HOUSE OF COMMONS

# Treasury Committee

## Oral evidence: Decarbonisation and Green Finance, HC 147

Wednesday 9 September 2020

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Watch the meeting

Members present: Mel Stride (Chair); Rushanara Ali; Mr Steve Baker; Harriett Baldwin; Anthony Browne; Julie Marson.

Questions 60 - 109

### Witnesses

I: Professor Nick Robins, Professor in Practice for Sustainable Finance, Grantham Research Institute, LSE; Dr Emily Shuckburgh OBE, Director, Cambridge Zero, University of Cambridge; Chris Cummings, CEO, Investment Association; Dr Daniel Klier, Group Head of Sustainable Finance, HSBC.

# Examination of Witnesses

Witnesses: Professor Nick Robins, Dr Emily Shuckburgh OBE, Chris Cummings and Dr Daniel Klier.

Q60 **Chair:** Good afternoon and welcome to the Treasury Committee's latest session on decarbonisation and green finance. We are delighted this afternoon to be joined by a very distinguished panel of four witnesses. They are Professor Nick Robins, Dr Emily Shuckburgh, Chris Cummings and Dr Daniel Klier. For the public record, I would ask each of you to very briefly introduce yourself to the Committee.

***Professor Robins:*** I am Nick Robins, professor in practice for sustainable finance at the Grantham Research Institute at the London School of Economics.

***Dr Shuckburgh:*** I am Emily Shuckburgh. I am a climate scientist by background, having spent many years working in the polar regions understanding the changes there. I am now the inaugural director of Cambridge Zero, the University of Cambridge's climate change initiative.

***Chris Cummings:*** Good afternoon. My name is Chris Cummings and I am the chief executive of the Investment Association. That is the representative body for UK-based fund managers.

***Dr Klier:*** Good afternoon. I am Daniel Klier, the global head of sustainable finance at HSBC. For this Committee, it is probably also relevant that I chair the climate risk working group at the Bank of England.

Q61 **Chair:** Welcome to the Committee and thank you very much for giving us your time this afternoon. Questions will be directed from different members of the Committee in sequence. Members are asked to identify the person or persons to whom they are directing a particular question, but if, for whatever reason, you feel you have something to say and you have not been called in in that fashion, please raise a hand and I will endeavour to bring you in at that point.

We are expecting a Division of the House at around 4 o'clock. To give members an opportunity to take part in that Division if they wish to do so, I will suspend the Committee for 15 minutes at that point. Just to alert you, that will probably happen around 4 o'clock.

Finally, let us go to my first question. I am going to put this initially, please, to Nick, but I would like all four panellists to answer it. Clearly, there are a number of external pressures bearing on the UK economy at the moment. We have Brexit uncertainty around the deal; we have the devastating consequences of the coronavirus on the economy; and of course we have the quest for net zero in 2050. It is often said that, when it comes to support from Government for those businesses that are struggling their way through, there should be a form of green conditionality attached to that. That may make green sense, but do you feel, as a panel, that it makes economic and commercial sense to, in a sense, burden those businesses with additional duties at a time when they are trying to struggle through these very difficult circumstances?

***Professor Robins:*** Thanks, Chair, for that question. As you say, we are in a very grave situation in terms of our economy and outlook. However, it is very heartening that, through the Covid crisis, we have seen a greater recognition, particularly from the financial sector but also from the corporate sector and the world of policy, that the way out of this crisis is to move in a more accelerated fashion to the economy of the future, one which is net zero, resilient and more inclusive. We have a legal commitment to that in the UK, particularly to net zero. That would imply that we would want to see funds that are allocated to business in the crisis being done in a way that is consistent with net zero.

We have had an emergency phase, which is to stabilise and provide relief to the economy. Now that we are moving into the recovery phase, which in many ways started with the Chancellor's plan for jobs in July, it is appropriate to think about green conditionality or applying conditions to that. You could do that in two ways. One is to look at past performance and the carbon or pollution intensity of particular businesses. A more attractive way is to make it more future-looking and have conditionality linked to the direction that company may take, in terms of commitments to net zero and disclosure around that, as well as social requirements, particularly if there is any need for retraining or restructuring of workers, and governance requirements.

Having future-linked conditionality, net zero targets, disclosure and then the social dimension will align the actions by Government in terms of the use of public finance with what is happening in the financial sector, particularly in the way that investors are engaging with the companies they own to ensure a net zero target. That would align public finance with the way that the financial system is working.

Q62 **Chair:** Emily, I am going to come to you now. Do you recognise that there is potentially an issue around requiring businesses to do various green things that they might not otherwise do, and thereby perhaps slowing down their ability, and the economy's more widely, to recover? If you do recognise that, what are the issues we should think about around that, so that we can come to the right kind of decision?

***Dr Shuckburgh:*** Do you know what? I am not sure I do recognise that, actually. I politely disagree. As Nick has articulated, it is very clear that the future we want to be rebuilding is one of resilience, inclusivity and sustainability. I can say as a climate scientist that we have now experienced what a global shock looks like. The state of our climate, if we do not address that, is going to create a much greater global shock in the future. You just have to look at the polar regions, which I have studied greatly, to see the scale of the changes. We are looking at potentially record ice loss in the Arctic again this year, with huge melts on the

Greenland ice sheet and the west Antarctic ice sheet. These are not risks that we do not know and are not predictable.

We have been through the current crisis. Although arguably pandemics were a well-known risk, it was not predictable that we would be going through the coronavirus pandemic that we have. Climate change is a predictable risk; we know what is on the cards. In that sense, I really do not think there is a sense in which we should not be preparing our society and our businesses to face and limit the scale of threats they are going to see in the future.

Q63 **Chair:** Would you accept, though, Emily, that in many circumstances there will be additional cost to business, at least? You may well be right that, in the medium to longer term, we will be laying off very significant risk if we get climate change sorted. In the immediate term, there are going to be significant costs to these businesses, are there not?

***Dr Shuckburgh:*** The key question is whether it is a cost to the overall economy. There is plenty of evidence, looking at past investments, that green investments give you a really strong multiplier in exactly these circumstances. It makes good economic and fiscal sense to be investing in this way, especially in the circumstances where, if we do not look at putting in place both the jobs and the infrastructure that are relevant to the future, we will be putting money into things that are stranded, in the sense of jobs or assets that do not have any future.

Q64 **Chair:** I am going to go to Chris with the same question. Do you think that, for some businesses at least, this transition and the actions the Government might take may hold them back commercially? If that is the case, what sort of thinking do you have around that? How can we ameliorate those problems if they are there? At the end of the day, there is no free lunch. If you ask businesses to do things that they would not otherwise have to do to be commercially successful, that will tend to be a drag on growth and job creation, in that sense at least.

***Chris Cummings:*** You have started in just the right place, with the biggest question. The way that we look at this, from the investors' point of view—and obviously I can only speak from the investors' point of view—is to make sure that the companies we are investing in are good, long-term bets that are going to deliver a positive return over the long term.

Reflecting on what we have seen through the crisis, as an industry we wrote to the chairs of all the FTSE companies to say, "This is the time for you to be thinking long term. We want you to be thinking and acting long term, to be looking after your employees, to be looking after your supply chain. Please do not prioritise what you think are short-term shareholder demands. That is not the game we are in. We actually want you to perform well over the long term". Part of that is paying attention to climate change. I will come back to that in a second.

Undoubtedly, through this crisis, we have seen companies that had a weak business model, which has been exposed perhaps more quickly than would otherwise have been the case. We have seen other companies that had what should have been a pretty robust business model, but because of the crisis it has been weakened, maybe fatally so, and others that are going to have a couple of years of difficult times but have a good long-term story, and therefore are still attractive to investors. Of course, there are those that have had a boom time through this crisis. From our point of view as investors, we have to be really careful when we are evaluating those companies, because we are thinking long term.

It is also important to recognise that, when we are talking about business, business covers a whole waterfront of major listed companies, from the type that are household names through to SMEs that have needed the banks to step in and do rescue finance. I am sure the Committee will be focusing on innovation, start-ups and the attractiveness there. From our point of view as investor, we are looking at how we can support the companies we have invested in, the ones we think are good long-term bets, through the crisis and into recovery. To do that, we have taken some immediate steps. I mentioned the letter of comfort to chairs. We have also helped 56 FTSE companies raise over £14 billion in new equity just in the last few weeks, to support them through the crisis.

Sorry for the long preamble, but I wanted to set that scene. What could worry us is what the conditionality of any Government support would be. Where would the extra costs lie? Forgive me for saying so, but how politically driven would some of the hooks be on that financing?

Undoubtedly, we are looking to move to an economy that is long-term sustainable and viable, and that factors in climate change. That is why we as an association and as an industry have been calling on all the listed companies we invest in to annually report on their TCFD requirements, to the point, now, that as part of the preparations for their AGMs we analyse their commitment to TCFD reporting and the steps they are taking as a result of it, and then issue guidance to our members that can inform their voting intentions.

We are trying to strike the right balance between making sure that the businesses we are investing in are responding to climate change, and setting a course for correction and improvement where necessary, without imposing costs on them, particularly at this time, that could be difficult and could make the difference between the long-term sustainability we want and too much short-term pain. I hope that is a useful introduction to how we are thinking about these matters.

**Chair:** Chris, that was very comprehensive. Thank you very much indeed. Daniel, what are your thoughts?

***Dr Klier:*** My colleagues covered a lot of ground. I wanted to make one addition to this. If we had had this discussion a year ago, many of us would have thought that many industries have probably a decade to transition. Look at the automotive industry, a lot of the construction industries, certainly the energy industry, but also consumer goods, travel and the like. The crisis did many things, but it also brought the transition forward by a decade. Many of the trends we thought would take a decade to work through—online purchases, the way we work, the way we consume, obviously transport—happened within six months.

One of the additional elements we need to look at is that, if we do not encourage companies to invest, we are actually increasing risk. What we thought would be a decade-long transition has happened within a month now. It is really important that we do not look at this as an additional burden, but almost as a way of making businesses viable again. When you look at the banking industry, our big topic is now how you actually support this transition. Over the last three years, we have done a great job mobilising a green finance industry, but we now really need to look at the high-emitting sectors, the automotive, the steel, the cement, the construction, the airlines, and work through a very rapid way of transitioning them. Therefore, linking Government support to that transition is a mechanism, only one of many, but an important mechanism.

Q65 **Chair:** I will direct my final question to Emily. The Chancellor, in July, came forward with his plan for jobs. Within that, we had grants for green homes, social housing decarbonisation and a few other measures. What sort of measures do you think the Government should, in addition to those measures he has announced, be focusing on or coming forward with, particularly as we come up to what we expect to be a Budget in the autumn?

***Dr Shuckburgh:*** Each of the ones that have already been announced could have greater targeting towards this net zero agenda. The kick-start scheme could have a greater emphasis on the jobs that are going to be the jobs of the future, and ensuring that people are being put into those jobs and we push the economy in that direction. Similarly, on the measures announced for greening public buildings, we should make sure that we are not just using the word "greener", but we have real numbers and targets behind the amount of carbon dioxide and other greenhouse gases we are intending to save through that, or the number of public buildings, so that there is real accountability and the numbers add up to the scale of the challenge.

In terms of the things that I think could be included, if we are looking to the future, and not just to jobs now but to jobs in a new economy, we should ensure funding for the research and development of the technologies that are going to be the right technologies to take us through. We have already heard examples of areas where there are still gaps in our technology base. That provides an opportunity for us as the UK to be the leaders in driving forward this new economy, by looking for specific investment in those areas. Net zero aviation is one particular topic area, for example, where we potentially have an opportunity to lead the world. Others are energy storage technologies and renewable energy technologies, for example the next generation of photovoltaics. All of these are areas where we have the potential to lead the world and that would make good sense to invest in.

The final area I would emphasise is green procurement, in particular using it to support our SMEs and small businesses, not least in helping to set them on the journey of a transition. It is perhaps easier to embark on that transition if you are a large organisation than a small organisation. If we can use green procurement at this time to support that, that would also be very beneficial. Those are some of the areas I would identify.

**Chair:** Thank you, Emily. That is very helpful.

***Professor Robins:*** The Chancellor's plan for jobs was a really welcome first instalment in linking the recovery package with green goals. Particularly, the green homes grant and building efficiency are very welcome. All the details of that are being worked out and we have some big decisions this autumn in terms of scaling them up: the Budget, as you say, the national infrastructure strategy and the spending review.

As a couple of thoughts, I will not go back on the green conditionality point, but the international benchmark for the share of any recovery is turning out to be about 30%. The plan for jobs was about 10% directly at green and potentially a larger share. We should also be looking at the mechanisms, on which we can go into more detail, maybe a green sovereign bond to raise finance from investors, a new national investment bank to help with pump priming investments and to crowd in private finance. On the tax raising side, we could look at smart ways of using carbon pricing and taxation that do not bear down on labour or capital.

The main thing, looking forward and learning from the last crisis, is that we do not have a sugar rush stimulus, either fiscal or regulatory, that boosts sectors temporarily, but then is not sustained, so you have a stop-start. Seeing these measures as part of a long-term plan will be very important, enabling investors and companies to put their capital behind this with some confidence.

***Chris Cummings:*** To support the comments that have been made, this is a pivotal moment and the Government are thinking about it in broadly the right way. To comment on the idea of green gilts, which have often been discussed, this is the ideal moment to bring that discussion back to the table, perhaps at a joint forum between the Debt Management Office, Treasury and industry, to look at the most efficient way of getting those green gilts launched. There is certainly investor appetite for the green gilt market. A more joined-up approach might look at how the money is invested and co-invested with industry. There was some discussion around housing, which is particularly exciting given the wider social problems in the UK around housing. This could be just the moment where those ideas take flight.

I would love to comment a little on the retail investor behaviour we are seeing as well, with the appetite to get behind those things, but perhaps I will pause there. I just wanted to flag the green gilts point, which is often dismissed as being a nice-to-do. This could be something more structurally important.

Q66 **Julie Marson:** Perhaps I could pick up with Chris, because I would like to explore in a bit more detail the role and contribution of institutional investors in going to a net zero recovery. First, the Bank of England launched its COP private finance agenda earlier this year. It said very specifically that every professional financial decision will need to take climate change into account and that every company, bank, insurer and investor will need to adjust its business model for a low-carbon world. While we know that COP 26 itself has been delayed for a year, what is your view of the progress we have been able to achieve in that objective notwithstanding? What else still needs to be done?

***Chris Cummings:*** I can only speak on behalf of the investment community, but I see Daniel there who I am sure can comment from a bank point of view. It is absolutely fair to say that the investment management industry recognises that those ESG factors—environmental, social and governance—are in the DNA of how we do investing today. That has been driven by our client sentiment, so major pension funds are hugely keen to understand how their money is being put to work. In fact, when competing for a mandate today, it is more than common—it is expected—that the investment manager would speak to their investment philosophy, their ESG approach, and have to report back on a very regular basis in terms of how the money was being managed.

On the retail side, when we talk about ESG factors, there is often a view that this is something that only millennials care about. That could not be further from the truth. It is true that millennials care about it, but so do other people. To give a quick reflection, since March this year, when the crisis really kicked off, we have seen in the order of £1 billion a month from retail investors coming into ESG funds, those funds that are marketed on environmental, social and governance principles. It is particularly the S factor, the social impact, that stood out loudest. Governance, of course, has always been there. The care for the environment is the one that everybody always thinks about first, so it is important to get those things in balance, but ESG funds have attracted £1 billion a month since March.

Looking at the growth across the industry over the last year, the ESG sector has grown by 60% and other sectors about 6%. You can see the significant growth that has been driven by retail investors, by voters, and that is true in different age brackets. I would be very happy to talk about different investor segment behaviour, if the Committee would like that extra layer of detail on the investor profile we are seeing. I just wanted to say that it is not only a millennial factor. In fact, if you look at people in the over-55 age group, you see significant concern for the environment and for those social factors as well.

We are seeing client pressure, institutional and retail. I would flag, yes, the Bank of England work, which was hugely important, but also the driving motivations of regulators here in the UK, with the Financial Conduct Authority becoming really keen that our industry addresses and speaks to the issues of stewardship and ESG. At a European level, there is a desire for greater transparency in those areas.

Without leaping too far ahead of your next question, there is an opportunity here for the UK to establish its credentials as the global centre for ESG fund management. With all the challenges facing us at the moment, the economic uncertainty caused by the crisis and other matters, for the UK to be on the front foot, in an area where we have recognised leadership around ESG, speaks to our future. It is an area where international investors—it is easy to talk about US pension funds, but we are seeing interest across Asia as well—are tapping into UK expertise on ESG find management.

For us, this is a pivotal moment, as I mentioned a while ago. Your Committee is extremely well timed to be looking at these issues, because this is a moment where investor sentiment and industry appetite go hand in hand, to deliver a more sustainable future for the UK.

**Julie Marson:** That is very interesting.

***Dr Klier:*** I can only echo Chris's comments. When we looked at this four years ago, it would have been a topic that a few institutions believed in and many did not. If you look at it now, most financial institutions—or banks, in this case—look at this topic for three major reasons. First, it is one of the biggest commercial opportunities we have out there. We know we need to finance £100 trillion in the world for the transition to a low-carbon economy. We know that the green bond market—the ESG asset classes—is one of the very few segments of the market that are growing in high double-digits. If you are in the banking industry, you do not have that many areas where you have that kind of growth. There is a commercial opportunity that has now clearly caught everybody's attention. If you read the newspapers at the moment, there is almost a competition as to who is putting out new and bigger targets.

The second element is what I mentioned before. There is now a real recognition that the discussion about transition risk and physical risk is not something we can solve in 10 or 15 years from now. Many of these topics are here and now. Therefore, the agenda of how we consider climate risk as part of our daily lending decisions is something we take very, very seriously. For instance, at HSBC, we have identified six sectors that we call the high-transition-risk sectors: oil and gas, utilities, metals and mining, but also the transportation sector, the construction sector and the chemical sector. That constitutes about 21% of our wholesale balance sheet, so it is a very significant number. We are not saying these are sectors that are risky per se, but they become risky if they do not transition. It is a real topic of attention.

The third reason why I think this is so important is about hiring, getting good people in and the wider reputation of an institution. We recognise that, if an institution wants to hire top talent, it is absolutely critical that it is credible in this space.

Jumping to the Bank of England comment that you made, the Bank of England put out, at the beginning of last year, a very, very good reference document. They have set out a guideline, supervisory statement 319, as to what good looks like. It is really important, because they have managed to outline what integration of climate risk into the core of the bank looks like. I will not go into detail, but essentially they have given you four dimensions: how you integrate climate risk into governance, into risk management, into disclosure and into stress testing.

The work that has happened since has created such an urgency and a dynamic that no institution can escape this any more. Quite recently, Sam Woods wrote to all CEOs in a "dear CEO" letter, reminding everyone that this is an urgency despite the current crisis and Covid. Because of the commercial risk and reputation debate, but also because of the regulatory pressure, this has never been as high on the agenda of a board and a management team as it is now.

**Julie Marson:** That is fascinating. Thank you very much.

***Dr Shuckburgh:*** I wanted to make one really short point. I agree with absolutely everything that Chris and Daniel have said regarding the enthusiasm for ESG that has built up now within the financial services sector. I would just like to highlight that, in my experience, that same enthusiasm exists across all business sectors. I engage with a very large number of businesses. Every time I do on this topic, that level of enthusiasm and excitement about creating the new future really, really comes through.

As Chris said, it is not just a millennial thing; this is really everyone. It feels to me as though this is a bit of a reset moment for us as a society. We could do with a bit of uplifting and a future that we want to head towards, which is a bit more positive and exciting, couldn't we? If we could galvanise what is already out there across all businesses, this enthusiasm for doing something, and make it into a great project of building a better future, it feels to me as though that would be quite a positive thing to come out of what is frankly quite a dismal situation, at the moment. I just wanted to take what they were saying and expand it out more broadly.

Q67 **Julie Marson:** Chris, I will go back to you, because you have alluded to it in the past and in your introductory remarks, in the sense that you felt this Covid crisis is shrinking the transition time. It is accelerating everything. It has been mentioned in the past that there is going to be a monumental change in capital allocation, effectively. It is going to take a huge change in capital. Is it even possible? Daniel mentions 25% of his assets being allocated to high-carbon-emitting industries. Where are we on the curve of that change in capital allocation?

***Chris Cummings:*** That is a really good question, because it is absolutely at the forefront of my members' minds when they are thinking about not only new investment decisions but ongoing support for a company. I would like to echo Emily's comments about the level of enthusiasm across other industries. Where we see companies exhibiting that type of spirit, from the senior management team and the board, and a clear execution plan, that goes a long way to speak to investor interest in those companies. That feels to us like a good long-term strategy and one that investors would want to get behind.

There are many examples of investment management companies seeking to influence investee company behaviour. We have members who have established their own ratings criteria looking at the type of companies they should be investing in, engaging with management, to let them know that they are either leaders or laggards in adoption. It is why, from the IA's point of view, one of the steps we have taken is to work with our members to insist that investee companies, those in the FTSE, have to report against TCFD steps being taken every year in preparation for their AGM, and go beyond that, but as a minimum we want to see them reporting against that good practice.

That gives comparability. One of the great issues we struggle with in the debate at the moment is comparability and data. By making sure that audit standards reflect current practices, working with the accountancy bodies, making sure that we have like-for-like data across the piece, we can have confidence in the data we are getting from investee companies and can report that back to end investors, whether pension funds, with their own duty of care to pensioners, or retail investors.

Given that this is a regulated activity and we are all under the scrutiny of the FCA to make sure these value statements are absolutely correct, you will understand the importance of getting this right. From that reputational point of view, ours is an industry that takes its responsibilities incredibly seriously on this. We understand completely the dangers of being accused of greenwashing. Part of the challenge is finding investible projects, investible companies, that have a good story to tell and are committed to transitioning. The danger we are all aware of is greenwashing: finding something that looks a bit green and promoting it as a green success story. That undermines everything we are trying to achieve.

Q68 **Julie Marson:** That is interesting, because I was going to ask you about the TCFD remit that you have asked particularly FTSE 100 companies to embrace. Do you find they are embracing it? What is the impact? Do you think there is an element of tokenism or greenwashing in what they are disclosing? How is that impacting on what you are finding?

***Chris Cummings:*** This is the first year we have made this a requirement. The majority of FTSE 100 companies have now signed up to that. I look forward to coming back to you next year with the full articulation of how we are getting on and the steps we have taken as a result. I would flag that any company that receives more than a 20% vote against a board resolution—and that would include these issues—would now appear on the public register of shareholder discontent. We have seen from previous initiatives we have taken that, when we tell companies that is about to happen, good heavens do they take that seriously and then try to fix their act to make sure they do not appear on that register. As we all know, transparency is such a great weapon in these discussions.

***Dr Klier:*** We run an annual investor survey on what is holding back further investment into sustainability and the energy transition. More than 80% of investors say it is the lack of disclosure and the inconsistency of definitions. While TCFD so far is a great success, we have more than 1,000 companies signed up to TCFD, and two-thirds of the FTSE 100 provides some level of TCFD disclosure, but the level of disclosure is very, very inconsistent. Only 4% of companies that are signed up to TCFD follow the full guidelines. Given that we do not have a way of setting that into accounting standards, the type of disclosure is very inconsistent.

Well-functioning capital markets take information as signals and allocate capital. If the information you are getting is inconsistent and incomplete, it is very hard to redirect capital. The mobilisation around TCFD has been great, but, similar to what Mark Carney is trying to drive for COP 26, we now need to work on a much greater level of consistency between the different levels of disclosure.

***Professor Robins:*** To the point about data, we need to be able to distinguish certain assets and understand which investments and assets are aligned to the transition. Some people have talked about it as a taxonomy of different assets. That is being developed in the European Union. Developing a taxonomy where you have a consistent definition is very important. At the UK level, at the moment, we do not have a body that tracks those flows, within the financial system, so the investment funds, the banks and so forth, but particularly within the real economy. How much of the capital flowing to different regions and sectors, to households and so on, is aligned? That is a bit of a gap at the moment in terms of understanding those flows of finance within the UK. Perhaps the Committee could look at how that could be done.

***Chris Cummings:*** This is an action for me to brief Nick on the responsible investment framework that the IA has published, which seeks to do that but also to establish a common language and dataset, because, as we all know, data is absolutely critical on this. The framework we have published goes beyond what we have seen in the European Union. It goes to the point I made about the UK's pre-eminence and our desire to be recognised as world leaders and build on that position. Ultimately, it is about bringing consistency of language and approach, so that investors can have real confidence that the money they are investing is being put to good use, in the way they would expect, and we can report back on that. I would be more than happy to share our work on a responsible investment framework with the Committee. I hope you would find it very useful.

Q69 **Julie Marson:** Do you think, Nick, that the Government should increase the carbon price to incentivise a change towards less carbon-heavy business models?

***Professor Robins:*** Clearly, we want to make markets work. Markets are incredibly effective tools of allocating the capital, as we have just been talking about. Climate change is classically a market failure. Prices in the marketplace do not reflect the costs that being imposed on people today and into the future. Carbon price is a key tool. We have seen it working both at European level and in the UK, in terms of the transition we have achieved. There are many other policy tools, but one of the factors would be a carbon price.

As well as what we were saying earlier about the allocation of public funding, the carbon price, particularly at this stage, would serve a good role. First, it would signal that private bodies were not going to be allocating capital to investments that could get locked in down the road and could fall foul of this rapid transition that Daniel was talking about. Secondly, it is a revenue raising issue and can raise revenue for the Treasury, which is important. Discussions are starting about that. We certainly have views and proposals for how that can be done in a way that is distributionally fair, so it does not fall unnecessarily on low-income households and so on. In fact, we have come forward with a citizens' dividend.

Yes, carbon pricing is very good at this stage. A lot of things are in the air, after the EU emissions trading scheme and so on. Our view would be that about £40 per tonne of carbon would be the right sum now to have. That could either be through an emissions trading scheme with a floor price, or in the form of a carbon tax, which then could be increased over time. As Daniel and others will probably confirm, all the things you can do in the financial system are great, but having clear market signals, which a carbon price can do, is among the best tools a Government could use. In terms of keeping markets honest and the revenue raising potential, this is the time to increase and £40 a tonne would be our guide price.

**Julie Marson:** I think I am out of time, but did Daniel want to quickly add something there?

***Dr Klier:*** It is a very quick one, because Nick said it all, but there is a third reason why the carbon price makes sense. It creates a business model for technologies and nature that currently is not there. Thinking about carbon capture and storage, and about investments in nature, if you have a carbon price, you actually create a business model. Suddenly those investments have a return, because you have an income through a carbon price. You allow some of what I call next frontier technologies and investments in nature to come on to the investment agenda.

**Julie Marson:** Thank you, everyone, for your fascinating answers.

Q70 **Harriett Baldwin:** I wanted to elaborate on the things that Emily and Nick raised earlier, in terms of infrastructure spending. Emily, if you were Chancellor, what type of infrastructure spending would you be prioritising?

***Dr Shuckburgh:*** The key thing around this transition is that it really involves a transition of the whole of society. It is very difficult to pick one thing versus another, but there is a suite of things that I would highlight in terms of infrastructure. As we all know, heating and the heating of our homes is a massive transition that we are going to need to go through. We have already seen some announcements around that, but prioritising, in the first instance, energy efficiency of our buildings, and then moving to low and zero-carbon heating, whether that is heat pumps or hydrogen, is clearly a significant priority.

On the transport side, we know what many of the solutions are, but it is about the speed of the change that is required by the science to respond to climate change. It is about accelerating the transition to electric vehicles and the infrastructure, critically, that is required to support that. It is not just thinking about personal transport, but also thinking about freight, where very different solutions may be required. There are a number of proposals. One is putting in place smart electric roads along our motorways, so we can have long-haul heavy freight being recharged and reduce the number of batteries required to do that on those road systems.

There are a number of options that need to be explored in transport. I have already mentioned aviation. If we do not tackle zero-carbon flight, aviation is going to completely dominate our emissions into the future. That is another key area of investment, but one where we could lead the world if we got that right.

We have already mentioned carbon capture and storage, and greenhouse gas removal more generally, in terms of both the technologies that might be developed for that, but also how we might be able to use nature-based solutions to support that. That, again, is a set of infrastructure where we are at the stage of demonstration and scale-up of the technologies required in those instances.

We have all started embracing much more of a digital world. Rolling out the infrastructure and the technologies, whether broadband or others, to support that is critically important, but doing so in a way that does not itself generate huge amounts of emissions through the energy usage.

Q71 **Harriett Baldwin:** We can argue about the scale, but these are all things that the Chancellor is currently funding.

***Dr Shuckburgh:*** I have given a long list of different things, but the key thing is that this all needs to be done at the same time, at scale and at pace. Therefore, it needs to be co-ordinated and orchestrated. If there was one single thing that would be really helpful to put in place, it is the sort of delivery board we had for the Olympics. A net zero delivery board could keep this complicated picture of different sets of infrastructure investment on track, involving many different Government Departments and also down at a local scale. If there was one single thing, that would be it.

Q72 **Harriett Baldwin:** In the existing national infrastructure and construction pipeline, what would you cancel if you were Chancellor?

***Dr Shuckburgh:*** The critical thing is that all those projects need to be consistent with our legal obligation to reach net zero by 2050. The key thing is that the numbers simply have to add up. The numbers, in terms of our emissions, simply have to add up. It is simply a case of going through and making sure that they really do. In some sense, that comes back to questions about how these projects are assessed and what metrics are used to assess them in the first place, and making sure they are the right metrics.

Q73 **Harriett Baldwin:** Can you give me an example of a shovel-ready project that has been funded that is also consistent with our net zero commitment?

***Dr Shuckburgh:*** The classic shovel-ready projects are the ones that have already been suggested. Increasing the energy efficiency of our homes seems to be an absolute no brainer, in terms of the sorts of things we ought to be doing.

***Professor Robins:*** We have an opportunity this autumn. We have a national infrastructure strategy coming forward, which can set those principles of net zero resilience and the inclusive economy. That would lead to re-evaluation of things that are already in the infrastructure pipeline. People have raised a number of questions about spending on roads and whether it could be better allocated, particularly to other forms of infrastructure, broadband and so on.

It may be important to think about the connectivity between public finance and private finance here. I would take as examples the down payment that the Chancellor has made in the plan for jobs, which has been seen as a very welcome sign, and the green homes grant. Many things are still being put in place. There is a real recognition is that this needs to have strong quality control, with so-called retrofit co-ordinators coming in to work on that. This is where the link can go to the financial sector, particularly the banking sector, in the provision of mortgages and other forms of housing finance. They can play a very useful enabling role in ensuring quality, where you are going to need extra funding for that retrofit activity.

In terms of funding infrastructure, we should think about the hard physical infrastructure, but recognise that this also is going to need a lot of human capital, skills, knowledge and people. Estimates in the building sector are that we need another 220,000 workers for that retrofit programme to continue. In terms of spending priorities, thinking about making sure that we have the skilled workers would be a really important point. We have touched on the green gilt already, but perhaps I could talk a bit about some of the institutions.

Q74 **Harriett Baldwin:** I was going to get to that question. I was going to ask you about this new national investment bank that you have been advocating. We did, until recently, have a green investment bank that was set up to do exactly what you are outlining and crowd in private sector investment. It was successful enough to be able to be moved into the private sector. Talk me through your thinking about why another new one is needed.

***Professor Robins:*** That is a very good point. To some extent, the Green Investment Bank was neither one thing nor the other. It was neither a classic, long-term public infrastructure bank, like KFW in Germany or the European Investment Bank, and it was not a fully profit-making private sector investor, like the members of Chris's organisation. The role would be for not a niche green investment bank, but for what is called a policy bank, a national investment bank to support development of the Government's economic policy.

Particularly in this arena of the green economy, it would help to deal with some of the policy risks there, and would help with what economists call market formation. There are many areas where we need to create new markets. The Green Investment Bank and other national investment banks can play a very useful role in that, providing lending, as banks would do, but also a number of very cost-effective mechanisms, guarantees, first-loss mechanisms and so on, which can then pull in investor capital and bank capital. We have the opportunity to set that up and that points to a long-term role.

It is not specifically infrastructure, but we might want to consider the role of the British Business Bank, which has had a massive role in the crisis. It already works with the SME sector, in terms of growth finance and so on. As we are talking about green finance, we should not forget the SMEs of this country, which have been in a tough position, and how we could extend the mandate of the British Business Bank to support the innovators, the green solution providers, those SMEs that are adopting green technologies, and those that could be exposed to some of the transition risk, for example SMEs in the diesel supply chain.

Q75 **Harriett Baldwin:** Thanks. That is very helpful. Can I turn to the regulatory side and turn towards Daniel and Chris? Again, if you were the top regulators, if you were running the FCA or the Governor of the Bank of England, what are the key regulatory changes you would make that would be helpful to ensure that we get a green recovery that supports net zero?

***Dr Klier:*** We touched on many of these things. When we think about the transition, we need to always look at both sides of the balance sheet. There is the new investment side, and then there is how we manage our current exposure. On the current exposure side, the book of work that is currently in play is very ambitious. It is world-leading and is seen as the driver of global regulatory change.

The other side is how we encourage more investment in green. We should have a discussion about a few elements. European colleagues just moved forward with some relief on green infrastructure, especially long-dated infrastructure, where the banking space has probably withdrawn. There is a very live discussion about anticipating the expected lower risk of green investments in some form of a green supporting factor. There is a lot of work going on to prove that in data, but there is a valid discussion to be had. We all believe that green investments are lower risk. We have seen in the current crisis a lot of evidence that climate-aligned investments performed much better than the market. We have analysed a very large population and found that the outperformance versus market was 10%.

Q76 **Harriett Baldwin:** For what period?

***Dr Klier:*** That was during the six-month crisis period. We wanted to test whether the common belief that climate-aligned investments and ESG-aligned investments outperform the market in a shock is true. For the first time, we have taken the theory through a real shock. There is a case to be made for whether we can start to anticipate some of that lower risk in the way we allocate capital. The big topic, for me, is the infrastructure debate. The latest regulatory changes made it much harder for financial institutions to hold long-dated infrastructure, for very good reasons, because we had our learnings from the last financial crisis, but they also had some unintended consequences, which are worth reconsidering. Again, we have seen just recently a few changes from the European Banking Authority on this, which we should consider mirroring in the UK.

Q77 **Harriett Baldwin:** Thanks. That is very helpful and specific. Chris, you are going to send us a whole document on this, but perhaps you could highlight the top thing you could see regulators doing that would support your investors to make net zero investment decisions.

***Chris Cummings:*** Sure, I will be brief. First, looking at the advice landscape, there is a lot that could be done with the children's ISA; that also speaks to intergenerational fairness. Looking at how we have seen the upswing in ESG interest in investing, there is an open goal there for

Government to attract even further levels of investing through the children's ISA. That gets covered by the advice issues that Harriett and I have spoken about in the past, so I will not go into those.

The major one is to work with the industry to create the long-term asset fund. This is a new fund vehicle that we have been spending a lot of time talking to our friends at Treasury and the FCA about, which allows retail investors and particularly DC pension funds to invest in infrastructure. It goes beyond the debate around open-ended or closed-ended. It is a new fund structure, which is specifically designed to address the long-term investment issues. If there was nothing else for the regulator and infrastructure—it will require joint effort to bring about—it is that new generation of fund vehicles. I would be more than happy to write to the Committee about that. We have a lot to say on that, as you know.

I have two very quick things to finish. First, in this discussion about other institutions, can I please put a plug in for the British Growth Fund, the BGF? It has been remarkably successful in reaching down into the SME community and providing some of the seed funding that can get them up to a more strategic level. It often goes unsung in meetings like this where other, better-known institutions get praise.

Q78 **Harriett Baldwin:** Who runs the British Growth Fund?

***Chris Cummings:*** Good heavens, I have a mental block. It will come to me in a second and I will send it to the Committee. Forgive me.

Q79 **Harriett Baldwin:** Is it with one of your members?

***Chris Cummings:*** No, it is an institution that was formed as a result of the last financial crisis, with seed capital from banks going into long-term investments. Daniel is nodding. He obviously knows its work as well.

Finally from me, could I underline the importance, please, of policy certainty? As the investment management industry, the one thing we love to invest in is infrastructure: long-term projects with known investment horizons. It is exactly type of thing we get excited about. Successive Governments, unfortunately, have changed the policy direction, rules, incentives and so on, which makes it much harder for UK pension funds to invest in infrastructure. Speaking personally, I see what happens when the Canadian pension funds invest in UK utilities and so on. There are lessons to be learned there as to how we can bring our own UK pension funds and DC pension funds back into investing strategically and substantially in infrastructure. Please, we would like policy certainty.

Q80 **Harriett Baldwin:** Chris, sorry to have to pin you down on this, but what is the specific regulatory change that would change that long-term investment incentive for your members?

***Chris Cummings:*** We have looked at this. Greater collaboration between the FCA, the Pensions Regulator and Treasury—yes, there are MOUs, but I mean a joined-up approach that can free up specifically DC pension scheme investment—is the one major initiative that could drive hundreds of millions or billions of pounds more into UK infrastructure investment over the space of years.

Q81 **Harriett Baldwin:** By doing what specifically?

***Chris Cummings:*** By agreeing the national infrastructure plan and by all parties signing up to it and pursuing it rigorously, with agreed incentives, known upfront, and, I am afraid, the political will to say, "That is the deal and we are not going to change it".

**Chair:** Not that I knew it, but I just checked and Stephen Welton is the executive chairman of the BGF, if that is who we had in mind.

Q82 **Mr Baker:** This has been very interesting. Daniel, a few minutes ago you said that ESG investments were outperforming the market but I do not think you said why. Why do you think they are outperforming the market?

***Dr Klier:*** We always believed, and are now able to test, that ESG-aligned investments remove risks in ESG criteria. We have just been going through a major environmental and social crisis. ESG, if done well, is supposed to reward and over-emphasise companies that are doing well in this, and reduce exposure to companies that have vulnerabilities. Normally in a crisis, these vulnerabilities are exposed. We are seeing this now, more than ever on the social side but also on the environmental side. This crisis emphasised industries that had a very limited carbon footprint and over-emphasised the impact on industries that have a very significant carbon footprint. It was unintentional, but it is one of the perfect scenarios that many scientists would play for physical climate events.

Q83 **Mr Baker:** We have all talked a lot about incentives, long-term stability and so on, but at one point somebody mentioned the previous financial crisis. One of the big lessons from the financial crisis is that you undermine people's faith in a market economy if you privatise profits and then project the risks on the taxpayer. I hope you will not mind me saying that, as I listen to all of this, I am a bit concerned that we are talking about the reallocation of really vast sums of capital. Hopefully, you would all agree with me that we do not want to create a rent-seeking class that enjoys private profits while the risks are socialised. I wonder if I could ask Nick what reflections he has had on all of this. How do we preserve faith in the market economy by ensuring that investors, while they enjoy the returns, also get the risks?

***Professor Robins:*** That is particularly important. There are a number of aspects to this. We talked earlier about making the market work better through carbon pricing, which is a very useful tool to make the market work better, as well as the revenue-raising aspects. In the current circumstances, we are in a crisis. We have a large amount of forced, involuntary saving. The Bank of England is estimating potentially 25% in the second quarter. With depressed investment appetite, for obvious reasons, this is the moment, in a countercyclical sense, for the Government to provide that investment direction, as we have said, towards the successful economy of the future and to provide some of the capital to kick-start that process. It is very important that this would be in a market-orientated sense.

Particularly looking at the situation in the equity markets, which some people have been referring to as perhaps the world's greatest bubble at the moment, whether that is true or not, the point for us at the moment is how the Government can encourage flows of capital into the real economy. The point we heard earlier about how infrastructure can safely become part of people's DC plans in every workplace pension, and support the real economy—SMEs and businesses—is a very important focus now, I would suggest.

Q84 **Mr Baker:** Can you recommend a specific mechanism to ensure that rent seeking is eliminated or at least minimised? Throughout all of this, we are talking about Government steering markets to deliver policy outcomes. What can Government do, while they do that, to avoid rent seeking?

***Professor Robins:*** I suppose the definition of rent seeking is that you are benefiting from unearned income for which you have not made any particular effort. In this case, as we talked about following the Chair's first question, we need to be very clear what the Government, on behalf of the people of the UK, get in return for any use of scarce public resources. We would also potentially need to think about the use of fiscal mechanisms to ensure that, if any excess profits are generated, these are clawed back by the state so that they can be used for the common good, I would suggest.

Q85 **Mr Baker:** I feel like we are out over deep waters. Chris, do you have any reflections on this particular issue of maintaining faith in the market economy by making sure that those who enjoy the profits carry the risks?

***Chris Cummings:*** Your question goes exactly to the heart of the matter. In the investment management industry, we were pleased to have weathered the last financial crisis without taking Government money. We have gone through the current crisis without taking Government money. I would like to almost turn the question on its head. There has been a lot of talk about how much a transition could cost. Our experience is that the capital markets are more than able to finance the transition of UK plc and of major companies from where they are today through to net zero.

What worries us a little is crowding out by Government and having too many Government initiatives that undermine the attractiveness for investors. We would urge a little caution and for capital markets to be allowed to do the job that they are there to do. As I mentioned at the start, in the last few weeks, 56 listed companies have been able to turn to their shareholders and raise over £14 billion in new fundraising, in record time. Because of how the markets responded, we relaxed rules around the cash box. We worked with the Pre-Emption Group. The market has coped very well at a time of massive stress, when—we should not forget—the whole of the industry was going from office-based to home-based, and stood up. Public markets stayed open through that. I understand the thrust of your question and it is exactly the right one, but we would approach it in a slightly different way.

**Mr Baker:** I am flattered. I am desperate to bring Emily in, but Daniel indicated he wanted to say something.

***Dr Klier:*** I echo Chris's observations. The place where public money is needed is in technologies that are not yet ready for market. Wind is a very good example where the UK was a world leader by creating a framework that made the technology market ready and then it was time to withdraw any subsidies.

If we think about the long list of technologies that Emily went through—hydrogen and electric vehicles, and at some point we can talk about low-emission aviation and the like—those are technologies where public money is needed to bring them to the place where they are commercially viable. At the moment, private money does not flow, unless you are an extraordinary risk taker who seeks an extraordinary return at the end. Those are the technologies where public money is needed, and the public also needs to be educated enough to withdraw subsidies at the point when it is ready for commercial application.

Q86 **Mr Baker:** I want to get on to the substance of green policy changes post coronavirus and ask you all about that, so I will just plant that thought. I want to ask you about some specific policies that you would recommend as we recover from coronavirus. It has been very interesting to listen to you. Daniel was talking earlier about capital allocation and price signals; Chris said that data is absolutely critical; and Emily talked about climate change being a predictable risk. Since you are a climate scientist, I have to ask you about some data that I have in my hands.

***Dr Shuckburgh:*** Go on, then.

**Mr Baker:** I will just wave it at you.

***Dr Shuckburgh:*** Gosh.

Q87 **Mr Baker:** You can see the general trend of it. The pink is modelled predictions of climate change and the blue is observations. If I were to look at the tropical troposphere warming trends in 102 climate models, the model average is 0.43 degrees C per decade, but the observations are only 0.15 degrees C per decade. If I look at the bottom chart, the model predictions are accelerating away from the observed data. In the observed data, there is undoubted warming of about 0.5 degrees on here, but the predictions of the model are up at one degree and 1.5 degrees. Why is it that the models are so wrong? Surely, accuracy of data is extremely important to driving the magnitude of the policy response to what is undoubtedly a problem. If it is predictable, why are the models wrong?

***Dr Shuckburgh:*** Apologies, but you will have to send it to me. Do please send it to me afterwards, if you want to. I cannot see exactly what graph you were talking about.

Q88 **Mr Baker:** I was taking it for granted that you are familiar with the models and the observations.

***Dr Shuckburgh:*** I am very familiar with the models. The observations show that, if we take global average surface temperature, we have seen just over one degree of warming since pre-industrial times. Our climate models, which are computer simulations of our climate, are entirely consistent with the observed warming that we have seen to date. There is no inconsistency between the two. You can send me whatever data you have and I am very happy to look at it, to understand exactly what you have. There is no inconsistency.

Q89 **Mr Baker:** I will do. Just so that people on the public record following the conversation know I am not making it up, it is by Professor John Christy, director of the Earth System Science Center, distinguished professor of atmospheric science and Alabama state climatologist at the University of Alabama. I am not making it up.

***Dr Shuckburgh:*** You are absolutely right that a critical analysis to do is to compare the observed temperature change with our computer simulations of the climate. We have had a number of decades now of projections of climate that we can do that comparison with. That sort of comparison is a standard part of the IPCC analysis. You can find it in each of the IPCC reports. Another IPCC report is coming out within the next 12 months and it will be a critical part of that as well. You will be able to see the consensus view of the academic community, both in past reports and in that future report.

**Mr Baker:** I love data.

***Dr Shuckburgh:*** There is no inconsistency.

Q90 **Mr Baker:** What changes do you want to policy?

***Dr Shuckburgh:*** You can pick any particular area that you like and identify specific policy changes. As I have said a number of times, the absolutely critical thing is the scale and the pace. If you are interested in the data, the key thing is that, as has been said already, this coming decade is the one in which substantial transformation needs to occur. In some areas, that may have been accelerated by the current crisis. The fact that we are all working from home has already been pointed to, and changes in some aspects associated with transport and digitalisation may happen more rapidly.

It is still the case that very great sectors need to transition very rapidly. In all honesty, if we had started this journey some time ago, it would have been a little easier and the transition would have been less sharp.

Q91 **Mr Baker:** I certainly would not start from here either. Could I ask you, Nick, what tax policy changes you would like?

***Professor Robins:*** We have already discussed carbon pricing and increasing the carbon price both as a signal and as a revenue raiser. Could I talk about other policies?

Q92 **Mr Baker:** Yes, but tax specifically. Here we are, recovering from coronavirus, talking about the green transition, specifically in the context of tax, since it is a Treasury Committee. I am probably getting close to needing to give way to others.

***Professor Robins:*** Could I turn to the spending side of fiscal?

**Mr Baker:** Yes, sure.

***Professor Robins:*** Very clearly, we should be increasing the carbon price as a revenue raiser and a signal. There are perhaps two areas to build on. We are talking about green finance, but the question of the social dimension has come up a number of times. We should be thinking about how the delivery of this green economy is going to happen at the local and regional level, as well as questions about a green gilt being the right moment. We are seeing two local authorities at the moment issuing new forms of local municipal finance, and there may be ways of encouraging that. We have the UK Municipal Bonds Agency and we should be thinking about that. That is on the spending side.

Another thing is the question of the skills base for this. As I mentioned earlier, just in housing, we need another 220,000 workers, so we need a large focus on a climate skills strategy, particularly to ensure that we deliver a just transition in this process and that this enables people to have good livelihoods and good enterprise across the country. Tax raising, carbon pricing and carbon taxation are priorities, but so are the local and the social dimensions, I would suggest.

**Mr Baker:** I must stop there. I have taken up plenty of time. Thank you all very much indeed.

Q93 **Rushanara Ali:** Good afternoon. Thank you very much. We are going to have a vote at about 4 o'clock, so I will try to rattle through. I wanted to dig a bit deeper into some of the points you have already made. Starting with Emily, can you talk through where you think the big structural shifts are emerging in our economy in the light of the Covid crisis? Which sectors are likely to form the new economy? You have all talked a lot about the areas where Covid has exposed what is coming their way—aviation and other forms of transport—but could you just run through what you see happening to the economy and, in terms of timeframe, what the trajectory might be?

***Dr Shuckburgh:*** Specifically post-Covid?

**Rushanara Ali:** Yes.

***Dr Shuckburgh:*** I do not have great professional insight into this, but it is very clear that some sectors of the economy, which we have seen already, are going to be under severe pressure, at least in the short term. It may be that some elements are, through that, simply going to be very difficult to recover. Green investment in these areas could help substitute for those other areas of the economy that are currently under severe pressure. It is almost fortuitous that these two crises have occurred at the same time and are usefully different. By responding to one and to the other at the same time, we might be able to mitigate some of the challenges there. Some communities around the country are under particular pressure at the moment, so if investments can be directed towards those—and we have seen very welcome announcements of jobs targeted at young people in particular—and if those jobs can be combined with the right skills training for the jobs of the future, that would be the most positive way out of the crisis.

Q94 **Rushanara Ali:** Could you identify which sectors you see as being the major part of the new economy? We have talked about housing and other types of physical infrastructure. What other sectors do you see as being part of that new economy?

***Dr Shuckburgh:*** There are all the things that we have listed already in terms of the infrastructure that is required. I would also point to the digital side of things. That is a transition that we have already talked about being accelerated and one that can significantly contribute to a new, much more knowledge-based economy. The knowledge economy is sometimes called the weightless economy, and we need to make sure that it is as decarbonised as it can be. Promoting that aspect could be a very positive way forward.

Q95 **Rushanara Ali:** Turning to other witnesses, we have talked about transition but we have not talked as much about another area that is going to be of concern, around how we ensure that that transition is a just transition. I do not know who is keen to go on that. The focus on young people is helpful but it is probably not going to be enough to ensure a just transition. What else should the Government be doing to make sure that they honour the commitments around net zero, given that quite a lot of gains have been made because we have had to shut down? It is not the ideal way to do it, but it is one outcome. What else should Government be doing to ensure that we get public buy-in?

***Professor Robins:*** One of the many impacts of Covid on this agenda around green finance and decarbonisation is that it has really pushed to the centre the fact that, as we make this transition, it needs to be a just transition that is fair for all. That chimes with some of the principles from the Committee on Climate Change, with fairness being a key priority of this recovery process.

Just transition is already part of the Paris agreement. We can translate that commitment in a policy sense, for example, when we come forward with the national infrastructure strategy, when we think about the skills and retraining that is going to be required. In terms of the regional dimension, the transition is not going to happen equally across the country. The country is very differentiated between rural, post-industrial and urban. That is going to be a really important dimension of this, as is enabling people to take part in decisions.

We have been working with investors and banks. In our latest work showing what banks can do to support a just transition, we have eight bank CEOs coming out and showing why this is needed, including HSBC UK's CEO. There is appetite there from the finance sector, from institutional investors and from the banking sector to connect the E and the S of ESG. These three things can sometimes be siloed but the just transition is, essentially, connecting the environmental and the social dimensions, so they go together. There is appetite from the finance sector and clear signals that the just transition is part of the Government's national infrastructure strategy, as well as support.

On the question of the green gilt or the green sovereign bond, it would be very plausible to issue something that could raise money at lower cost for the state, to allocate the funds to the green sectors that we have all talked about, and to ensure that those also have social impact in terms of jobs and skills, as well as potentially allocating some of those funds to areas of higher deprivation. You could use the green gilts to tackle both the green and the social.

***Dr Klier:*** The words "just transition" can often sound very generic and people do not really know what they mean. If you think about what financial institutions are now doing with their lending exposures, they are running scenarios to identify which geographies and sectors are most affected. We need to do exactly the same for the UK economy, to identify exactly what we mean, which industries and which parts of the economy are affected, and then launch a cluster strategy for those. Investors, banks and the wider community here will be able to act only if we point fingers at where we have concerns. To my knowledge, we have not done that yet on that basis. For me, that would be the first step in talking about a just transition.

Q96 **Rushanara Ali:** Would you say that our Committee should be pushing the Government to look at that? We have seen the way that the coronavirus and the existing inequalities have played out in differential impacts on our constituents and different regions, with the economic dimension kicking in. Is that a role for Government, alongside others? Who is doing this kind of work and who else should be doing it?

***Dr Klier:*** The Government will have to face exactly the same challenge that every company faces. We used to work in certain pathways. Our projections were all linear. The current crisis showed us that we have to plan in scenarios. We are doing this with a number of academic institutions and we are working with MIT in this case, but there are many very capable academic institutions in the UK that could support such a piece of work. It is very unlikely that any future plan can be done on a linear forecast.

***Chris Cummings:*** To reflect on the question and the impetus behind it, as I was saying a little earlier, during the course of the crisis we have seen retail investors—ordinary people, up and down the country—investing in the order of £1 billion a month in ESG funds. Some fresh research from Opinium was shared with us, showing that 54% of people who were already investors during the crisis have increased the amount they are investing in ESG funds.

Across the UK population, we see a greater desire to make sure that the money they are investing is put to work in the way they would want, with greater transparency about what is happening to their investment. They want to see that local impact in creating jobs and improving the environment. We are seeing that across the country. We are absolutely seeing it from institutional investors and the major pension funds whose money we are investing. There is a great coming together of what we see in terms of retail investors and voters, and how they want Government to be acting, with an opportunity to build that just transition that you were referring to.

Q97 **Rushanara Ali:** The bell may ring shortly, but here is one for you to think about. When I am back, I am going to get on to my next section. This links to the international perspective and Britain's influence, not only through the financial markets, which we will come to later, but how we enable other countries to honour commitments from the Paris agreement. We made a commitment to put in something like £100 billion in the previous summits. Only a fraction of that has been provided to emerging economies to make the transition and to make adaptations and mitigations to reduce their emissions. Given the wealth of expertise in this panel, I wondered if any of you wanted to speak to that dimension of our influence. I will have to leave you to think about it while we go and vote.

*Sitting suspended for a Division in the House.*

*On resuming—*

**Chair:** Rushanara, you were just asking a question at the moment we had to suspend the Committee.

Q98 **Rushanara Ali:** I wanted to turn the panel's attention to the international dimension. In previous summits, we agreed, as an international community, to support developing countries through the Green Climate Fund. In the order of £100 billion was committed but only a fraction was provided to those countries. It would be really helpful, given what has happened with coronavirus and the impact on those economies—even more so than our own economies—to hear what we should be doing to support those countries so that they can meet their commitments, recognising the challenges that they face, if we want to make sure that the global community acts together to reduce emissions and meet the net zero target.

***Professor Robins:*** Thank you very much for this. The global community has committed to mobilising £100 billion a year in flows to developing countries, led by the public sector and then bringing in private capital. We are on a rising track, going from about £58 billion in 2016 to about £71 billion in 2017, and we are probably on course to hit that. Again, we are talking here about billions and, essentially, we know that the vast majority of the extra capital needed to achieve climate goals—net zero, resilience and the just-transition element that we were talking about—is going to need to be in the developing world. That is a question of trillions, so we have to think about the order of magnitude.

The UK is in a good position, with a good track record of public climate finance. Interestingly, the CDC, our development finance institution, has come out with a new climate strategy that recognises net zero, resilience and the just transition. We could also think about the role that UK export finance could play in this, as well as how UK Government strategy on mobilising finance can connect with the pools of capital that are managed in the UK.

One thought that I have been discussing with many people is that, as you said, developing countries are very hard hit by the coronavirus. A number of countries are experiencing stress in terms of sovereign debt. Interesting discussions are underway about how the green finance and sustainable finance capacity that now exists, which was not around in the global financial crisis, could be deployed. For example, how could countries such as the UK provide first-loss mechanisms and guarantee mechanisms for sovereign bond issuance from developing countries, which would then be allocated towards climate and sustainable development goals?

This would be a very cost-efficient use of capital in terms of first loss and guarantees. It has been done on the corporate green bond side through the IFC, but we could similarly think about an application on the sovereign side for countries that are able to issue debt. From my discussions, a lot of investors would be very interested in that, because it would enable them to come in and back developing countries at this time of crisis.

***Dr Klier:*** As Nick said, we all believe we need to invest £6 trillion to £7 trillion every year in the energy transition. Two-thirds of that is in emerging markets. I would also caution against thinking that we can solving that with aid money. It is important to have that, but it will not solve the problem. I have five quick things on my list, given that you gave us a bit of thinking time over the break, that we can do, going beyond aid money.

First, there is a big piece of work to be done to define what sustainable infrastructure is and what the financing mechanisms are, and then to turn London into the hub for this investment. As we heard before from Chris, investors are hungry for yield and are looking for long-dated assets.

There may be some need for risk mitigation, but we can have much more impact if we do that risk mitigation here in London and mobilise money. There is a piece of ongoing work that we are leading together with the OECD and the World Bank to create that framework for sustainable infrastructure and how to mobilise it.

Secondly, we talked a lot about how we make new technologies mature. Germany led on solar and the UK on wind. It is probably a bigger contribution to emerging markets than many other things if we turn new technologies to market readiness and then hand them over to emerging markets.

The third topic on my list is much more focus on supply chains. While we think we need to invest a lot directly in countries, we also have an incredible influence. We know that 80% of the carbon footprint sits in our supply chains, many of which go into emerging markets. Therefore, working with companies in the West to create incentives in their supply chains to make them greener and to make investment in those supply chains is critical.

Fourthly, if the UK or London could create a functioning carbon offset market, we could mobilise a lot of money for nature and reforestation in emerging markets via the capital markets in London. Lastly, if we manage to roll out a functioning regulatory framework between fiscal and monetary and the regulators, which can be adopted in other geographies, we would probably do a lot of service because people look at the UK as a role model to copy, and nobody has to reinvent the wheel. Those are five ideas that go beyond sending money directly and which allow us to mobilise trillions, not just billions.

Q99 **Rushanara Ali:** To follow up on that, I was not suggesting that it should be direct but very much along what you said. You talked earlier about the Bank of England's four tests around this agenda. Given what you were saying about the UK and financial services, and the things we can do, does that provide the opportunity to do them and is it adequate, or could we do more?

***Dr Klier:*** The UK has done a great job so far in showing leadership. Given that COP 26 was really positioned as a COP for business and finance, that is the moment to turn things that are suggestions and voluntary standards at the moment into something that can be adopted by many more countries. In terms of what the Bank of England and, increasingly, the ECB, the Banque de France and the MAS in Singapore are driving, if we could find emerging market geographies to adopt similar standards, we would see a lot of change.

Q100 **Rushanara Ali:** Chris, are the numbers that Daniel is talking about—two-thirds for emerging markets of the £6 trillion to £7 trillion a year—doable?

***Chris Cummings:*** I was going to make a couple of comments. At the moment, we are managing some £1.7 trillion for international investors through the UK and deploying that money into various parts of the world. A lot of that is coming through higher-growth economies in Asia and so on.

Going back to my earlier comments about making the UK even more attractive and a competitive destination, part of the reason why the UK is held in such high regard, and UK-based investment management firms are sought out by these clients, is the stewardship code. The UK really carved a swathe when we introduced the stewardship code. It has been hugely successful in reassuring investors and clarifying to investee companies the expectations and how we all deal with them, invest in them and hold them to account. As you will know, the stewardship code has recently been updated and we are doing a joint project for Treasury at the moment, looking at how we can make the stewardship code even more internationally attractive. That is a great magnet to investment.

Can I also underline the final point that Daniel made about the regulatory environment? Making sure that we have a regulatory environment here in the UK that is conducive to business, does not impose cost after cost and is not constantly changing would be a boon. We are all hoping that COP 26 provides a great platform opportunity for these ideas next year.

***Dr Shuckburgh:*** I just have two to add to Daniel's list. He talked about, essentially, technology transfer, but there is also a role for collaborative R&D development to create locally appropriate solutions. The second thing that I wanted to add to his list is skills and education. It feels to me as though, in this country but particularly in many developing countries, that there is a large capacity gap in bringing up the skill base required for the jobs and the other functions of society going forward. Where we can export that skills and education training, that could be a critical component as well.

Q101 **Anthony Browne:** Sorry I missed the first half of the session, but I was in a debate in the Chamber. I should just declare some relevant interests. I used to be chief executive of the British Bankers' Association, of which HSBC was a member. I also used to be on the board of TheCityUK when Chris Cummings was the CEO. We appointed him.

My questions are about green finance or at least how financing can promote the transition from a carbon-intensive economy to a low-carbon economy. Clearly, that is going to involve a lot of costs in certain sectors, and more in some than others. It is really about the role of the finance industry in helping companies make that transition. Dr Klier, in your written evidence you called for the issuance of transition finance to help companies make that transition from carbon-intensive to low-carbon. Can you just explain how you see that working and what barriers there are to the take-up of that?

***Dr Klier:*** If you look at the green finance industry or the broader discussion that we have at the moment, we are really talking about two extremes. We are talking about the very green parts for the economy and, very often, about the very brown parts of the economy. We often forget that 90% of the discussion happens at the core. That is where the emissions are and where the employment is. I am talking about the sectors we mentioned before: oil and gas, utilities, cement and steel. We all know we need these industries, but we need to transition them. As we set out in our written evidence, we now have a need to mobilise money for those sectors because, at the moment, they are not the companies issuing green bonds. They are not the companies issuing green loans.

These are the companies that we know have to invest billions in new technologies and to transition existing manufacturing processes. If you think about transition instruments, we are now slowly seeing the emergence of sustainability-linked bonds and transition bonds, which allow investors to, essentially, support companies in their transition, connected to specific targets. To make that viable, you also need to have much better reporting. A lot of companies are able to tell a very good story, but we need to have much better and more consistent disclosure to ensure that investors can trace back and check that the investments that have been made are successful.

Over the last 12 months, we have seen the emergence of sustainability-linked bonds—Enel was one of the first companies to issue them—and transition bonds, with China Light & Power and KEPCO coming to market. Investors are very supportive of putting money to very specific use cases in these heavy-emitting industries.

Q102 **Anthony Browne:** What are the barriers to more of that being taken up now? Are there any regulatory barriers that you would need to see changed or is it just the case that the market needs to develop?

***Dr Klier:*** We do not see significant regulatory barriers. Two things need to be in place to make that successful. One is clarity on what people accept as the right transition pathway. If you think about the sectors that I just mentioned, there is a lot of controversy as to what the right transition is for an oil and gas company, a utility or an automotive company. It is about accepting and agreeing the pathway to net zero, and what KPIs people can agree to along the way. The second element where regulators come in to a degree is the right disclosure: finding better means of industry and financial sector agreed disclosure to make that viable.

**Anthony Browne:** The disclosure of carbon use, for example.

***Dr Klier:*** Yes. I do not see this as an area where we need significant public money and the like. We need to find the right framework that is accepted and the right disclosure that people can report to.

Q103 **Anthony Browne:** Chris Cummings, you represent investors. What role do they have to play in the transition from the economy we have now to a low-carbon economy, thinking particularly about investing in businesses?

***Chris Cummings:*** It is absolutely the right question to be asking at this precise moment. I was making the point a littler earlier that, during the crisis, from a retail point of view we have seen in the order of £1 billion a month going into ESG funds, particularly those with a more pronounced S aspect to them. That shows the appetite from the UK public to be supporting the type of companies that are taking the transition seriously and looking after their community and supply chain.

From a more institutional point of view, there is real appetite to work with major listed PLCs. In the last few weeks, we have refinanced some £14 billion from 54 FTSE-listed companies to help them through the crisis and prepare for the transition ahead. Investible assets are available for those corporates with a transition story, which are transparent about the difficulties they face and willing to be held to account by investors.

I would make a couple of points on broader-brush regulatory change. First, we have called on all FTSE companies to sign up to the TCFD requirements and to bake them into their annual report and accounts. Given that that is a public document, we can then do our job as investors and scrutinise the milestones that Daniel was referring to, to decide how much longer we can support those companies and make sure that they are progressing according to the strategy that we were involved in.

Finally, on the FRC, clarity around audit standards, so that a common language is established between auditors, the companies they are auditing and us as investors, is mission critical in building that just transition. Otherwise, we end up with an alphabet soup of different standards and a lack of clarity as to what one corporate is doing against another. That is bad news for investors.

Q104 **Anthony Browne:** How much is that aspect of the company's journey to net zero a real clincher in an investment-making decision at the moment? Do you hear any equities analysts saying, "You cannot invest in this company because it is not decarbonising quickly enough" or is it really just a niche thing, of more concern for ethical funds?

***Chris Cummings:*** No, it is becoming core to the industry's purpose. In fact, many of our firms, including HSBC's investment arm, have established a clear taxonomy, a guide to the type of companies that they will and will not invest in, with a real desire to celebrate the leaders versus the laggards.

Q105 **Anthony Browne:** That is based on hard-headed financial decisions as opposed to ethical decisions.

***Chris Cummings:*** It is. To echo something that Daniel said a little earlier, we have seen through this crisis that ESG funds are outperforming their non-ESG counterparts. That is because of the characteristics of this particular crisis, and how well biotech and health sectors have done, but it is a good sign for the future.

***Dr Shuckburgh:*** TCFD has been mentioned a number of times and has been hugely influential already. It seems to me that there are opportunities for expanding TCFD; in particular, we have mentioned supply chains a few times. Scope 3 emissions, as they are often called—essentially, tracing emissions through supply chains, for example—are not currently part of the TCFD reporting. It is difficult and complex to do, but, if efforts were made to encapsulate those supply chain emissions, that could be incredibly influential in moving TCFD from something that just the larger firms are focused on and broadening it throughout the economy, in an efficient way. We have already mentioned the importance of having common standards for reporting on those sorts of emissions.

We have been talking predominantly today about climate, and equating climate and green, but there are many other aspects of greenness that are also important and are starting to rise up investors' agendas: biodiversity, land degradation and water, for example. There is a nascent TCND, with the N being nature, which is being developed as a reporting framework around that. It is going to be very interesting to see how that develops and is taken up by the industry.

Q106 **Anthony Browne:** It is the right thing to do. Coming back to the question I asked Chris, is it something that people are doing just because it is a good thing and the right thing to do, which might limit the attractiveness to investors, or is it because they really have to do it, as a commercial imperative, given that the Government have the target of decarbonising by 2050?

***Dr Shuckburgh:*** Others can answer much more from a financial services perspective, but I sense that people have been on a bit of a journey here in the sector. It started off as something it seemed like we ought to be doing and, over time, as we have heard evidence of ESG funds outperforming other funds, it is becoming much more than something we ought to do and is seen as a really beneficial tool for prioritising.

***Professor Robins:*** How do we get the financial system as a whole to move? We have been talking about the emissions side and net zero, and Emily very helpfully brought up nature and other things. Investors are adopting net zero targets to make their portfolios align with net zero by 2050, for reasons that, if you are a pension fund, you will not be able to continue to pay out pensions if we have disruptive climate change. That is then being signalled through shareholder engagement to companies: BP came forward with its net zero target. We need the instruments and the transition finance in between.

One of the key things is to be clear, particularly to the end investors—individuals and their ISAs or pensions—about the temperature alignment of their fund. The Bank of England has done it for its holdings. It is 3.5

degrees C, so way off where we need to be. That could be a very important result.

Q107 **Anthony Browne:** Could you just explain that? The temperature alignment of their fund is 3.5 degrees. What does that mean exactly?

***Professor Robins:*** It is an estimate, looking at their current portfolio and the emissions associated with it across the world, and what sort of future it is aligned with. The Bank of England's portfolio is about 3.5 degrees C and a number of funds are starting to publish that as part of their TCFD disclosures. That will be an important result of the Bank of England's first scenario exercise, the biennial exploratory scenario, which will enable us to have a temperature score for the UK's financial system and then for individual institutions.

It will be very helpful for individual investors who are thinking about this. What is the score for their fund? What is their fund doing about achieving net zero? How are they allocating capital and how are they using their influence through shareholders—the stewardship point—to ensure that their capital is aligned? Making sure that that Bank of England exercise comes out with institution-level and financial-system-level scores would be very helpful to measure our performance.

Q108 **Anthony Browne:** Is there anything specific that Government need to do? I include regulators there, which I touched on earlier with Daniel Klier about disclosures. If you were Chancellor and you wanted to speed up the financing of the transition to net zero, is there anything in particular that they should do?

***Chris Cummings:*** That is exactly the right question. We would be looking at the rules around the children's ISA. There have been discussions around a recovery ISA to map against the great upsurge we have seen in investor sentiment. People want to invest in a way that puts their money to good use, and a recovery ISA could do that. Thinking about intergenerational fairness, certainly a repurposed children's ISA would do that. We are working with the industry on the long-term asset fund, which is all about deploying DC pension money into infrastructure over the long term. Those are front and centre of the wish-list.

Policy certainty underpins all of this, making sure that Government are thinking long-term, especially when thinking about green infrastructure and green investment. That way, we can crowd in investor sentiment rather than crowding it out, because Government are seen to be financing the juicier parts of the infrastructure investment and the transition that we all want to participate in.

**Anthony Browne:** I would love to continue this discussion but I am being told that my time is definitely up. Thank you, all.

Q109 **Chair:** We are running a bit short. I am going to ask one very quick question. I would like to put this question to Chris and Daniel, for fairly short answers. One of the things that we have not touched on in detail is sovereign green bonds. Germany has recently issued €6 billion of 10-year green bonds. Should this be an area that the UK goes into? Is there validity to the Debt Management Office's view that, if we do have green bonds, these will have to raise finance at a premium, which is clearly undesirable in an economic sense?

***Chris Cummings:*** There is investor appetite for green bonds and green gilts. It is something that the Government should actively explore. Having spoken to our members, I am not convinced that there would be a premium for these investments, but I would encourage Government to work with the industry to agree a structure and a deal sheet that would work for us as investors and could deliver the returns and the investment profile that Government are looking for.

***Dr Klier:*** I am very supportive of a Government gilt, for three reasons. One is the signalling. We go to a lot of companies and say they should issue green, to show that they are serious about it and to evidence to their investors that proceeds are being used in the way that they promised. That is the key element of a green bond: you raise money and you report that your proceeds are being used the way that you promised in the beginning. There is a signalling and being serious about it.

The second element, which is even more important, is that we do not have a sterling green bond market. There is a strongly growing green bond market, but it is in dollars and euros. Very often, you need a benchmark bond issued by a Government to unlock the sterling market, which, at the moment, is tiny.

There is a third reason why this is absolutely worth exploring. At the moment, especially in Germany, we come in at prices that are below the market curve. I do not see any evidence for why we should be at a premium. At the moment, we see evidence that we are coming in below. Nobody can promise that, but you should at least expect to issue on or below the market.

**Chair:** That is very helpful. Thank you both for that. That brings us to the end. Can I just thank our panel very much indeed for their contributions this afternoon? These are huge issues that we have been discussing. Climate change is one of the biggest challenges that we face at the moment, although clearly there is coronavirus, Brexit and other economic challenges too. There are some very big risks, some very big investments to be made and some very big costs to be borne in certain parts of the economy, as well as some very big opportunities. Collectively, you have all given us a really good insight into the issues around those, and particularly the role that Government and the finance sector need to play in making sure that we arrive at the right place. That was an excellent session. Thank you for joining us today.