import and the impact that current policy has on our national economic sovereignty. That is why today we are asking for this inquiry into the benefits of targeting the reduction of total UK carbon consumption.

Despite the recent report by the ONS highlighting the extent of the UK's imported emissions, the Government currently have no explicit ambition or budget to reduce them or to reduce overall consumption emissions.

The Committee has the opportunity to propose meaningful reform to UK carbon accounting and to develop a coherent and responsible climate change policy that delivers for business and the environment in the context of the UK's position as both a territorial producer of emissions and an importer of products with embedded emissions.

We are not alone in this view. A diverse and growing coalition of organisations is calling for change, which includes the WWF, liberal media outlets such as *The Economist*, and business groups such as the CBI.

There are many ways in which the Government could develop policy in this area, which an inquiry could explore. For example, the Government regularly publish both territorial and consumption emissions statistics alongside GDP and productivity. Such transparency would invite healthy scrutiny and drive development of policies to boost sustainable growth. The Government could also broaden the remit of the Committee on Climate Change to mandate it to advise on policies to reduce the UK's overall carbon footprint and set budgets for total consumption emissions, complementing its existing work on territorial emissions.

If the UK is serious about its commitment to reducing emissions, it must be open about its true footprint and not hide behind incomplete carbon accounting. Government policy must acknowledge and seek to reduce to net zero the UK's contribution to the global carbon footprint, not just the domestic one.

If we stick to the current trajectory, the UK's energy-intensive industries and the communities and jobs they support will pay the price for this skewed approach, despite their efforts to improve energy efficiency in their processes. Many tens of thousands of vital manufacturing jobs will be at risk in the coming years. As we work towards the post-covid recovery, we should be building these jobs for the future, not placing them in jeopardy.

Q21 **Chair:** Thank you for your submission. I have a quick question before we go to Mark Pawsey. Can you just explain to me how the connection is made between reporting on both production and consumption emissions and how that links to business prosperity in the UK? Maybe I missed that point; forgive me if I'm being simple.

Andrew Large: The issue is this: the UK's carbon policy is based on making the emission of carbon in the UK expensive and, thereby, using economic levers to move businesses to decarbonise, but our overall global

strategy depends on other countries taking the same approach. Sadly, as we have seen, many countries have not done so; they continue to invest in high-carbon power generation, even commissioning coal-fired power stations in 2020.

As a result, the UK manufacturing sector is bearing the economic cost of the decarbonisation policy, and investors and customers are investing in and buying from cheaper manufacturing capacities that continue to be supported by high-carbon power outside the UK.

Q22 **Mark Pawsey:** Andrew, what would be your key message to Government here? Is it that the Government must change their approach? In your view, what are the consequences if the Government do not change their approach?

Andrew Large: Yes, the Government do need to change their approach. We seek parity of esteem between territorial emissions and imported emissions, so that when we set carbon policies, we do so on the basis of the totality of the UK's carbon footprint on the world, not just a skewed focus on the UK side only.

For policy, that means looking at the way we support domestic businesses through the compensation and exemption schemes. More widely, it means reviewing areas such as the global price for carbon and using the forthcoming free trade negotiations with third countries post-Brexit to address carbon-related issues in trade, so that all the levers of Government are applied behind generating a level playing field for carbon across all the UK's relationships.

Q23 **Mark Pawsey:** How urgent is this matter? Do you have a view on the number of jobs that might already have been lost as a consequence of the Government's approach?

Andrew Large: Over the past 10 to 15 years of the Government's approach, in the run-up to the Climate Change Act and beyond, it is clear that tens of thousands of jobs, if not hundreds of thousands, have been lost in energy-intensive manufacturing across the UK.

This is urgent, because there is a confluence of challenges. We have the challenge of the post-coronavirus recovery. We have the challenge of the industrial renaissance of the UK. We have the challenge of the post-Brexit repositioning of the UK's economic relationships across the world.

Now is a perfect opportunity to set those growth ambitions in the context of ensuring that we are really addressing the UK's real carbon footprint and not just cutting UK emissions and importing products that are produced with emissions from third countries.

Q24 **Mark Pawsey:** You spoke about needing a level playing field. Have other countries adopted the method of calculating carbon footprints that you have outlined? Who is doing that already? Where could we look to as an example?

Andrew Large: One interesting facet is that the Paris agreement is currently focused on territorial emissions. Its aim is to get the economically developed countries with historic emissions and high current emissions to reduce their emissions faster.

The challenge is that the UK is taking a hugely leading role in this, but others are not following. The strategy of leadership requires a strategy of followership. At the moment, we are seeing other countries that have Paris agreement constraints, first, providing greater support for their domestic businesses and, secondly, continuing to invest in higher-carbon energy solutions and, for example, having longer timescales for the decarbonisation of their power generation sectors. That means that the UK is effectively importing emissions from those countries.

Q25 **Mark Pawsey:** Why shouldn't the UK do more to persuade others to adopt our current practice, rather than taking what some might consider to be a step backwards, and not what others are currently doing?

Andrew Large: I don't think it is a step backwards at all; I think it is a recognition that the UK should take responsibility for all of the carbon that it emits, whether it produces it in the territory of the UK or purchases it from outside. It has been a long-standing tenet of UK policy over many years that leadership requires followership—that the UK would lead and other countries would follow our example. I would take this approach of focusing on our consumption emissions as an extension of the existing policy approach, because we would be trying to enact leadership on a day-to-day basis in our relations with third countries, rather than just trying to prove an inspiration.

Chair: Andrew, thank you for your contribution.

Examination of witness

Witness: Hannah Dillon.

Q26 **Chair:** We will move on now to the second pitch under industrial decarbonisation. We have Hannah Dillon, the head of campaigns at the Zero Carbon campaign. Good morning, Hannah.

Hannah Dillon: Good morning. Thanks for having me.

Chair: You are absolutely welcome. You have five minutes, starting now.

Hannah Dillon: We are recommending that you launch an inquiry into the future of carbon pricing and the role it has to play in the transition to net zero.

At the Zero Carbon campaign, we have formed a commission to develop a series of proposals for revising and extending carbon pricing to help drive a fair and just transition to net zero. I will lay out some of our policy proposals today, but primarily I want to highlight key topics of debate in

this area, to help you shape an inquiry on carbon pricing, should you wish to pursue that.

As it stands, decarbonisation costs are all too readily lumped on to consumers' electricity bills, while gas, which is proportionately a more polluting heat source, has been left relatively alone. Under the current system, it seems that polluters are given free allowances and consumers are left to pay.

There are several reasons why now is the time to tell this. A green recovery has gained unprecedented support and we know that the UK public are open to the idea of raising environmental taxes. We also know that revenue can provide much-needed funds to invest in a green recovery from covid-19. We are about to leave the EU and we are about to host COP26. If carbon pricing is ever going to have its moment in the spotlight, we think this should be it.

I will share three sets of insights that I hope can form the basis of an inquiry. The first is on current pricing policy. We know that carbon pricing has been effective in the past. The UK's introduction of a carbon price floor is a world-leading example of pricing policy. Along with other instruments, it has weaned the UK off its dependence on coal and shown that set carbon pricing can have a tangible impact on reducing emissions.

However, carbon pricing in the UK is not being used to its full potential. Our current system is sporadic and inconsistent. It does not cover emissions across enough of the economy, and it is not transparent or strong enough to drive that behaviour change required to reach net zero. Price signals can and should do more to incentivise emissions abatement across the economy, not least in agriculture and household gas use.

Thirdly, the future UK emissions trading scheme proposal demonstrates a significant lack of ambition. While we acknowledge that this proposal is being reviewed, it still represents a missed opportunity to treat the UK's exit from the EU as a chance to design a more ambitious and unified system of carbon pricing that covers emissions wherever they occur.

Next, I will summarise inputs from the evidence sessions that we have conducted across various sectors. First, set carbon pricing can drive low-carbon investment. Industry representatives state that they have done as much as they reasonably can to decarbonise within our current policy framework. Caveats aside, they all agreed that a clear carbon price trajectory, starting at around £50 per tonne of carbon dioxide, would give them the confidence to invest in decarbonisation technologies.

Secondly, concern about UK competitiveness is real, as we have heard today, but it is not insurmountable. Almost every carbon pricing system that we have looked at employs subsidy and free allowances to protect domestic manufacturing from international competition. We are not unique in this respect, but I will make two observations.

In 2016, the Committee on Climate Change found that the carbon price floor had not had an adverse impact on UK competitiveness in spite of increasing electricity costs. Also, border carbon adjustments may be complex and politically contentious, but they can help to overcome concerns about carbon leakage, in a way that drives both domestic accountability, including for consumption emissions, and international ambition.

Thirdly, carbon pricing requires a sectoral approach. While some may prefer a singular price across the entire economy, that is not practical and could lead to some sectors facing unmanageable costs while others lose their incentive to abate. However, this should not prevent us from exploring what carbon pricing options and supportive policies might work in different sectors.

Finally, I have some insights based on our public opinion research. First, carbon pricing can get popular consent. Fear of a gilets jaunes-style backlash has often been used to justify a lack of policy ambition in this space, but our research has shown that stronger carbon pricing can gain popular support, if it is deemed to be both holistic and fair.

Secondly, revenues from a carbon charge can be used to boost the popularity and impact of carbon pricing. Our polling showed that investing revenues in environmentally friendly solutions was more popular than investing the money in the NHS or funding a general reduction in taxation.

Thirdly, there are ways to mitigate cost impacts on households. With the right balance of policy and regulation, perceived barriers to the feasibility of carbon pricing can be overcome. For example, revenue for a charge on gas could be front-loaded to support the roll-out of energy efficiency improvements in homes in advance of such a charge being introduced, and revenue could enable exemptions for certain households and help to alleviate fuel poverty.

In summary, carbon pricing has huge potential to aid a fair and just transition to net zero. This merits further exploration and now is the time to do it. The inquiry could focus on: first, reviewing current policy to ensure it is consistent with net zero; secondly, how to extend carbon pricing to cover emissions across more of the economy; and finally, how to ensure carbon pricing is introduced in a way that is fair, for individuals and businesses, as well as for the UK and the global economy.

Q27 **Chair:** That was perfectly timed. Thank you. You have talked about the timeliness of an inquiry on carbon pricing. Clearly there are some Brexit issues here, because of the role that the European Commission played on this issue while we were members of the EU. I do not think the Government have yet responded to the initial consultation on what we will do next. Do you have any insights into whether an inquiry from us will add real value to Government thinking on this, or is it pretty much agreed what approach we will take?

Hannah Dillon: Absolutely, there is value to add. The response to the consultation was issued—time is hard to track at the moment—over the past couple of months, for the proposal for the UK to form a UK version of the European emissions trading system. However, the Government acknowledged in that response that the proposal that they have made merits further review, which I believe the Committee on Climate Change will look at. They have still not agreed to extend it beyond any more sectors than are currently involved in trading schemes and acknowledge that we need to think about how to provide carbon pricing in other sectors, such as transport and agriculture.

With EU member states agreeing to think about border carbon adjustments, the UK will have to think about that too. Internationally, as we are hosting COP26, we have a huge amount to add in terms of the leverage that we have over international pricing ambition, not least in sectors such as international aviation and shipping.

Finally, BEIS is due to release a consultation on a carbon emissions tax, which was announced at the Budget. For obvious reasons, that has not happened yet. There is real scope to think holistically about how trading and taxation might work together and to bring Departments together to think about how that plays across lots of different sectors.

I will mention something that our commission has deemed to be out of scope because of time. Payment for negative emissions needs some vital consideration, not just in land management and payment for carbon sequestration and biodiversity, but also with regard to negative emissions technologies, which I think you are also hearing about later today.

Q28 **Chair:** Yes, we are hearing about that next. There is one last question from me. You mentioned in your pitch that carbon pricing can help to incentivise investment in the technologies that we need. Obviously, hydrogen and carbon capture and storage have been proven at a test level but have not been scaled up yet, and there is still a pricing problem. Explain to me a little more about how carbon pricing will help to reduce the cost of those technologies and how that can assist scaling up.

Hannah Dillon: There are two parts to my response to that question. First, it will give confidence to investors about the direction of travel. A set carbon price trajectory that increases over time and is legislated for in some way can show people what is coming down the track, and they can make the relevant investments to avoid paying those costs down the line.

Secondly, our commission has looked at how we can use some of the revenue from carbon taxation to help drive the scale of the technologies that you have mentioned. One recommendation is based on how we might apply the contracts for difference tactic to technologies such as hydrogen, or carbon capture, utilisation and storage. We would absolutely acknowledge that carbon pricing is a signal and it can give some confidence, but we might need to use other revenues to give a bit of a financial boost to scaling decarbonations technologies.

Chair: Thank you. We have one minute left. Are there any questions from colleagues? If not, thank you for your time today, Hannah.

Examination of witness

Witness: Daniel Quiggin.

Q29 **Chair:** We will now move on to the third and final pitch under the theme of industrial decarbonisation. We should have Dr Daniel Quiggin with us. Good morning.

Daniel Quiggin: Good morning.

Chair: You are from Chatham House, and you are going to talk about negative emissions technologies. You have five minutes, starting now.

Daniel Quiggin: Thank you for providing this opportunity to highlight a critical policy area for the Committee's consideration. My name is Daniel Quiggin, and I am a senior research fellow at Chatham House, presenting on behalf of WWF and Ember.

Under net zero legislation, negative emissions technologies are required to compensate for residual greenhouse gas emissions in most decarbonisation scenarios forecast for 2050. That is, in other words, finding a balance between emissions emitted and those removed from the atmosphere rather than reducing emissions to zero. We would like the Committee to consider an inquiry that investigates the feasibility, advantages and disadvantages, and the realistic scale of negative emissions technologies. These technologies are currently poorly understood and, crucially, may fail to deliver against what is currently claimed, yet the UK is increasingly reliant on these technologies to avert runaway climate change.

The UK's Committee on Climate Change forecast in 2019 that under a net zero scenario, around 20% of today's annual emissions will still be being emitted in 2050, originating from hard-to-treat sectors such as aviation and agriculture. It perceived the use of negative emissions technologies to address these residual emissions.

This is not just a UK problem. The majority of decarbonisation scenarios investigated by the Intergovernmental Panel on Climate Change rely on negative emissions technologies to keep the world within set carbon budgets. The two most advocated large-scale negative emissions technologies are bio-energy with carbon capture and storage, and direct air capture. Other greenhouse gas removal mechanisms exist, such as nature-based solutions.

The UK has already begun investing in direct air capture. The Treasury recently announced £100 million for R&D funding. Both technologies work by capturing molecules of CO_2 and either storing them underground in geological formations or locking them away in products such as plastics. In

the case of bio-energy with carbon capture and storage, CO_2 is captured from the burning of biomass, such as wood pellets. In direct air capture, huge volumes of air are directly sucked into the machine and CO_2 is separated.

Both technologies are still very much in the R&D phase, with small-scale demonstration pilots. As such, large uncertainties remain regarding their technical limitations and costs. These uncertainties stem from fundamental physics, which tells us that separating molecules within a gas is hugely energy intensive. In the case of bio-energy with carbon capture and storage, this requires large inputs of biomass and, thus, vast areas of land to grow that biomass. This could have dire impacts on food prices, biodiversity and forest cover.

In the case of direct air capture, the large energy input would be sourced from the wider energy system, which, it should be remembered, is the main source of emissions that we are attempting to decarbonise. These large energy inputs, with large knock-on consequences, will occur even if capture rates or efficiencies are high. However, growing evidence indicates that capture efficiencies may be significantly lower than required, bringing into question whether these technologies will even be net removing. There are, however, potential benefits to the UK if we manage to commercialise these technologies. The export potential of the technology would be significant, and there are opportunities to store CO_2 in the North sea.

To conclude, an inquiry is urgently needed now to assess the risks, opportunities and feasible scale and the design of appropriate incentives, regulations and governance and to initiate regular assessment cycles. The Committee has an opportunity to assess the viability of technologies critical to achieving net zero. This policy area is chronically ill-defined yet highly relied upon.

A final thought that is nearly impossible to evidence or quantify is that the prospect of these technologies is potentially impacting near-term deployment of proven technologies such as solar and wind, potentially deferring and compounding climate risks into the future. Thank you for your time.

Q30 **Chair:** Thank you, Dr Quiggin. I want to be clear about what you think your proposed inquiry's focus would be. The tone of your submission was broadly on the negative side and said that these technologies are in the R&D stage, but everyone is largely relying on them for us to meet our targets. I am pretty sure that negative emissions technologies are in all the models about us reaching our targets.

It sounded as if you were saying that we need to try to reach the targets without relying so much on these technologies, in case they don't work. Equally, you said that there is a benefit to commercialising them for the UK. Are you saying that we don't yet know how viable these technologies are, and that we need to think about that and be honest in our assumptions? Or are you saying that we need to understand whether we need to move away from reliance on negative emissions technologies and

try to ramp up the other measures that we can take?

Daniel Quiggin: That is an incredibly good question. It is complex. We need to remember that a lot of the assumptions, on which the models are based, are based on feasibility studies. Many of the demonstration projects that have recently been undertaken are only recently starting to produce evidence as to what the capture rates might be, what the energy inputs might be and what the land use might be.

For instance, if you were to run through the CCC's residual emissions for the UK, you can fairly easily calculate that if all those residual emissions were serviced by BECCS, that would require a land area of around 42% of the agricultural land within the UK. Obviously, that is completely inconceivable, and it would then require importing biomass from other countries.

The point here is that the potential of the technologies is incredibly positive, and, if those technologies manage to reach the new types of technical capabilities currently claimed, then they are incredibly beneficial to the UK's ability to meet net zero. However, there are large uncertainties and at the moment the evidence does not stack up against what is currently claimed. There are large risks in pursuing them. The Committee needs to have an inquiry that looks to narrow down the range of uncertainties, such that the risk is appropriately quantified and we move forward in the full knowledge of what those risks and benefits might be.

Q31 **Chair:** We are a bit behind in understanding the questions and the answers that we need to know about this. I am pretty sure that the National Infrastructure Committee, in its previous strategy, said that we ought to know by either this year or next year whether these are viable technologies to help us meet our targets. Why are we so behind in our understanding of this? What has been the constraint on getting on with providing the evidence you say we need?

Daniel Quiggin: I think there is a large commercial incentive for companies to develop these technologies. Obviously, there is a commercial confidence that they develop them in a way that they hold that evidence fairly close and release it at appropriate times into the public domain when it is of benefit to them, and of benefit to society.

I point you to a recent paper by Stanford University in late 2019, which indicated that capture rates for a CCU plant and a direct air capture plant looked like they were below 11% over 20 years, when we require capture rates in excess of 80% in order to make these technologies work. It is around ensuring that the evidence from the commercial demonstration projects is put into the public domain in a suitable and timely fashion, such that we can make decisions where the risks are appropriately evaluated.

Chair: Are there any questions from colleagues to Dr Quiggin? I have Paul Howell first and then Alan Brown.

Q32 **Paul Howell:** We are getting into quite a technical area. To whom do you suggest we ask the questions, to get a clarity of understanding about

how this technology is being delivered with the right science?

Daniel Quiggin: That is a great question. The CCS knowledge centre in Canada is an incredibly good resource. They span a number of CCS projects in north America, principally in Canada. Climeworks in Switzerland is developing direct air capture, which is the technology that the Treasury has recently funded. You should try to engage with those industry leaders to look at the evidence that is coming out of those demonstration projects. The UK also has an incredibly good academic footprint on this. Imperial College London has some excellent researchers. It is a mixture of engaging industry and academics in the field.

Q33 **Alan Brown:** My question is in a similar vein to Paul's. You cited some examples there, Daniel. Is there going to be enough robust evidence out there to enable the Committee to make informed decisions? A key part of your pitch is very much about early stages R&D. I am concerned that if we did an inquiry, we will end up in the same kind of position. Good commercial opportunities could pose big risks, as you have outlined. Would we get enough accurate information to make informed decisions?

Daniel Quiggin: You are highlighting a real risk. There is a growing body of evidence, as per the paper from late 2019 that I highlighted and others. This is an incredibly interdisciplinary area, where you have lots of different disciplines, all connected. One of the issues is that a lot of the time you have a paper that is produced on the thermodynamics or power generation side, and one on the land use for BECCS and so on. What the Committee would be really well placed to do is bring those disciplines together and ensure that the interconnected nature, assumptions and risks that stem from or interact among those disciplines are well interrogated, and that the evidence is presented robustly. That interdisciplinary nature is really important.

Chair: Thank you, Dr Quiggin, for your time this morning. That is the third theme, on industrial decarbonisation, complete.

Examination of witness

Witness: Dhara Vyas.

Q34 **Chair:** We now move on to the fourth theme, on net zero and the just transition. We have three pitches in this theme. The first is from Dhara Vyas, who is the head of future energy services at Citizens Advice. Good morning, Dhara. Nice to see you.

Dhara Vyas: Good morning, and thank you for that introduction. We are the official advice provider, and we represent energy consumers across the market, so it is no surprise that it covers issues to do with pipes and wires, network investments, fuel poverty, low-carbon heat, smart energy services and, of course, retail issues such as switching, billing and complaints, just to name a few.

The Committee will be aware that the energy market has undergone a great transformation in the last decade, and the commitment to reach net zero by 2050 is a real catalyst to do more, and do it faster. I am here to ask the Committee to take a forensic look at whether the existing consumer protections are adequate, and to ensure that the Government's plans to improve energy in the home—whether through smart energy technology, energy efficiency or low-carbon heat—will give people and businesses the confidence to make the transition to net zero.

The Committee will be aware that some forms of protection are enshrined in law. They range from general protections, such as the Consumer Rights Act, to sectoral protections, such as supply licence conditions. However, lots of the new business models in energy fall through the gaps and do not give people clear information or help when things go wrong. Nor do they ensure that companies support people in vulnerable circumstances.

Changes to the way we make our homes more efficient, keep warm and interact with electricity will all take place against the backdrop of the post-pandemic recovery and severe economic recession. The immediate and ongoing impacts of the virus are being felt across the country. I am sure you will not be surprised to hear that we are really seeing them at first hand at Citizens Advice. At their peak, views of our website reached 2.2 million a week at the start of the crisis.

People are really worried about paying their energy bills, with certain groups more affected—for example, people who are shielding, younger people and people in insecure work are more likely to have already fallen behind on bills. The crisis has also shone a spotlight on the need to tackle some of the issues embedded in the use of traditional energy—for example, pre-pay meters. It really highlights the value of smart meter technology.

Citizens Advice supports the goal of achieving net zero. We know that will not be possible without the support and buy-in of everybody in the country. People have to change the way they use energy in their homes, and that means three things. You have heard a lot about making homes more efficient so that they use less energy in the first place. People will also be using technology and smart energy products and services to better manage the way we use energy. That means things like multiple companies interacting with and sharing energy users' data, more bundled products and services, and paying different prices at different times of day—that sort of thing. It also means moving to low-carbon heat options. I won't expand on that; you have heard a lot about how important that will be and how big the scale of that challenge is.

Sectoral regulations do not currently cover a lot of third-party intermediaries such as switching sites in the energy market. There are also a number of voluntary energy consumer codes and accreditation schemes, which are confusing and are really hard for people to navigate. Public support is going to be crucial if we want a successful transition to a low-carbon future. Whether the changes are driven by policy, technology, logistics or consumer choice, it will be crucial that information, support

and protection are built in from the outset. Consumer protections really do matter. We are asking people to do a lot—to engage in multiple complex things that will have lots of different impacts on their homes and their lives.

While everybody in the energy policy world at least seems to agree that consumers should be at the heart of net zero plans, very little attention is given to how that actually might happen and what it might mean, and it is potentially really dangerous to ignore that. As a worst-case scenario, it could lead to a raft of well-intentioned but disjointed programmes and projects. Most people just have one home and they will not want to make multitudes of decisions and investments in a really short space of time. Doing so would mean a lot of different conversations about funding or finance options, about disruption to the home or potential disruption, and about what choice or lack of choice they actually face.

An inquiry by the Committee could seek to explore lessons from previous programmes. There are some really high-profile examples, such as HELMS, where there was significant mis-selling of green deal loans by rogue traders in over a third of UK constituencies. We have also heard from people who have experienced issues with how they have understood or interacted with things like ECO, feed-in tariffs, the renewable heat incentive and smart meters.

I also think the Committee could interrogate the Government's consumer protection plans for its heating buildings strategy, which is imminent, ask regulators how they are planning to work together to address net zero consumer issues—there will be so many issues that fall between the gaps of regulated markets—and consider the outcomes and recommendations from the climate change assembly, which I am sure will look at this.

The Chancellor announced the green homes grant scheme in the summer Budget and that is really welcome. I am hoping it is the first step in a series of moves to help people improve the efficiency of their homes and their heating options. Better, simpler, co-ordinated consumer protections in this space will encourage good behaviour by market participants and create a level playing field, while also giving people the confidence to engage.

Chair: Thank you, Dhara. The first question to you is from Judith Cummins.

Q35 **Judith Cummins:** Thank you, Dhara. You point to a confusing and complex future for consumers, as if life is not confusing and complex enough under the current regime. I have got to say that anybody who has tried to work out a utility bill will know the pain you are describing.

Can you give me an example of when things go wrong and how consumer protection does not work at the moment, and how you envisage that having some kind of regulation or mandatory oversight would help? Could you also outline why this is so urgent? It is obvious that it needs doing—the need is obviously there—but why is it urgent? When would be the

best time for it to be most impactful in terms of scrutiny?

Dhara Vyas: Those are really good questions. If it is okay, I will take them in reverse order, because I think the reason it is so important leads into what a good example might be.

There is a lot happening. The scale and speed is unprecedented, which is a word that gets used a lot right now, but there is so much happening and there is so much expected of people. The heating buildings strategy is going to be really key here, where we actually understand how we move from less than 5% of people living in homes with low-carbon heat to 90%, which is what the CCC says we need to get to. Speed and scale really mean that this is beyond anything we know.

It is really important to remember that technology just keeps on changing. There is more and more stuff in people's homes that interacts with other stuff, or doesn't. There are issues around data. There is technology and the speed and scale of the issue, and then there is the urgency that the net zero target presents.

In the economic recovery, there is a discussion around upskilling people in jobs—people need to be able to work out what on earth they need to do in their home, if they are going to be able to provide work for all these installers we are going to skill up.

There are all these different factors pushing at this issue, which mean that it is like a bubbling pot.

Right now, there are a number of voluntary codes and accreditation schemes. It is very messy. A few years ago, we tried to plan out the consumer journey and it is not seamless in any way. It is really difficult to know who to go to when you need help, what for and at what point. There is a real problem.

A good example is a vulnerable consumer—someone who is in vulnerable circumstances. In the regulated energy market, there are numerous licence conditions, which place huge expectations on the way suppliers support and treat those consumers. In the rest of the energy market, the bit that is not regulated, there is just not that expectation.

You asked for an example, and I am going to give you an example of something that could happen in the future. This is just an example of something that I think is quite complicated. Let us say that you had a smart washing machine and that washing machine was set to start when energy was cheapest, but something went wrong and it kept switching on when energy was most expensive and you didn't know how to sort that—you didn't know what to do. Would you go to the manufacturer, to the store you bought it from, to your energy supplier or to your network? If you had a third party involved in switching things on and off in your home, that would be super-confusing. That is an example from the future.

An example from now is the fact that, as we know, the enforcement landscape is hard to navigate, but also not very well resourced. Who do

you go to if a rogue trader installs cavity wall insulation and it is mouldy? How do you get redress? Trading standards do a great job, but it is really hard for them right now.

Those are probably the best examples I could give you.

Judith Cummins: This does point to a future that is increasingly complex and confusing for consumers. Thank you very much for those answers, Dhara.

Q36 **Alan Brown:** I just want to follow on from those examples, Dhara. In your presentation, you touched on the green deal mis-selling with the company called HELMS, which has left something like 4,500 people across the UK affected and seeking redress. How important is it that we look at these real-life examples of failure—you mentioned cavity wall insulation—that, as a Committee, we look at that and understand how it directly relates to flaws in consumer protection and what other resources need to be put in by Government? You mentioned trading standards. I think that, in your submission, you also mentioned that some aspects about switching in markets should perhaps come under Ofgem. How important is it that we look at the other regulatory bodies, what powers they have and what they might require on top of that?

Dhara Vyas: Thank you, Alan. There have been a number of projects and programmes over previous years, under various Governments, that it is worth learning the lessons from, including the support to make homes more efficient, which involves the green deal and ECO. We should also learn from things like building standards, zero-carbon homes, the feed-in tariff and the renewable heat incentive. The point about HELMS is that it is a high-profile and stark reminder of how badly these things can impact on people.

The main thing is to ensure that the future consumer journey is simple and is integrated to make sure that energy efficiency is a priority. It is so important that we try to improve our housing stock before we try to do anything else, or alongside doing other things. There needs to be integration with other priorities, and with options for funding and finance—people are going to really struggle to work out how to make these changes. Also important are standards for quality and standards for consumer experience, and a really strong communication message, because this is actually really difficult for people to navigate. Those are some of the main things.

One really important issue is redress. There is not always a clear route to redress; there is not always an ombudsman. I am thinking of people in vulnerable circumstances. People in the private rented sector and people who are digitally excluded are the two big groups that are really going to struggle in the future energy market, and they are going to need that extra support.

There also needs to be a seamless customer journey. At the end of the day, it doesn't really matter who is involved in sorting the problem at the

back end, as long as the consumer knows who to go to and that is their point of contact, that is who they are talking to and that is how it gets resolved, because people give up—people give up.

Chair: Dhara, thank you so much for your contribution and your time this morning.

Examination of witness

Witness: Professor Nick Robins.

Q37 **Chair:** We will now hear the second pitch on net zero and a just transition, which will be made by Professor Nick Robins from the LSE. Good morning, Professor Robins.

Professor Robins: Good morning, Chair. Good morning, Committee. Thanks for inviting us to pitch to you today.

Last month in its annual report to Parliament, the Committee on Climate Change stated, "A just transition is a crucial part of meeting our Net Zero target", yet when we look around the policy architecture that we face, there is a striking gap in terms of goals, measures and resources to make the just transition a reality. That is why I believe the BEIS Committee should launch an inquiry into the just transition as a cross-cutting issue that brings together the implications of the transition for the people of Britain, for their economy and for their livelihoods, and puts that into the heart of the process.

Clearly, the covid crisis has made us all realise the importance of a green and an inclusive recovery, making the just transition even more pressing—not a "nice to have" but a "need to have". So in the next couple of minutes I would first like to set out the need for and opportunity of focusing on the just transition in one of your inquiries, and secondly, set out some themes that you could tackle under this banner: overall industrial and energy strategy, issues around workforce, the regional dimension, public finance, engaging with the business and finance sector, and then the international agenda. If I can turn first to what we are talking about here.

In many ways the work that we have done suggests that the just transition is the next chapter in climate action—really ensuring that the climate action we take delivers a positive social impact across the country. It is included in the Paris agreement, which we are all familiar with and which had a focus on the workforce around the world to ensure that the new jobs that we have in a growing green economy are good jobs, and that we avoid not just stranded assets but stranded work.

More recently, the scope of the just transition has broadened to include communities and consumers, as Dhara very eloquently laid out just now, and in Scotland the just transition has been defined as ensuring that the process of economic transformation is fair for all. For us and in the work

that we have done, we include the crucial SMEs sector, which is obviously under so much pressure at the moment.

Fairness is a great British value. In this context there are three elements we should consider. In the just transition, we should make sure that the benefits, of which there are many, and some of the burdens of change are distributed fairly across the economy; that is the first. The second is making sure that those affected by change are participating in key decisions, which is, as you know, a key criterion in policy setting. The third is making sure that those who have been hit perhaps by previous transitions, such as the shift away from heavy industry, are given particular attention. If you want to put it very simply, climate action plus levelling up equals the just transition. This is a broad agenda, it is a comprehensive agenda, and I think that many of the pitches you have already heard today touch on aspects of this.

I want to outline seven areas where I think you could make a real difference with your scrutiny and research. The first is overall Government strategy. What would it take to put the just transition at the heart of economic, industrial and climate strategy? We have an industrial strategy. How could that be upgraded to deliver the just transition, particularly with a focus on key sectors such as construction, energy—notably oil and gas—and manufacturing and transport? So the first area is a strategic review.

Secondly, on this question of the workforce, the latest Committee on Climate Change report has a very big highlight on building a net zero workforce. The Committee could take a real role in understanding what that means. Our research suggests that about one in five workers across the country will be affected both positively and potentially negatively by the transition, with the greatest exposure in the west and east midlands and Yorkshire. So how would we build this net zero workforce and ensure that those workers who are moving from high to low carbon sectors have that process managed in a smooth way, and that we have an education system that provides relevant skills and training? That is the second point.

The third is the regional dimension. The transition will be delivered very differently across the country, with a profound place-based element. We work with the Universities of Leeds, Edinburgh and Belfast to understand this process. Again, what are the particularly regional opportunities and risks across the country? Also, how can bottom-up action by local government, by the regions and by devolved nations be enabled and supported? That is the third element.

Fourthly, this will require finance and funding. I will touch now on the role of public finances. We have had the Chancellor's plan for jobs announced recently, with a green recovery dimension. That is quite well tailored to pick up the social dimension around the buildings aspect, but how could the recovery stimulus plans in the coming months really kick-start the just transition, perhaps cracking the climate and fuel poverty challenge?

Secondly, we have the broader issue of raising finances and the fiscal dimension, particularly with the UK having left the EU. How do we ensure

that our carbon pricing and carbon taxation policies land fairly for consumers, industries and regions?

Thirdly, there is an institutional issue, in terms of what institutional architecture we need. We are proposing the need for a national investment bank—how could that support a just transition across the country, helping to *[Inaudible.]* The fourth area—

Chair: I am going to have to cut you off there, because you are half a minute over your allotted time. My apologies for having to do that. The first question in this session comes from Paul Howell.

Q38 **Paul Howell:** I have been scribbling away in my notes trying to keep up, as it was quite a comprehensive presentation. Where do you start, and where are the priorities? There are so many angles that you are talking to here—whether it be the workforce or the overall Government strategy. Which is the driving force in that, and where would we actually target an inquiry in such a way that we do not end up just talking about too much and doing nothing?

Professor Robins: Thank you, Paul. That is a very clear point. In terms of what I have said about the strategy points, there is a recognition of this agenda. It is about understanding where that would fit with our existing architecture, industrial strategy, energy strategy and so on. I touched on the public finance piece and the workforce. What I did not say—my apologies for running over—is how to engage with the business community in a broad sense: large corporates, the SME sector, their workforce, their communities, and the finance sector. We have just published a report on the role of banks. It is about bringing together the support from banks and what they could do to enable their customers. I don't know whether that narrows the scope for you, Paul, but starting at the strategy level, the workforce area is one that would benefit from further inquiry. It is about how we mobilise business and finance behind that, and what Government needs to do to do that. Thank you for the question.

Chair: If there are no other follow-up questions from colleagues, Thank you, Professor Robins, for your time this morning.

Examination of witness

Witness: Matthew Copeland.

Q39 **Chair:** We will now hear from Matthew Copeland, who is the policy manager at National Energy Action. Matthew, good morning.

Matthew Copeland: Thank you for inviting me to pitch today. I would like to make the case for the Committee to run a single-day inquiry on the fuel poverty strategy for England. I will talk about why this inquiry would be timely, a proposed structure, and the impact that it can make. Millions of households are fuel poor, residing in each of your constituencies, and

there are live policies that can be influenced to help them. I will start with the legal part.

The Energy Act 2013 requires the Government to publish and implement a strategy for reducing fuel poverty in England. This is still pending, despite it being almost a year since it was consulted on. The Act requires three things of the strategy. First, the strategy must describe the household that it applies to. This has a material impact on the design of schemes such as the green homes grant, which was announced by the Chancellor last week.

Secondly, the strategy must describe a comprehensive package of measures to ensure more efficient use of energy. This has partially been addressed by the green homes grant, but we are still awaiting confirmation of its details. Other existing policies have been described by this Committee as underfunded and in need of complementary schemes.

Thirdly, the strategy must set targets and interim objectives. According to the Committee on Fuel Poverty, the 2020 milestone will be missed. The milestones lack teeth; they are not set on the same statutory basis as the final target. We think it is an opportune time to conduct such an inquiry. The legal requirements to form a strategy in England are mirrored in Wales, where the strategy is also in the process of being updated; Scotland and Northern Ireland have also been spending time reassessing their strategies. Although I am aware that this Committee cannot scrutinise the devolved Governments, it is imperative that actions taken in Westminster can learn from Wales, Northern Ireland and Scotland. Any work to facilitate the learning of lessons from devolved Administrations could be fruitful for the design of strategies across the UK—the benefit is not limited to England and Westminster.

As for the structure of the inquiry, we propose a one-off session that is used to scrutinise several areas. A priority area is whether the UK Government are doing everything reasonably practicable to meet their fuel poverty target and milestones. Recent announcements have been welcome, but the Committee on Fuel Poverty has identified that longer term programmes are needed to meet the 2030 target and the 2025 milestone.

Another area to explore is whether the milestones and targets are sufficient and align with other Government priorities. Much has changed since the formation of the original strategy in 2015. Our statutory carbon targets have been made significantly more ambitious, and there is a question as to whether other related targets, such as those for fuel poverty, should also be made more ambitious.

Furthermore, the strategy contains provisions for direct financial support alongside energy-efficiency improvements. Each nation has a different approach to seeking the right balance between these two things and it is not clear how Westminster has used the lessons learned from the devolved nations to support its own strategy for England. Interrogating that area could be fruitful for all nations.

A final aspect is exploring how the strategy is implemented across Government. While the responsibility for the strategy clearly sits with BEIS, the benefits, costs and actions needed to execute it extend across several Departments. Over 1 million fuel-poor households live in social or private rented housing, where MHCLG has a major role to play; addressing fuel poverty has a positive impact on people's health, and the cost savings seen by the NHS are governed by the Department of Health and Social Care; and the Treasury allocates the cost of meeting net zero, which will have a profound impact on the number of households living in fuel poverty.

Before I finish, I wanted to put some of what I have talked about in the context of a world in which coronavirus is dominating. Even before this crisis, on average about 10,000 people die each winter from living in a cold home, and one of the largest contributors to this situation is that vulnerable people, who often struggle with existing ill health, are unable to heat their homes adequately, if at all.

Being cold at home leads to respiratory problems and lower resistance to respiratory infections. Warm homes enable inhabitants' immune systems to better fight off viruses, reduce the likelihood of their suffering more acute respiratory symptoms, and help to improve the recovery process. Although there is currently no cure for covid-19, there is a cure for cold homes. Improvements in energy efficiency can help the fight against respiratory conditions, including coronavirus, and therefore help to save lives.

Ensuring that the fuel poverty strategy is working as well as it possibly can is crucial. The two great challenges of our time are beating the virus and eliminating carbon emissions. Ensuring that the poorest people can live in a warm home is absolutely central to meeting both challenges.

Thank you for your time. I look forward to your questions.

Chair: Thank you, Matthew—perfectly timed. I will first go to Mark Pawsey.

Q40 **Mark Pawsey:** Thank you, Matthew. You told us that there are 10,000 excess winter deaths. Is that situation currently improving or getting worse?

Matthew Copeland: It is obviously very variable, year on year, due to how cold—

Q41 **Mark Pawsey:** But if you look at the trend, are we doing better now than we were 10 years ago?

Matthew Copeland: I do not believe so. We have seen some absolutely horrendous figures for excess winter deaths from cold homes in the last few years, particularly in the winter when there was the "Beast from the East", when I think we saw over 15,000 excess winter deaths from living in a cold home.

Q42 **Mark Pawsey:** And would the primary objective of an inquiry by the Committee be concern for the welfare for citizens, or would an inquiry be conducted out of concern for the need to reduce emissions?

Matthew Copeland: Primarily, it needs to focus on citizens, to be honest—ensuring that people can live in a warm home and making sure that the fuel poverty strategy is working towards that aim. At the same time, however, it is true that the fuel poverty strategy is a major part of the delivery towards net zero. The EPCC target for fuel-poor homes needs to be met for us to meet net zero. I think an inquiry would encompass part of that, but the primary focus has to be on people and homes.

Q43 **Mark Pawsey:** Okay. Where do you think the key Government action should be? What would an inquiry identify as the principal course of action?

Matthew Copeland: There are long-term things and short-term things. In the long term, it is clear that we need to make more homes energy-efficient. Although the stimulus that was announced last week is important, it is just a stimulus; it is not a long-term strategy for reducing the carbon emissions from homes. So we need a long-term strategy—a long-term spending plan to improve the homes of fuel-poor households.

We also need to make sure that those households who do not receive those improvements right now can heat their homes. We should help make sure that the warm home discount is working as well as it can, extend and expand it, and see if there are other things that can be done in the short term for those homes.

Q44 **Mark Pawsey:** How would this report differ from the pitch we heard earlier about improving the energy efficiency of our homes? Is that too long term a perspective? Is progress too slow? Should we be subsidising the cost of energy for poorer households?

Matthew Copeland: I think it is a mix. What we have, though the warm home discount, is a sort of subsidy. It is bit different from the pitch earlier on energy efficiency because it is encompassing more areas of policy. It is trying to look at the long-term solution, which is energy efficiency, and how everything else fits in between that: the principles of what that strategy should look at and how; how it should help households, both in the long term and in plugging the gap in the short term, through the short-term measures that you talked about, in subsidising the bills; and anything else as well.

Q45 **Mark Pawsey:** How would you suggest that we gather evidence? Where should we go to get a baseline and determine whether existing measures are working?

Matthew Copeland: We would suggest a one-day inquiry where you take oral evidence from a number of stakeholders. There are two aspects to this. We think it would be interesting and useful for you to interrogate people on the policy side of things including the Government themselves; the devolved Governments, to learn what is being done in other countries; other stakeholders, such as the Committee on Fuel Poverty; and NGOs,

such as ourselves. We also think you should get close to the lived experience, whether that it is people who work closely with projects or people who live in fuel poverty. We think that is an important aspect for the Committee, and policy makers in general, to understand when developing this sort of strategy.

Mark Pawsey: Thank you.

Q46 **Paul Howell:** Thanks Matthew—interesting stuff. You mentioned a number of times the need to consider what is happening through the devolved Administrations and their comparators. Are they the only comparators we should be looking at, or are there other things elsewhere in the world that we should be looking at? Have you seen particular things in the devolved Administrations that you want to make sure we pick up on here?

Matthew Copeland: On the first part of your question, from my experience of looking at different strategies across the world that deal with this, the UK is pretty good and far ahead. From England's perspective, the best place to look is the devolved Governments.

Particularly in Wales, there are a few things that are really interesting. They are putting together their new draft fuel poverty plan at the moment and they have been asked to consider how they balance the need for increasing incomes and reducing energy costs. Those are the two aspects of fuel poverty. Trying to work out what can be learned from the Welsh analysis will be useful for Westminster, to develop its own strategy.

Scotland has been very ambitious with its fuel poverty strategy. It would be useful to learn why and how that is being done, and how that can be translated into accelerating the fuel poverty strategy in England.

Q47 **Chair:** Thank you.

Examination of witness

Witness: Councillor Claire Holland.

Q48 **Chair:** Moving on to the final theme for today on delivering net zero, we have two pitches. The first pitch is from Councillor Claire Holland who is the chair of the transport and environment committee at London Council. Good morning, Councillor Holland.

Councillor Claire Holland: Good morning, Chair.

Chair: You have five minutes.

Councillor Claire Holland: Thank you to the Committee for the invitation to pitch this proposal on the role of local government in supporting the development of the low carbon economy. My pitch to you is that no strategy will work if it does not have a local foundation. Only local government can offer you a way of delivering that.

Local authorities have bee active in setting ambitious targets for achieving net zero since the Government adopted its 2050 target. Local government is an indispensable partner in achieving net zero, because of our insight into our communities and local circumstances, our service delivery and regulatory functions, and our ability to join up emissions reductions with other pressing priorities, from public health to inequality and economic development. To put it quantitatively, we estimate that local government can influence around 70% of carbon emissions in England.

Covid-19 has underscored our role in making delivery work for our residents and businesses locally, albeit with significant new financial pressures. Accelerating the low-carbon economy is critical to the UK's recovery from covid and our ability to build back better. We are calling for a green recovery, driving the decarbonisation we need while creating secure, meaningful work that also supports longer-term prosperity. Since submitting the proposal, we have seen many public interventions from across the sector supporting a green recovery. LGA analysis suggests that there could be more than a million new jobs in local carbon sectors in England by 2050.

But why local government? What role do we have here? There are four main points: skills, innovation, greening, and joining the dots to create a place-based approach. First, through our close relationship with business, schools and colleges, we play a vital role in supporting skills programmes and the workforce requirements needed to drive a local low-carbon economy. In London, green skills might focus on low-carbon heating, whereas in the north-west or west midlands, their manufacturing expertise means the focus might be on skills for the electric vehicle industry.

Secondly, councils have a key role in establishing and supporting the infrastructure and innovation required—broadband, public transport, working and cycling infrastructure—but also in providing *[Inaudible].* Lambeth, for example, is looking at launching a co-investment fund to incubate business in high-growth sectors, including low-carbon start-ups. Local authorities enable innovation and lead by example. Islington Council has recently completed the extension of its Bunhill heat and power network, a groundbreaking scheme that uses waste heat from the underground to heat more than 1,300 homes, as well as leisure centres and a school. That project has increased our understanding of the opportunity that waste heat can play in decarbonisation, and, given the GLA estimate that there is enough heat wasted in London to meet 63% of demand by 2050 with the expansion of district heating networks, that opportunity is really significant.

Thirdly, councils can also support businesses to green their operations, regardless of what sector they are in. We are already providing grants to SMEs to increase their energy efficiency, and, of course, we are enforcing standards.

Fourthly, local authorities can join the dots and use their convening role to ensure that low-carbon sector support is place-based, responds to local

needs and opportunities, links up with other services and supports those whose postcodes will be particularly disadvantaged.

Unfortunately, there is currently no coherent national framework for driving local low-carbon growth and leveraging the unique role of local authorities. Currently, the Government do not give local authorities the powers or funding we need to ensure our economies operate on a low-carbon basis. Without that joined-up approach to policy, powers and funding, we risk failing to meet both local and national targets and missing out on crucial growth in low-carbon sectors.

We believe that an inquiry on this topic should take place soon. It could immediately follow your work on post-pandemic economy growth, and could then feed into the Government's preparation for COP26. Thank you, Chair.

Chair: Thank you, Councillor Holland. Paul Howell will start the questions for this section. Over to you, Paul.

Q49 **Paul Howell:** Thanks, Chair. I can hear the passion for local government, having spent a bit of time there myself. There are so many different examples in different parts of the UK, as you rightly say. How would you try to make an inquiry understand the differences in that? In the north-east, you would maybe be looking at things from mine working, but you have talked about things in London being completely different. How would you get the scale and scope of that into the same inquiry?

Councillor Claire Holland: Thank you for that question, because that encompasses exactly what we are saying. The role of local government is critical to the development of the low-carbon economy, because we are uniquely placed and integral to achieving a workable strategy that has that buy-in at a local level and is tailored to local circumstances. We are asking for a national framework and funding that we can deliver to those local circumstances. You are right: in South Shields, we might be looking at different solutions from Exeter or Brighton and Hove. Even in London, we look at different solutions—outer London has very different experiences of transport from ours in central London. We have to tailor solutions to local circumstances.

We would be looking to include all those voices in the inquiry. It is a matter for the Committee how it wants to conduct the inquiry. On covid, talking about a low-carbon recovery, a green recovery, an equal recovery, in London we are certainly finding roundtables where we are focusing short and sharp, but hearing experiences from around London is extremely useful.

We would argue that the inquiry should include voices from all across the nation, to understand those differences and that people need solutions that are local to their environment. We know what businesses and colleges we have in our area, and whether it is manufacturing or mining, as you say, or low-carbon heating. Those voices would need to be included in that inquiry, and that is at the heart of what we are saying.

Q50 **Paul Howell:** It is like looking for something that has an overarching strategy, which different councils, in different ways, at different times and with different localised perspectives, would pick from in terms of how they see the implementation going forward. Is that the thrust of what you are talking to there?

Councillor Claire Holland: Absolutely, sir. That is exactly it. Recently, the LGA said that 20 employment and skills funding streams are managed by eight Departments or agencies, spending £10 billion a year—this is BEIS—but, despite that, investment often fails to meet local need, to address economic and social challenges, or to have a decisive impact. The skills, the willingness and the commitment are there; it is about having the national framework and the Government support, direction and funding to enable us at a local level to drive the low-carbon economy locally. That is why we are uniquely placed—we need that local knowledge and buy-in. That is what will achieve success.

It is great to hear all the pitches for all this amazing technology, which is changing all the time—that is all essential—but if we do not have people on the ground, local government on the ground, enabling that delivery, it will not have the impact that we need it to have. Under covid, as we have seen across the nation, local authorities have learned—contrary perhaps to what we used to be, which felt a bit like pushing a juggernaut up a hill—that we have been agile and responsive. We have had to act quickly to feed our communities and protect our key workers, so I think that we have demonstrated that we can do that.

Chair: Thank you, Councillor Holland. We do not always get local government voices in parliamentary Committees, so we are pleased to have you today. Thank you for taking the time.

Councillor Claire Holland: Thank you, Chair.

Examination of witness

Witness: Professor Paul Ekins.

Q51 **Chair:** Moving to our last pitch of the day and on this theme of net zero delivery, we have Professor Ekins from UCL. Good morning, professor.

Professor Ekins: Good afternoon.

Chair: I have lost track of time. That is why you are a professor and I am not. Good afternoon, Professor Ekins. You have five minutes.

Professor Ekins: Thank you very much for inviting me to make this presentation. For a number of reasons, I believe that the institutional arrangements for achieving net zero are a crucial topic and suitable for one of your inquiries.

First, there is a climate emergency, as recent images from Siberia have shown. Government responses so far in no sense suggest a response to an emergency.

Secondly, Government have a legal obligation to reach net zero emissions in 2050, and yet they are not even on track to meet the previous target of an 80% reduction. They need to put in place far-reaching plans for decarbonisation.

Thirdly, Government are a signatory to the Paris agreement and are hosting COP26 next year. They need to show that they have arrangements in place to meet their obligations under the agreement.

Fourthly, Government cannot reach net zero through their own actions. To do so, they will need unprecedented understanding of the incentives that cause individuals and organisations to change their behaviour.

Fifthly, no Government have ever attempted to achieve technologic, economic and social change on the scale required to achieve net zero. It is a project that will profoundly affect every business, household and organisation in the country. It cuts across all Government Departments and all levels of Government. It will require large public and private sector investments and fundamental changes in energy, transport, digital and other infrastructures. It requires a level of policy co-ordination and integration that has only ever been approached in wartime.

Sixthly, the current institutional arrangements in Government are simply not up to this task. If the Committee were to adopt this inquiry topic, it could investigate a whole host of issues, such as how to achieve the necessary levels of co-ordination between the Government Departments responsible for the sectors that produce the majority of greenhouse gas emissions—energy, industry, transport, buildings and agriculture—as well as what institutional arrangements would mobilise the necessary private investments and investments from central Government, devolved Administrations and local authorities; how public procurement offices could be linked to the decarbonisation imperative; the institutional arrangements that could foster low-carbon behaviours by businesses, households and individuals; and how stakeholder expert and advisory bodies should feed into the institutional processes fostering decarbonisation and lead to a widely shared route map as to how it could be achieved by the middle of this century. And finally—perhaps most importantly—whether there might be a role for a zero-emission delivery body to take the project forward, and the issues of accountability, monitoring and evaluation around such a body were it to be established. Thank you very much—that is the end of my presentation.

Q52 **Chair:** Thank you for your presentation. I am interested in your point about a delivery body. Obviously, we have not delivered a net zero transition before, but are there good examples in the UK or in other countries of something of such scale and cross-departmental responsibility being delivered effectively by establishing new to the machinery of government?

Professor Ekins: I am not aware of anything in other countries. I think this would be an area in which the UK was a world leader, as it has been before with the Climate Change Act. The example that sprang to mind when I have thought about this was the Olympic delivery body, which was set up several years in advance of the Olympics. It was a very complicated task and it worked remarkably well. Clearly, decarbonisation is orders of magnitude more complex than that, but that commended itself to me. The local docklands corporations and other kinds of delivery bodies that have delivered urban regeneration around the country might provide another model for thinking of how this might work.

Q53 **Chair:** Do you think that the connection between such a delivery body and dedicated ministerial oversight is important? The Industrial Strategy Council, for example, does not have any ministerial or senior civil service leadership—it is completely independent and then reports to. Do you think that a body would need to be completely embedded to be effective?

Professor Ekins: I think that it would need to be at arm's length from Government, but it would obviously be necessary for it to be accountable, both to Government and to Parliament. This is a political project the scale of which I do not think has been attempted before and it is crucial that it should have proper political accountability. It would also need very widespread stakeholder input and engagement—the finance sector, local authorities, the devolved Administrations—because it would be a truly integrated project across the UK.

Chair: Thank you for your presentation this morning, Professor Ekins. Thanks also to our 10 other pitchers. I hope it was a useful and enjoyable process for you and not a daunting one, as I know some people thought it might be. You were all very welcome and thank you for the amount of work that you have put in.

The Committee is grateful for the more than 200 submissions we have had, and we really appreciate the engagement that we have seen throughout the process. We will now consider the pitches and, further to some private meetings next week, we will publish how we decide to take the ideas forward in due course. I thank my Committee colleagues and all participants.