House of Commons

# Environmental Audit Committee

## Oral evidence: Preparations for COP26, HC 222

Thursday 14 May 2020

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Watch the meeting

Members present: Philip Dunne (Chair); Duncan Baker; Sir Christopher Chope; Feryal Clark; Mr Robert Goodwill; Ian Levy; Marco Longhi; Caroline Lucas; Jerome Mayhew; Kerry McCarthy; John McNally; Dr Matthew Offord; Alex Sobel; Mr Shailesh Vara; Claudia Webbe; Nadia Whittome.

Questions 40 - 76

### Witnesses

# Examination of witnesses

Witnesses: Fiona Reynolds and Nigel Topping.

Q40 **Chair:** Welcome to the first broadcast session of our inquiry into COP26 and the implications of the Covid crisis for green finance. I am very pleased to be able to welcome to our Committee today our first witnesses in public session. I am going to ask each of them to identify themselves and explain their background. First we have Fiona Reynolds, who is the chief executive of the Principles for Responsible Investment.

***Fiona Reynolds:*** Thanks for the opportunity. I appreciate that MPs have a lot on their plates at the moment with Covid-19, so I am really pleased to see that climate remains an important issue. I hope all your families and yourselves are safe and well.

My role is CEO of the Principles for Responsible Investment, as Philip just said. We are a UN-supported organisation created in 2006 out of the UN system to bring sustainability issues to capital markets. We have 3,000 signatories across the globe, which represent US$90 trillion in assets under management. Why climate change is important to us is that we are invested across the whole global economy and, from your perspective, why we are important to you is that climate change cannot be solved without the finance sector. The public sector alone, the UK Government alone, is not going to be able to provide the finance required to deal with the transition to a low-carbon economy. That is going to require the private sector as well. We need to work in partnership to solve this problem.

Q41 **Chair:** Thank you, Fiona. Nigel Topping, if you could introduce yourself, please, as the UK High Level Climate Action Champion.

***Nigel Topping:*** Good morning, Philip, and good morning, everyone. It is a pleasure to join you this morning. I thought I would give you a little bit of my background and then explain the role, because it may not be a role that is familiar to many of you.

My background is in the manufacturing industry. I started work at Lucas in the Midlands. I see we have a Member from Dudley, and I was working around there. Then I was running manufacturing businesses in Manchester and in Hartlepool. I was part of a management buyout team that created TMD Friction, which we built into the largest brake pad manufacturing company in the world. You will see that I will keep coming back to automotive sector examples.

I spent quite a lot of time working in Germany and Spain, and running projects in Brazil and China, in that time. For the last 13 years I have been working on the nexus between the private sector and climate change. I spent time with the Carbon Disclosure Project, a London-based NGO, working on transparency to support investors like those that Fiona works with in understanding how companies are responding to climate change and what the risks and opportunities are.

Most recently I was the CEO of the We Mean Business coalition, which is a coalition of the leading global business-facing NGOs. We set that up in the run-up to Paris to mobilise the voice of business to make sure there was a constructive business voice at the table in helping get the Paris agreement over the line. I was privileged to literally have a front row seat as the gavel came down in Paris.

The role I have now, the High Level Climate Action Champion, was created in Paris in recognition of what the parties to the UNFCCC, the countries, see as the crucial role of what they call non-party stakeholders or non-state actors—businesses, investors, cities and state and regional governments. The role is a two COP cycle role. I would have said two years but, of course, the delay means it will be a bit more than two years. I was appointed in February and I will keep going until COP27, which will be a year after COP26 in Glasgow.

I work alongside the Chilean High Level Champion, Gonzalo Muñoz, and work very closely with the UK Government's COP26 team, the UNFCCC secretariat and the Secretary General's team. But our constituency is non-state actors, so businesses, investors, cities, states and regions.

Our job is to drive ambition and accelerate action. We do that by working with a large coalition of organisations, international NGOs and coalitions of businesses and cities. You will be familiar with some of them, like the World Business Council for Sustainable Development, the World Economic Forum and We Mean Business, as well as organisations like the Principles for Responsible Investment, C40 on the cities side, ICLEI for local governments and the Under2 coalition, which is working with regional governments.

We are driving ambition to bring about systemic transformation sector by sector, because we know there is a huge growth opportunity. As Lord Stern said, addressing climate change is the growth story of the 21st century. We know there is $26 trillion-worth of growth and 65 million jobs to be created. That is something to aim for in the best of times, but in a time of health and economic crisis that we are facing now, our stakeholders believe it is even more important that we have climate change at the heart of recovery packages.

To summarise the consensus among these broad stakeholder groups, there is a very strong view that the science is clear and that every time we review the science the risks rise. There is a real sense of urgency that the next 10 years are crucial but the next 12 months will set the tone, particularly now that we are seeing the need for big economic recovery packages. We are working to massively magnify the level of net-zero commitments from non-party stakeholders. We are launching our Race to Zero campaign on World Environment Day on 5 June, so look out for that. There will be news of many more people committing to net zero. We are looking to work with our community, which is often referred to as the Marrakech Partnership because it was launched formally as a community of non-party stakeholders in the COP, after Paris, in Marrakesh in 2016.

There is also a growing sense that the change, the transformation, is already happening and that it is accelerating, so there is a real competitiveness issue whether you are a CEO or a mayor or a Minister. The pace of change is growing exponentially and those who do not get ahead of the curve, the laggards, will become losers, as I said before.

I am delighted to join you and am pleased to discuss our work with you and to help in any way I can. Thank you, Philip.

Q42 **Chair:** Thank you very much, Nigel. That was a very helpful introduction. You mentioned February next year as the end of your term. Are you indicating that the conference in Glasgow, which has been deferred from this autumn, might now be in February?

***Nigel Topping:*** No. I was appointed in February this year and my role runs until COP27. We do not know yet when COP26 will be. It will be next year, and we should hear within the next few weeks from the COP Bureau, which is the official body that makes that decision. My role will run from then until COP27, which will be held in Africa—we don't know where yet—in 2022.

Q43 **Chair:** You slightly cut out there. Were you saying that the decision will be taken, about when it happens next year, by the UN or by the UN working with the UK?

***Nigel Topping:*** The formal body that makes the decision is called the COP Bureau and, as the incoming president, the UK is an important voice in that, but it is a multilateral decision. I believe there are 12 members representing the 190-plus parties to the UN Climate Convention and I understand that they will likely meet in the next few weeks. We are hoping to have clarity by the middle of June.

Q44 **Chair:** Do you have good liaison with the COP26 President, the Secretary of State for BEIS and his team, and the Cabinet Office about where they are heading at the moment, having made the decision to defer for obvious and proper reasons? Are they able to devote bandwidth to this at present, given the other distractions?

***Nigel Topping:*** The COP26 team, led by Peter Hill, is full steam ahead, so they are full bandwidth. There are obviously some restrictions because of home working. For example, the international diplomacy cannot carry on as it would have done, so diplomacy with China is not possible physically, although that is still continuing. I work closely to align Gonzalo's and my team's work with the COP26 team. They are going full steam ahead although, as I said, some things are delaying them. Of course, the Secretary of State has much broader responsibilities and understandably has been very focused on the implications of the Covid response for the business community in the UK, but he has still been very engaged in some of the international fora, like the Placencia Forum put on by the small island states a few weeks ago and the Petersburg Dialogue that Germany and the UK co-hosted a couple of weeks ago, which is an important diplomatic milestone in the climate diplomacy year. They are still very engaged but, obviously, with some restrictions. The COP team, which is less publicly visible, is very much still going full steam ahead, and we are working very closely with them.

Q45 **Chair:** Can you indicate what has happened to the Chinese Biodiversity COP, which was due in September-October?

***Nigel Topping:*** It was due in October and, like the climate conference, has been postponed. I don't think we know the date. I think it is similarly somewhat in limbo at the moment, but I expect that will also be cleared up in the next couple of months. Of course, there is an important link between the two because of the important role of nature-based solutions in addressing climate change.

Q46 **Chair:** Thank you very much indeed. We look forward to hearing more from you shortly.

Fiona, could you give an indication of the significance that you see the financial community in the UK can play in leading green finance solutions to climate change? We have heard from Mark Carney publicly—given his new role following his finishing as the Bank of England Governor—that he thinks the UK has a pivotal role to play. Can you explain how the Principles for Responsible Investment fits into this and give some scoping of the role as you see it?

***Fiona Reynolds:*** I completely agree with Mark Carney. We worked closely with him in his role at the Bank of England and continue to work closely with him in his role with COP26.

I was talking about our signatory base. All of our signatories commit to incorporating environmental, social and governance factors into their investment process. Pre Covid-19, climate change was the No. 1 issue that they were focused on. It was the issue that they wanted the most input and guidance on, both from us but also from Governments. That is true in the UK as well. One of the things that our signatories are really committed to, even though we have Covid-19, is ensuring that climate remains on the agenda.

Thinking about why this is important and how we can help the green finance agenda here in the UK and across the world, our signatories are mainly investing pension fund money, so they are investing in a different way. They are investing very much for the long term. For example, if you are a 20-year-old today, you are going to be in your pension fund for 50 years and the idea that climate is not going to impact you is just not true. In fact, it already is if we think about stranded assets, insurance companies, increased flooding, natural disasters and so on. Our signatory base very much thinks about climate from a risk perspective—what is the risk to my portfolio?—but they also think about it as an opportunity, "What are the opportunities that will be available to me, as an investor, as the transition to a low-carbon economy happens? How can I get in on those investments?" These are all very important issues. Of course, they would like to see a pipeline of green projects from the UK Government.

Our signatories are also universal owners. They are invested across the whole economy, so they cannot just divest from the whole global economy. They participate in it. Therefore, what Governments do and how Governments aid the transition is extremely important. What we want to see as part of the green finance from the UK is clear, consistent policies and a clear, consistent direction going forward that will help investors. We would like to see a pipeline of projects as well.

Of course, investors also use their leverage. We are major shareholders in major companies around the world, so we influence companies that we have capital allocated to in how they are transitioning to the low-carbon economy. We have a number of initiatives that many UK pension funds are part of. For example, the PRI is part of Climate Action 100+, which has 450 investors and over $40 trillion in assets under management. It is the largest investor-to-corporate engagement that has ever taken place, with three major asks: one is an emissions reduction target in line with the Paris Agreement, one is reporting in line with the TCFD and one is understanding how boards are thinking about this transition, "What are your governance arrangements?"

We also have a net-zero asset alliance. It is not just us telling companies what they need to do to transition; it is also making commitments to a net-zero target across the whole portfolio for those in the alliance, which is an important component. The other in the green finance issue is the TCFD. The PRI has been part of the TCFD taskforce. Our seconded staff were fed into its development. Within our own reporting system, which all of our signatories have to report through, since this year we have mandated reporting of the governance and strategy indicators, and we work across deforestation, water and plastics.

Our investors are very much looking at: what are the opportunities and what are the risks? They are very keen to invest in green finance under the right circumstances, so we need the right policies in place and the right pipelines from Governments that are at scale and investable. I think that the role the finance sector in general can play is significant. As I said in my opening remarks, climate change will not be solved by the finance sector alone, but climate change will not be solved without the finance sector.

Q47 **Chair:** Could you explain for complete clarity, is PRI a global organisation headquartered in the UK?

***Fiona Reynolds:*** Yes, we are headquartered here in London, and we have around 500 of our signatories based in the UK, so most of the major investment managers and pension funds that are all headquartered in the UK.

Q48 **Chair:** Do people sign up to the principles in order to demonstrate to their shareholders their conviction on the environment for ESG reporting purposes, or is it your sense that they have a genuine belief that this is the right thing to do and, by joining your principles, are changing their behaviour?

***Fiona Reynolds:*** I believe that the vast majority of them sign up because they believe in the principles. They understand that climate is a risk to them and they join also understanding that, as an individual organisation, they cannot tackle this alone so they need collective action. They join other investors in coalitions to be able to work together to bring about change.

Q49 **Chair:** Do you have any responsibility for measuring or reporting on the change that your members are undertaking, or is that left to the members themselves?

***Fiona Reynolds:*** As a signatory to the PRI, you have to report annually. If you do not report, you are delisted; you cannot remain a signatory. In terms of climate, there are a whole lot of climate indicators—some that include some of the TCFD indicators—that you must report against. Those reports are made public. We also score our signatories annually about their progress. That is the commitment that you must make.

If you are part of the asset owner alliance, as one of our signatories, that goes further. They have committed to net zero by 2050. That is a long time away and it is easy to make that commitment. What that group is working on with us at the moment is: what are the near-term targets and near-term metrics, how will we measure things? 2050 has to be made up of a whole lot of short-term pathway indicators and actions as well. We are working on those now and, once those metrics are in place, we will report against those on an annual basis as well.

Q50 **Alex Sobel:** The finance sector played a hugely important role at COP21, with the French institutions in the lead. For instance, Crédit Agricole pledged $60 billion of new finance. Nigel, can you outline the importance of the finance sector and its role in the potential new agreement at COP26 in Glasgow?

***Nigel Topping:*** It might be worth clarifying that there is a very big difference in the dynamics of COP21 and COP26. They are both COPs. They are both conferences of the parties, but at COP21 in Paris we were all converging to try to get one agreement, one document, over the line. I was at the We Mean Business centre. We were particularly working to make sure that the business community was sending a very clear, consistent message to all the countries negotiating of what they saw as important to the business community, a clear long-term goal, the ratchet mechanism, arrangements for carbon markets and so on. Then supportive voices from the private sector, whether finance—as Fiona can talk to in more detail—or business, were really important in setting the overall tone.

Now we are much more in the implementation phase, so it is down to individual countries to set their plans, their so-called nationally determined contributions, and the role that the private sector and other non-state actors can play in doing that. There is still a role in setting the tone for ambition. Some of the initiatives that Fiona has talked about, like the Net-Zero Asset Owner Alliance, are very important. There is now something like $5 trillion-worth of assets under management—that is pension and insurance money—committed to net-zero economies. That is a very strong signal to politicians around the world. That is the sort of story that I will tell when I have a chance to speak to Ministers around the world, and it is just beginning. It was only launched last year. That signal is really important.

Then there are the actions of putting the money to work to finance renewable energy projects, to finance vehicle charging infrastructure projects and to differentiate the cost of capital and tilt towards companies that are clearly committed towards implementing the pathway to zero-carbon economies—historically, the view of risk has been that if something has been around for a long time, it is lower risk. There has tended to be a lower risk premium on fossil fuel investments and a higher risk on renewables, seen as the new thing coming. That is changing now, as investors, businesses and policymakers start to understand the very real risks of continuing to invest, particularly, in new fossil fuel assets that are increasingly likely to become stranded. As our understanding of the science ratchets up, the policy response is likely to get even clearer and stronger.

There are two main roles for finance here. One is in setting a long-term signal that the private sector knows and is committed to transforming the economy to a zero economy. The other is the practical allocation of capital and differentiation of the cost of capital, which changes the way that the private sector, on the business side, responds to those financial signals.

Q51 **Alex Sobel:** If we do have runaway climate change, there are significant risks to the UK in flooding, farming and heatwaves. How resilient is the UK economy to these risks? Would the UK be able to function in a scenario where we pass 2°C warming? Would the business community and the finance sector be able to cope with that scenario?

***Fiona Reynolds:*** The UK economy is going to be as resilient as we make it, and that is up to Government and investor action. The UK has made its commitment to net zero by 2050 and, of course, we welcome this leadership. As I said before, what is now needed is a clear strategy. Investors are committed to a 1.5°C world, and to net zero, and they want concrete policies that will deliver net zero. That is really necessary to give investors certainty, particularly investors who are investing billions upon billions upon billions of dollars in the long term. They need to know what that direction is to start informing their decision-making today.

From the UK's perspective, it is fantastic that we are having COP26, and we need to show leadership from the UK Government in advance of that. I was talking about how, within our own organisation, we are setting shorter-term plans and shorter-term metrics and targets. That is what we need to see from the Government. Coming back to your point, what we need is an orderly and planned transition from the Government. That is going to be far less costly to the economy and to investors than if we leave everything too late and we have to put on the emergency brakes and bring in emergency measures and policies, like we are seeing happening now with Covid-19.

Within our research, we have focused on eight areas where we think Government can pull levers to aid the transition. Some are setting a coal phase-out date, which the UK has done. Others are about carbon pricing. Academics have estimated that we need a carbon price of around $40 to $80 a tonne by 2020, and $50 to $100 a tonne by 2030. However, the EU trading scheme, of which the UK is still part, is currently trading at £14 and could fall to as low as £5 later this year if the crisis continues. A much higher price, a bigger floor, is needed if we are to make sure that the UK is resilient.

The UK is committed to electric vehicles and to phasing out the internal combustion engine, but this date could be accelerated. We need more focus on carbon capture and storage, on zero carbon energy, on energy efficiency in particular, and on nature-based solutions. In the agricultural sector, how do we get more efficiency from technology but, also, how do we get more climate-friendly techniques? These are the areas that we think should be focused on by Government and would be welcomed by investors. These are things in which they can invest in a low-carbon future.

I have a couple of stats. From our research, carbon-intensive firms are likely to lose 43% of their value thanks to policies that would be designed to combat climate change. Agricultural firms with high exposure to sustainable biofuels and non-meat protein sources could gain at least 10% of current value. Of course there are going to be winners and losers as investors. This is why we want to understand the plan; we want to invest in the winners and not be invested in the losers. Those exposed to under-pressure sectors, such as cattle, may lose between 15% and 43% depending on their links with deforestation.

Then again there are huge opportunities. The car makers that make the swiftest transition to electric vehicles are predicted to increase in value by 108%. In job creation, 11 million people are employed in the renewables sector: 39% in China and 60% in Asia. In the UK there are over 110,000 jobs in renewables, around 40% of those jobs in wind power. We see that job creation: offshore wind projects are helping to revitalise coastal communities in the East Yorkshire region, in the Isle of Wight and other areas; and a £310 million investment by Siemens and one of our signatories—the Dutch pension fund ABP—in turbine assembly and blade manufacturing that has created over 1,000 jobs in Hull.

As we emerge from Covid-19—and I am sure we will talk about this—we are going to need job creation, obviously. We need to ensure those jobs are green and accelerate the transition to the UK's net-zero target so that we are becoming more resilient. We must keep the world to 1.5°C, not 2°C, not 3°C. That will not be sustainable over the long term. As I said, investors are committed to the transition and will support Governments in their aim to transition to a low-carbon economy.

Q52 **Alex Sobel:** On a scorecard of how Government policies encourage investment to achieve net zero—it is clear that on coal for mains generation the Government are on green—would I be right to say that in other areas we may be more on amber, or even on red, and the Government need to step up policy to ensure that private investment is flowing into those areas so we meet the transition target? Is there also an issue around the need for public investment and private investment to come together? In the US there is a big push for a green new deal. Is that something the private investment community would like to see?

***Fiona Reynolds:*** Absolutely. The EU has also come out with a green new deal and the US is talking about it. That is absolutely what is needed. The recovery from Covid-19 is the perfect opportunity to implement this. How do we stimulate the economy, how do we stimulate jobs and how do we tie those to the net-zero commitments that the Government have made? Investors working with Government and public-private partnerships will be needed and will be welcome.

**Chair:** This session is being broadcast and acronyms used by witnesses might not necessarily be readily understood. Could you try to avoid acronyms? I think you can use COP26 but please spell out everything else.

Q53 **Duncan Baker:** If we want to see green finance grow and the take-up expand, what are the main influencing mechanisms available to the UK Government, regulators and the Bank of England to promote it? If the initiatives are currently voluntary, will the take-up be enough in the sector?

***Fiona Reynolds:*** First, I want to focus on what I see as one of the major barriers in this country that is not necessarily a barrier in other countries. That barrier is the way the pension system is set up. You might not see a direct correlation, but I was talking about who are the world's major investors. They are big, major pension funds around the world. In the UK the system is highly fragmented. There are over 30,000 different schemes and most of them are very small. They are micro schemes, so they struggle with the basic issues of sustainability and, in some cases, thinking about climate change is not in their capabilities.

If we look at other countries as an example—I worked in the Australian pension system before I came to the UK. If we look at who is funding the

UK infrastructure, in the main, it is very large Australian and Canadian pension funds, or the Dutch. Why is that? It is because they have been consolidated and they have scale. They are massive and they can invest in unlisted assets in a completely different way.

I talked earlier about how all our signatories must report annually. Within our reporting framework, we find a direct correlation between the size of a pension fund and how well it does on ESG factors, both globally and in the UK. Those with less than $1 billion in assets under management performed the worst; those with more than $10 billion performed the best. If the UK wants much more injection of capital from its pension funds, it needs to tackle some of these issues.

The other thing is that there needs to be strong oversight of master trusts and contract-based schemes. Of the 38 authorised master trusts that currently exist in the UK, only 10 appear to hold funds that employ any ESG screening or tilts to do with climate, any of those issues. This is concerning, considering that almost 100% of master trust members are in their provider's default fund, yet the default fund does not consider these issues.

Also, most of the contract-based schemes have independent governance committees that oversee them, but there is a lack of independence. The big financial institution that has these master trusts employs the oversight committee, so that can lead to a lessening of questions about these things. The EAC could scrutinise these schemes, as it did with the 25 largest pension schemes in 2018 under the green finance inquiry.

Also, you could be encouraging increased allocation by UK defined-benefit pension funds to real assets, including infrastructure. As I said, things have been done with the local authorities' pension funds but, in the main, the way the UK system is set up means that most of the funds tend to stay away from holding direct unlisted assets because they have these perceptions that they must do daily pricing and so on. They are all serious barriers.

The other thing is that we need to see mass adoption of the Taskforce on Climate-related Financial Disclosures recommendations by UK investors and listed companies. Having this will play a major role in addressing awareness and barriers. If all UK companies were reporting along the TCFD, as investors we would have access to much better information about what companies are doing. For example, Canada has just announced that all companies that are receiving Covid-19 large employer emergency funding will have to commit to TCFD.

We think that the UK Government making TCFD mandatory will be a competitive advantage not a disadvantage. This is an industry-led initiative that the industry is behind, and it is being adopted internationally on a voluntary basis already, but it is important to bring everybody along.

Investors also want from regulators and the Government a common understanding of what is green to guard against greenwashing. There is a need for common classification of what assets and financial products constitute being green or low carbon, and I think the integrity of the financial markets requires this. The EU has produced the EU Taxonomy, which is a tool that translates goals like the net zero by 2050 goal into tools that companies can work with, and it is a powerful tool.

The EU Taxonomy is based on net zero by 2050. It is the most advanced and developed taxonomy that can support investors implementing the UK's commitment to TCFD. With the changes with the UK coming out of the EU, it is important that the UK aligns as much as possible with the EU Taxonomy that investors are already starting to use. Within our signatory base, we have a group of practitioners who are implementing the Taxonomy.

They are all things on which the Government need to think outside the square in the structure of the finance sector. Then there are the tools that the sector needs to be able to implement green finance more effectively and to understand what is green and what is not green, so that money goes to the right place not to the wrong place.

Q54 **Duncan Baker:** That is really useful, and I am glad you bring up TCFD. I will just clarify that because our Chairman said not to use too many acronyms. At the moment, the Government's green finance strategy expects business to align with the Taskforce on Climate-related Financial Disclosures but, in practice, how effective do you think that approach is?

***Fiona Reynolds:*** Well, "expect" is a good starting point, isn't it? It is a good signal, but that means you get a whole lot of good organisations that are a bit more advanced in their thinking and are doing things. To bring along the tail, and to get the consistency of reporting we need to make sure that, as an investor, I have good comparable information, I need everyone to be reporting.

Now that so many people are behind it—like I said, over 2,000 of our signatories reported this year along some of the TCFD indicators in our reporting alone—we need to move to a date when it becomes mandatory. That would be a terrific initiative out of COP26, because it means that other countries that look to the UK on green finance will follow. As investors, we don't just invest in the UK; we invest globally. It is a fantastic global standard for us.

Q55 **Mr Robert Goodwill:** We quite often come across the law of unintended consequences. We pat ourselves on the back because we have reduced the amount of $CO_2$ we produce in the UK and across western Europe, but we conveniently forget that many of the energy-intensive industries are now concentrated in places like China and Korea. Therefore, just because we can point at a blast furnace in Redcar that is not operating, it does not mean that we are not importing steel produced in exactly the same way.

Is there a risk that we may see these incentives, which are put in front of the financial industry, resulting in UK companies divesting themselves of assets around the world that are more energy intensive, or coal mines in Colombia, and that we might see the risk of either the financial companies themselves or those businesses moving their headquarters abroad in order to look like they are complying or to avoid the constraints we are putting upon them? Is there a risk that the financial sector and businesses might move overseas because of these climate-related obligations that we are placing upon them?

***Nigel Topping:*** When we are thinking about green finance flows, it is not just about what the finance sector does. It is about how clear the signals are from the market, which of course is a mix of clear policy and what the market itself is doing. If I take a couple of examples: we talked earlier about the phase-out of the internal combustion engine, where the UK has set a strong policy signal and is now ratcheting it to be even stronger, but there are others setting clear policies, like the biggest fleet operator in Europe, LeasePlan, which owns nearly 2 million vehicles. It is committed to going 100% electric by 2030. The city of Paris has said it is going to ban combustion engines by 2030. Mercedes, the inventor of the combustion engine, has said it will be net zero by 2039.

They send signals to policymakers, who maybe can be more confident about ratcheting, but they also send signals to the market. That means, for example, that if you are a steel producer, whether in the UK or China, you now know that you will not be supplying steel to Mercedes in the 2030s unless you are producing zero-carbon steel. We know that is the reason why ArcelorMittal committed to producing zero-carbon steel in Europe by 2050, because they see the direction of travel in policy and market signals, demand signals from the Daimlers and from the house builders, the sectors that use a lot of steel.

There is always a risk if people get too out of kilter with the rest of the world and the rest of the market. One of the things that we are working hard to do is to try to make sure that everybody is moving more or less in lockstep. If you want to sell a car that is going to be driven on the roads in the UK, you are not going to be designing a combustion engine car anymore, wherever you are building them. We have a very strong sense, as the non-state actor community, that these transitions are inevitable and are getting faster and faster. As I forewarned, I will keep going back to the combustion engine. In 2016, when we woke up from Paris, no one thought that combustion engines would be banned until 2060 or 2070. A couple of years later, the UK and France were saying 2040 and now people are saying 2030.

Our understanding of how fast things can happen keeps coming forward in time because we are not very good at the exponential maths of industrial transformation. There is a risk if you get too far ahead, but it is almost impossible to catch up if you get behind, which is maybe a bigger risk. It is an investment skill of investing not too late and not too soon, where policy and market signals going in lockstep can really help.

Q56 **Mr Robert Goodwill:** Nigel, it sounds like you are more optimistic that we will be making progress globally than, for example, a similar situation where we have companies divesting themselves of investments in the tobacco industry. That has not stopped very many people around the world smoking or producing tobacco. From what I gather—and maybe Fiona might want to add something—there is more of a global feeling that we can make progress, and getting everyone on board, including the United States, surely must be the key to that.

***Fiona Reynolds:*** I definitely think there is. You mentioned tobacco. A number of our signatories divested from tobacco. They do that because engagement does not really work with the tobacco companies. You cannot ask them to change their product. If you are engaging, as we have through Climate Action 100+, with the biggest emitters in the world, with the oil and gas sector, you can bring about change within those companies. Directly from Climate Action 100+ engagements, in the last couple of weeks we have seen Shell and Total come out with major announcements committing to change their whole operations to net zero by 2050.

Going back to your original point, the Shell commitment is also looking at all of their suppliers, their scope 3 emissions, every sector that they work with and making sure that they are all getting to net zero as a total. That means that moving things to other countries will not really work. That is why I think the business and the investment sector have such an important role to play in this transition.

Of course there will be some opportunist investors who invest just for the short term, but the vast majority of institutional money is in long-term investment. They know that a transition to a low-carbon economy is happening and that they need to be on the right side of it, or they risk losing substantial amounts of money.

**Mr Robert Goodwill:** Thank you. I think that is very encouraging.

Q57 **Feryal Clark:** We have been told that there are challenges in leveraging private finance for large but necessary decarbonisation projects, such as the widespread rollout of energy-efficiency measures. What are the challenges with leveraging that private finance?

***Nigel Topping:*** That is a really good question. There are different challenges with different types of problem. Energy efficiency has some specific dynamics. It tends not to be about big infrastructure projects, unlike energy generation where the issue is: what is the cost of capital for the overall project of putting up an offshore wind farm? Of course, the UK Government have a very good track record of driving that, and we see that driving down costs and creating jobs.

Energy efficiency is much more granular. It is much more about appliance standards, so the levers are different. The levers tend to be about product standards. The Japanese Top Runner approach is a very good approach; just keep on raising the standards and that will drive innovation.

I was talking to Dr Rhian-Mari Thomas, who leads the Green Finance Institute. They have been doing a lot of work on the measures needed to accelerate capital flows for retrofitting buildings because, again, we have the agency problem of landlords and tenants and the long-term value creation there, so there are not necessarily the right market incentives. There are different solutions needed for big infrastructure projects, like power generation, and where there is a fragmentation or an agency issue that needs more financial products or product standards. I am sure Fiona will have some thoughts as well.

***Fiona Reynolds:*** You have sort of covered things, but from an investor point of view—and we are talking about very large investors—it is about the scale of the projects. You have to spend a huge amount of money just doing the due diligence on projects, so you want projects that are at scale, investable and bankable. It does not mean you can invest in every small project unless they are packaged up in the right way.

This is where, coming back to my earlier point, we need to see the UK Government work with the industry on green finance in developing that pipeline of projects so that they are bankable and investable. Public and private finance institutions have played a key role in the UK decarbonisation efforts to date.

On infrastructure funding, going back to what Nigel mentioned, financing the UK's industrial strategy and the transition to net zero will require the mobilisation of a large amount of private sector funding for infrastructure. It is estimated to be about £393 billion by 2031. We have had public institutions, such as the former Green Investment Bank and the European Investment Bank, that played pivotal roles in financing the low-carbon infrastructure for the UK. The former Green Investment Bank invested £3.4 billion and attracted £3 billion from the private sector—sorry, £3 for every £1 that was invested. The EIB has also contributed significantly, investing over $1 billion just in 2006 alone. Both institutions specialised in that early project development, and that is really important because then investors can come in later once things are up and running.

That kind of partnership is important. To maintain investment from the private sector, the UK will need to develop contingency plans to safeguard the role of the former GIB and the EIB, the role that they have played in the direct finance scene and the derisking of green infrastructure and other developments in the UK, including technological innovation.

If we look at that, European institutions have also played a key role in funding early-stage green technology in the UK. The European

Investment Fund has been a cornerstone investor in UK venture capital funds, investing more than €500 million across the UK and over €100 million in cleantech. While the Government have announced a £20 million clean growth venture capital fund, it is nowhere near the order of magnitude. It is much smaller than what was previously provided.

In financing innovation in both small-scale projects and big infrastructure projects in the UK, it is looking like we are facing reduced access to public sector investment. I do not think that is such a good thing. The upcoming national infrastructure strategy, which was due to be published this month but appears to be delayed, should address how we are going to overcome this funding gap if we want to address the issues that you have mentioned, otherwise we are not going to be able to get there. It needs a lot of thought.

**Chair:** The Government have announced a £750 million recovery fund to do match funding with development capital for R&D. Is any of that coming into green areas? Shailesh, perhaps you can pick that up.

Q58 **Mr Shailesh Vara:** Fiona, you have mentioned a number of international funders, but do you think that we ourselves should be establishing a new investment bank to reduce risk and to help leverage private finance?

***Fiona Reynolds:*** I do. I think I covered that just now in talking about what was there. We had the Green Investment Bank, and there has been the EIB as well. Now we don't have those institutions in exactly the same way, and what has been promised is far less than what was there before. What is the solution? As I said, I think that needs to come out when the Government announce their new national infrastructure strategy.

We need to look at how we are going to address that funding gap. The Government need to tell us how that will happen, or we are not going to be where we need to get to. Nigel might have some other thoughts, but I do think it is an extremely important issue.

Q59 **Mr Shailesh Vara:** You have covered the point that we need to have that finance, but what do you think would be the central feature of it? Would it be that those who want the finance have very strict criteria, or should there be a bit more lessening of the regulations if we are going to achieve our objectives?

***Fiona Reynolds:*** That is very difficult to answer. It depends on the project. I am not in favour of lessening regulations as such. They can under certain circumstances, but we need to make sure that we are attracting that capital and it is done in a way that is attractive to the private sector. As I keep saying, I think the infrastructure strategy is a great example and is an opportunity to do that. Nigel might have some other things from a business perspective that would be attractive.

***Nigel Topping:*** I won't comment on individual institutional structures in the UK, but what I am seeing globally is that, increasingly, this is seen as a competitiveness issue by businesses and investors. Therefore, it would be helpful for Governments to see this as a competitiveness issue. In other words, this is an inevitable transition. How much of that economic pie of growth and jobs are Governments around the world going to garner for themselves? As Fiona mentioned, this is where infrastructure strategy and industrial strategy come together.

One thing that I am looking at closely—and maybe it is starting to be on your radar as well—is the hydrogen economy. The Energy Transitions Commission published its report "Mission Possible" about 18 months ago, looking at how we can get to zero carbon in what we have traditionally called the heavy emitting sectors: the industrial sectors and some of the steel that we referred to earlier. Steel, cement, plastics, shipping and aviation are all historically considered almost too difficult to touch.

Now we know there are technological pathways to zero, and many of them rely on hydrogen. In shipping, for example, it looks like we will need ammonia as fuel, which is basically a big hydrogen carrier. We will need fuel cells for long-distance trucking, and we will need hydrogen for high-temperature heat in some of the chemical processes. The Energy Transitions Commission calculates that we will need 10 to 15 times the hydrogen that we have now. That will all need to be green hydrogen, which means that it is produced by renewable electricity. We will need, globally, five times the amount of electricity we have now.

You start to see a road map for the growth in these technologies. Hydrogen needs policy clarity; it needs early demand signals like committing to blend 5%, say, in the thermal grid so you can mix hydrogen with gas in the thermal grid, like committing to early-stage projects. There are some good examples in the UK in the north-east industrial clusters where that is starting to happen.

This is what business is looking for, long-term policy clarity, and then particularly help in what we sometimes call "the valley of death" where the cost of the technology needs to be driven down by supporting early-stage installations until the market can take off with the exponential change.

Those are the sorts of things I would point to that business is looking for. Investment will flow and jobs will be created where those conditions are created, and these are huge markets for the future. They may be very low now—electric vehicles are only 3%—but it will be 50% or 100% within 10 or 15 years. Those who are ahead of the curve will capture a disproportionate share of the market for growth and jobs.

Q60 **Ian Levy:** Good morning. I have two questions, and I will direct my first question to Fiona. Could you please tell me your views on the longer-lasting impact of Covid-19 on the economy and society in general? What legacy do you see the country being left with as we move forward into the future?

***Fiona Reynolds:*** I see that there are huge opportunities from Covid-19. That might seem strange to say, and I obviously wish Covid-19 didn't happen, but what I am seeing, when I am talking to investors, business and Government, is that there is a much greater understanding of the interconnectedness of everything. If you do not have healthy people and you do not have a healthy planet, you are not going to have a healthy economy.

It is very clear from everyone, from our organisation to many others, that when we are looking to the future we need not just to talk about getting back to normal but that we need a new normal. Of course, at the moment the near-term focus is on crisis management and on immediate relief, but climate problems still need to be resolved. We all know, from listening to the science, that if we do not solve climate problems, we will only see more epidemics around the world, particularly as we start to take more human habitation into animals' space.

I feel hopeful. I want us to emerge from Covid-19 with a recovery plan that is all about how we make a greener UK, a more inclusive UK. How we make the recovery sustainable, inclusive and green is extremely important.

Investors are looking for the UK to uphold the Paris agreement. How do we make sure that the recovery planning is in line with the Government's 2050 net-zero target? This should be reflected in the UK's infrastructure strategy and the Treasury's net zero review. We also need to look at the stimulus money, and we need to look at what conditions should be attached. I do not necessarily think it should become condition-free. We need to make sure it is aligned with net zero.

If I take the airline sector, because it is in the news every day, if airlines were bailed out, for example, should that be linked to emissions reduction, to innovation in biofuels? Should the oil and gas sector, if it was given any bailout money, have conditions about emissions reductions? I definitely think so.

The Government need to think about the opportunities for investment: investment in wind and solar, accelerating electric vehicles, policies that will accelerate the transition but that will also be job creating. If there is one thing that we know we will need, it is jobs, and we need those jobs to be green jobs, in energy efficiency, in retrofitting buildings, in nature-based solutions, protecting forests, nature—all of those—making the cities greener. These are all the things that we have to look at. Let's not bail out and continue to prop up unsustainable sectors. Let's focus on the world of the future and how we mobilise money that way.

There are other opportunities, if I may. Obviously, we also have to look at how we are going to make up all the taxpayers' money that has been spent in recent times, and very rightly spent, but there are things that we could do there as well. We could do things like ending fossil fuel subsidies. As I have always talked to, we need to look at increasing the carbon tax to a meaningful level—that would increase revenue as well—and at building efficiencies.

I would like to see the Government embed investors in the recovery. To work with the private sector on the transition to a low-carbon economy, combined with Covid-19, investors will look for opportunities that aid the transition. Coming back to that—I sound like a broken record—develop the pipeline of investable products, then we will be right there with the Government. Let's invest in things like low-carbon transport, all of those sorts of things. It is such a great opportunity to think about the world of tomorrow, not the world of the past.

Q61 **Ian Levy:** Thank you. I appreciate that.

Could I direct my second question to Nigel, please? Carbon emissions have continued to increase since the 2008 financial crisis. What can we learn from the actions that were taken in response to that crisis as we tackle the economic crisis of Covid-19 that we face at the moment?

***Nigel Topping:*** We are all looking at analogies, aren't we, whether it is the post-second world war or the 2008 crisis, for lessons?

First, clearly, a couple of things are very different here: this is not a financial crisis but a health crisis. Secondly, we are in a very different shape in terms of the availability and understanding of technology. There is no doubt in everything that we are hearing from businesses, investors and cities that their immediate focus, rightly, must be on saving lives, on health and on preserving employment. We have a human health crisis; we do not want a human unemployment catastrophe.

It seems to me that the big difference is that the science is clearer, and the costs of technology, the costs of solar and wind, have come down precipitously in the last 10 years so that new renewables are now cheaper than existing fossil fuels in many parts of the world. That is one reason, for example, why we see coal plants still being shut in America even though there is a President promising to bring back coal; no one will invest in a new coal plant. The technology is over for generating power.

As an industrialist by background, the other big lesson for me would be to make sure that recovery packages are focused more granularly on the shape of the economy and the shape of the society that we want to build, not so much of a big macroeconomic boost. If we just build the economy back to the same size but we exacerbate inequality and we do not build the industries of the future, we are not building a resilient economy for the future. We need to be more granular.

So far, I am encouraged. Around the world, there is a general realisation that it is not just about quantitative easing to get back to the size of the economy. It has to be the quality of jobs and the quality of industry. As Fiona indicates, we are using this as an opportunity to accelerate transition to the industries of the future. We know that, like wars, recessions or shocks are opportunities to accelerate change. The next six to 12 months are going to be a real opportunity for us collectively to decide—in the UK but also globally—what industries we want. What jobs do we want? What kind of society do we want in the future?

**Ian Levy:** I certainly think this is an opportunity for us to take something positive from such an awful situation. Thank you.

Q62 **Marco Longhi:** I have two questions for both witnesses, but I am happy for the witnesses to decide which they might prefer to take, unless they both want to.

My first question is about how we might look at incorporating the value of natural assets and other forms of capital into our reporting and decision-making for both the public and private sector scenarios, but specifically, if that is the case, how Covid-19 might have an impact on that.

***Nigel Topping:*** That is a really interesting question. We often talk about climate change and other ecological value destruction being problems of economic externality. In a way, I take your question as: how do we internalise the value of those services, like a climate that protects us and keeps us in the right temperature band, or the other services that nature provides, whether it is filtering water, providing protection against severe weather events or being a source of biodiversity?

The classic economic response would be to put a price on the externality, so put a price on carbon. That is one solution, and we know that that is effective in some sectors. I have been very influenced by the work of Michael Grubb at UCL, who points out that—for example, as we have done in the UK—putting a floor price on carbon really helps accelerate the transition from coal to gas and renewables in the energy sector, but it does not have any real impact on car purchase because there is already quite high taxation, and the marginal impact of a $50-a-tonne price on carbon would only be about $100 a year on a mid-sized car. That is not enough to affect the decision, which is behaviourally dictated much more by things like, "How cool I look" or "How safe I feel." Putting a price is one thing and we can extend that to other environmental externalities, like water and biodiversity, although sometimes it might be harder.

Another one is transparency, so the TCFD is really important. The other one is embedding the limits or the planetary boundaries—as Johan Rockström from the Potsdam Institute and others call them—into markets in other ways. One thing we have seen increasingly becoming a norm is the implementation of what we call science-based targets for climate. That is a mechanism by which companies and cities can set a target that is consistent with the global goal. They can say, "We are setting our target that is consistent with the global goal," and increasingly investors and citizens are demanding that, and some Governments are even starting to mandate that.

Most of this work so far has really focused on climate, so science-based targets, carbon pricing and the Task Force on Climate-related Financial Disclosures. There is work going on. There are science-based targets.

There is now a Science Based Targets Network looking at applying the same approach to land, water and biodiversity. There has been some talk of the need for a taskforce on nature-related financial disclosures. The Dasgupta report from Professor Dasgupta is coming out soon, which will help us understand the economic implications of those externalities from nature that are not being priced into markets.

There are various mechanisms—pricing is one, standards is another, disclosure is another—but we are much further advanced on climate than we are on other elements of nature.

***Fiona Reynolds:*** I have talked quite a bit about TCFD and its importance. The other thing from the investment community's point of view—if I can go down a bit more micro—is definitely the transparency and disclosure angle. Coming down to all of these issues: how do we get the right disclosures? We are very much focused on: how do we get that meaningful data? How do we get those meaningful disclosures so we can make decisions, and that there is, therefore, transparency from business and sectors?

The other thing that we have been focusing on is really the whole issue—and within this we have been using the sustainable development goals—of thinking about how investors can think more about the outcomes of their investments because they don't always. They invest, and they think, "I am trying to bring emissions down. I am trying to do all of these different things. I am trying to use water more efficiently." How do you measure the impact of your investments?

We have been part of a coalition of organisations working under the umbrella of the Impact Management Project, trying to drive this forward and solve some of these problems, but it is still very much in its early infant stages.

Q63 **Marco Longhi:** Again, my second question is to either or both witnesses. It is quite straightforward: what impacts is Covid-19 having on investor and other non-state actors that are important to COP26?

***Fiona Reynolds:*** If I talk about the investor community, we and our investors were quite supportive of COP26 being moved because we see COP26 as absolutely essential. COP26 cannot fail, in our opinion. Therefore, it is right that Governments, business, investors and many other parts of civil society are trying to deal with the immediate impacts of Covid-19. Of course, this is not an excuse not to do anything. This gives us a longer lead time to prepare.

Our very large signatories have not dropped climate from their agendas. They are preparing themselves. While they are, of course, allowing businesses room, and supporting the businesses in which they are major shareholders through Covid-19, they still expect those businesses to be focusing on longer-term issues. Yes, we must deal with the immediate—

of course we must—but that does not mean we cannot focus on the long term.

I mentioned before that, just in the last couple of weeks, there have been major announcements from Shell and Total, so we are seeing that companies are able to focus on the short term while focusing on the long term. We are right behind COP26. Investors have a lot to contribute to COP26. We are working closely with Nigel's team, we are working closely with Mark Carney's team, and we want to do as much as we can to support the UK Government in having COP26. We are still very much working on it. We have not forgotten about it. We have not dropped it in any way.

***Nigel Topping:*** I will just add a couple of thoughts. I have a couple of quotes. Obviously, I am tracking this obsessively because it is my job to make sure that COP26 is a success.

Clearly, the immediate impact is human in terms of health and insecurity of employment, but the leadership impact right now is bandwidth constraint. Whether you are a Government Minister, the CEO of a business, the mayor of a city or a chief investment officer, this is occupying a lot of your bandwidth. How do you get your organisation through this unprecedented disruption?

As Fiona said, I have not heard one voice of dissent among all the non-state actor communities around the world about the rationale for delaying. Everyone recognises this bandwidth constraint for leaders, and we need leadership attention across non-state actor and Government communities to drive up the ambition on the road to Glasgow. I am really encouraged by the response of the international community and the business community.

I just have a couple of quotes, if you will indulge me. You may have seen Bernard Looney, the CEO of BP, another one of the oil companies that have publicly committed to net zero by 2050, in part as a result of the Climate Action 100+ initiative that Fiona talked about, although we know the devil is in the detail and we are waiting for some of that detail at their investor day in September. He said—and this is an oil and gas CEO—a couple of days ago, in the *FT*, "Climate change and the drive for the world to get to net zero have not gone away."

Ola Källenius, the CEO of Daimler and Mercedes—as I mentioned earlier, Mercedes, inventor of the combustion engine, has committed to net zero by 2039—took time out to bother to write a blog about this issue, and said, "The fight against the pandemic must not be an excuse in the fight against climate change." Allianz Global Investors: "No reason for Governments and investors to step back from corporate climate objectives. If we do this right now, it will backfire."

I think that is the key. All of these leaders—we have the same from cities and investors all around the world—understand that tackling climate change is essential because the value destruction that will follow, at an economic and a human level, if we do not tackle it will be enormous. All of us will be dealing with it for the rest of our careers and handing it on to the next generation. None of that goes away.

From the leaders that we work with, we see a very strong resolve to use the fact that there is going to be a whole raft of policy and financial measures to make sure that they are being used to accelerate that transition and not to prop up industries of the past, which will inevitably have to decline as we go forward.

**Marco Longhi:** That is very reassuring.

***Fiona Reynolds:*** The other thing that I have been really impressed by from the UK Government is that we have still been having meetings with Ministers. I recently had a meeting on climate and discussions with the responsible Minister at BEIS. I had originally thought, "We have had these meetings planned. Surely they will be cancelled." They just moved online, and the Minister himself was there. There has been a real show of commitment to climate from the Government, which has been terrific.

**Chair:** That is encouraging to hear, Fiona. Hopefully, we will be able to get a Minister in front of us before too long.

Q64 **John McNally:** First of all, my question is to Nigel and then Fiona, please. Given that Covid-19 puts incredible pressure on the financial companies to stop pursuing the climate change agenda, what is there to be done in practice by both investors and the general public to hold them to account? The aim of my question is basically for the Committee and the public to understand, as countries recover from Covid-19, what details of green and sustainable stimulus packages have been widely discussed. You touched on this quite a lot earlier. For example, investment in three areas: infrastructure, innovation and skills. I know you have written about this yourself. What should the stimulus or investment look like in practice?

***Nigel Topping:*** A lot of us are thinking a lot about this, so it is a very timely question. I know the UK Government and many other Governments are thinking about this, as are businesses and investors.

In the article in *The Daily Telegraph*, which you refer to, I gave some clues to that. A lot of what we are seeing as emerging best practice or best practice expectations, let me try to list a few. One is to have clear and stable long-term policies. The UK is an exemplar here, I think, in terms of a clear phase-out date for the internal combustion engine and a clear phase-out date for coal; just the clarity of that and not wavering from that, and if anything bringing it forward—as has happened in both cases in the UK—is tremendously helpful.

We see that then mirrored by major industrial companies. Maersk shipping committed to net zero by 2050. We have steel companies committing to net zero, chemical companies committing to net zero. The clearer and the stronger those long-term signals are, the more confidence it gives to the private sector and vice versa.

I mentioned the Energy Transitions Commission earlier. It has just put out some thoughts. That is a group of about 40 international energy and industrial CEOs laying out what they would like to see from Governments in terms of stimulus packages, including accelerating spend in infrastructure in some of the areas that we know, so charging infrastructure or renewables—which creates jobs and builds the infrastructure of the future—and bringing forward some of those dates that the ETC has called on Governments to bring forward: the combustion engine phase-out to 2030, and also accelerate the early-stage deployment of some key technologies like hydrogen. That might be investing in early-stage R&D or using public procurement or standards to start to introduce hydrogen into the grid.

More specifically, on bailouts, the French Government recently attached some very interesting conditions to their support to Air France. They have put three conditions: first, a halving of emissions per passenger kilometre by 2030; secondly, introducing a sustainable aviation fuel mandate. We know that to decarbonise flying, we need to introduce fuels that are produced in a sustainable way. We call it SAF, or sustainable aviation fuel. It is currently 0.01%, so negligible. The French Government have said that France needs to get to 2%. It does not sound like much, but it is 200 times the volume now, so you start to get that exponential.

I believe they have also put a condition on Air France not running short-haul routes that compete with high-speed rail. It is an interesting example of a package of conditions that will help accelerate the transition to clean flying and to remove some of the flying that is not clean and can be replaced by clean rail travel. Those would be a few examples. Again, the city communities, the investor communities and the business communities are all calling for these kinds of measures.

What we are starting to see now is the need for, and the emergence of, more sectoral specificity, what companies and cities are saying needs to happen on cars, trucks, aviation and building. I mentioned building earlier. The big call or big push is for retrofit, because that is a big job creator, as well as improving the quality of the building stock.

***Fiona Reynolds:*** I am in agreement with Nigel, and I think I have already mentioned some of these things, but I just want to reinforce that I do not think bailout money should come to sectors without conditions, and that taxpayers' money should not be used to sustain unsustainable businesses. We should be using this as a good opportunity to transform and to get to the city and the country of the future that we want to be, but, at the same time, really driving green jobs.

As I have said, we need jobs in energy efficiency and the retrofitting of buildings. How do we make London and other big cities in the UK greener, more user friendly, and better for our health as well? Then in other regions, how do we think about nature-based solutions that would create jobs, in terms of restoring coastal habitats, protecting forests and all of those kinds of things that, again, could create the green jobs of the future? The UK needs a lot done on building efficiency. That would create jobs in the construction and the property sector.

**John McNally:** I am mindful of the time, so I am happy to finish my questions on that note. Thank you.

Q65 **Jerome Mayhew:** Fiona, given the huge cost of the response to Covid-19 by national Governments, it is unfortunately foreseeable that Administrations are going to need to seek to increase their tax take. If that does become unavoidable, can this be done in a way that promotes sustainable development at the same time? Could a carbon tax or enhanced carbon pricing be part of that change?

***Fiona Reynolds:*** Absolutely it can, and it should be. As I mentioned before, the carbon tax is far too low. It needs to be increased if we are going to drive the transition to a low-carbon economy, and it is a way of raising revenue. Carbon taxes are one thing, but I also think we need to look at the subsidies that we have in place for sectors—particularly the fossil fuel sector—and whether they should be removed so that the Government are not paying out so much money as well.

This is a great opportunity also to look at the tax system, a tax system that drives the transition but a tax system that is also more inclusive. Some countries have already done this, but, as a taxpayer in the UK, I do not like the idea of bailing out companies that do not pay any tax in this country. We could do more thinking around corporate tax, but around corporate tax and disclosures, and also corporate tax in country-by-country reporting. All of these things need to be on the table.

Q66 **Jerome Mayhew:** Nigel, the discussion throughout this morning has made it very clear that capitalism, the efficient allocation of private capital, is going to be crucial for our global response to climate change. Post Covid-19, the scope for Government investment will be, I am afraid, further constrained.

We talked earlier about long-term policy clarity giving encouragement to investors. I know that last week Mark Carney was talking about the framing of the investment horizon by Government policy, and we have seen an example referred to today about the removal of the internal combustion engine from UK roads by 2035 as being very helpful. In your view, are other structures, market signals or policies needed that we can put in place to promote green and sustainable future trade?

***Nigel Topping:*** Yes. There was a very good report put out by BEIS that built on the "Mission Possible" report I have referred to. The "Mission Possible" report was put out about 18 months ago by the Energy Transitions Commission. It showed that technically and economically there is a pathway to zero in the so-called heavy emitting sectors of transport and industry. Then the BEIS report, which was published at the back end of last year, just before the COP in Madrid, overlays a systems change view. This is something we are putting at the heart of all our work.

We know empirically, historically, that industrial transformations always follow an S-shaped curve. They start very slow, people think nothing is going to happen, and then they go exponential. They take off. They take everyone by surprise. The famous example is the two photos of Fifth Avenue in New York about five years apart. In one there is only one car, and then a few years later there is only one horse. My personal and very strong view is that this is what is happening now.

We are not very good cognitively at handling exponentials. I always say, "Do not look at the percentage. Look at the rate of change." I think Germany was at 9.2% EV market penetration last period, and that was a threefold increase from the period before. Once you start getting that kind of exponential change, you get to 10% and you double, you get to 20%, 40%, 80%; suddenly, it is all over by 2030. I think that industrialists and policymakers always tend to underestimate the power of exponential change.

That is okay, because it is also very difficult to be punchy as a policymaker. You do not want to be too ambitious. 2040 a few years ago, then 2035 or 2032, is a natural process of ratchet. Those long-term signals are really important.

Where there can be supporting mechanisms, again, the UK is a good example, where there is an end date for coal and a floor price for carbon. The combination means that we are in 2020 and we already have almost no coal being burned for power generation, and we can see that bringing that forward by a year or two can continue to happen.

There are other sectors. Energy and transport are examples where the technology is relatively well developed and a long-term signal and maybe some infrastructure investment will be enough to drive the full transition. There are other technologies where it is at a much earlier phase.

I mentioned ammonia for shipping, and hydrogen. The cost of electrolysis to produce hydrogen from clean energy is not competitive yet. We think it will be within five to 10 years, but it is going to require some upfront investment in R&D and the early demonstration projects. We know that costs come down with experience. That is the so-called learning curve. It is important to distinguish between what phase of the transition each sector is at, which helps determine what policy measures are most important.

A long-term signal is always helpful, so net zero and then breaking that down by sector, but the more specific policy instruments, whether it is a pricing or a feed-in tariff or equivalent, a contract for difference, something that helps stimulate the early stage until the technology is competitive in its own right and then the market and private capital will take it all the way to 100%.

Very relevant right now—it was referred to earlier—is the question of the risk of going too far and then the offshoring of businesses that are made uncompetitive internationally because of local regulations. The EU is currently pursuing an approach of border tax adjustments, which is one way of doing it, but it seems to me quite a clumsy measure. Risk is becoming a trade issue, and it can be seen as a tariff measure, whereas the same thing can be achieved through product standards.

If we were to say that we will only use clean, green or zero-carbon steel in the UK automotive and building industry, that becomes a de facto order adjustment tariff, but it is not done as a tariff. We do that in all sorts of other areas. It is worth thinking about what the unintended consequences are of particular policy measures beyond just the decarbonisation of a particular value chain.

**Chair:** That is a very interesting suggestion, because obviously the Department for International Trade is launching a great many trade negotiations right now, and it was a topical part of yesterday's debate regarding the Agriculture Bill about whether processes could be taken into account as part of the end result in setting standards. There is some debate about that with the WTO. That is a really interesting point.

**Caroline Lucas:** In fact, part of my question has been answered already by both of you because it was about the use of public money in bailouts and so forth. Could we explore the French Government example with their aviation conditions for Air France and just think about how we could apply that to the UK? You will know easyJet has gone cap-in-hand to the Government wanting £600 million in bailout. Virgin is following it.

If we really are to use this moment to build back better and to make sure we have this better normal and so forth, I would suggest—and I would be interested in your views—you do not want the Government to bail them out in an unconditional way. What kinds of conditions should we be applying, both for aviation and for the wider areas of industry that will be asking for public money, and in particular how should we address the difference between supporting workers, which we all want to do, and supporting the actual industries? Sometimes there can be a difference between those two.

***Fiona Reynolds:*** It is a really, really important question. If we keep with the airline industry, it is going to be different for every airline. There is an overarching comment—I have already said this, but I will just reinforce it—that it has to drive forward the Government's net-zero commitments and the transition to a low-carbon economy. In the airline sector that needs to be tied to emissions reductions. It needs to be tied to innovation in fuel and electric planes—those kinds of things. It also needs to be tied to decarbonisation and how we also get better aircraft. Those are a couple of things off the top of my head, but I am sure there are many others for that sector.

Coming back to the jobs issue, because the jobs issue is so important at this time. We do not want to kill jobs. We want to keep jobs. We want to create jobs. As we talk about the climate space, we need to make sure there is very much a just transition. It is an important thing. I think from Covid-19, we have to make sure that the principles of a just transition are taken forward as well.

If we can keep airlines going—maybe not every single one of them, maybe there are too many airlines—and we can keep the aviation industry thriving, because we have emissions reductions and because we have all of these things, we are going to keep jobs. It is not just jobs working at airports and on planes, for example. We are seeing now how important the tourism sector is to so many countries' GDP. In many of those cases, we require planes to get there.

It all has to come together. I think it is doable if we really think about keeping that net zero target at the top of our minds: what is going to drive that in every different sector? They are going to be different sector to sector. We also want to maintain jobs. I think we will maintain jobs much longer if we have jobs that are going to be in sustainable sectors, otherwise those jobs will be lost at some point, in some industries anyway.

Q67 **Caroline Lucas:** How do you think we could deal with the obvious backlash there would be? If we are saying, as you hinted at just then, that there may well be too many airlines—and certainly in many people's views there is too much overall aviation, or at least there has been, given that it is one of the fastest-growing sources of greenhouse gas emissions—then that takes us into those decisions such as the decision to expand Heathrow Airport or, indeed, the French proposal that you should not have airlines competing domestically where a rail route can do the job in a reasonable amount of time. There will be a big backlash. I just wonder, politically, how you think we can help to deal with that.

***Fiona Reynolds:*** I do not envy being in that position, I have to say. If we are showing that we are trying to keep as many jobs as possible, what jobs are being created? There would be jobs created in the airline industry, in terms of creating new aircraft. They have to be built, so that is jobs. We would create jobs in new fuel sectors, in scientific research, all of those sorts of things. Jobs can be created, not just taken away. That is not to say we can save every kind of job. I think it has to be told as an overall story.

Caroline, you mentioned the issue around other forms of transport. People will choose other things if they are available to them. People will get on a train if they can get high-speed trains.

Q68 **Caroline Lucas:** What if it is three times as expensive?

***Fiona Reynolds:*** I suppose not everybody can make that choice, but I think some people can. Those people who can often will make those choices to get a train. If that takes pressure off more people flying, that is a good thing as well. It is having those combinations of things. That is an opportunity for huge numbers of jobs in the future, both in the construction and in the running of better rail lines across the UK, across Europe. Obviously, this does not work in some countries, as I always say, when people do not want anyone to fly anymore. I am originally from Australia; I am not leaving the country without flying.

Q69 **Caroline Lucas:** I am very mindful of time, so I want to put the next bit of the question to Nigel, which was just to look perhaps more broadly than aviation. I know you have touched on it already, but could you say a little bit more about the kinds of conditions that you think we might be thinking about in terms of linking that to the use of public money and supporting businesses? In particular, what would be the best arguments against those who might say, "Look, if you start applying these conditions, you are going to slow down the whole process of providing these funds at a time when it is urgently needed"?

***Nigel Topping:*** That last point is an important one to get right. This is not a UK point. This is globally. If there is a trade-off between a million people being on the streets, unemployed, and becoming a burden on the state in the next six months or keeping them employed, the speed of deployment of money is crucial to that. There is a balancing.

Nick Stern talked about the phases in a more eloquent way than I can remember. We do need to distinguish between the emergency, like keeping the economy going, and then the rebuild. There may well be a need to release funds without conditions in the short-term, for the short term. That is probably by sector and by country, Caroline. I do have some sympathy for that. It will take time to get the conditions right. The French have been quick on aviation, but I do not know what they are doing on all the other sectors. There is a pragmatic balance question there.

We are seeing in some sectors the increasing likelihood that there is going to be a step-change in demand. It does not look like aviation is going to come back in a V-shaped recovery, so there is going to be excess capacity. That is a classic challenge for Governments. I think what most people in the community that I work with would say is, "Be very careful of propping up that kind of demand." Be wary of stimulating demand for something that is naturally declining.

There are other sectors where maybe the demand is going to come back but there is a longer-term transition, and there it is more important that any bailout money is focused on accelerating the transition. There are some nuances depending on the sector.

Q70 **Caroline Lucas:** Would you give the money to easyJet now, £600 million?

***Nigel Topping:*** Of course, that is not my choice. The French example seems to be a really intelligent approach to attaching conditions to significant flows of public finance.

**Chair:** We are beginning to run out of time. We have three more questions to get in, so if we could try to keep our answers a bit more concise.

Q71 **Claudia Webbe:** Quantitative easing is another measure being used to support the economy during this crisis. However, some may question—and are probably right to question—whether it is right for the Bank of England, endorsed by Government, to use quantitative easing to support carbon-intensive activity, including, for example, purchasing oil company bonds. What impact would quantitative easing have on our climate agenda and on the sustainability of businesses and the financial sector?

***Nigel Topping:*** The real expert here would be Mark Carney, so I am sure you will ask him that question when he appears.

I referred to my thoughts on that earlier. While that stimulus might be macroeconomically necessary, one of the lessons from 2008 is that we do not just want to build back the size of the economy. It is the quality of the economy in terms of the quality of jobs, the health implications and the cleanness of the technology. I think I have expressed my view on that. That is aligning all flows with the commitment to net zero.

***Fiona Reynolds:*** This might be a bit controversial, but I think the Bank of England should be leading by example. It should pledge to exclude fossil fuel assets from bond purchases and collateral framework, starting with any exposures to coal. This will send a powerful signal that holding these assets undermines long-term financial stability and is not compatible with the Paris goals.

Q72 **Claudia Webbe:** Do you see any negative impact? If we develop quantitative easing on the basis of a climate objective, do you see any negative impact that this would have on the sustainability of businesses and the financial sector?

***Fiona Reynolds:*** There are always going to be some, aren't there? There are always going to be some negatives. We still have to keep our eye on the fact that this is the commitment that was made and we need to drive all our policies that way. We have to live with the negatives. There are going to be some downsides. That is life, to put it simply.

Q73 **Claudia Webbe:** Do you see that there are other ways that, for example, oil companies can survive and operate sustainably?

***Fiona Reynolds:*** We engage with lots of investors through many initiatives engaged with lots of oil and gas industry businesses. I have referred a number of times to Shell and Total, and Nigel talked about BP. These are all industries that we are working with, that are committing to get to net zero and that are building up their renewables. They are looking at their supply chains, looking at the other products they provide and how they can be done differently.

This work is all happening and I think it is all moving in the right direction, showing that business and investors working together can bring about good change. Shareholders are saying, "This is what we expect from you. We are not going to continue to invest in companies that are not planning for transition, and we want to set targets with you along the way to understand what are the one-year, the five-year and the 10-year metrics that we will have in this transition." It is all happening. In the main, it is all very positive.

Not that this matters for this discussion, but I do think there is a bit of a European/US divide. I do not think it is happening in the same way. The same conversations are not happening with Exxon, for example, and Chevron, as they are happening with Shell and Total and so on. That is because there are strong signals from Governments within the UK and within Europe, and not so much within the US, for example. That is an example of why Government signals are important.

Q74 **Kerry McCarthy:** This may be just for Nigel. Paris agreed a target of $100 billion of funding to go from developed countries to developing countries to help them cope with climate adaptation and resilience. Can you tell me what progress is being made? I think there have been problems trying to mobilise that. I do not think every country has paid into the fund that should have done. If you could give an update on where we are with that.

***Nigel Topping:*** It is really a Government-to-Government question, so it is not something I work on directly with my stakeholders, but it is such an important issue in the politics of climate change that maybe I can give you an update on where it is at now.

As you rightly said, it was a commitment made in Copenhagen and in Cancún and built into Paris, so it is seen as a key part of the commitment from developed economies to those many vulnerable countries that are most exposed, including coastal countries and small island states. The definition is somewhat unclear, which means that people will always argue about it, but the idea is that $100 billion of bilateral and multilateral funds flow to support those countries, particularly around adaptation and resilience.

The latest figure we have from an OECD report, which is based on the 2017 data, is that that level was $71 billion then and that we need to get to $100 billion this year—obviously, there is a data lag—and then revisit that this year in terms of what the level will be in 2025.

I would just draw attention to the distinction between the political need to deliver that $100 billion, because it is a promise that has been made, and the pragmatic effect of that $100 billion, which will depend on the quality of the way it is linked to the mechanics that will crowd in private sector finance. That is a relatively small amount of money compared with the trillions that need to flow internationally. A lot of the infrastructure that is going to be built internationally will be in the global south.

The UK has taken a lead in doubling its commitment to the International Climate Fund to £11.6 billion in the next five years. Of course, the outcome of the US election in November will likely have a material impact on the US contribution going forwards—obviously it was a major contributor in the past with a different approach at the moment.

I would say that for the politics, for the vulnerable countries, the $100 billion is important, although I think we will almost inevitably argue about the number because there are different ways of counting it. For the actual flow of capital, it will be the way that that money is spent to reduce the risk. A lot of the problems in investing in less-developed countries are that the cost of capital goes up because of foreign exchange risk and because of policy risk, so perceived or real instability of policy—again, we have talked a lot about the need for stable, long-term policy—puts up the cost of capital, particularly for renewable energy.

If you compare renewable energy with fossil energy, the cost of renewable energy is largely dictated by the cost of capital because it is all upfront capital, and then almost zero marginal cost because wind and sun are free. It is very different from fossil fuel projects that have ongoing OPEX because they have to keep buying gas and coal. The way that that $100 billion can be used to de-risk, and maybe take what we call "the first loss" out so that the private sector can come in at an acceptable rate of return, will be economically more important, whether it is $80 billion or $100 billion. Politically, the $100 billion is a very important signal and one to do with the trust between developed and developing countries.

**Kerry McCarthy:** I think we are running out of time. There is an issue with some of the small island states, which have said to me that they have had real problems accessing the fund. There is also an issue as they drop out of being eligible for concessional finance, so as they move from being least-developed countries and so on, some of the countries get missed out of the loop. I am not sure we have time for an answer now. We have to squeeze in one more colleague. Perhaps we can engage in some correspondence about that afterwards.

Q75 **Chair:** Thank you for bearing with us, Kerry. Just before I bring in Nadia, does the £11.5 billion UK contribution count in whole towards the $100 billion target?

***Nigel Topping:*** If my facts are right, that is £11.6 billion over a five-year period, and the $100 billion is per year.

Q76 **Nadia Whittome:** Signs are that the $100 billion target will be missed, yet the UK Government continue to finance and invest in fossil fuels. It is currently €10.5 billion in subsidies. In your view, what impact does this have on the UK COP26 diplomacy? Do you think that fossil fuel funding could be redirected towards meeting the $100 billion target?

***Nigel Topping:*** My understanding is that there is a commitment for all financial flows to be consistent with Paris and that there is work going on right now, I think particularly with the CDC, which directs a lot of that investment. There is a strong expectation from the non-state actor community globally that commitments to net zero are commitments to net zero and that all financial flows are aligned with that.

Sometimes there is a nuance. In particular, there is a growing expectation that investment in upstream exploration would not take place, because we know we already have enough oil and gas reserves, in fact more than enough, and we cannot burn them all. Whether on a climate or an economic or both bases, it would be foolhardy to keep investing in trying to find new reserves of oil and gas.

There may sometimes be a case to be made for supporting the infrastructure if we have a lot of energy access problems in emerging markets. There may be a case for developing infrastructure for electricity or gas distribution, but I think there is generally no case for a net zero-aligned investment portfolio to be investing in new oil and gas reserves or new coal mines or coal burning. I think that is something that the world will be looking quite closely at in the next 12 months.

***Fiona Reynolds:*** Our research shows that the UK Government spent £4.6 billion on fossil fuels overseas between 2010 and 2017, primarily through UK Export Finance, which offers loans and financial guarantees to UK companies involved in major projects around the world, and it has long declined to rule out investments in fossil fuels. There have also been other reports that show how the Private Infrastructure Development Group, which is a major investment vehicle that is funded by the UK Government, has spent £750 million in aid money on fossil fuel projects in the developing world.

I could go on, but I think it shows a bit of a contradiction there with having a current situation that the UK Government are providing climate aid with the one hand and exporting the UK's fossil fuel pollution with the other. I do think that that can be undermining of the otherwise really good reputation that the UK Government have as leading on climate action, and it is something that the Committee should consider.

**Chair:** Thank you very much. That concludes our questioning for this session. I would like to thank our witnesses, Fiona Reynolds and Nigel Topping, for a really fascinating session and an excellent lead-in to next week's session where we will be pursuing Covid and the environment. You have given a lot of food for thought on how we should use the Government response to re-stimulate the economy following the Covid crisis and to do so in a greening way, which will help drive our world leadership when we get to COP26 whenever it happens next year.

I would like to thank our Committee clerk, Andrew Bax, for arranging this session, and the technical team in the Thatcher Room in Parliament for organising this. Thank you, Steve. Thank you to our witnesses. Thank you to our Committee members for attending this session in full.