

Environmental Audit Committee

Oral evidence: [Green Finance](#), HC 617

Tuesday 20 Feb 2018

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Members present: Mary Creagh (Chair); Colin Clark; Geraint Davies; Mr Philip Dunne; Zac Goldsmith; Mr Robert Goodwill; Caroline Lucas; Kerry McCarthy; Anna McMorrin; Dr Matthew Offord; and Joan Ryan.

Questions 280-384

Witnesses

[I](#): Lord Turner of Ecchinswell, chair of the Institute for New Economic Thinking and of the Energy Transitions Commission.

[II](#): Sarah Breeden, Executive Director, Bank of England; Stephen Haddrill, Chief Executive, The Financial Reporting Council; David Harris, Group Head of Sustainable Business at London Stock Exchange Group; David Geale, Director of Policy, The Financial Conduct Authority; and Anthony Raymond, Acting Executive Director of Regulatory Policy, Analysis and Advice and General Counsel, The Pensions Regulator.

Written evidence from witnesses:

– [London Stock Exchange Group](#)

Examination of witness

Witness: Lord Turner of Ecchinswell.

Q280 **Chair:** I welcome our first witness, Lord Turner of Ecchinswell, chair of the Institute of New Economic Thinking, chair of the Energy Transitions Commission and former chair of the Committee on Climate Change, the FSA and the Pensions Commission. We thought you were covering quite a lot of our bases. We hope to appeal to your current as well as previous knowledge on these very important subjects.

What is your overall assessment of the Government's clean growth strategy?

Lord Turner: I do not think I can do much better than the Climate Change Committee's assessment of it—that is not just being loyal to the thing that I was the first chair of. As you know, it has gone through the clean growth strategy very systematically and scored it against what it thought was required to close the gap to make sure that we meet the fourth and fifth climate budgets. That score suggests a set of “mets”, “partially mets” and “not mets” with the dominant side being partially met. Most of the scores are saying that there was something that needed to be achieved, but more needed to be achieved.

I attach particular importance to the decarbonisation of the power system. I have always believed that the thing that we have to do first of all in getting on a path to the 2050 emission reductions is to decarbonise power as rapidly as possible, achieving 100 grams per kWh or below by 2030.

I think that the latest steps forward take us a bit in the direction of the assessment that the CCC puts forward, in particular the new contracts for difference which were signed in the autumn, but that there will still need to be a strategy for developing another 50 to 70 or 80 TWh of clean, zero-carbon electricity by the end of the 2020s, which is not clearly in the current plan. It is that extra 50 to 70 TWh that is required to make sure that we meet that crucial bit of the overall strategy.

In relation to all the other elements, again, there are lots of “partially mets”. They are in a sense more difficult. The great news in renewable energy is that there is a small number of things you need to do, you can define them and you can get on with them, whereas when you get to dealing with the residential heat issue, it is much more complicated and multifaceted.

What is required there, as the CCC highlights, is a clearer sense of an overall vision of what balance we think we are heading towards between electrification of residential heat through heat pumps and, in the long term, hydrogen or biogas in the gas grid. Broadly speaking, along with better insulation, those are the two ways to deal with the issue of residential heat. Along with industry, that will become a more and more important part of the challenge as we make further progress on power decarbonisation, where we have of course made significant progress already over the last 10 years.

Q281 **Chair:** You have laid out two areas: investment in renewables and low carbon, and the residential heat challenge. How much of a setback would it be if the measures in the clean growth strategy did not deliver investment to meet those targets by the end of the 2020s?

Lord Turner: If we start with the renewable energy side, it would be a major setback, because the decarbonisation of the power system is crucial to making sure that other things are as decarbonising as possible. When you buy an electric car, as long as the carbon intensity of the grid is somewhere below 600 grams per kWh, you are reducing emissions versus a petrol car, but getting it down to 100 grams, then to 50 grams and then to zero is crucial to getting the maximum benefit out of moving to the electrification of surface transport.

It has always been the case that decarbonising the power system is not just important in itself for the emissions currently being produced out of the power system, but a crucial mechanism to make sure that other things you do to electrify the economy themselves achieve a lot of decarbonisation.

It has always been a flagship aim of the UK climate strategy and of the design and vision that the Committee on Climate Change originally set out that we should get to 100 grams per kWh by 2030. That is a very important objective. The good news is that, with the falling cost of offshore and onshore wind in this country, there is a real possibility that we can do that at a relatively low cost.

My belief is that if we stepped up the volume vision, or the quantity of offshore and onshore wind that we are determined to buy and are providing certainty to the industry that we will buy, we would find that onshore wind was the cheapest source of electricity generation in the UK—cheaper than fossil fuels—and that offshore wind increasingly headed there over the next 10 years. The renewable energy side is crucial, but the good news is that, with the fall in the price of wind and solar energy, the cost of getting there is actually lower than we thought it would be a few years ago.

Q282 **Chair:** And on the residential side?

Lord Turner: I must admit that I am less focused on the residential heat side at the moment, so I am less able to tell you exactly what I think of the Government's strategy. I noticed in the CCC report that it gave a "partially met" score in terms of how rapidly we are heading towards it.

Q283 **Chair:** The strategy said that they want all homes to be EPC band C by 2035, but there is no real route map to get there.

Lord Turner: The challenge—this has been true for several years with the UK strategy in this area—is that we have not really defined clearly enough how we are going to go from A to B. In a way, the easy bit is to make sure that new buildings are built to very high standards—that ought to be a straightforward bit. It was unfortunate that there was a pull back several years ago from the initial commitment that from 2016 all buildings would meet a zero-carbon limit, because if you get it right first time when

building new houses, the costs of achieving something close to zero carbon are relatively slight.

The challenge has always been the existing housing stock. We have tried too many partial approaches rather than getting on with it: defining the standards that we need to meet, the Government acting as a sort of creative designer and pulling together a set of packages for training and how to actually do the work in each house, and supporting it with finance. If you look at the way the Germans do it, they have financing packages provided by a state investment company, KfW. They define the standards, and although the things are delivered by the private sector, there is a clear definition of the packages that will be available to the residential home sector. We have been unwilling to be sufficiently directive and strategic about our approach in that area.

Q284 **Chair:** Just looking at the green finance piece, do you think the Government have the balance right between specific green finance proposals to mobilise capital for clean energy projects—it sounds like you are saying that that is going well—and the systemic reform of the financial system to make sustainability a consideration for the whole system?

Lord Turner: The crucial need in the renewable energy space is not so much a change on the financial side; I think that it is certainty of contract. My belief, and I know some people do not agree with this, is that provided you had what people call zero-subsidy CFDs—writing a set of contracts with offshore providers at a price that I think will soon have no anticipated subsidy in it but still gives certainty to the offshore or onshore wind provider—you would start pulling through bids on the offshore wind side. Relatively soon, I think we would be at £40 per MWh, rather than the £57 per MWh that we were at with the lowest bid back in the autumn.

The crucial thing there is not to redesign anything in the financial system. The finance is there, as long as there is the ability to invest with the certainty of selling the electricity at a defined price in advance. Until now, we have written those CFDs with an expectation that on average, over time, they will cost something. Relative to the reference price of what we think the wholesale price will be, we have paid a higher price. I think that there should be a developing vision that we move towards more CFDs at a lower and lower premium over the expected wholesale price, and I suspect that within three or four years we will write contracts that have no expectation of subsidy, but which still require the Government or the systems operator to make a fixed price commitment.

We know throughout the world that the contract structure, which has driven the unbelievably remarkable collapse in wind and solar prices across the world, has in almost all cases been these forms of long-term fixed-price contracts. People bid in, through the competitive auction process that drives the price down, but once you have got the price down and done the contract, there is a certainty of delivering your kilowatt-hours at a defined price for the contract period.

On the renewable energy space, the biggest issue in the UK—it might be different in some of the other countries in the world and I spend a lot of

time working in the developing world—is not really in the guts of the financial system; it is within the guts of the Government’s overall strategy toward the amount of renewable energies they are determined to bring on stream, and therefore what lies beyond the present £730 million CFD budget. As we know, that £730 million is now buying a bigger quantity than we previously assumed. The CCC previously assumed that £730 million would bring forward 25 TWh of renewable generation, and it now estimates that at the latest cost that could be 55 TWh.

I personally believe that if we developed a vision based on very low-cost or zero-expected-cost CFDs for the 50 to 70 TWh that we will need during the 2020s, with the cost trends we are seeing in offshore and particularly onshore wind, we would find that we would bring that investment through at a very low or zero expected subsidy cost, even if we did not do anything within the guts of the financial system itself.

Q285 **Chair:** May I ask about carbon pricing? Our regime consists of the European emissions trading scheme and the UK’s carbon price support tax. Do you have any comments on the adequacy of those two mechanisms in delivering investment in low-carbon projects? How do you see that going forward post-Brexit?

Lord Turner: I think it is clear to everybody involved with the issue of climate change and any transition that the EU ETS has turned out a big disappointment, essentially because the amount of permits within it is so large that the price of carbon has settled at a level that has made relatively little difference. Indeed, if you look at what has driven the progress toward decarbonisation of the power sector in Europe, the carbon price has played only a limited role in that, and things like renewable targets, feed-in tariffs and, in the UK, contracts for difference have played a bigger role.

The UK carbon price tax has been more effective because it is set at a higher level than the EU ETS carbon price has settled at. In the UK, that carbon price has been high enough to drive a particular development in the power system—the switch from coal to gas at the margin. What a carbon price undoubtedly will do in a power system, provided you get it high enough, is to make people run gas plants rather than coal plants if both already exist in the system. I have never thought that the carbon price should be the sole instrument, or even necessarily the most effective instrument, in the power system and in the development of renewable energy, compared with elements of auctioned fixed-price contracts.

Where the carbon price will be absolutely crucially dependent is in driving the decarbonisation of industrial sectors. When you get to, “How are we going to take the carbon out of plastics production, chemicals, ammonia, steel and cement?”, in those areas you cannot possibly define centrally a small number of things that you need to do—“Build this much nuclear and that many windmills and you’ve got there.” You have to have a very complicated, private sector, competitively driven search process for the best solutions.

There are some elements of the way forward that we can define: for instance, in steel it is almost certain that the future is either carbon

capture and storage, or replacing coking coal with hydrogen as the reduction agent. So you can define that it could go one way or the other, but the process of deciding which way should rely significantly on the carbon price. As we move beyond the challenge of decarbonising the power sector and start to look at some of the other sectors of the economy, the carbon price could be more important than it has been. Generating an expectation of a gradually rising carbon price is hugely important.

The challenge here is that it also becomes incredibly important to try to get international agreement, because steel, for instance, is a highly internationally traded commodity. If the world could agree that by 2030 it was definitively going to get to a carbon price of \$50 per tonne, I think you would see waves of innovation and development in the steel industry, which would take us towards decarbonising steel. That is the challenge in these sectors.

Broadly speaking, I think carbon prices will become more important as we switch from decarbonising the power sector to other sectors of the economy. I might also mention that, in agriculture, we should be thinking about a nitrogen price.

Chair: We are about to begin a review of nitrates, so we are coming on to that in a few weeks' time.

Q286 **Colin Clark:** We have heard in the inquiry about how low carbon is becoming a mainstream consideration for investors, yet investment in clean energy in the UK fell dramatically last year. What is your assessment of the state of low-carbon investment in the UK and around the world, and are there grounds for optimism or pessimism? You seem like an optimistic chap.

Lord Turner: Globally, it is undoubtedly the case that low-carbon investment is becoming mainstream. We are seeing massive investments in solar and in wind—both onshore and offshore—across the world, and we are also seeing massive investments, including venture capital investments, in battery technologies. We are seeing this in the form of equity investors' willingness to back, with speculative equity, projects that may deliver a return in 10 years' time. You see that with Elon Musk and Tesla. This is actually an extraordinary willingness of the equity markets to support a very long-term vision that will produce cash flows quite a long time into the future. We are also seeing it in the more straightforward forms of investments in huge solar and wind developments by, among others, pension funds and infrastructure funds, which are investing behind the contracts I described earlier: the fixed-price contracts that give them certainty of what the cash flows are.

One of the things driving the dramatic reduction in solar and wind across the world—and broadly speaking the story since I started as chair of the CCC in 2008—is that the levelised cost and the price at auction of solar is down about 90%, and wind is down about 70%, from where it was in 2008. This is an extraordinary success for technology. Part of what has driven that is technology; part of what has driven it is also a falling cost of capital.

The bigger the scale, the greater the certainty that there are contracts that Governments will stick to, and the lower the required rate of return that investors need—the cost of capital. That has a very material effect on the price at which they will bid in a form of investment where pretty much all of the cost is upfront and then there is zero marginal cost of delivering thereafter. When you get a business proposition like that, the long-term cost of capital is crucial.

Across the world it is absolutely becoming mainstream. There are massive amounts of investment going into it in China and in India. I was in India last week, where my Energy Transitions Commission is working on a vision to move India rapidly beyond coal. Even now, short of the vision that we hope for—an almost entirely renewable vision—the Indians are already committed to building 125 GW of solar or wind within the next six years. Of course that mainstreams the investment because there is massive investment required.

If we come to the UK, the following has happened: through the renewables obligation certificate regime, which was essentially simply an add-on to whatever the variable price was, we unleashed a big flow of investment in the early twenty-teens. There was then a concern that the total cost of that was ending up higher than the Government had originally anticipated, partly because more investment came forward, stimulated by that ROC regime.

We therefore changed the regime—and I think it was a good regime—to contracts for difference, but we then also limited the amount of money through the control cap. That then produced a period of a year or so in which there was a falling level of investment. In 2015 and 2016, we had investment coming through stimulated by the previous regime. It had made the contracts and was then spending the money.

We have had what I hope is a temporary dip. The danger of that, of course, is that you are not developing your supply chain; you're not developing the scale that gets the costs down. But the good news from the contracts last year for offshore wind was that the costs are still coming down. They are coming down partly because they are coming down across Europe. We know that, before Christmas, there were bids at just €54 per MWh for offshore wind off the Netherlands. So, the industry is still driving down cost.

That is why, having had this fall in the UK, which I think is a product of a particular development of our policy regime over time, it is now important to have a sense of the policy regime going forward to the 2020s. That should be a contingent set of, essentially, fixed-price auctions, or you can call them contracts for difference—that is the structure by which we achieve the fixed price. If we made that clear volume commitment, we would find that the contracts for difference would cost very little indeed. So, I hope that it is a temporary effect of this change of regime, but given that the costs are continuing to come down, the opportunity now is to make big-volume commitments going forward, and I think that will bring forward the volume at relatively low cost.

Q287 **Colin Clark:** May I take you back to what you were saying about international players? Who are the global leaders in green finance and what has made them leaders in the field?

Lord Turner: It depends what you mean. There are major infrastructure funds across the world; there are major private equity funds. There are insurance companies and pension funds trying to find ways to invest in green finance. I think it is difficult to name a particular one of those.

If you switch round to the green finance policy environment, I think that the leader is China. I would urge you to look at the work done by Dr Ma Jun, previously the head of economic research at the People's Bank of China, now at Tsinghua University. He was also the sherpa for all the G20 work on green finance, which was put forward last year. He has played a major role in developing within China a very clear set of green finance packages, in the sense that their criteria for defining what you can call a green bond is quite strong, and stronger than in other parts of the world.

I think they have a very clear vision of how, once they have defined what they mean by green finance—what is a green bond that a major financial institution can issue—they then have an intention that the PBOC would be willing to relend and discount that at a favourable rate compared with what it would do with some other category of bond. They have strategies for encouraging—"encouraging" is quite a strong word within the Chinese economy—local governments to issue green bonds, but they can only do so if they meet these strong criteria. They are intending to use the processes of state procurement to only buy state procurement from people who meet certain criteria of green finance and who are green in their fundamental underlying business.

Q288 **Colin Clark:** Is that largely a market solution, or a state solution?

Lord Turner: It is a mix. In terms of everything that goes on in China, it is a hybrid market—a socialist economy with Chinese characteristics. That's what it is; that is how they describe it, and that is what it truly is. They use the power of the market, but there are significant interventions as well. There is a regulatory intervention to say that if you want to issue something that is called a green bond, it has to meet this criteria; and there are then forms of state economic interventions to give a state preference to those people who meet that criteria, including at the level of what the central bank is willing to discount and the rates at which it is willing to discount. That is a different system. China is not a pure market economy, but it is a long way from a socialist planned economy. It truly is a hybrid economy, and it uses these hybrid instruments. But I think it is a well-designed set of ideas that has been put forward. The broad principles were endorsed by the G20 last year, because when China had the presidency of the G20, it put a lot of focus into this, but they have been taken to a far deeper extent within China.

Q289 **Colin Clark:** Let me draw you back to the UK for a minute. Do you think the UK is getting it right when it comes to helping to finance sustainable development in the emerging world? The development charity CAFOD recently published a report claiming that the latest figures for the years 2009 to 2013 show that UK international funds were still being used to

support fossil fuel projects around the world. How can we ensure that development finance aligns with our climate and sustainable development objectives?

Lord Turner: Okay. This is an incredibly important issue. It is something that I have been discussing with other development banks around the world, for instance, the Asian Infrastructure Investment Bank. The overall story is that we need, as a world, to meet two challenges. One is to build zero-carbon economies and to deal with climate change, but we have also got to do it in a way that delivers big increases in energy use in developing countries.

We, in the UK, on average consume about 130 GJ of energy per capita per year. If we were more efficient, we could probably have our standard of living with about 80 GJ, but India is down at about 30 GJ, so even if it is as efficient as possible, in order to be a prosperous country like ours, it will need three times as much energy. The challenge for international development agencies and development banks is, on the one hand, they have a mandate to drive economic growth, and that requires more energy, even if we are as energy-efficient as we possibly can be, while driving decarbonisation. The crucial thing is, what should be your criteria for that?

I think one should be incredibly cautious of coal investments. I think we are increasingly in a world—and this is the great news—where we do not need new coal investments in the power system of the world. In almost all countries, you could use renewables, or in some cases nuclear, to drive power development at a lower cost than coal. In particular, once you recognise the horrendous local pollution and air quality problems of coal as well, there is a very strong argument for development banks and developing agencies not being willing to support coal investments.

The grey area of that is where you have an old-fashioned coal plant, which is very efficient, and somebody says, “I can put in an absolutely efficient super-critical coal plant, which will reduce CO₂ emissions and local air pollution.” I do not think one should exclude that development might do that under very strict rules, where they are absolutely clear that the net effect of their investment is getting rid of an old coal plant, but I think there should be a pretty strong presumption against coal power development, because we don’t need it.

Bluntly, if the world is remotely serious about the Paris commitments, then the use of thermal coal has got to fall by about 80% by 2040. Otherwise, we can all turn up to Paris and say we are committed to well below 2°C, but unless we reduce the global use of thermal coal by something like 80% by 2040, we are just deluding ourselves.

Q290 **Colin Clark:** What about gas?

Lord Turner: It is reasonable to support gas developments in development. I don’t think one should exclude that. Gas can play a significant role as a transition fuel. I think we will probably always need an element of gas within renewable systems in the long term. An analysis that my commission did last year and published suggested that we can

now envision near-total renewable systems—systems that are 85% or 90% dependent on intermittent renewables.

However, to make them work with back-up, and even with the collapse in the price of batteries, we may still need 10% running on gas, which is, of course, much less polluting than coal. That means that in the long term, we need carbon capture and storage as well as renewables, not on the scale we thought we needed 10 years ago, but I still think it will be needed at the margin to produce truly zero-carbon—

Q291 Colin Clark: Should we embrace fracking? Should the world embrace fracking, if maybe not the UK?

Lord Turner: I am not personally very keen on fracking. I think it is possible that the local environment arguments against it are overstated, but in a place like the UK I do not think we need new gas supplies to decarbonise our economy. I am worried that the development of fracking will simply mean that we delay our progress towards a fully decarbonised electricity system, which I think is within our sights.

Colin Clark: We have been doing it in the North Sea for a long time. Fracking is not new; it is just new that we are doing it on land.

Lord Turner: It is new in the extent of it.

Q292 Colin Clark: We have heard concerns that the privatisation of the Green Investment Bank and the possible departure from the European Investment Bank might lead to a gap in early-stage investment in clean technologies at home. Do you think those concerns are warranted?

Lord Turner: I have to say that I never saw the sense in privatising the Green Investment Bank. I thought the Green Investment Bank was a perfectly sensible idea: to have a national development bank that, like all development banks, was charged with at least covering its face in terms of economics—doing okay; not making a loss—but that would be willing to accept a lower rate of return in trying to achieve its strategic vision. That is the basic philosophy of development banks, both in the international element and at the national element; I already mentioned the German company, KfW.

I think it was a perfectly sensible idea to do that, and once you have one of those it does not make much sense to privatise it. Let me be clear: essentially what happened was that George Osborne never really agreed with Vince Cable about having the Green Investment Bank in the first place, but it was part of the coalition Government, and once the coalition was got rid of, George Osborne undid what he never agreed with in the first place. That is what occurred in the history of the UK Green Investment Bank.

I think you have to distinguish different elements of what is required in investment. The EIB would classically be a core investor in a long-term infrastructure project, like a wind farm or toll roads; it is willing to be an anchor investor in anything that is a 15 or 20-year infrastructure project. That is really about how you build your wind or solar farms, and there may be a disadvantage to losing that. However, I do not think, quantitatively,

that the EIB has played a big role in the investments we have seen in the UK so far.

On the whole, as I said earlier, so long as we have a clear framework for the volume of renewable energy that we want to bring on stream in the 2020s, and a contract framework of contracts for difference or fixed contracts that drive it, I suspect that we are now in a situation where investment in that—with the right contract structure—is sufficiently mainstream that it will be forthcoming at a relatively low cost.

There is a different area that you may have been getting at, which is not about investment in long-term infrastructure but early-stage technological investment, where what is required is not long-term debt but equity finance or so on. Privatising the Green Investment Bank is probably a missed opportunity for it to have played some sort of role in equity finance for early-stage investment.

However, that is still a useful role for the Government. There are elements of that sort of venture capital support within the clean growth strategy. It would probably be good if they were somewhat bigger, but they don't necessarily need to be huge. As I say, equity markets, if they get the right propositions, are able to back things that are extremely speculative. As I say, there is no lack of long-termism among the investors in Tesla; they are taking an enormously long-term point of view as to when their cash flows are going to come through.

Q293 Colin Clark: This is my last question—I know I am taking up a lot of time. Given that local authorities may also be losing access to European funds, what could the Government do to enable local government to access finance for low-carbon infrastructure projects? What more could they do?

Lord Turner: As I said earlier, that could have been precisely the role of a green investment bank. One of the things that national development banks often do is provide finance for subsidiary levels of government—for local government—providing a willingness to finance long-term developments at a somewhat lower rate than the market would require, but still subject to a tight discipline on what the projects are. I think UK local government has always had very tight controls on its long-term lending—its ability to lend for capital investments—and I think it is difficult to suggest specific things that can change that without a change of Treasury philosophy towards that. Our whole approach to local government is to keep it on a very tight rein in terms of capital investment.

I do not think there are any magic mechanisms to do with—I think if you want local government to be willing to do more innovative things, like a really dramatic approach to charging infrastructure for electric cars, or a really strong approach to improving the quality of its housing stock, you are probably going to have to help it borrow money through the central Government, or borrow money direct. I suspect that trying to do it in complex forms of public-private partnership may end up more expensive than doing it directly; but that is going against the predominant form of our philosophy of public finance for several years.

Chair: No lessons from China then.

Q294 **Anna McMorris:** The UK Government's submission to this inquiry says the market is already in the process of integrating climate change risks and opportunities into the investment chain. To what extent do you agree with that statement?

Lord Turner: I think I do partially agree with that. What do you want a financial system to do? You want it to take seriously the opportunity, itself, to invest in early-stage equity development of technologies in long-term infrastructure projects. At least in the latter. I have suggested that at least in the developed world—not so much the developing; not so much in, for instance, India, and certainly not in Africa—the crucial thing is simply the certainty of the contracts: the organisation of the renewable power market. Provided you get that right, pure private finance will probably be forthcoming. I think, as I said in answer to the previous question, that the sheer scale of investment opportunity in renewable energy worldwide is making this way beyond a marginal investment category. It is a very major investment category across the world.

I think what is also happening is that we are steadily developing a structure of reporting whereby companies outside the financial sector are increasingly reporting on their carbon emissions, their plans to reduce those carbon emissions and their compatibility with the Paris climate objectives. Although those developments are not perfect—and on the whole once you have gone down that disclosure route it makes sense at some stage to make it compulsory versus voluntary; that is my overall point of view—I think we have steadily been developing through the Bloomberg Carney taskforce a set of criteria for what disclosure should be.

The extraordinary work of a small NGO called the Carbon Disclosure Project, who have punched massively above their weight across the world for 15 years in persuading more and more companies to do more and more effective disclosure, has been very powerful. We are now increasingly creating a set of required information flows from major companies to their shareholders that then enable shareholders—if they want to—to have an intelligent conversation with them about whether or not they are well-prepared for future climate change risks, either on an adaptation side or on a mitigation side, or in relation to this issue of stranded assets. We are beginning to create the information flows that enable somebody investing in a fossil fuel company to say, "Do you really have a strategy that is compatible with Paris climate agreements?" My overall belief is that these should become compulsory requirements.

The crucial bit required within them is to be more specific about the reporting of the compatibility with the Paris climate agreements, particularly for fossil fuel companies. What does that mean? Once you take the Paris climate agreements then it is possible to establish a set of quantitative facts that we know about what happens to fossil fuels. I can see no way that the world is heading on a path compatible with well below 2 °C that does not involve something like: 80% less use of thermal coal by 2040, then 20% to 25% less use of oil by 2040, and gas use that is roughly flat but not significantly increased.

If, within the global agreements on disclosure, you were able not only to say that oil companies and fossil fuel companies have to report on whether they consider that their strategies are compatible with the Paris agreement, but to have a trusted authority that says, "If we are serious about the Paris agreement it needs to involve something like that set of figures. Is your business robust against that set of figures?", that would give it some teeth and some definition.

Otherwise, there is a danger that a company can say, "Yes I assure you that I am fully compatible with the Paris agreement, but that is because my definition of the Paris agreement assumes that we do not produce these reductions in the use of fossil fuels by 2040 and we fix it all by massive negative emissions sometime in the second half of the 21st century." That is the problem. If you are willing to chuck huge negative emissions into your model, you can convince yourself that all sorts of strategies are compatible with the Paris climate objectives.

Q295 Anna McMorris: Moving on slightly from that point, we heard earlier that incentive structures within the financial system can focus on short-term returns rather than more sustainable terms—even long-term investments such as pensions. Is that concern warranted? How can the incentives be re-aligned?

Lord Turner: It is an absolutely legitimate concern, and the challenge is that it goes far beyond the climate change environment. It is clear that within the arena of asset management it can be a challenge for people to pursue long-term asset management strategies which are sensible over the long term but which do not look sensible for four months or six months. If you have a lot of money that has been given to asset managers on mandates which require short-term returns, you can have people who abandon strategies that were sensible in the long term.

The most famous examples of that over the last several decades have nothing to do with climate change. There were famously asset managers back in 2000 and 2001 who rightly said: "I think this internet boom has gone completely mad. I think some time in the next five years it is all going to come crashing down. I don't know when, but I am going to be underweight in this sector." They were absolutely right, but in some high profile cases they were fired before they got there because they were right over five years but not right over six months. This is a systemic problem and the sort of problem that has been discussed in Committees in Parliament extensively. Paul Myners produced reports on it eight years ago and it is not something to which we have an easy set of answers, so there will be problems.

Fossil fuel prices fluctuate. The coal price will fluctuate. Somebody might say: "I believe that in the long term investing in coal will be not only bad for the environment but bad for my shareholders." They might be absolutely right over 20 years. If, over a six-month period the coal price goes up because of all sorts of short-term global developments, they might suffer relative to somebody else who did not take that point of view.

What can we do about that? I think there is a whole series of discussions about encouraging pension funds and institutional money to take a longer

term point of view. Some of the actions that have been taken in that respect I think have helped. There is a role for foundation money or sovereign wealth money, which is sometimes the money that can take the longest-term point of view on investing free from short-term returns.

It is something that we need to keep looking at, but given that we have been looking at it for many reasons for many decades, I do not hold out the expectation that we are suddenly going to find the magic answer that has previously eluded us.

Q296 Anna McMorris: So this probably would have to be Government-led, rather than regulator-led?

Lord Turner: As I said earlier, I think here is a role for Government through the classic environment of the development bank institution, which I think can have a role domestically as well as institutionally of saying that there are some things where this might be best done—we might get a more long-term point of view—with a quasi-Government public entity.

Within the imperfections of the private financial markets, however, this is a glass half-empty or half-full thing. There are still people making long-term investments. I think there are fossil fuel companies, actually, trying to think through what their long-term strategy is. Most of the responsible ones have got completely out of coal and are now trying to think through how they manage the oil and gas balance over time.

I think there is a role for disclosure. I think disclosure helps and equips asset managers and shareholders to ask searching questions of companies. But there will always be a danger that the asset managers that take a long-term point of view may have to ride out the fact that over a six-month period their choices may look wrong. But that is just an inherent problem with asset management; it is not specific to the climate change challenge.

Q297 Mr Dunne: Can I just come in on something on the back of that? Lord Turner, I think you are unique among our witnesses, given your public sector roles, but you are also a chairman of Chubb Europe, I believe, which claims to be largest property and casualty insurer in the world and so has a very keen interest in the impact of climate change on its insurance risk. It also has pension assets of its own and assets under management. It has a notable focus on transparency in its environmental track record. Have you been able to determine any influence of investment policy by Chubb to take into account the kind of things you have just been discussing?

Lord Turner: The answer is no, so far. I am early days in my role of Chairman of Chubb Europe. I am also on the board of the Prudential, which is also a very large investor. Prudential, in particular through M&G, a large asset manager, is trying to think through its approach to climate change.

There are two aspects that you have to think about. One is what is called red lining—things you will not invest in—and the other is influence

strategies. Both of those are under debate within M&G. On the Chubb side, the investment side is less long term because, although we have some long-term liabilities, some of our insurance is more short term, and therefore you keep the investments somewhat shorter term as well. It is an area, having got into all the other aspects of the business, I intend to get into in future.

Q298 Geraint Davies: You have not mentioned fossil fuel subsidies. Obviously, different estimates have been made but one was that there is something like \$5.3 trillion of fossil fuel subsidies, as big as the French and UK economies combined. How do you see fossil fuel subsidies in the round holding back renewables and our Paris commitments, and how they can be changed?

Lord Turner: Do you mean fossil fuel subsidies globally?

Q299 Geraint Davies: Globally, yes, but from a UK point of view as well. Globally, you mentioned China.

Lord Turner: The biggest fossil fuel subsidies are in the global environment. Once you have fossil fuel subsidies, they can be incredibly difficult to get out of. Various countries, for what they thought were good reasons of helping poorer people or citizens have good access to energy, ended up, for instance, underpricing diesel or petrol fuel, even below the market price.

That turned out not to be efficient at all in distributional terms because, actually, the big bulk of those subsidies ends up in the hands of middle-class people who have the bigger cars, rather than poor people who might be more dependent on public transport.

Those subsidies are inefficient and many countries are trying to get out them. Most dramatically at the moment, the current regime of Saudi Arabia is trying to phase out incredibly low use of energy in incredibly wasteful ways in Saudi Arabia, because they have realised that every barrel of oil that they spend on underpriced electricity, produced in an extremely efficient way in Saudi Arabia, is one fewer barrel that they could sell internationally.

India has been trying to get out of these subsidies; Saudi has been trying to get out of them. All the people who have looked at this issue and the major development banks have argued for getting rid of them. I think some countries are being quite brave about getting rid of these.

There are then many hidden forms of subsidy. Within China until recently, you could essentially say that coal was being subsidised because it was absolutely not picking up even the local environmental cost that it was imposing on people in the big cities. It was able to develop with the underpricing of land and the ability to chuck pollutants into rivers, and very low capital provided by state-owned banks. That is the downside of a hybrid state-market economy. It can be used to conduit money towards new green investments and it can also be used—and has been used in the past—to subsidise coal.

When you see the huge estimates of fossil fuel subsidies produced by the World Bank and the UN—I suspect they were in the Stern review report and the New Climate Economy report produced a few years ago as well—they are dominated by China, India and the Middle East.

When you get to the UK, I think it is less clear that we have fossil fuel subsidies. We do tax gasoline and diesel, and quite heavily, and that is appropriate. We now have a tax on carbon, which has helped produce a switch from coal to gas in our power sector. By 2025, we will have no coal at all within the UK power sector.

There is the issue of whether you should have a carbon tax and whether you count the absence of a carbon tax as a form of subsidy because there is an externality that you are not reflecting. I do not feel the need to argue it that way round; I think we should be introducing a carbon tax. However, you cannot start by saying that the UK has massive fossil fuel subsidies at the moment. The really big fossil fuel subsidies are in other parts of the world and steps are being taken to remove them. They are beginning to go, but there is a hell of a lot of work still to be done.

What that does mean, going back to the issue of the transparency of major global companies including fossil fuel companies, is that they should be operating in a world in which they anticipate that those fossil fuel subsidies will and should be phased out over time, with implications for what their business will support over time.

Q300 Mr Goodwill: My Lord, you have already touched on this to some extent, and I can see the Chair looking at me as we are maybe running a bit ahead of time. The Government have endorsed the proposals made by the Task Force on Climate-related Financial Disclosures. You have already said that your view is that they should be made compulsory, the same as France, as an Act in legislation. In the meantime, or if the Government decide not to make this compulsory, how do you feel they could encourage companies to do this?

Lord Turner: When the Government go down a voluntary approach rather than a compulsory approach, the levers of encouragement are cajoling, encouraging, making speeches to say that it is a good thing, being very happy when NGOs turn up at company AGMs saying, “Why haven’t you got a voluntary disclosure here as well?” and all the broad techniques of creating a social environment in which doing a disclosure becomes the right thing to do. My own feeling is that if you are going to do all that, why not make it compulsory?

The argument against compulsory can be that you have an experimental period. You are trying to work out how the disclosure really works and you have got to work out whether you have defined the criteria in a way that produces really useful information. You are enabling a reaction to it and encouraging the companies that are most important, in terms of doing this voluntary disclosure, to do it first.

Within the range of companies, there are some where it’s nice to have voluntary disclosure of everything, but there will be some companies out there where it does not make all that much of a difference whether they

disclose or not. For instance, media companies. Clearly, they use electricity in their businesses, but they are not as important to the economy as what the retailers do with their logistics systems or the manufacturers do or the fossil fuel companies do.

The argument for voluntarism is that there can be a role for a working-it-out transitional period where you are encouraging the most important companies to go first and where you are working out how it works. At the end of the day, however, if you are confident that this is a valuable thing to do—if you think you have got a value here—you should eventually move to compulsory. Indeed, the biggest thing that will encourage people to move to voluntarism is if they know that in five years' time it is going to be compulsory, because they will think, "We'd better get on with it and we'd better start making it work," and so on. So that would be my answer.

Q301 Mr Goodwill: You have already referred to shareholder activism, whether that be institutions or, indeed, individuals buying shares and turning up at the AGM and making points. To what extent do you think businesses, asset managers and regulators have the expertise and resources actively to assess climate risks?

Lord Turner: I think some of the asset managers do. We are seeing an increasing number of asset managers who are thinking through what climate change risk is and/or trying to design products that assure their end-investors that they are not invested in things that they do not want to be invested in. They do not want to be in coal and so on. The asset managers are capable of developing the skills. The role of the regulator is interesting.

Mr Goodwill: That was going to be my next point.

Lord Turner: That will be referred to later—you have the Financial Reporting Council coming in later. Regulators have an expertise on whether a disclosure requirement is a workable thing to police. Is it sufficiently defined for a reasonable regulator to be able to say, "Did you meet the requirements of it and so on?" The missing bit is what I referred to earlier: the emerging idea within this area of financial disclosure coming out of the global taskforce is that companies should report on whether their strategies are compatible with the Paris climate change agreements.

That is where there is an extra bit of analysis that does not naturally fall within the existing skill set of the regulators; it is a process of saying that on the one hand you have the Paris climate objective, and on the other hand you have today's business activities. In order to make a reporting against the Paris climate objective something that really has crunchiness, then you have to define an intermediate set of things: if we are serious about Paris then we are going to have to be 80% less coal by 2040, on a downward path of total oil by 2040, and there will have to be flat rather than a big increase on gas by 2040—or whatever the figures are; people might debate them.

That translation from the overall broad objective to something specifically quantified that you could have a real debate about—"Is your strategy really compatible with that?"—is not something for which the regulators

would have a natural skill set at the start. That is going to have to come through either some process of asking an external body that you believe does have the natural skillset to produce that—although the regulators will still have to evaluate that—or the regulators would have to invest in that themselves. That is the skillset that they do not naturally have: the ability to translate the overall climate objective into what it has to mean for some particular intermediate objectives.

Q302 Kerry McCarthy: Can I ask specifically about pension funds? We have touched on a lot of the underlying issues and questions, but specifically we have heard evidence that some pension funds view this as just an ethical issue—so they can promote ethical investment as opposed to actually seeing it as a material risk, by which I mean investing in climate change-related products. Where do you come down on that?

Lord Turner: I think you are absolutely right. Pension funds and other institutional investors, including charitable investors and so on, are trying to look at this issue. Some of them are convinced that some investment categories have a long-term risk attached to them—that is probably coal investments, in particular. The trouble is that, provided you get the cycle right, you can still make a lot of money investing in coal; even if it is a long-term stranded asset, it will cycle on the way there.

But a long-term investor should take very seriously the risk that the world will get serious about getting out of thermal coal—thermal coal is the coal used for power stations, as against coking coal, which is used for making steel. That will mean that in the long term, investments in coal mines or coal-fired power stations will end up as stranded assets: assets that are not worth what they are now on the books.

I think when you move beyond coal, it is always going to be much more difficult to make that argument. We are going to use a lot of oil and a lot of gas for a long period of time. I quoted the figures earlier. You have to think about reducing oil use by maybe 25% by 2040. Gas could be flat to 2040. It is much more difficult then to construct an argument that says, “If you are invested in a company in gas, you are facing an economic risk, over the relevant period of your asset management decision making”.

When you get to there, it is more: do you want simply ethically to get out of that and put your money into renewable energy, or in that area do you want to be part of a sort of voice approach, rather than an exit approach, of turning up to the oil companies in which you are investing and saying, “But what is your strategy as a company to move beyond this over time?” That can essentially be to become a dividend-rich cash company which is making a profit at the moment, but paying it out to be invested elsewhere, or it can be deliberately within the company itself making a set of statements about how the balance between fossil fuel and renewable energy of that company will change over time.

I think pension funds are looking at it both ways. They are trying to think about it both ways, and I think they are right to do that. The argument that there will be stranded assets is much clearer on the coal side. In the long term there will be stranded assets in oil and gas, but it will be over a longer period of time.

Other issues may then become ethical. They go back a little to the fracking issue et cetera, which is: "What is your attitude to an oil company deliberately not simply running its existing coalfields in an efficient fashion or efficiently driving extra extraction out of existing coalfields, but deliberately doing new high-cost investment?" I think some of that high-cost investment could get stranded.

I personally believe that we are heading to a world that is likely to see lower energy costs. One of the biggest things that worries me about the energy transition is that the collapsing cost of renewables is going to be matched by a long-term decline in the price of oil and gas as we get ever more efficient at extracting more out of existing fields and that that lower price of energy is going to produce what we call a "rebound effect"—a profligate use of energy—because it is so cheap.

In that environment, if I were an oil company, I would be very, very wary about investing in very high-cost oil developments, because I think it could end up stranded by a lower overall price. That is also a very legitimate issue for an owner of a pension fund, or whatever it is, to be asking: "What is your strategy about investing in tar sands and the Arctic et cetera—investing in the more expensive environments?"

Q303 Kerry McCarthy: I think I was at an event with you a couple of years ago when you said that the arguments about drilling in the Arctic—the high-cost exploration—had become almost financially unviable. Would that be one of the examples, along with tar sands?

Lord Turner: Yes, it is a balance. Technological advance keeps on bringing down these costs, but I still think there are some oil and gas environments which are likely to be stranded in an environment in which renewables and other ways of reducing carbon emissions are getting so much cheaper.

Q304 Kerry McCarthy: To what extent is there still nervousness among the pension funds as to whether they will be able to make these decisions or whether it will be seen as a breach of fiduciary duty to their investors?

Lord Turner: Not being, right at the moment, a trustee of a pension fund, I can't answer that. I know that that has been an issue. As long as they have a coherent basis for deciding that there are some assets that could be stranded—I think that could well be the case for coal—I suspect they are okay. I am sorry; I do not know the details of what is either the latest wrinkle of the law or the interpretation of the law, or the attitude of the pension funds, which might be different from the absolute letter of the law. I am afraid I cannot answer that.

Q305 Kerry McCarthy: One last question: obviously, pension fund trustees control huge amounts of money, which could have a significant impact if they were invested in low-carbon assets. What more could be done to unlock that potential and encourage them to support a low-carbon economy?

Lord Turner: Transparency and disclosure can play a role here. Ultimately, an asset manager can do two things. First, they can decide to sell one share and buy another. They can just say, "There are some red

lines. I don't buy shares in coal companies or in oil companies that are investing in potentially very high-cost oil or gas developments"—or anything else, such as tobacco or arms manufacturing or whatever. They can do that for an economic reason or an ethical reason.

By the way, on the ethical side, I do not think that anybody has ever challenged the notion that a pension fund has a right not to invest in tobacco if it does not want to. The ethical proposition is clearly there.

Secondly, they can use their voice—they can turn up, argue and ask questions. The ability to do both of those is helped by greater transparency—by forcing companies to be clearer about how they are approaching the question of climate change, what they are doing to their own emissions and what their overall approach is to investment and to the balance of their business over time. The single biggest thing we can do to help them is on the transparency and disclosure side.

Q306 Caroline Lucas: Very quickly, to go back to the issue of what makes an asset stranded and the time period over which we are considering the strandedness of an asset, what do you take as your period there? I was slightly surprised. Obviously, I completely agree about coal, but when it comes to oil and gas, if we are serious about the 1.5 °C threshold rather than the 2 °C from Paris and about the urgency of making that transition, I would have thought that the likelihood of stronger policy coming in on oil and gas would mean that those assets could not be dealt with with quite the relaxedness that it felt like you might have.

Lord Turner: You are absolutely right that the key issue is whether the target is 2 °C or 1.5 °C. The figures I quoted earlier, which were from the ETC report that we developed last year, of what level of fossil fuel emissions was compatible with well below 2 °C—80% down on coal, 25% down on oil, flat gas by 2040—assumed a 2 °C target, not a 1.5 °C target. By the way, we are also assuming a non-trivial amount of carbon capture and storage. If you say that we will never do that amount of carbon capture and storage, you have to have even more aggressive roles on that.

If the world basically said, "We are serious about 1.5 °C," and it was the strategy not just to look at it, which is broadly speaking what Paris says, but, "We've got to do that", then I think you are right that a wider set of assets would get stranded in an environment where we were serious about that. As the Climate Change Committee has pointed out, if we are serious about 1.5 °C, we ought to be tightening our 2050 target from an 80% reduction to something like a reduction of 85% to 95% by 2050.

The crucial issue is, what is your benchmark? I have essentially been talking about the benchmark. If you were an asset manager thinking about this, you could think about what you want it to be—do you want it to be 1.5 °C? If you believed that at the moment, there was a chance that the world was really serious about 2 °C—and of course, as you know, even to be serious about 2 °C, we will have to have very significant tightening of the initially submitted, nationally determined contributions under the Paris process. The nationally determined plans that were originally put into Paris will still take us to 3 °C, and there is a very significant tightening of

those plans to get us to 2 °C. But you are broadly right—it depends on what the objective is.

Q307 **Caroline Lucas:** Are you personally serious about 1.5 °C?

Lord Turner: I have to say that my main focus in my role in climate change is to make absolutely sure that we meet well below 2 °C. I think that is a sufficiently large challenge that that is where I want to focus my activity. I am not against putting 1.5 °C on the table; I think it is important for the IPCC to set out what are the extra adaptation challenges and threats to welfare that derive from being at 2 rather than 1.5.

I am absolutely convinced that there is a workable way for the global economy to meet increasing energy demands while achieving the emission reductions required to make 2 °C doable. I think that is doable, provided we get on with it with enforceable policies. I worry that 1.5 is almost impossible economically, let alone politically, to be honest.

Q308 **Caroline Lucas:** But scientifically it is rather essential.

Lord Turner: Yes, it may be scientifically.

Q309 **Chair:** To be continued on another day. We are going to leave it there. Thank you very much.

Examination of Witnesses

Witnesses: Sarah Breeden, Stephen Haddrill, David Harris, David Geale and Anthony Raymond.

Chair: Welcome to our second panel, most of whom were here during the first panel. Could you introduce yourselves?

Sarah Breeden: I am Sarah Breeden. I am the executive director at the Bank of England, responsible for the supervision of international banks. I am also responsible for our work on climate change.

Stephen Haddrill: I am Stephen Haddrill, chief executive of the Financial Reporting Council.

David Harris: I am David Harris, head of sustainable business for London Stock Exchange Group, where I also lead our ESG business within our index company, FTSE Russell. I should also say that I was a member of the European Commission HLEG on sustainable finance and also participate in the Green Finance Taskforce.

David Geale: I am David Geale, policy director at the Financial Conduct Authority.

Anthony Raymond: I am Anthony Raymond, executive director at the Pensions Regulator.

Q310 **Chair:** Thank you all very much. The Bank of England said that there is growing evidence of the financial risk from climate change. Can you say where you think those risks fall? Who do those risks fall on?

Sarah Breeden: Thank you very much, Chair, and thank you for inviting us to speak to your Committee as part of this timely and important enquiry into green finance.

As we outlined in our written evidence to you, the Bank is undertaking a range of activities to enhance the financial system's resilience to climate change. We do this because climate change and society's response to it present financial risks that speak to our objectives of the safety and soundness of the firms we regulate and the stability of the financial system.

Those financial risks arise both in physical events—storms, floods, drought—but also from the transition to a lower carbon economy, which would be consistent with the commitments made in Paris two years ago.

Our work has two core elements. The first involves us engaging with the firms that we regulate on the climate-related financial risks that they face. Perhaps not surprisingly, given that insurers are most directly exposed to the physical risks, we have continued to engage in a close dialogue with them, building on the report we published in 2015 about the risks in insurance. We are also broadening out to consider climate-related risks that the banking sector faces. We are part of the way through our work on that, and we expect to publish a report on it in the coming months.

The second element of our work involves us engaging with initiatives that support an orderly market transition to a low-carbon economy. Obviously, given that that requires a co-ordinated response, a significant element of that work requires us to engage with other financial regulators and central banks, including our fellow UK regulators on this panel, with whom we recently initiated a regular informal roundtable discussion.

We also engage with our international peers: we are part of the Central Banks and Supervisors Network for Greening the Financial System, and we participate in the Sustainable Insurance Forum. The aim of those discussions is to increase awareness of this important issue and share best practice on how we should react as financial policy makers, given that this is a pretty new endeavour for us all.

Our work has also included support for the FSB's Task Force on Climate-related Financial Disclosures, which Lord Turner discussed. In my view, the recommendations of that taskforce, particularly those that focus on scenario analysis, are an excellent basis for companies to disclose the climate-related risks and opportunities and their related strategies, governance and risk management practices.

Awareness of future risks and opportunities and of how firms are responding to them is the best way to create pressure for change and avoid the financial stability risk that might otherwise arise in a late or disorderly adjustment. We all know that what gets measured gets

managed, and the taskforce recommendations are core to making that real.

Climate change is a complex issue that is relevant to many actors, but we consider these actions to represent the Bank playing its part in trying to address the issue consistent with our mandate.

Q311 **Chair:** You talked about awareness. To what extent do you think that there is sufficient awareness in the UK financial sector? What is the penetration of awareness?

Sarah Breeden: I would summarise it by saying that a transition in thinking is under way. If I compare where we are now to where we were in 2014 when the Committee last produced a report, it is fair to say—based on the conversations we have with the firms we supervise and with participants more generally—that climate change has moved from the corporate and social responsibility box into the financial risk box. It is not complete—the transition is under way, and some are ahead of others—but I think it is now very clearly recognised as being more a financial risk than a “nice to have” corporate social responsibility issue.

Chair: Great. Thank you very much.

Q312 **Caroline Lucas:** I want to talk about pensions, and particularly the Pensions Regulator. As you will have heard, in our previous discussion we talked a bit about fiduciary duty. Many submissions to the Committee have argued that that duty is being interpreted too narrowly in the UK. I would be interested in your thoughts on that.

Anthony Raymond: I presume that you are referring to the Law Commission report on this topic. Our experience is certainly that there is more to do in terms of trustees being clear about this. From the Pensions Regulator’s perspective, we have been clear in our guidance that it is very possible for trustees to do this. There is probably more for us to do in being clearer to trustees that that is possible, but it is certainly signposted in the guidance we provide to trustees.

Q313 **Caroline Lucas:** But do you think there is a muddle because people still think of climate change as an ethical issue rather than as a core economic one? Do you think that that is still a challenge?

Anthony Raymond: Yes, I would agree with that. From our perspective, it is absolutely something that trustees should consider. Climate risk is a short, medium and long-term risk, and it is something that trustees should take into account when they are making their investment decisions. It is something which we have put into guidance for the various different types of pension schemes that we regulate, and it is something that we are trying to raise the profile of in terms of speeches and other engagements and forums etc.

Q314 **Caroline Lucas:** Were you surprised that, according to UKSIF, in its 2016 survey 53% of pension professionals did not consider climate a financially material factor?

Anthony Raymond: I am not necessarily surprised to hear that.

Q315 **Caroline Lucas:** Disappointed?

Anthony Raymond: Disappointed, certainly. It is a journey, I think. The start of the process is putting that information into guidance. I think that needs to be reinforced. It is something more broadly that the Pensions Regulator is looking at in relation to trustee governance. The Pensions Regulator, just to be clear, regulates trustees and trustee governance. It is not prescriptive. It provides guidance and principles that we regulate against. A core priority of the regulator is to improve standards of trusteeship. We have a campaign at the moment to try to achieve that, which we call our 21st Century Trusteeship campaign. Part of that will include raising that awareness with trustees.

Q316 **Caroline Lucas:** In your guidelines, the onus is put on trustees to assess what constitutes a financial, material risk. Under what circumstances would you as a regulator act to challenge a judgment made by trustees on whether environmental issues do indeed constitute a material risk?

Anthony Raymond: The sort of circumstances where the regulator would look at this would be if it came to our attention that the trustees' conduct had fallen below the standards that we would have expected. The regulator has various powers to appoint trustees or prohibit trustees. If they have not complied with our guidance, that would be the sort of regulatory action we could take.

Q317 **Caroline Lucas:** But supposing they had not factored in the material aspects of climate change in some decisions they were taking, for example. Is that something where you could take action?

Anthony Raymond: The first thing we would do would be to engage with the trustees and to highlight that. If the behaviour did not change as a consequence of that engagement, we could certainly take action.

Q318 **Caroline Lucas:** Have you got any examples of where you have done that?

Anthony Raymond: Not in relation to climate change. We have examples where the decisions in relation to trustees regarding investments have certainly been part of cases that we have brought to our internal decision-making body to appoint different trustees to a scheme.

Q319 **Caroline Lucas:** What are the current rules governing how trustees communicate with beneficiaries concerning their statement of investment principles? For example, are trustees required to engage with beneficiaries and seek their views when devising the SIP?

Anthony Raymond: Sometimes, I guess is the answer. There are different situations. Trustees could come to a view that they wish to make a certain type of investment. They would not have to engage with the members to do that. If it was something more fundamental, possibly they would. I guess the answer to the question is, it would depend.

Q320 **Caroline Lucas:** But are there any rules governing how there is a general communication about the statement of investment principles with beneficiaries? Is there any requirement, for example, to be sending a

copy of the SIP to beneficiaries at any point? What I am trying to get at is what is the relationship between the regulator and the trustees when it comes to the SIP and the beneficiaries?

Anthony Raymond: I think, generally, the trustees would be communicating with their membership about the performance of the scheme.

Q321 **Caroline Lucas:** Okay, but there is no requirement on the statements of principles to make sure beneficiaries know about them?

Anthony Raymond: Not as far as I know.

Q322 **Caroline Lucas:** Do you think there should be?

Anthony Raymond: I can see that it could drive a change in behaviour. I am slightly hesitating because our focus tends to be on trustees as distinct from what is communicated to the members. The trustees are there to act in the best interest of the scheme, and that tends to be our focus, as opposed to the members, as such, in so far as their wishes are concerned. Clearly, we are there to protect the members, but there is a slightly different focus from our perspective.

Q323 **Caroline Lucas:** Finally, the Government has raised concerns that member surveys can be self-selecting, so when beneficiaries are trying to let their views be known to their pension funds, it is not quite clear how that is going to happen. Do you take any steps to ensure that when pension funds seek the views of their beneficiaries, they do so in a way that produces robust conclusions?

Anthony Raymond: I am aware that we have some guidance in terms of different types of engagement with members. It is not an area that we regulate actively in a way to prescriptively ensure that certain things do or do not happen.

Q324 **Caroline Lucas:** But do you think you should? I am interested in this potential gap, because we are often told that, as members of a pension fund, the way in which we can influence the decisions the pension fund takes is precisely by having some kind of dialogue with the trustees of that fund. Yet, I can tell you, as a member of the parliamentary pension fund, that that relationship has not been a happy one and there has not been much helpful dialogue. What I am trying to get at is whether there is any role for the Pensions Regulator to have any kind of say in what kind of communication goes on between beneficiaries and their funds.

Anthony Raymond: I guess it comes back to our focus, which is set out in legislation. Our focus is to regulate the trustees.

Q325 **Caroline Lucas:** But it's regulating the trustees in their relationship with the beneficiary, so I do not see why that is a contradiction.

Anthony Raymond: The guidance we produce, and being clearer with trustees as to the sorts of considerations they need to have when thinking about, for example, long-term investment issues, will be helpful. As I said, there is a journey to raising that awareness and some confusion still. I hope that our programme of work to focus on trustee standards will make a difference.

Q326 **Chair:** You said, though, that you focus on regulating the trustees and protect the beneficiaries of the scheme, but doesn't protecting them mean not having the scheme invested in bubbles or coal that's going to cycle down? Shouldn't the statement of investment principles at the very least be communicated to beneficiaries—with their annual statement, for example?

Anthony Raymond: I think the trustees absolutely should be taking into account issues that are financially material, and climate risk is absolutely one of those. In terms of communicating with members as to the types of investment the schemes have, yes. Your question was about whether the statement of investment principles should be communicated to members—

Q327 **Chair:** That is the means by which they protect their beneficiaries from that risk. And it is not just financial risk, is it? It is also transition risk. There are different types of risk; it's not just one risk. Are you just looking at financial risk from climate change?

Anthony Raymond: No. The trustees would need to look at it in totality when they are making their investment decisions. So it has a broader perspective and it depends on the type of scheme. Talking generally, there are schemes that are more mature and paying members that are in retirement. They will have a different set of considerations to a scheme that is very new, which will have longer-term considerations. Climate risk will probably be more relevant to those types of schemes.

Q328 **Chair:** Yes, we had NEST in two weeks ago.

David Harris: Can I come in and respond on this question of fiduciary duty? Certainly, from our experience, the larger, more sophisticated pension funds and asset owners very much understand that climate change and a range of other environmental, social and governance factors are material to investment decision making. However, there is also a challenge for the smaller schemes, which are currently quite a bit behind.

There is also a difference between defined-benefit schemes, which tend to be more advanced, and defined-contribution schemes, which tend on the whole to consider these issues there. This is an area that the Green Finance Taskforce is looking at. There will be recommendations linked to that around how we can make environmental, social and governance considerations more explicit within fiduciary duty. This is still around how to deliver the best long-term risk-adjusted returns, but by making sure that the environmental, social and governance factors—including climate—are explicit within that.

Chair: Thank you.

Q329 **Mr Dunne:** Ms Breeden, you mentioned the fact that you undertook a report, using your adaptation reporting powers, into the insurance sector five years ago and you are now doing one into banking. Can you give the Committee a little flavour of what you learned from the insurance review that you will take forward into the banking review in relation to the climate change risks?

Sarah Breeden: Of course. The insurers—general insurers in particular—are very aware of the physical risks that they directly insure. There are good data points that suggest that the losses from Hurricane Sandy were higher as a result of the rise in sea levels that has been associated with global warming and, more broadly, that insured losses from these physical weather-related events now are running at three times the rate this decade that they were back in the 1980s. So our focus with insurers was very much on general insurance and thinking about how they take into account the different physical risks that they are now insuring.

The second aspect of it spoke to the asset side of their balance sheet, picking up on some of the issues already discussed by the Committee today about exposures to climate change and, in particular, the risk of a disorderly transition as we move to a lower carbon environment. That was the focus of our discussion with insurers. For general insurers it was about the physical risk that they are insuring, and for insurers more broadly it was about how they take this into account in their asset management choices.

With banking, it is the same process. The most obvious types of areas where banks are exposed in respect of these physical risks might be in mortgages. When offering a 25-year mortgage on a house that may in future be hard to get insured because it is more likely to be susceptible to flooding, how do banks take that into account in their understanding and pricing and approach to mortgages? There is also the thinking about what other assets they have on their balance sheet, whether it be in their pension fund, investing their capital, or loans to coal or other producers. It is very much the same issue: physical risk and transition risks too.

To echo the point David just made: there is a range of views and a range of sophistication amongst the firms that we talk to. There are examples of very good practice at the more sophisticated end, but smaller institutions are less sophisticated. One of the things we will be aiming to do is to share best practice to try to bring everybody up to that higher standard.

Q330 **Mr Dunne:** Will you be making recommendations about transparency and disclosure in future banking reports?

Sarah Breeden: Our view at the moment—again, this echoes the conversation with Lord Turner and in your previous evidence session—is that right now we think that it is too early to move to mandatory disclosure of, for example, the Taskforce on Climate-related Financial Disclosure recommendations.

One of the reasons for that is that we do not think that it is necessary at this stage. There is a huge amount of momentum behind those recommendations; already, 240 companies globally have said that they will voluntarily adopt them—that is \$6.5 trillion of market capitalisation, eight out of the ten largest asset managers and 20 of the largest banks. There is already a real momentum, which means that there will be progress in making those disclosures regardless of what we as regulators and the authorities generally do.

We think it is important to recognise the immaturity of where we are in the disclosure process. It is relatively easy to disclose facts, but what is harder is to disclose sensible scenario analysis that speaks to the future risks and opportunities that climate change poses for firms. In our view, it is important to have a period of experimentation, where we work out what good looks like and where we get the climate scientists working with the firms to work out what is meaningful disclosure. At that point we can consider whether it is right to make it mandatory. As Lord Turner said before—and I very much agree with him—for mandatory to be useful it needs to be specific. We need time to make it specific.

Q331 **Mr Dunne:** That is very helpful. May I bring in the other regulators on the panel? I have a final question for you, Mr Harris. Mr Haddrill, will you commit to making a similar review of the areas for which you have responsibility?

Stephen Haddrill: Yes, absolutely. I very much agree with the point about disclosure. I think that it should become compulsory at some point. I think that we need to see some innovation and experimentation around the best type of reporting. Also, I think we need to see how this pans out on a global basis, because we are talking about global investment flows and information to global investors. So I think it is worth looking at this from an international perspective as well.

Q332 **Mr Dunne:** Just on that, are we ahead of other countries, or are we behind, in your perception?

Stephen Haddrill: I think at the moment, in relation to the Bloomberg report, I would not say that we can say one thing or the other; it is just far too early. What is needed, though, is for regulators like ourselves not just to wait for it to happen but actually to push things along. We have a financial reporting lab that brings together investors and companies to try to identify and promote best practice. We will be using that to accelerate the process.

David Geale: I would very much echo my colleague's comments. There are some questions for me around who is the disclosure for. When we look at pensions in particular, one of the issues we have found is that individual scheme members tend not to be engaged, which is one of the reasons we have auto-enrolment, for example. It is one of the reasons we introduced independent governance committees, to look at value for money on behalf of those members. So, who is that disclosure for—that is one question.

I would also reflect on the period of experimentation. If we look at some of the work done by the social investment advisory group, they found that a very significant chunk of people—I think well over 50%—were put off social-type investment because they could not measure it and could not see performance.

The difficulty is in finding metrics that people understand and that you can track back to causality. For example, if one of the objectives of a social fund is to reduce reoffending rates, can you track that back to the investment or is it because the police are not so active in that area at that particular point in time? Actually giving people something they can work

with is very important and therefore it is very useful to have a period of experimentation, against which we require the firms to disclose material risks to what they have said they will do already.

Q333 **Mr Dunne:** The more obvious physical risks. Mr Raymond, do you have anything to add?

Anthony Raymond: I would echo the previous comments. Having that period of time to assess is very useful. I can certainly see, in the longer term, the force of that being changed to something that is more mandatory, but that is ultimately a matter for Government.

Q334 **Mr Dunne:** Mr Harris, you made an interesting point about passive investors being slower to recognise the influences of climate change risk. Does that effectively mean that there is a problem with the indices, because passive investors invest in indices, and if the indices don't recognise that climate change risk is relevant, they will continue to work on the basis of market cap?

David Harris: That is a great question. There is a huge amount of change going on here. Right in the middle of this, on the one hand we are building a lot of indexes for asset owners who are wanting to incorporate climate change. You had Russell Picot here, the chair of the HSBC pension fund; we worked with them to build climate parameters into the design, not as a satellite option index—this was for their defined contribution default option. Everyone automatically goes into it, and we used three different climate parameters—one around carbon reserves, one around carbon emissions and a third about exposure to green economy sectors, which is an area that I don't think gets covered enough.

We tilted the weights of all the companies based on those parameters, alongside a range of smart beta factors as well. What is starting to change in index investing is the use of a range of different ESG sustainability data. That is a global phenomenon. The UK is very much a part of that and a number of UK institutions are leading it. At the same time, we are doing similar work for GPIF, the Government Pension Investment Fund of Japan, the largest asset owner in the world, who allocated to one of our ESG indexes in very large mandates, just the week before last. Another very large Asian asset owner, the Taiwan public pension fund, did likewise.

We are seeing this happen all round the world. What that means is that there is a real need for hard investment-grade data and information. This is moving away from the world of the pretty CSR reports. We need reliable information because this is being used at scale now.

Q335 **Mr Dunne:** Is that because of a desire among the underlying investor base of those institutions that they want to have something in response to the social demands for this kind of asset? Or is it built around financial performance—so that if you invest with a green conscience, you get a better return than if you do not?

David Harris: It is all about investment risk and investment opportunity. It is about how to deliver best long-term returns. That is the core driver here.

Q336 **Mr Dunne:** Is the evidence there yet, or not?

David Harris: Absolutely. Pretty much any large asset owner is now looking very seriously at climate change and what the potential implications of climate change will mean to their portfolio. They will want to try to build that into their investment strategy today. As we discussed earlier, there is a real need to help some of the smaller asset owners and also make sure that this thinking is switching across to DC schemes as well.

The HSBC example is interesting, because it was their DC scheme. I think they are unusual so far in applying it across for DC members as well. We are in an interesting place, because as well as working with investors and trying to support them on this, we are also obviously working with issuers on their markets. They are often very confused by this whole agenda. A huge range of different reporting requirements is coming at them—requests from their clients, requests from a whole range of different stakeholders for different kinds of data.

The role that we have been trying to play on that is to try to join up that dialogue between the investment community and issuers so that the issuers understand what information the investors need. We produced this document in February last year for issuers—not just on the London Stock Exchange and Borsa Italiana, which are our two exchanges, but also because with the FTSE Russell part of the group being a global index company, we need this data from companies globally in a consistent manner, so we really trying to see if we can help to drive that.

In terms of UK regulations and the role of Government, the UK has played a huge leadership role internationally in a range of inter-related areas, whether it is governance code, or the stewardship code, but also in terms of carbon reporting. As part of the Companies Act, there is a requirement on companies on a complier-explain basis to provide carbon emissions data. That means that the UK has some of the best carbon data in the world.

Looking across the TCFD and my colleagues' comments, where you can be prescriptive—and carbon emissions data is an example of where you can be—it makes absolute sense to have very clearly defined requirements. Where you have areas which are still evolving—if you look at the number of recommendations from TCFD, whether that is a scenario analysis, also maybe the green economy part as well, which I would like to touch on—you need guidance and to be able to provide examples of scenario analysis, baseline scenarios. There needs to be support to help us get to a higher level of sophistication.

You also have to be clear that there are two very different kinds of investors. There are those which need consistent comparable data across the whole economy and across all companies, for building into things like index strategies. You also need for active managers more strategic information which is more about the business model, how a company is thinking about these issues, how they are changing their core business. Those are two very different kinds of needs, which need to be dealt with in different ways.

Q337 **Chair:** Before we move on, I am going to go back to the regulators. DEFRA is consulting on this adaptation reporting power. We have heard the power of an adaptation report being produced on the insurance industry from the Bank of England. Do you commit to producing an adaptation report in this round of reporting, examining the risks of climate change on your area that you supervise?

Stephen Haddrill: Yes, I think we should understand it much better than we do.

Q338 **Chair:** Are you going to produce an adaptation report?

Stephen Haddrill: I will look at producing a report in this area. I just need to get more familiar with exactly what is required and the extent to which it is relevant.

Q339 **Chair:** What about you, Mr Geale?

David Geale: We have committed to work with DEFRA. We are talking to DEFRA about what the exact requirements will be and then we will make a decision on what that looks like in due course.

Q340 **Chair:** When is “due course”?

David Geale: I believe DEFRA is due to report fairly shortly. We are organising a meeting next week with DEFRA.

Q341 **Chair:** Okay, thank you. Mr Raymond?

Anthony Raymond: Our position is the same as the FCA’s in that respect. We are working with them and it is under consideration.

Q342 **Chair:** So you have not decided yet?

Stephen Haddrill: No.

Anthony Raymond: No.

David Geale: Sorry, I should just clarify: it is the end of the month, not next week.

Q343 **Chair:** Okay, the end of the month, so very soon—looming deadlines. Thank you very much. We are going to move on.

Q344 **Geraint Davies:** Sarah Breeden, you mentioned, as Lord Turner did, that at least for the moment you do not support mandatory reporting because of the momentum and the changing scenarios. We do not know exactly how the future will look, but can I ask you what you are currently doing to ensure that there is a voluntary take-up in terms of the TCFD, and to manage the risk of a variety of performance indicators, confusions, and an inconsistent approach emerging? How are you encouraging minimum standards towards a goal of mandatory reporting that presumably would change in its architecture over time in any case?

Sarah Breeden: This is very early days. The TCFD recommendations were finalised only very recently. We have not yet had the first set of disclosures come through. The TCFD has committed to produce a report by the end of the year that looks to compare and contrast across different

areas, and try to articulate, exactly as you said, what good looks like. A report will be produced by the end of this year that will be designed to try to establish what good looks like.

Separately, there are lots of preparer groups that are consulting as the disclosures are being written and formalised. As we speak, there are groups for oil and gas, for financials, that are looking to share best practice. We will support that, alongside all the work that the TCFD itself is doing.

Q345 Geraint Davies: In simple terms, what are the different institutions doing to encourage that process? Could you perhaps differentiate between the issue of climate risk, which affects investors, and what Lord Turner was talking about regarding how we end up with a metric where everyone is moving towards the Paris outcomes, which might not be a particularly profitable thing for a fund to invest in?

Finally, how can we avoid certain players who aren't? It is all very well saying a lot of people are involved. Some people want to hide things from investors because they face substantial risk. How do we police them and stop that, before moving to a mandatory system?

Stephen Haddrill: First, this issue of Bloomberg work and the TCFD is also bound up, for us, with the non-financial reporting directive that came in not long ago. The Government are also introducing new regulations that we expect in the spring. We are producing guidance on the strategic report, which will very much stress the importance of reporting against environmental matters, and so on.

We are also amending the corporate governance code, which is out for consultation at the moment, with additional provisions about companies addressing the sustainability of their business, and so on. A number of things are in train. In addition, we review something like 200 to 250 sets of reports and accounts every year, and will focus on this area. I also mentioned the financial reporting work that we intend to start once the reports come through.

I think a degree of mandation is important, but we should think about doing that through some sort of regulatory standard rather than through legislation. If we do it through legislation, we are frankly stuck with it for quite a long time. This will be an ongoing and developing area, so that is an additional thing that I would suggest.

Q346 Geraint Davies: Is there a case for minimum standards before mandatory regulation, David Harris?

David Harris: There is a range of existing regulations that can be used to deliver a lot of the improvements that we need to see in the information and data flows, both from companies and, potentially, the financial sector as well. That should be the initial focus. As I said, there is a need for much more in the way of guidance and guidelines.

There is nowhere near enough focus on some of the positive components. There is quite a lot of focus on understanding exposure, in terms of carbon emissions and carbon reserves, but we have spent a lot of time trying to

gather data on what proportion of companies' revenues come from green economy sectors and subsectors.

We have developed a taxonomy of 60 green subsectors, and we have been looking at companies' reports and accounts to break out revenue from those products. It includes everything from LED lights over tungsten lights, and electric vehicles over combustion vehicles. For construction companies, it is about how much is coming from adaptation—it is things like building flood defences.

Often, the revenue from green products and services—low-carbon products and services, which are going to help us with the change to a low-carbon economy—is not broken out. Through policy engagement and engagement with companies, we have been encouraging better revenue breakouts.¹

Let me put that in practical terms. HSBC's pension fund is one of many that is now tilting towards companies with more green revenues, but if companies are not breaking them out it is hard to do that. If an automotive company is providing revenue only by region, not by car model, you can't do that. This is an area in which we need more guidance and encouragement for companies to provide that kind of information. Again, it is too soon to be prescriptive with hard, very specific regulations.

David Geale: A lot of the TCFD regulations are more for the FRC, rather than the FCA, in terms of corporate governance. That said, we have engaged with the FSB taskforce through our role as a member of the FSB. Our focus will generally be on whether a firm is doing what they say they do. If they have said they will do something, have they done it? Can they back that up? We tend to get involved if we find they have not done something they said they will have done.

We have also published a risk outlook, which calls out climate risk, for example. We expect firms to read that risk outlook and take account of it. In our discussions with firms, we ask them what their approach has been to the risks we have highlighted.

In addition to that, we are a member of the International Organisation of Securities Commissions. Through the audit committee, of which we are a member, they are scoping a piece of work looking at things like investment time horizons and appropriate disclosures to investors.

Again, I come back to the issue of who are the people we are preparing disclosures for in some of those instances and how they should be disclosed. A lot of the research we have done shows that just giving people more information doesn't necessarily move the dial, because they often do not read the information they get already. It is about giving them things in a different way and a way they can engage with. That may be about embracing technology, thinking about digital means of providing information and making it meaningful.

¹ The Committee has received correspondence about this exchange, which can be found [here](#).

Anthony Raymond: It is worth reiterating my point about our focus, in terms of regulation, which is trusted governance. I will look at it with that frame of reference. As I said earlier, we are trying to raise this issue, in terms of awareness, with trustees, and we are putting that into our guidance. We have a guidance review in the next financial year, and we will certainly be looking at some of these issues to see whether there is more we can do in the material we put out.

Q347 **Geraint Davies:** Shouldn't the pension funds be demanding this information from the companies they are investing in to protect them from risk to their pensioners?

Anthony Raymond: What we have said in our guidance is that there will certainly be circumstances where climate risk will need to be taken into account. It is important that trustees do so when they look at their investment decisions. We have been very clear about that with trustees in the guidance.

Stephen Hadrill: I wanted to pick up on David Geale's point about checking whether the directors have actually done what they say they have done. There is a limited role for external audit in that regard, and that is one of the things we will be looking at. We are going to do a thematic review of what auditors do in reviewing the statements that directors make in the annual report, in addition to the financial statements. I think this is an important area to look at to see what role they have got to contribute.

Q348 **Geraint Davies:** May I ask Sarah something? If I am an investor—a pension fund or institution—who wants to invest only in companies that will help deliver the Paris agreement, how can you ensure that that data is available to me for me to invest, because it isn't, is it?

Sarah Breeden: That is right. That is the scenario analysis that is, as yet, an underdeveloped part of the disclosure framework. That is why we need time to experiment, to ensure we can work out what meaningful, good, credible disclosure looks like before we make it a mandatory requirement.

The way that we address your point is for companies to explain in their disclosures how their strategies are resilient and robust to a variety of scenarios, including a Paris 2 °C scenario, or a 1.5 °C scenario. Then you can make an informed judgment as to whether you think it is worth investing in that company.

That kind of scenario analysis is hard. It is very uncertain; there are a variety of paths to get there. What you want is a credible set of disclosures and that requires the climate scientists, as Lord Turner said, to have an opinion on this as well.

That is why we need time to get to a period of experimentation, before we can get to the meaningful disclosures that I think are the ones that will drive the right investor behaviours and the right allocation of capital that means we will not have the financial stability disorder we are concerned about. It is relatively easy to put objective facts out there. I don't think

that helps ensure you get the allocation of capital to reduce the risks that we care about.

Q349 **Chair:** Before we move on, I want to come back to Mr Haddrill. You said you were against mandatory disclosure, or mandatory incorporation of TCFD, but you said you wanted it done through a regulatory standard. Could you just expand on what you mean by that?

Stephen Haddrill: The first thing is that I would not be against it being mandated eventually—

Chair: But not now.

Stephen Haddrill: But not now. There is then a question of how you mandate it. Do you put it in the Companies Act or do we have some kind of reporting standard that my organisation, with help from others, develops?

Q350 **Chair:** Globally? So is that an FRC matter?

Stephen Haddrill: It could be an FRC standard.

Q351 **Chair:** That also feeds into the global system, doesn't it, through education for accountants?

Stephen Haddrill: It could do. I think we would be influential on the global system. What we would ask the Government to do is to give us the power to review formally any statements that we see made under that standard and, if necessary, ask the directors to change them if we don't think they are accurate, or hold them to account in some way.

Chair: Thank you for explaining that. We are going to move on.

Q352 **Joan Ryan:** May I address my question on the Financial Reporting Council to Mr Haddrill? The Companies Act already requires companies to disclose the principal risks that they face. Which sorts of company, from which sectors, would you expect to be already reporting on climate risks?

Stephen Haddrill: There is a pretty broad range of companies. Obviously, there is the energy sector that we talked about earlier, the construction sector and manufacturing. Anywhere there is high embedded carbon has got an issue. Equally, if you have got major facilities in high flood risk areas and so on, those are things that you ought to be taking account of.

I rather favour the approach that has been discussed in relation to non-financial reporting requirements. There is a presumption that you will have some sort of material risk and you should report. If you choose not to report, you have to explain why you do not believe that presumption applies to you.

Q353 **Joan Ryan:** There are further questions I want to come back to on that. What criteria do you think companies should use to decide whether climate change is a material risk or an opportunity for their business?

Stephen Haddrill: What we are looking for, as Sarah said earlier, is risk related to the performance and position of the business. So it is the impact

of the risk on profitability, on the balance sheet and so on—on the financials. I also think companies need to take account of the impact on their reputation with the public. That may well bear on the nature of the business as well as its profitability.

The key thing—and this is what companies find most difficult—is something in the annual report called a longer-term viability statement. Companies are reporting against that typically over a period of about three to five years. Since we introduced that requirement about three years ago, that is about the best we have got. That is clearly not adequate if you are taking account of climate change. So there is a lot of work, as Sarah was saying, to work out how you can assess the materiality issue over a period of 20 or 30 years.

Q354 **Joan Ryan:** Has the FRC ever reached a decision that corporate reporting requirements have been breached in relation to environmental risks? If so, what enforcement action was taken as a result?

Stephen Hadrill: We have and are certainly indebted to ClientEarth and other organisations for drawing things to our attention. The enforcement action we have taken is to get the company to report more fully or more appropriately in its next set of annual reporting figures.

Q355 **Chair:** Sorry, did you just say that you are indebted to ClientEarth?

Stephen Hadrill: Yes.

Chair: So they spotted it, not you?

Stephen Hadrill: Yes. We wouldn't necessarily have been looking at that company that year. We invite people to draw our attention to things and if they do, we will investigate.

Q356 **Chair:** Has that happened?

Stephen Hadrill: Yes. I think that has happened with them about four times.

Chair: Can you name that company?

Stephen Hadrill: I think so. Certainly I can name Rio Tinto. That was one that they raised with us. I will write to you if there are others I can name, but I don't want to talk about one that is in process rather than one that is concluded.

Chair: Okay. But Rio Tinto is over.

Stephen Hadrill: That was over some time ago.

Q357 **Joan Ryan:** Were there cases more recently?

Stephen Hadrill: There have been and there are ongoing cases now, yes.

Q358 **Joan Ryan:** In response to the complaint that was made in August 2016—I can't see why we can't name these companies, can you?

Stephen Hadrill: I think you can name the companies.

Joan Ryan: Yes, I think so. Cairn Energy.

Stephen Hadrill: Yes.

Joan Ryan: SOCO International.

Stephen Hadrill: Yes.

Q359 **Joan Ryan:** So they made no mention at all of climate change in their strategic reports and, in response to the complaint, they then included sections on climate change risks. But the FRC closed the complaint without ruling on whether their original reports were compliant. It is hard to see that as enforcement action.

Stephen Hadrill: Our regulatory philosophy is to get it put right.

Q360 **Joan Ryan:** But you are not getting it put right, because you are dependent on other organisations to find the problem, to raise it with you and then to insist it is put right, which is what happens. To not then have a ruling on whether the original report was compliant seems a somewhat toothless approach, if I might be so bold.

Stephen Hadrill: I don't think so. We review about 10% of the listed company reports every year. That is what we have the resources for and that is a reasonable proportion. If something comes up in the other 90%, then we are indebted to the people who bring those things to our attention.

If we felt that the company had really abused the rules, we could take enforcement action against any directors who were accountants. If we feel that the matter can be most readily addressed by correcting the information in the annual report or adding additional information to the annual report, and that can be done within a matter of months, from the investors' point of view, that seems to me to be the most satisfactory outcome, because the actual heavy-duty enforcement cases could take a considerable period of time.

Q361 **Joan Ryan:** I take the point about the resources, but there has been quite considerable criticism, hasn't there, of the FRC's approach to monitoring annual reports and accounts in recent years, particularly in the wake of recent corporate governance scandals? Coming a little more up to date, I am thinking of the FRC facing censure for not identifying problems at Carillion. You have recently faced questions on that before the BEIS Committee.

Stephen Hadrill: I reject the criticism of the FRC. We will see what the other Select Committee says. We have very quickly launched an enforcement investigation in that case, but I cannot really talk about that yet because it is sort of sub judice.

Q362 **Joan Ryan:** You referred to work on a strategic report in answer to my colleague's question about how, with companies, we will get to the point at which disclosure and recognition of risks in relation to these matters of environment, climate change and so on—social, environmental and

strategic—are included, but in your review you are not recommending that that be mandatory. Are you recommending that for any point in time, because you said that you think eventually it should be mandatory, but not at the moment?

Stephen Hadrill: The Government are responsible for bringing about change in legislation on what the strategic report should cover, then what we do is generate guidance to companies to give them a bit more depth on how they may approach and use that legislation. As I said earlier, we are waiting for the Government to confirm the legislation. Shortly after that, we will confirm what the guidance will be. But we do feel that it is absolutely essential that, through that guidance and legislation, companies do an excellent job of reporting on the risks that are material to their business and the interests of their investors. That would include climate change—

Q363 **Joan Ryan:** But you are consulting on the revised corporate governance code and your proposed revisions do not explicitly mention risk related to environmental sustainability.

Stephen Hadrill: It does explicitly talk about the sustainability of the company's business.

Joan Ryan: But you do not explicitly mention risks related to environmental sustainability.

Stephen Hadrill: We have not listed all the different types of risk. That is something we will consider at the end of the consultation. We will see what response we get from that, and indeed the Committee may well wish to comment on that.

Q364 **Joan Ryan:** Should not corporate governance guidance be unambiguous for companies where the environmental risks are material?

Stephen Hadrill: The code really should be clear, and it should be relatively short. It should direct the directors at making sure that they have done an excellent job of reviewing the risks to the business, rather than telling them what the risks are. But there are definitely two schools of thought about this, and you and others I know feel that we should be more explicit not just about this area but about how the company treats its employees and so on. The way we have dealt with that is to say that companies need to do a better job of reporting against section 172 of the Companies Act, which says that directors report on how they have had due regard to the interests of employees, the environment and wider society. We have reflected that language into the corporate governance code, so it is in there in that regard, and it is consistent with the Act.

Q365 **Joan Ryan:** What is your view of the October 2017 paper by the UK Shareholders' Association, the Local Authority Pension Fund Forum, Sarasin & Partners and others, which is very critical of the FRC's ability to do its job? It somewhat echoes some of what was said at the BEIS Committee about very weak enforcement mechanisms.

The paper said that "the FRC's ability to scrutinise auditors has been impaired by its heavy dependence on the very profession that it is tasked

with overseeing. This has resulted from an opaque and piecemeal statutory basis; weak governance structures; funding that depends on the audit profession's discretion; and poor public transparency." It goes on to talk about the "inadequate accountability to Parliament, the public, investors or companies". It was pretty hard hitting and damning and it is echoed by some other Select Committees. Could you comment on that and on what you see as the way forward?

Stephen Haddrill: I totally reject some of those points, and I think that there is something in some of the others. I reject the idea that we are in any way over-influenced by the profession, particularly by the audit firms. My executive committee has only two accountants on it; most of us are from a legal or, in my case, a civil service background. We have quite strict governance arrangements around the board committees that take the key decisions to make sure that we have an appropriate level of independence. We have seen that risk over the years and have made sure that we proof against it.

It is true, however, that the legal framework within which we operate has some gaps in it, if you look at the FRC on its own. We can take enforcement action against accountants but we cannot take enforcement action against directors who are not accountants, even if they are sitting side by side on the board with an accountant.

You mentioned our reporting to Parliament; we report to the Secretary of State every year, who places that report before Parliament. We have had very little parliamentary scrutiny, perhaps partly because we are not a statutory body; we are a body that Governments over the years have given some powers to, but formally we are a private company. There are areas around our formation and our relationship with Parliament that could well be strengthened and I would be very much in favour of that, but obviously it is for the Government to determine that and take it forward.

Q366 **Kerry McCarthy:** I want to move on to the FCA. In the risk outlook included in your 2017-18 business plan, there is a focus on climate change and the risks associated with things like flooding and so on, but you do not deal with transition risks, in terms of the risk to firms that are not moving to a more low carbon approach. Is there a reason for that?

David Geale: I don't think there is a specific reason for that. We have identified what we consider to be a long-term horizon. We put that out against certain things for firms to consider.

Q367 **Kerry McCarthy:** Could you clarify what you mean by a long-term horizon?

David Geale: Of course. We look at risk in a number of different ways. In terms of developing our business plan, we look at the here-and-now risks of what is the harm that is either occurring or that has the strong potential to occur in the short term that we can act on now and seek to mitigate. Through the risk outlook element of what we produce, we take a longer term view and call out some of the things that we see on the horizon—we are talking five or 10 years out or longer, rather than the here and now.

The business plan is a short-term document; the risk outlook is a longer term document that we put out for firms to consider, and that forms part of the basis for the discussions that we have with firms about how they make their own risk decisions and considerations. We would expect firms to think for themselves about what the risks are of things like transition.

Q368 **Kerry McCarthy:** But you are flagging up the insurance related risks with flooding—that has obviously become more prevalent—but not really flagging up the risk of stranded assets. Is that because you see it as something that is beyond the five to 10-year horizon you are concerned with, or do you just feel that it is a business decision for firms, rather than your concern?

David Geale: There is an element of “how much do we put in the documents that we put out?” We perhaps put things out at a high level, and we then expect firms to consider for themselves the risks associated with that. We would expect firms to consider the transition risk—it is a question of the level of detail that we put in the reports we produce.

Q369 **Kerry McCarthy:** If a major fossil fuel company was seeking a listing on the LSE—I will come on to the LSE in a moment—what sort of information would you expect it to disclose about climate change risks?

David Geale: We would expect it to think about what are the material risks to their business, and primarily about what information potential investors need to know—that should be the lens through which they should be looking at it. They should be describing the business that they do and the areas in which they are active. They should be describing the risks that they see, and what actions they take to mitigate those risks. That is the sort of thing.

Q370 **Kerry McCarthy:** During the prospectus approval process, have you ever pulled a company up on not doing sufficient disclosure of climate-related risk?

David Geale: I am not aware of whether we have pulled anyone up specifically on climate disclosure risk, but we do, of course, pull companies up on failure to disclose material risk. In the sorts of example you provide, one of the areas we would be looking for is whether they had called out those sorts of issues.

Q371 **Kerry McCarthy:** Can I ask the LSE, again if a major fossil fuel company was seeking a listing, what would your role be in that process, in terms of it disclosing climate change risks?

David Harris: I guess the regulatory role would be played by the institutions represented here as well as the UKLA. Our role is particularly about how to encourage companies to ensure that when they are looking at the regulatory requirements, they are not doing it in a de minimis way and coming up with boiler-plate reporting, but are actually providing the information that investors will value and use.

As I said earlier, through things like this we have been trying to encourage a combination of two things. One is information more strategically about how a company is looking at the transition to a low-carbon economy, and

what that means for its business model and so on, and the other part is ensuring that it is providing consistent, comparable, reliable data that enable that information to be used for more diversified investments.

Q372 Kerry McCarthy: Is there a tendency for greenwashing, in terms of making themselves look better than they are on this front?

David Harris: Yes, which is why the focus for TCFD was that this should be in the financial reporting accounts. There is a discussion about where information should be presented, and when it should be independently verified. You do not want to start increasing unduly the costs on businesses in terms of reporting, particularly for smaller companies, and you also need to make sure that where you focus on getting information verified, it is the most important information. That will clearly apply to some of the climate-related data.

Sarah Breeden: That underlines a point in the high-level experts group report, which is that the foundation for sensible analysis of climate change is a proper taxonomy that is well defined and that everybody can understand to have credibility. We are not there now.

Q373 Kerry McCarthy: You say we are not there now. What efforts have been made to get there? When will we be there?

Sarah Breeden: That is something that the green finance task force is looking at in a UK context, and obviously the EU high-level experts group has made a recommendation to that effect.

David Harris: A lot of the green taxonomy work so far has been applied for green bonds. That is a very important market, and it is growing rapidly. We also need something that is much more cross-applicable across all asset classes, and relevant across all equities, and across fixed income much more broadly as well.

At a European level, the HLEG report recommended a European sustainability taxonomy. I think there is an opportunity for UK leadership to pick up some of that and be able to move on it more quickly. A lot of the expertise here in the UK is around many of these topics, as much as the innovation. One thing we are hoping for within the work of the Green Finance Taskforce are recommendations around free taxonomies and how to evolve that work and thinking.

Q374 Mr Goodwill: I would particularly like to ask Mr Harris some questions about green bonds. Historically, people might have invested in green bonds for altruistic reasons. Now, given that there are companies out there that are addressing climate change and have solutions to some of the challenges that we face, green bonds are becoming much more mainstream.

Some suggest that the UK is lagging behind countries such as France and Germany in the issuance of green bonds. The LSE has suggested introducing subsidies and incentives for the issuance of green bonds. On what grounds would you justify taxpayer support for financial institutions issuing green bonds?

David Harris: Spread right through the discussion here, and earlier with Lord Turner, are the huge capital requirements for a transition to a low-carbon economy. When you look at a range, not just of developed markets but across emerging markets, notably China and India but many others, even well-resourced economies need to come to international capital markets to be able to finance a lot of the green infrastructure that is required.

There is an opportunity for the UK and London to be a centre for that. We already are in many ways. We were the first exchange to have a green bond segment. We have been attracting issuance from 11 different countries, seven different currencies, with more than £20 billion green bond issuance. But it is still relatively small today. This market, in terms of total fixed income issuance, is less than 1% but is approximately doubling each year. So there is an opportunity to ensure that the UK is playing a key role in helping support those green capital flows internationally by supporting the growth of this market.

Q375 **Mr Goodwill:** For that to develop successfully, there has to be robust confidence in these green bonds. We have heard in this Committee some scepticism about the certification of green bonds. There is a lot of greenwash sloshing around, we have heard. Could the LSE assure us that the certification of green bonds being listed in London is robust enough to get that international confidence?

David Harris: There is a difficult balancing act here. On the one hand, what is really important is that you have credibility around the green bonds standards. You also need not to overburden green bond issuers. Because, if you make the requirements too onerous and costly, it becomes too expensive and they won't bother.

We are already seeing a lot of green bond issuance from public institutions. A lot of the demand, though, is for more green bond issuance from corporates, and we are starting to see that. The approach we are taking to ensure that we have got credibility behind green bond issuance is that to be admitted on to the green bond segments of the LSE you have to have independent certification.

A number of green bonds will be self-certified. We require independent certification by an experienced third-party certification provider. One recommendation within the HLEG report was a European process to allow bodies to be able to certify to that standard. That could be an area to be looked at from a UK standpoint as well.

Q376 **Mr Goodwill:** Is it the job of Government to set these rules, or would the market be able to set them itself, in the way it has in other areas?

David Harris: The leading standard for green bonds has come from the climate bonds initiative, which has its HQ in London. As we have heard, CDP is also headquartered here and UNPRI is. A lot of action, innovation in thinking as well as many of the institutions that are taking some of the bigger steps are here.

The question is, how do you support those market-based standards? We don't want to have a huge proliferation of different green bond standards internationally, but there is room for a few different standards in trying to ensure we are getting some sort of alignment internationally between them.

Q377 Mr Goodwill: In the same vein, we heard that the UK could go more quickly, but on the other hand you just said it would be good to work together. Do you feel it would be better to go with the European standards that are being considered, or should we go on our own?

David Harris: It is about trying to strike a balance. You want to get consistency, but there are areas where we can try to speed up the development. From a UK standpoint, we would be in the vanguard, and then we could help to set the standards and encourage their application globally.

There is a lot of work already going on in terms of green bond standards and definitions. We now have the opportunity to join up the thinking about the green taxonomies so they are applicable—not just to green bonds and bank finance, but to equities and bonds more broadly. For example, I was making some points earlier about green revenue reporting. If you are a large institutional investor looking at your exposure across all your portfolios, you want to understand what exposure to low-carbon and green sectors you have got across each portfolio.

The benefit would be that if you have got a taxonomy that is being used to drive corporate reporting of what proportion of their revenues are coming from those areas, that allows you to start to reallocate towards those sectors. We have done quite a lot of work at the London Stock Exchange and within FTSE Russell on developing a green revenue taxonomy, which can be a good starting point. That is an area on which we want to have more focus now.

Q378 Mr Goodwill: Does the Bank of England have a view about whether we should be going our own way or whether we should have a wider European taxonomy for these bonds?

Sarah Breeden: I think that is beyond our level of competence. The broader discussion about whether we do something locally or in Europe is beyond our area of expertise. Personally, I agree with what David said. It is about trying to strike a balance between setting a standard that is widely recognised and ensuring you can make progress at a sufficient pace.

Q379 Chair: Final question. We have had a lot of evidence about the disparity on trust and contract-based pension regulation. There was definitely criticism of the FCA when it comes to considering environmental risk as a financial factor. Several submissions argued that the FCA should issue guidance for contract-based schemes in line with the Law Commission's recommendations, just as the Pensions Regulator has done. When can we expect to see that?

David Geale: We welcome the report from the Law Commission. We welcome a number of factors in it that are very much aligned with our own thinking.

Q380 **Chair:** When was the Law Commission's report published?

David Geale: I don't remember the exact date it was published, but we responded to the interim report before Christmas and we are working with DCMS and the DWP now on the final report for the summer. Sorry, I don't recall the exact date it was published.

We have done a number of pieces of work ourselves looking at whether regulation creates a barrier to social or impact investing. We put out a call for input on that topic, and we did not find any regulatory barriers. In looking at the listing rules, we did not have any feedback that regulations are causing problems in this sector.

The Law Commission reports made a number of recommendations to the FCA. Their findings were along the lines of what we found, which is that while regulations are not a barrier, the issues are more about scalability and behaviour. They include a lack of measurability—we have already talked about that—and the difficulty in scaling what may be niche projects, and therefore finding things to invest in in some cases. As Lord Turner said, there is the long-term nature of some of the necessary decision making in some of these projects, versus the relatively short-term horizons that people are operating to, which again we have talked about.

There were a number of recommendations to the FCA. The first was that we should expand the role of independent governance committees. In response to that, we are already considering the role of independent governance committees in a number of the pieces of work we are doing. It is not helpful for us to come up with piecemeal solutions. We are looking at the role of independent governance committees relative to non-workplace pensions. Currently, they apply only to workplace pensions. We have issued a discussion paper asking whether we should read them across. We are wary of a one-size-fits-all, but there are certain similarities there, as you would expect. If it is showing positive signs in workplace, why not in non-workplace as well?

We also have our asset management market study going on, where we have looked at raising governance standards for funds in a number of other ways. Again, I am very happy to talk about that if that would be helpful.

Q381 **Chair:** We are more interested in environmental, social and governance factors. The Law Commission said that they are compatible with fiduciary duty and that, where they are financially material, to ignore those factors is a breach of that duty. The Pensions Regulator has updated its guidance. When are you going to update your guidance?

David Geale: What we have said is that we will consider that guidance alongside the work we are already doing, and we will include our response in the final response to the Law Commission. I would also reflect, though, that the Law Commission said—and we agree—that the primary purpose of

a pension is to provide people with pension savings. There is a potential tension with the fact that people are under-saving towards their pensions, they are expecting companies to maximise returns, and in some cases they may be giving up returns by taking some form of social investment as an aspect of their pension funds.

The Law Commission also said—again, we agree—that firms should understand the investment objectives of their scheme members. If their scheme members share those concerns, of course they should act on that. They should invest in accordance with the wishes of their members.

Q382 **Chair:** Is that not that a problem when we have a pensions regulator that does not think that trustees should talk to scheme members and find out what they want? It seems to me there is stuff falling between the cracks of the regulators here.

David Geale: Tony may wish to comment, but I do not think there is stuff falling between the regulators. We have announced that we will be putting out a joint strategy. We have already put out a joint guide in terms of what our respective roles are in respect of pensions. We operate under different legislation, but our aims are actually very much aligned.

Q383 **Chair:** When are you going to publish that joint strategy?

David Geale: We are running a series of stakeholder events over the next couple of months, which will be preceded by a document that tees them up by saying, "These are the key risks we see in the pensions area." That will be coming out very shortly, and we propose to publish the joint strategy in the summer.

Q384 **Chair:** So you will have your joint strategy by this summer. Can we be confident that guidance for contract and trust-based pension schemes will be harmonised by the end of this year?

David Geale: We have to reflect that we operate under different legislation, so "harmonised" is perhaps too strong a word, but are our objectives the same? Yes, we are both seeking to achieve well-managed pension funds that reflect the needs of pension savers.

Chair: Okay. Thank you all very much indeed. Thank you for your patience.