HOUSE OF COMMONS

Environmental Audit Committee

Oral evidence: Green jobs and the just transition, HC 75

Wednesday 12 May 2021

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Watch the meeting

Members present: Philip Dunne (Chair); Dan Carden; Duncan Baker; Robert Goodwill; James Gray; Helen Hayes; Ian Levy; Cherilyn Mackrory; Jerome Mayhew; Dr Matthew Offord; Nadia Whittome.

Questions 113 - 169

Witnesses

I: Jane Cooper, UK Stakeholder Relations & Regulatory Affairs, Ørsted; Dr Adam Read, External Affairs Director, SUEZ Recycling and Recovery UK Limited; and Venetia Knight, Head of Employment and Enterprise, Groundwork Greater Manchester.

II: Andrew Mennear, Director, UK Government Affairs, BP; and Peter Walters, Head of Environment and Sustainability, Chemical Industries Association.

Written evidence from witnesses:

SUEZ recycling and recovery UK Ltd

Groundwork UK

Chemical Industries Association

Examination of witnesses

Witnesses: Jane Cooper, Dr Adam Read and Venetia Knight.

Q113 **Chair:** Welcome to the Environmental Audit Committee for our third oral evidence session in our inquiry into green jobs. We are delighted today to welcome two panels, the first from the sector engaged in existing green jobs in one way or another, as we will establish, and the second from more traditional industrial sectors looking to transition towards the new economy to understand how this will impact on jobs in their sectors. I would like to start by welcoming our first panel with Jane Cooper from Ørsted.

Jane Cooper: Thank you, Chair, and good afternoon. My name is Jane Cooper and I work for Ørsted. We are the largest offshore wind developer in the world. My role is Head of Regulatory and Stakeholder and we have stakeholder relations in local areas in Grimsby on the east coast and Cumbria on the west coast, which we cover.

Chair: Thank you. Secondly, Dr Adam Read from SUEZ Recycling and Recovery.

Dr Read: Good afternoon, Chair, and thank you. I am Dr Adam Read, the External Affairs Director at SUEZ Recycling and Recovery. We are a large leading waste management business here in the UK, but also operating globally. I am also wearing my Chartered Institution of Wastes Management hat today, representing the leading professional body for waste and resource managers.

Chair: Thank you, and I gather that you are due to step up to be president of that organisation shortly.

Dr Read: Next month. Thank you.

Chair: Also Venetia Knight from Groundwork, the social enterprise.

Venetia Knight: Good afternoon. I am Venetia Knight, the Head of Employment and Enterprise at Groundwork Greater Manchester. I am also representing the Federation of Groundwork Trusts today. My responsibilities are around creating lots of jobs within the green economy and the natural environment sector. I have particular responsibility for designing and delivering employment trade services and programmes.

Q114 **Chair:** Thank you very much for joining us today. I am going to start by inviting each of you to give us an immediate sense of how Covid has impacted on jobs and growth within your individual sectors. It has been a most unusual 14-month period, but it would help set the context for the future. We will start with Jane.

Jane Cooper: Thank you, Chair. Covid has had a material impact on all economies throughout the UK and we are remaining vigilant. As offshore wind, we are well positioned to ride through this. We have been continuing to construct our Hornsea Two wind farm throughout this time.

Most of our workers have been working from home though over this period.

Looking ahead, we have the Prime Minister's 40 by 30 target from the seven-point plan, which will deliver £50 billion worth of investment and around 27,000 jobs in the top tier industries. With the refocus, I think Covid has been very successful, in that one of the benefits it has given us is an opportunity to refocus on the future, looking at net zero. We have green hydrogen coming along, and with the collaborative approach between Government and industry we will be successful with more employment through the offshore wind sector.

Q115 **Chair:** Thank you. Adam, your business has been pretty stable, I imagine. Waste recovery happens with or without Covid.

Dr Read: Very true, Chair. From the municipal side, in terms of the household waste streams, of course with everybody at home and working at home, the levels have increased and we have been maxing out on collections and treatment. None of our facilities have closed—not on the main operational side—but when you consider that half of the material we handle comes from industry, business and sectors of society that have been closed for large chunks of time in the last 12 months, those throughputs have declined significantly.

In hospitality, for example, we were down to maybe 50% of all the material that we would normally handle during the last 12 months. That does have a knock-on impact for keeping sites open and moving materials through, but on the whole we rode that well by moving resources to where they were most needed, so supporting the municipal stream and ensuring that the recyclables and recoverables were handled appropriately and moved on.

What Covid has done is it has enabled the industry and the sector to start to revolutionise much quicker than perhaps we had predicted. The online opportunity, the ability to be more just in time and working from home has meant that we have broken some of the traditional rules of everybody being in the same place at the same time and we have become a lot more fleet of foot. With customers now bouncing back, they are expecting a different type of service, and the sector is now primed to offer a service that is just in time and more appropriate and perhaps more focused on recycling, recovery and reuse, so there are some good positive outcomes from Covid.

Q116 **Chair:** It is good to hear that there are some silver linings. Venetia, the Groundwork business tends to try to find roles for those who are hardest to get into employment, which must have been much tougher when there are not fresh roles coming forward through Covid.

Venetia Knight: Yes, in terms of employment interventions it has been a lot harder to engage with certain groups of people, not young people though; they have embraced the opportunities of the digital environment

and changes over the last 12 months. But it is harder to find opportunities for people to get into work. There are certain sectors that we would often have had quite a lot of progression routes into that have been badly affected. Similarly, there are other sectors, whether that is care or logistics, where there has been growth, so it has been a bit of a mixed picture. But for the environment sector we do a lot of different things, and it can often be quite difficult to pinpoint what we are doing in a short, snappy statement.

Some things have been very badly affected. Charities that rely on fundraising and volunteering programmes and that sort of thing have obviously struggled, but overall we hope that people have grown to understand the importance of the natural environment, the local spaces where they live and understand the impact that the climate emergency will have on us and that we do need to change the things that we are doing.

We see potential for growth as people understand our message and then look to us to provide solutions around the green economy. It feels like the time is right now for change, so we hope that that will follow through into more activity.

Q117 **Chair:** That is a nice lead into the main topic of the inquiry, which is how we are going to change roles. Yesterday, rather fortuitously for this session, one of the flagship measures in the Queen's Speech was the Government's plan to introduce a Lifetime Skills Guarantee and other measures around encouraging people to reskill through providing loan arrangements and so on. Starting with Adam, could you each give the Committee an indication of how you think these measures—to the extent that you are familiar with them—could help encourage the kind of upskilling and reskilling of existing workforces that are going to have to be engaged in doing rather different sorts of jobs as we move towards a net zero economy?

Dr Read: Of course, Chair, and it is good news; you are absolutely right. As a sector that has evolved once before from a landfill-dominated to a recycling-dominated sector, we are now going to evolve into a circular economy or multiple circular economies. A green recovery is not just about taking the staff that we have had over the last 20 or 30 years on a journey of evolution. It is also about working with other sectors whose staff may not be used in a traditional sense in their current roles.

Lifetime learning and approaching that kind of cross-sectoral interchangeability of skills is quite key because in the last decade we have increasingly recruited from the power sector. We have had high numbers coming from manufacturing, as our infrastructure has become more reliant on the key skills that those sectors could offer in terms of understanding electrical flows and power output, controlling large-scale equipment, for example. More recently we are taking people from the hospitality sector because the roles that we are now providing, in terms of collection and harvesting of materials, are requiring us to do things a

little bit differently with customers, and so more communication skills and ability to advise and support.

This is not the traditional dustman of 20 years ago. The positivity of lifelong learning and skills development is the fact that we can map careers that can morph alongside evolving sectors. None of our sectors work in isolation. We work closely with the charity sector, because some of those services they provide exceptionally well, and that is the future—that collaborative ability to move people in and out with the right skills and with the right support.

Q118 **Chair:** Thank you. Venetia, does the client base of Groundwork primarily comprise people who are moving into work not necessarily for the first time but changing roles, and therefore reskilling is very relevant to them? Do you think that the Government measures could help the work that you do?

Venetia Knight: There is potential to make it easier for people to move between jobs, especially if they have been trained already in one area and they need to gain new qualifications in a different sector.

For the natural environment sector, we perhaps still have work to do to get the training programmes right that people need. The existing green skills, green economy type of qualifications do not always match up with what we are doing. Often we need people to be doing modular programmes of training. We have to write new material, and it is often access to tickets and licences and various things that can hold people back, so it is welcome, but it feels like we have more work to do to be able to get people with the right skills for our sector.

What we are finding over time is that we need people to be multidisciplinary. It is not enough just to understand about nature, climate change and the environment. It is having commercial skills or different kinds of communication and education skills. Marketing skills run alongside that. Certainly in Manchester we have a lot of people with new start-up businesses, and they need help to be able to grow their business. They have all the technical knowledge and knowhow, but it is how to make those businesses grow with commercial marketing and generating the right kind of evidence base to support their sales, so it feels like we have a lot to do.

Q119 **Chair:** Jane, the renewable energy sector has a bit of a lead on the rest of the economy here because you have been at it for some while. It is also the source of a large number of expected jobs for the future. How do you see the opportunity to transition people from old-style industrial jobs into the renewable energy sector, and do the Government's proposals for skills transfer help?

Jane Cooper: Yes. The news yesterday is good news; lifelong learning is good news. We also look forward to the Levelling Up White Paper later on this year. That is obviously part of the same picture.

Yes, you are right: we are transitioning. Already we are taking and transitioning people from the oil and gas sector into our renewables sector. We are looking at what qualifications are needed, how we can best transition easily across from the oil and gas sector qualifications into the offshore sector ones. We have already been transitioning a lot of people. We have a lot of staff that come from the forces—from the army and navy. We have a lot of people already working in our sector from those areas. Looking ahead, that is certainly going to continue as more offshore wind farms are built.

I am a mechanical engineer, but I would envisage that engineers will become more multidisciplinary. We have more green hydrogen coming. I can see that there will be mechanical engineers who will need to increase their electrical/electronic engineering standards, so right across the piece. Communication will change with the impact of Covid—the virtual working. We have to be able to communicate across teams and globally. We move staff around the globe, so we have to work across the globe. We will be doing more of that.

I also see the manufacturing skills that will be needed in the supply chain that we expect to be coming as well, with the support of Government. We will need to have more people moving into that area and learning how to make blades, as they have done at Siemens Gamesa in Hull and on the Isle of Wight with Vestas.

There is more service support in the regions as well that will come through, because we have more people working there. We have more roles, we have more training centres and we have more hospitality that is needed to support people. They are not working directly in net zero, but they are going to be very closely associated with it, and it is all going to be part of the same lifelong learning—the bigger picture.

Q120 **Chair:** I am going to conclude with a few more questions to Venetia because Groundwork has proposed a national nature service. I am not sure when you proposed it or whether you had read our report in the previous Parliament in which we recommended a national volunteer service to help identify invasive species around the country. I think you suggested trying to establish 10,000 entry-level jobs and some 5,000 supervisory roles to help meet some of the nature-based solution challenge targets that the Government are setting. How do you see this joining up? There was a lot of demand for the Green Recovery Challenge funding. I think it was doubled to about £80 million during the course of the last year in order to establish nature-based jobs. Can you give us an overview of how you think this might work?

Venetia Knight: It was proposed just before Kickstart and the Green Recovery Challenge Fund programmes were being announced, so there is definitely overlap within both of those programmes. The principles of it are a bit like the Great Depression kind of response in the States of having big programmes, where they had a conservation corps of jobs creating national parks and planting 3 billion trees.

We are looking at job opportunities for people that are waged, with the right kind of package of training, good supervision and support to get people working in the sector, focusing on nature-based solutions that we know are required to hit climate targets—work like peatland rewetting and restoration, tree planting and hedgerow planting. It could be work in the coastal communities expanding seagrass. It is a lot of the largescale environmental programmes. I would say invasive species control as well. That is a big part of it, but it is one part of it, and there are a lot of other opportunities, so that is the design—

Q121 **Chair:** Who are the employers under such schemes?

Venetia Knight: It would be employers like Groundwork, but a network of environmental organisations and charities. Rather than competing against each other for funding, it is constructing a programme that is about collaboration and providing a good programme that meets the needs of our environmental requirements, in particular in the north and the Midlands where unemployment levels, particularly for young people, are very high at the moment.

Chair: Thank you. I have enjoyed my set of questions.

Q122 **Cherilyn Mackrory:** Good afternoon, panel. Jane, I will start with you. You touched earlier on the types of jobs that you thought were going to be involved. Could I ask you about Ørsted's particular UK projects and, following on from what you were saying earlier, the types of green job opportunities that those projects in the UK are likely to provide?

Jane Cooper: We have 12 operational wind farms around the UK—off the east coast, Grimsby; Cumbria and Liverpool on the west coast; and Brightlingsea just out of Essex. At the moment we are constructing Hornsea Two wind farm, which I mentioned earlier. That is going to be the largest offshore wind farm in the world, which we can own as part of the UK. There are around 2,000 construction jobs during the construction of the project, which is over a period of about five years. We use subcontractors because they are the ones with the experience to be able to do the construction work, and we will have over 100 O&M staff for each offshore wind farm over the 25-year life of the project. We have around 400 people in our operations and maintenance base on the east coast in Grimsby at the moment.

We have project Hornsea Three, which will also be off the east coast, which we are currently hoping to put into the Government's auction round at the end of the year. We also have Hornsea Four, which we are beginning development work on. As we develop those projects we use environment consent project planners, engineers, grid engineers, commercial people, lawyers, policy people, people like myself, to construct and develop the project to bring it to a point where we can go forward with a contract from the Government. Those two projects alone will invest around £15 billion in the next eight years into the UK economy.

The Crown Estate has just had some leasing rounds for further offshore leasing. That will bring forward more offshore wind farms in the next five to 10 years. We also have a ScotWind leasing round that is due to take place later this summer. We also have a project in Grimsby. We are looking at an engineering study for green hydrogen, working with Phillips 66 as an off-taker, and a UK electrolyser company, ITM, which we are looking at to hopefully start to develop our green hydrogen economy as well. We are hoping that that will take off in the next couple of years, with other projects to come.

Q123 **Cherilyn Mackrory:** That is great. Following on from there, how do you think the Government can meet their goals for jobs in offshore wind and in hydrogen under the Prime Minister's 10-point plan?

Jane Cooper: We need to be doing the training for people and identify the roles that are needed. There are roles needed in the offshore wind sector. We have been planning and looking ahead for that. RenewableUK has just done a jobs report, which I hope you have seen. If you have not, I can send it to you. We anticipate that there will be around 69,000 jobs by 2026—by the mid-2020s—in direct and contracted roles for that.

On green hydrogen, we will need to find chemical engineers, more electrical engineers, electronic engineers and data engineers. We are about to go through a transformation of the way that we have looked at electricity since it has existed. We are going to become consumer-led, much more like a mobile phone network. We are going to become much more flexible and we will have to react quickly. We are going to have apps on our phones that can manage our heating and our electric vehicles at home, which is going to flow through in numbers to how the generators work. We are about to go through an enormous change. For those technical roles, we will need lots of people with technical skills, which we may talk more about later.

Cherilyn Mackrory: As someone that lives rurally and relies on a wood burner, I am very excited about that.

Jane Cooper: Great.

Q124 **Cherilyn Mackrory:** Adam, what do you think is needed from the Government to encourage the transition to the circular economy with jobs in your sector, in the reuse and repair sector?

Dr Read: Leadership and clarity is needed. A roadmap would help, because having just listened to Jane, we are all going to be competing for similar skills and similar people. I am not sure the environment sector is that cool when it comes to nine and 10 year-olds thinking about A-Levels, universities, degrees, apprenticeships and so on. It is about understanding the roles that we need in reuse and repair. We have mapped maybe 15,000 jobs in and around local government alone, looking at the household recycling centres and making them reuse hubs.

If you expand that into the repair network in every village, add another 20,000 to 30,000 jobs. But who is training those people? Add 1,000 trainers, mentors and supporters who are going to help with the transition over what will probably be a decade as we move from buy, consume and discard rapidly to something that is more about getting a repair and getting a refill. That is a cultural shift, but without those 50,000, 60,000, 70,000 new employees working in and around materials and product ownership, we are going to have a problem on our hands. There needs to be some real leadership, roadmap and some clarity about the priorities, I would suggest, around decarbonisation. Are we going green energy first? Where is green heat? Where do we sit with fuels? Where does the waste and resources sector sit? Does the circular economy compete? All of those need to be addressed.

I would argue that many of the people that we would be looking at to do repair and reuse are probably engineers coming to the end of their first career. Maybe they are looking to put something back into a community but they do not want a full-time job, so it could be there are some parallel but very positive solutions to this. But if we do not map that, those engineers, tinkerers and entrepreneurs may have gone somewhere else by the time we realise we need them. Then we are waiting for the bright young things of tomorrow to come through the system, who may or may not have decided that saving the planet is cool. Even if they do want to save the planet, will they want to do it with a circular economy hat on or will they think that renewable energy is the answer? I think we have some competing interests to address.

Q125 **Cherilyn Mackrory:** We have to try to talk the kids into wanting to go for careers that perhaps do not even exist yet; you are absolutely right. Venetia, can you explain the wider social benefits of both urban and rural jobs in nature particularly?

Venetia Knight: There are a lot of benefits to those jobs around health and wellbeing benefits for people. A good local environment with lots of green space is good for business and the local economy generally. It has mitigated the impact of weather events and climate change, and basically they are places where people want to live. It contributes to supporting social connections and cohesion between people, and we recognise that there are real inequalities in access to nature, particularly in green space, which needs to be addressed.

Cherilyn Mackrory: Thank you, that is helpful.

Q126 **Helen Hayes:** My first question is for Venetia. Beyond training and job creation, what else is needed to make sure that there is access to green jobs fairly and equitably across the UK?

Venetia Knight: Transport is a particular issue in many sectors, but it is particularly relevant within the green economy and certainly within the natural environment, because often you are trying to get to work in places that are not necessarily in an urban centre. In certain roles there

are early starts. Certainly in our sector people need to get to the yard very early. That is a real biggie. I know it is not just within the green economy.

In terms of rural communities, digital connectivity is a problem for areas—poor access to mobile coverage and adequate broadband. Also the investment in social infrastructure is important and the connection between people and how to work together and collaborate.

We notice that the ability to drive is a massive barrier. For our kind of jobs, being able to drive or not makes a difference to whether you can progress. We are seeing more and more young people coming into the workforce who do not have a driving licence. It is an equality issue, because if you do not have the bank of mum and dad to support you to get driving lessons and a car, you have challenges. We often have people being held back because they cannot drive the work vans, and that becomes an essential criteria.

Those are the key things. Certainly for us it is the valuing of the natural environment. We can all say that it is incredibly important and the quality of green space and all of those sorts of things are important, but there is just a lack of investment. It feels like it has declined and declined, so decisions about being able to do things are held back by the long-term maintenance liabilities. That is a big factor to properly value the environment for all the benefits that it provides for people.

Q127 **Helen Hayes:** Building on that, when green jobs are created in an area, are there additional measures that are needed at a very local level to ensure that local people are able to access those jobs?

Venetia Knight: Sometimes people do not understand the green economy, and I do not think that there is very good careers advice generally about the kind of jobs and opportunities that are there. If you talk to careers advisers, they do not really get it, so there is a lot of work for us to do as organisations—and especially organisations like Groundwork that are about connecting communities and business—on getting the message out there about what work is like, what career paths people can go down and what the opportunities are. It is being able to prepare people to make the connections between the opportunities, so brokering with third sector and community organisations is very important.

Q128 **Helen Hayes:** My next question is for Jane Cooper. The Committee has been told that safety standards have been lower in the renewable energy sector than in fossil fuel sectors. What is the offshore wind sector doing to make sure that your workers all have the highest standards of health and safety at work?

Jane Cooper: Safety is the number one priority for us in the offshore wind sector. It has to be. Ørsted has recently invested £1.4 million into an immersive safety facility in Grimsby called Thrive, where actors come

in to work with our offshore workers. You can properly simulate an accident with roleplay, not just by phoning people up, but in the moment with actors playing those roles.

Every two years there is a GWO, which is an offshore certification that needs to be done every two years. Everyone who goes offshore has to rerun it every two years to make sure they are always up to date. There are many different ways. We work through the sector with an organisation called G+ with our trade association, RenewableUK, who works with the Health and Safety Executive.

Q129 **Helen Hayes:** My next question is for Adam Read. How could regional hubs of excellence make use of existing local skills, and what steps might be needed to facilitate that kind of approach?

Dr Read: Regional hubs are an interesting opportunity to not only harness existing skills, but maybe those that are no longer needed in that local environment because other things are centralising or those types of career opportunities are closing because we are switching from old power to new power, for example. It is about creating hubs where you bring together demand, i.e. end markets—the chemical sector maybe in the north or the agricultural sector in the east—who want a specific material flow or need a specific nutrient or a specific input material. Linking that to the R&D and training needs and provision is how we start to build innovation and deliver on not only the skills we need but also the workforce that needs to be ready to roll. That is a blend.

Some of that expertise might have to come from another region. Just as we are importing expertise to help drive green energy at the moment, you then translate that expertise, maybe from the south-east into the north-east, then the north-east develops its own experience and expertise through the hub. That then propagates that in the region.

That is how we see the hubs working, not only from a resource perspective, but you could map this across any green initiative and innovation. The universities have the insight. Industry—the likes of SUEZ and others—is putting people on the ground; we are putting in infrastructure; we are investing heavily. Bring us together with that local workforce and with the insights of the sectors locally, and then you can start to build transition.

It is about understanding that this is not about an answer on day one. This is about a 10-year transition to get the workforce that we need in 2030, 2035, because if we do not start now, we are going to hit a precipice where we are running out of staff who have the skills, the insight, the ability, the communications and the entrepreneurialism. We need to build that, and we need to do that collaboratively with university and training skills, because otherwise we will end up doing great R&D that cannot be translated into the real world or we will have lots of trainers with nobody to train.

It is a very delicate balance. The hub approach, which we have been proposing for the last year or so, is very much about harnessing the best of all of those worlds and putting it somewhere where you can let them work collaboratively over a sensible period of time.

Q130 **Helen Hayes:** Could you say a little bit more about the location where you are working or plans that you have in a location where there have been job losses in a particular sector—that process of harnessing skills that exist already in a community but perhaps are not needed anymore and repurposing those skills for jobs that are available now?

Dr Read: Yes, of course. On a small scale, in the north-east we have a lot of energy recovery centres where we are taking residual waste and leftover rubbish and putting it to good use in terms of heat and power. All of that stuff is local to Teesside and the north-east more generally, but some of those have come from the power sector and some of those were in the coal sector and heavy industry historically.

We have been able to adapt staff that have a certain understanding of some of the principles and apply them to a new geography or, in this case, a new type of infrastructure. We have done similarly in Cornwall, where some of the mining activities were on the decline and some of those staff are now involved in some of our energy recovery and recycling facilities. They are quite local in that respect and they are not huge employers, but they are a step change in what you can do.

Going forward, when you look at the likelihood of our demand for chemical recycling—for example, to handle the recyclables that we cannot physically recycle through traditional centres, and the ability to go after plastic films and low-grade plastics and all the things that the public want us to handle—that is a skillset that historically would sit in one geography, maybe the north-east. You can think about those traditional chemical sectors and go, "Well, we can transition them into a very green positive role model that could be replicated elsewhere." Those are the examples.

In the east of England we have already been having conversations with the agricultural sector about creating hubs that are very much about nutrient value, no longer seeing waste as something that we have to handle, but going, "Organic material, in the right place in the right hands, now becomes a massive feedstock for us starting to grow our own products." That is a different thought process though, and it is not just about one company locating in the right place. It is about the alignment of those sectors going, "The only way we can unlock the potential and play our role is to collaboratively design that solution."

Q131 **Helen Hayes:** Thank you very much. My final question is for Jane Cooper again. Could you tell the Committee a bit about the lessons that Ørsted has learnt and can share from the process of transformation that you have gone through to become a green energy company?

Jane Cooper: Yes, of course. It is a story that we are very proud of. Ten years ago we were one of the most coal-intensive companies in Europe, and we are now a fully renewable company. We are 100% renewable. About four years ago we changed our name from Danish Oil and Natural Gas into Ørsted, who is a Danish scientist.

The lessons we have learnt—which we have recently published because we have been asked so many times—are that first you have to define a vision. Secondly, you have to engage and align with your stakeholders, so that is internally and it is externally with Government, with customers, with other people who work with other businesses to make sure we are all on the same trajectory. Then you have to mobilise and you have to deliver, so the mobilisation and delivery is about making sure everyone in the workforce is pointing in the same direction.

I have never worked in a company with such a clear, committed workforce. We all understand what the goal is. It is very clear and people believe in it. Then you have to make sure you have the business models, the external environment and the internal environment and it is all driven through the same lens. Fortunately we are in a place at the moment, with net zero coming by 2050, where we are very well positioned to take advantage of that and lead in that environment with the learnings we have had, so we speak to a lot of other companies about what we have done.

Looking ahead, we plan to halve our indirect emissions by 2032 compared with 2018, so now we are working with our supply chain as well to look at greening our supply chain.

Helen Hayes: Thank you very much.

Q132 **Ian Levy:** I would like to ask the panel specifically about skills gaps. What are the specific skills in your sectors and what can we do to address that?

Dr Read: There are skills gaps on the reuse and repair side. I mentioned them earlier, but it is that immediate need to take your phone and get it sorted somewhere locally, otherwise you are just going to go and buy another one. Add that to your whitegoods and suddenly there is a whole need for that kind of army of repairers and tinkerers who can help solve that local problem.

We need much more communicative, engaging front-line support for businesses and consumers who are going to be faced with an unrivalled changing collection infrastructure in the next five to 10 years. We are going to be collecting material separately. We are going to be keeping the quality of those materials high. We are going to be bringing new materials into the collection system to meet Government targets. All of that is going to require us to have a very different relationship. That "bin out of mind, out of sight" is no longer going to be appropriate, and

therefore we need staff who are much more engaging, much more collaborative and much more customer focused and customer centric.

If you go to the other end of the spectrum, we are going to be handling materials in a completely different way. We will be producing nutrients, molecules and chemicals. It is not just going to be landfill or energy recovery as your two default endpoints. You are going to suddenly see us as a supply chain feature for the chemical sector, the agricultural sector and the remanufacturing sector. We will become part of their infrastructure, and therefore you need skills that are about material quality, material design, material choice and lifecycle thinking. There is a huge sea change coming into not just a policy space, but how you then enable a business to make a sensible decision about what it buys and what service it needs in terms of its resource management.

With all these businesses—from every scale, from a Tesco down to a corner shop—needing an improved waste management and resource management system over the next decade, there are literally thousands of opportunities and touchpoints where we will need creative people who can join dots and identify opportunities for doing things differently and to bring customers on a journey, because decarbonisation and green recovery is not easy if people do not get it. That is where I see the real innovation, plus all the technology stuff. Of course there is going to be heaps of new technology, with chemical recycling, gasification and pyrolysis—the list is endless—but I think they will be more niche, because they will be bespoke to certain locations. The broad change is the one that I think is most interesting and exciting.

Jane Cooper: I agree with Adam. The collaboration and the communication and all those other areas—we are all going to have to have those skills as we go forward. It is already a hot market. We are seeing the change coming, with the driving through of the ambition of the Government for offshore wind. We are looking for grid engineers and QHSE—quality, health, safety and environment—engineers and people across the industry as more offshore wind farms are being built.

Looking ahead, I have already spoken about the decentralisation of the network. We are going to need grid engineers; we are going to need systems analysts; we are going to need artificial intelligence and mathematical modellers; we are going to need data scientists and chemical engineers. It is a very technical base, and I am struck by what Adam said about that. Some of those skills are going to be very similar. There is going to have to be quite a deep understanding of how things work in order to enable us to find solutions, particularly over this next decade when we have such a huge transformation to go through.

Ian Levy: Lovely, thank you. Venetia, do you have anything that you would like to add?

Venetia Knight: For us, it is a lot about people being quite flexible in the way that they do things. We need people who understand about the

natural environment, but we need people who can communicate and train in different ways. There is a big connection with the health sector, so people being able to understand and support people with mental health needs plus get involved in projects within the natural environment.

There are particular skills needed: green space management relating to new measures, so managing spaces better for biodiversity—things like understanding how to install sustainable urban drainage systems and maintain them properly. It is not massive changes, but they are an additionality that people will need to have as the economy changes. For us, it is the importance of everybody having climate literacy, understanding and awareness. For us as a training provider, that is ensuring that we are putting people into the market across all industries who understand what the change to a low carbon economy is and what their role within it is going to be.

That is a big part, and we want to see sustainability for education in all vocational qualifications. If you think about a vocational course that starts off with health and safety, we think that sustainability needs to be the second part of the module that everybody does, and then it feeds through into the qualification, because it is not just about green jobs; it is all sectors that have to change.

Q133 **Ian Levy:** Thanks a lot. Adam, in terms of the transition for people from one sector to another, how easy is it for workers in other sectors—say, from manufacturing—to apply their skills to the waste sector?

Dr Read: We have a history of doing this, and I alluded to this earlier. Over the last 10 years we have started to produce more fuels. For example, SUEZ is putting about 400,000 tonnes of fuel into CEMEX, just outside Rugby. That is enabling CEMEX to reduce its reliance on coal and therefore reduce its emissions. In parallel, we are taking 400,000 tonnes of what was residual waste—so this is not the recyclables that are being put out on the curbside, it is the other stuff—and putting that to a secondary use.

That kind of experience from the manufacturing side—how do you blend a fuel? How do you get equipment to work together in an advanced shed to give you something that is consistently good week in, week out, that they can use? Because of course they cannot undermine their quality. There are real pockets of that experience. Our recycling facilities have lots of ex-manufacturers and process engineers, for example, working from many other sectors, whether it be food and drink or chemical engineering, so we have a history of doing that.

The interesting thing going forward is just how applicable that model is in the future. More recyclables? Yes, we can scale that, and the recycling centres and fuel centres of today will demand that type of workforce, so I think that will work, but from a repair circular economy perspective, that is different. That is not a manufacturing base necessarily that is going to turn its skillset easily to the repair and circular economy, but that will

potentially be a much happier marriage with the hospitality sector, for example, and some of the charity sectors that are already doing repair and refurb in a small way, where we can expand that. It is about understanding the skills we need and then which other sectors we can start to work with to enhance that relationship in terms of skills transfer and potentially job transfer. There is not one fit in the needs of the waste and resources space that will be matched by one other sector in isolation though.

Q134 **Ian Levy:** Jane, how useful do you find apprenticeships to employers for addressing skills gaps?

Jane Cooper: Apprentices are critical to address the skills gap. We have taken on 33 apprentices since 2017—offshore wind technicians on our east coast and west coast hub sites. That is around 15% of the total population of apprentices in our sector. They train doing maintenance and operations engineering apprenticeships with an engineering BTEC.

We have employed all of our apprentices afterwards, so they all have full-time jobs at the end of their training. We now have 29 full-time engineers, and we have recently taken on eight apprentices on the east coast, four male, one non-binary and three female, so we are delighted that we are finding a way to bring some diversity into the industry as well.

Q135 **Ian Levy:** My last question is to Venetia. How could jobs in nature help people into the labour market and those who have been out of work for a long time to gain useful employment skills?

Venetia Knight: This is something that Groundwork has been doing pretty much the whole time that we have been around, starting off with the Manpower Services Commission years ago through all kinds of different programmes. While working on nature to deliver good, sound, practical, field-based skills and health and safety knowledge, they create the opportunity to develop the sort of transferable skills that all employers talk about.

If you are working outside, things do not go to plan. You have to be quite flexible. You have to problem solve and work out how to deal with it. There are also plenty of team work opportunities—communication between different people is absolutely critical for effectiveness—and opportunities to develop leadership skills. There is also a critical thing about working outside in all weathers, you have to be quite hardy and resilient and just get on with it. Those are all good things that employers value, so they are great skills that you can continue with within the natural environment sector, but they are very relevant to other employers across the board.

Ian Levy: Lovely, thank you for that. I will return back to you, Chair.

Chair: Thank you, Ian. The last set of questions to this panel are from Nadia Whittome.

Q136 **Nadia Whittome:** The Committee heard that the environmental sector is the second least diverse of 202 occupations, coming ahead of only farming, yet workers from ethnic minority groups, women and disabled workers have been disproportionately hit economically during the Covid pandemic. What are the barriers to workforce diversity in your sectors, and what possible solutions should there be from the Government, employers and educational institutions? That question is for everyone.

Jane Cooper: The UK engineering sector does not have a good record in STEM; it just doesn't. I speak as an engineer. I trained 30 years ago as a mechanical engineer at Rolls-Royce, and 30 years on, while I am not working directly as an engineer, women in the industry are still at 10%, which I realised recently. I was quite horrified. We are doing a lot of work to try to increase ethnic minorities, people of colour and women and increase the diversity in our industry.

We worked on the offshore wind sector deal with Government. We set an ambition of 40% women by 2030. This is a challenging target, particularly as it is a technical environment. We have heard from all of us today that the skills that are going to be needed are going to be cross-sectoral skills. They are going to be skills that should appeal to everyone.

I have also mentioned that we have just recruited apprentices, where we have had a mix of apprentices. We thought hard about how we use the language. We use problem-solving language and we use behaviours when we run our training. It was not about fixing things. It was about how teams work together. We looked at behaviourals; we looked at skills; we looked at leadership; we looked at different areas where we could improve the diversity of our intake.

We also support through our community benefit funds. We also support STEM. We offer hardship grants to encourage people who may find it difficult in some of the regional areas that have been hardest hit to come into our area and our sector. We have also improved our community benefit funds through that to support areas that have been hit by Covid.

On the east coast we support women into manufacturing and engineering with WiME, which has been going for quite a long while. We support and work with the Grimsby Institute. We work out the courses together. We look at how to make sure the course is diverse. We also work with POWERful Women, Energy Leaders' Coalition and Teach First. We train our staff to be coaches and we have a mentoring scheme internally. We are doing lots and lots of things. This is little and often. We have a big diversity drive internally. We are working across the industry and across sectors.

I am so delighted to see that finally we seem to be picking up and getting to grips with this. If there is one thing that comes out of Covid, it may be that we are understanding much more about diversity and inclusion and the need and importance for it.

We have to think about retention. We lose people from our industry. We lose people from all industries as different things happen—maternity and paternity leave—and we have to make sure that our environments are inclusive and we have PPE that fits all people. We have facilities available onsite that are available to all people. We have some way to go, but I am hopeful that we are turning a corner on this.

Nadia Whittome: It sounds like you are making excellent progress. Thank you, Jane.

Jane Cooper: I do hope so.

Venetia Knight: If you look at the people going into environment courses at university, there is a real lack of interest in the environmental sector. If you are good at maths and science you may be thinking about going into pharmacy or medicine, and the environmental sector just does not feel very appealing. There is the perception that there is not good pay and there is not good progression, and there is a concern perhaps that you have to do lots of volunteering, certainly to be able to get into the natural environment sector, which is a bit of a turnoff. Fundamentally, people are discouraged by a lack of diversity in the sector.

We also think that part of the problem is generally a lack of engagement from diverse groups with the natural environment and with nature. People who come into our sector are often passionate about the environment. They are naturalists and they use the countryside. There are a lot of issues around lack of diversity in rural areas and lack of access to good-quality green space, so there is a sort of disconnect between the environment with some communities. It needs to be for everybody. We have to recognise that those issues are there and make positive changes and take positive action to do things.

The Landscape Institute, for instance, has recognised that less than 5% of its workforce are from other than white British backgrounds, so it is redesigning how it engages people, putting in place a new apprenticeship programme and finding different ways for people to get into the sector. There is a lot of work to do. Young people in particular are more interested in the sector and more interested in the climate emergency. We have to take advantage of that enthusiasm and engage people to come and work for us because we need them. We need that sort of diversity of thought, and we also need people to communicate with different communities to get them on board with the changes that need to happen in our communities.

Nadia Whittome: Thanks, Venetia. Those are very important points, and I would like to come back to some of them.

Dr Read: Venetia and Jane make some very valid points, so I will not dwell on those. In the waste resources sector we have something like 16% female, 7% ethnic and 18% disabled, so we have a long way to go. That is partly because so many of our staff historically have been front-

line operatives. It has been heavy lifting, it has been running around after vehicles and it is long days. It has not always been something that has been attractive to a diverse workforce, but that is changing. With more and more of our staff now having multiple types of role and different types of opportunity, we are starting to see a shift in that.

In terms of the point that has been made about attracting diverse groups into our sector, the environment sector struggles full stop with diversity. That is a shame. I am a STEM ambassador and I have been for a very long time. I thoroughly enjoyed going down to east London just before lockdown to spend a day with an inner London all-girls' school where the ethnic group were something like 90%. I think it was 10% white. That was fascinating for me to watch them solving all today's environmental problems—a whole day of us giving them a little bit of a nudge and acting as an adviser. The passion in the room was huge.

I am hoping that those groups who historically would not have seen a lot of green space and maybe had not thought about the outdoors as a career might go, "Solving climate change is something I can get involved in." That is the hook not only for my sector, but the other speakers we have here today, so there are some real positives there.

The chartered institution last year launched a careers guide targeting schools, trying to make our sector sound far more hip and cool than it ever was before and to open up some of these opportunities around solving the climate crisis. The more we can work with schools and colleges to put in content, whether you end up working in my sector or whether you end up just being somebody that understands sustainability while working in finance, I do not mind. We need people that understand the environmental impacts of their decisions and choices embedded across all systems and sectors. I do not necessarily need them coming to work for me, but I do need them to understand what role they can play.

On the point about PPE and facilities on sites, I have been in the sector for 25 years, and it took a while for us to get a ladies' toilet, for example, on one of the sites that I worked on as a youngster. There is so much more we are doing. The PPE choices now are fantastic and that is absolutely right, but it is just a small step. We have to go much bigger and much faster in making our sector interesting, appropriate and flexible for people that would have historically looked at us and gone, "You're binmen." Well, we are not. We are resource custodians, we are climate change advocates and we are passionate, and it is the passion that we need to instil in my son's generation quickly.

Q137 **Nadia Whittome:** Thank you, Adam; I completely agree. You made a particularly important point about every sector needing to be sustainable. It is a very heartening example from the school as well.

Just quickly before we finish, Venetia, what are the risks of failing to improve diversity in environmental sectors and green jobs, and what other enabling infrastructure is needed to increase access to green jobs?

Venetia Knight: There are particular issues around green space that do not meet the needs of all our communities. The reason it has been recognised is designers and landscape architects are all predominantly white people and they design spaces that meet the aesthetics of white people and how they use spaces. If we keep having people making decisions without being inclusive, then we continue to exclude people from the environment and from green spaces.

We have all been talking about these issues and the fact that sustainability is about all careers and all jobs, and we need to take people with us on that journey. We need to be training everybody and we need to reach into communities. Again, if we do not have people working in our sector from diverse communities, that reach is not going to happen, so we will just fail to hit our targets if we do not have an inclusive workforce. It is about creating solutions, but being able to use the diversity of skills and thought to solve the problems in creating environmental solutions.

In terms of other enabling structures, it is thinking about flexibility in working arrangements, particularly issues around women, childcare and meeting other kinds of care responsibilities. For me, a big part of this is about careers advice. It is not just about our sector, and we have to change that to persuade people about the benefits of working for us and that they can have good careers.

Nadia Whittome: Thank you, Venetia. It is pretty damning that we will not meet our targets if we do not diversify our workforce.

Chair: My thanks to members of the first panel. That concludes our session. I thank Jane Cooper, Adam Read and Venetia Knight for your contributions today. Thank you very much indeed. You are very welcome to stay for the second panel.

Examination of witnesses

Witnesses: Andrew Mennear and Peter Walters.

Q138 **Chair:** I would like to introduce our second panel. Andrew Mennear from BP, welcome. Could you tell us your responsibilities at BP?

Andrew Mennear: Yes. I am the Director of UK Government Affairs at BP.

Chair: Thank you. Pete Walters from the Chemical Industries Association.

Peter Walters: Good afternoon. I work as the Head of Environment and Sustainability, which is quite a broad area. I am very pleased to be here today.

Q139 **Chair:** Thank you for joining us. I am going to start with you, Andrew. Could you give us an overview of what BP is doing to move from a business entirely dependent on fossil fuels to one that you have pledged will be zero emissions by 2050? You have some 16,000 employers in the

UK. What proportion of those—perhaps you could illustrate as you describe what is happening—are no longer dependent on the fossil fuel side of the business?

Andrew Mennear: Currently within the UK it will not be very many who are not involved in parts of the business that would have to do with oil and gas. We are not describing ourselves as a green company, but we see ourselves as a greening company—a company that may not be green today but has the strong intention, skills and resources in order to become green by 2050 or sooner.

As part of that journey, I should add that we have had for a long time in BP some renewables activity. We did have some other parts of business—big onshore wind business in the United States and biofuels within Brazil—but we have decided that now is the time for us to adopt the 2050 ambition. We have adopted a set of aims to help both BP and the world reach net zero. As part of that, we have set out a plan of what we intend to do en route to doing that. Our 2030 strategy shows that we will reduce our oil and gas production by around 40% by 2030. We will be increasing our low carbon spend around tenfold, and we will also be increasing by about 20-fold the amount of renewables that we are developing at that time.

We are in action already. I hope you will have heard already that we have recently been successful in being made one of the preferred bidders for two of the leases in the offshore wind round 4 in the Irish Sea. That follows on from our entry into offshore wind off America together with Equinor; the UK blocks are with our German partner, EnBW.

We are also already, with our bp pulse brand, the largest installer and operator of EV charging points around the UK. We have about 7,500, with a plan to increase that to 16,000 by 2030. We have also announced a plan to eliminate all routine flaring from our North Sea oil and gas operations by 2027. That is three years ahead of the World Bank's target for doing so. We have plans, we have the strong ambition, we have a clear strategy to 2030 and we are intent on going on that journey.

Q140 **Chair:** I accept this may be an unfair question to ask you at this stage of that journey. You have given some examples of things that you are already doing, but for the Committee's benefit, are there more jobs involved in delivering renewable energy than in bringing oil and gas out of the ground or under the ocean?

Andrew Mennear: That is a very good question. Some of this depends upon the rates of change of technology in different parts of the business. I do not know whether we have done a particular study on that. Everyone talks about the number of jobs that are going to be required in order, for example, to convert homes across the UK to zero carbon emitting heating systems. In the short run we are calling it a reinvention, as we are transitioning from being an international oil company to an integrated energy company.

As part of this transition BP is reinventing itself. We have been doing a complete reorganisation of the company, breaking down the silos that used to separate parts of the business. We used to have the upstream division doing exploration and production, we had the downstream that was doing refining and marketing and we had the smaller parts that were dealing with renewable energy. We have completely done away with that structure, so we are bringing together the teams that have the project expertise to develop the project. We are bringing together the people who are good at operating existing activity into a big part of the business as well. We are removing the silos, and we think that is chiefly because all of our people—they are engineers, scientists, chemists and data specialists—have applications across the energy chain, and it will be easier for those people to be able to go on and move to jobs which are outside of the areas they originally started their careers in.

We have seen huge enthusiasm for this inside BP. You may remember back in the noughties BP started up BP alternative energy, when we were making large investments in renewable energy. We were a bit ahead of the curve. We had a very positive advertising campaign called "Beyond Petroleum", which became very famous at the time. That meant that we did attract into the company quite a lot of young people who were very enthusiastic about the energy transition at that stage. The people inside BP are enthusiastic about the changes that we are putting in place, and we think we have a lot of skills and talent that are transferable to the new markets that we are entering into.

Of course we are going to need more. Just this week we have advertised for 100 jobs in offshore wind, split between the US and the UK, plus a range of different openings. We recognise that will be the case for many other businesses as they develop.

Q141 **Chair:** Do you think what the Government announced in the Queen's Speech yesterday, with the focus on encouraging a skill transfer for older generations—this idea of the Lifetime Skills Guarantee—and encouraging people who have already embarked on one career to be able to be trained to do another, is something you expect BP to take advantage of? Does it work for you or is it flawed, as far as you can tell?

Andrew Mennear: We think it is very positive in terms of the direction. Obviously retraining is going to be hugely important. For a number of years people have been saying you cannot depend on one company for your career for life, you are going to be in a world that is changing fast and you need to be able to adapt to it from an individual perspective. From a company perspective as well, we are constantly retraining people as they move from job to job. People in BP have traditionally spent three or four years in one role before they have moved to another job in another part of the business. With the breadth that comes in with the new activity set, any help towards retraining is of course extremely welcome and very important for new people who will be coming into the company as well.

Q142 **Chair:** Thank you. Pete, I think you have claimed to have something in the order of 275,000 people engaged in the chemical sector as your members in the UK. As an industry you are a very significant employer—even bigger than the mighty BP and its competitors in the UK. What is your view of the Government measures announced yesterday and how you see the industry transitioning from its current activities to the focus on the green economy?

Peter Walters: The first thing to note is some agreement with Andrew's comments. The measures outlined in the Queen's Speech are certainly steps in the right direction. One thing is definitely clear, and that is the rate of change is only increasing in many ways, and that means there is a constant need to continue upskilling and reskilling. Any measures to support that are certainly a step in the right direction.

To your point on the number of jobs supported by our industry, the number we use for indirect support is about 350,000 jobs, and direct industry employment is about 150,000. Those jobs are generally very high quality, earning on average 33% more than the manufacturing average and 50% more than the economy average. It is also quite an innovation-intensive industry. About one-fifth of those 33,000 are in roles related to research and development. Together that means that we are placed at the heart of very many high-value manufacturing chains, and that leads in part to the significant number of indirect jobs supported as well.

The economic relevance is that there is a significant contribution to the UK economy, with about £17 billion of gross value added each year on a turnover of about £15.5 billion.

It is worth noting that chemistry and chemicals are essential to many parts of everyday life and the sustainability transition. Those are across activities like ensuring clean water, sufficient food, new medicines and clean energy and several other examples.

Q143 **Chair:** As a Committee, we have taken a lot of interest in the chemical sector over the years and in particular have been pressing the Government to try to establish—partly as a result of evidence from some of your colleagues—how we are going to be regulating your sector in the new world without the EU regulator through EU REACH. We are going to continue to press that issue because it is by no means clear yet where it is going to land.

I am very intrigued that you have 50,000 people across your membership engaged in R&D, because one of the consequences of the focus on trying to leave our environment in a better place than we found it is going to inevitably be reducing chemical usage and exposure of consumers, the human population and the wildlife population to toxic chemicals. Do you see a lot of investment being undertaken at the moment in trying to find more natural alternatives to some of the chemicals that your members are producing?

Peter Walters: That 33,000-strong research and development workforce demonstrates a very strong commitment to innovation and the need to constantly innovate around new challenges. The differentiation we should be talking about here is probably the hazard and risk rather than necessarily natural versus synthetic. Some natural chemicals can be quite nasty and many synthetic chemicals are perfectly benign. That is one thing that comes out quite strongly when we are in discussion with membership.

In order to enable that innovation to take place, there needs to be the right balance within the regulatory frameworks, such as REACH, in order to allow the new products to be brought to market in order to meet some of those challenges facing society.

Q144 **Chair:** Could you illustrate for us the kinds of green jobs that you envisage growing in demand within your sector compared to what has been happening up until now?

Peter Walters: One of the stats that is usually used within our sector is that 96% of manufactured goods rely in some way on industrial chemical processes. That means that we are very much central to many other manufacturing industries. The proposals that we put forward under the previous modern Industrial Strategy for a sector bid projected to create around 50,000 jobs. Those were across activities like bio-ethylene oxide production and polymer recycling facilities, as well as a host of advanced materials that are central to some of those sustainability transitions—areas like battery technologies, wind turbine blades, solar, photovoltaics and novel fuels like hydrogen, ammonia and electro fuels, including lightweight materials for the transport sector to improve efficiency and insulation to keep our homes warm as well. Those are some of the growth areas, opening up new markets and potentially jobs.

Q145 **Chair:** With transitioning, what sort of period do you think it is going to take for the sector to move towards a much more benign environment? I hear what you say about the fact that some synthetic chemicals are benign. The feedstocks that many of them relied on in the past have been coming from fossil fuels or from extracting minerals from the earth, which have finite supply. We are going to have to come up with some alternative ways of creating many of the beneficial effects of some of the products made by your members.

Peter Walters: You have drawn on two very important solutions that we need to look to. The first is increasing the use of and employing more of the bio-based economy. There are a couple of enabling routes that we can use for that. In order to increase the feedstock use in the chemical sector, one of the barriers is the current subsidies for bio-based fuels. That means it is more difficult and less economically viable to use those same materials as feedstocks in the industry. That is a real way where Government could potentially even that playing field up and allow—

Q146 **Chair:** Could you just explain that? Do you mean in transport in

particular?

Peter Walters: Yes, that is right. The Renewable Transport Fuel Obligation does subsidise bio-based fuels—an example would be biobutanol—and then that makes that comparatively more expensive to use as a feedstock and disadvantages it compared to fossil-based butanol.

Q147 **Chair:** The final question from me, Pete, before we move on to other colleagues—and I am going to come back and have another go with both of you at the end—is in relation to what the industry itself is doing to decarbonise its own processes, which are heavily energy dependent on fossil fuel at the moment. Can you paint a picture of what the industry is trying to do to reduce its impact from an operating point of view?

Peter Walters: One thing to note is the significant progress that we have made to date. Since 1990 up until 2018 there was an 82% reduction in scope 1 greenhouse gas emissions, according to the UK National Atmospheric Emissions Inventory, which is used as a basis for reporting into international frameworks. That in part has been due to abatement of some greenhouse gases like nitrous oxide, methane and halocarbons, as well as energy efficiency measures and cleaner processes.

Within that, a substantial portion of that 82% reduction has resulted from loss of production from some material streams outside of the UK. Some examples of those are ethylene oxide. I mentioned the previous proposals to try to introduce back into the UK a bio-ethylene oxide—a more sustainable version of that manufacture. Another example is adipic acid. Each of those base chemicals has a strategic importance to any economy, and they also end up in the economy in one way or another.

In terms of where we are going forward, the approach to decarbonisation so far is looking to be primarily cluster-based. We have a significant presence and concentration in four main industrial clusters around the UK: one in Grangemouth up in Scotland, the north-east, the north-west and Yorkshire and the Humber. That means that the decarbonisation solutions on offer like carbon capture, neutralisation and storage as well as the hydrogen economy are able to become, through economies of scale, a more accessible option. That is still not to say that they do not need a significant amount of Government support in order particularly for some of those early movers to be able to adopt those technologies that are currently, for the most part, prohibitively expensive.

Chair: Thank you.

Q148 **Duncan Baker:** I am going to focus on net zero and long-term environmental goals. Where there is critique of the 10-point plan, it is probably in how it would be delivered. In effect, we have a plan and we have the aims, but it is how we achieve them. To Andrew Mennear first, that delivery mechanism, in my view, is still yet to be 100% clear—is it investment? Is it legislation, if that it is needed? How do we get energy

sectors in transition to deliver the plan?

Andrew Mennear: There are three key parts to this from where we sit. The first one is the identification of clear targets. To a certain extent we have that through the 10-point plan, which has set some quite ambitious goals for the growth of renewable energy in different parts of the economy. What is probably also a good thing to recognise is that where there are mechanisms in place, these need to be stable for quite a long period of time in order to attract the investment into the UK.

Pete mentioned previously the RTFO, the Renewable Transport Fuel Obligation, which is currently being consulted on. If the hope is that that will support investment in new plants, to build new plant that is going to produce sustainable fuels into the future, it probably needs to be shown to investors that the support mechanism will be in place 20 to 25 years. At the moment there is a question mark beyond about 2032. Clear targets is one point.

The second piece is the topic of business models. Business models are basically the commercial framework by which the investors know that they are going to receive a return on the capital that they choose to invest. We believe, from our consultations with potential investors, that there is an awful lot of interest in investing in the UK, because they have seen the political support for net zero, they have seen the Prime Minister's 10-point plan and they are eager to be part of that. But for technologies like carbon capture usage and storage and for hydrogen, both green and blue, it is not yet clear how the investors are going to get a return on the investment that they risk in the UK.

The Government are in discussions, and we have had consultations on CCUS business models. We are waiting for further developments of those with the announcements on the CCUS cluster plans. I should add that BP is the operator of both the Net Zero Teesside cluster and the Northern Endurance Partnership, which is the storage in the North Sea that is going to work on behalf of both Net Zero Teesside and Zero Carbon Humber, because it serves both of those two industrial clusters.

The business models are absolutely key to being able to move to, first of all, FEED and then to the final investment decision. FEED is Front End Engineering Design. The third aspect is pace. You are probably well aware that it takes more than 10 years on average to be able to develop an offshore wind farm in the UK. We have been successful in the round 4 bidding round for offshore wind, but we are determined and we want to see those leases develop before 2030 so that they are in place. There is a lot to do. It is very challenging to be able to bring an offshore wind farm into production to get it set up. That is an issue.

We also have challenges with the rollout of ultrafast charging points for electric vehicles around the UK, because it is not clear at the moment how long you have to wait and what the cost will be if you are trying to get a grid upgrade to put in ultrafast chargers in a new site around the

country, for example. Also access to land is going to be an issue in terms of which are the best sites and where they are going to be.

For CCUS and hydrogen, we have the clear targets about when the Government would like to see these projects delivered, but we need to keep up the pace with development and to be able to roll out. Ultimately there will be slippage. We recognise the prioritisation of all of these technologies within all of the parties' thinking at the moment. It is simply a case of being able to deliver at pace.

Q149 **Duncan Baker:** You do not need to remind us of the problems of rolling out wind farms. In North Norfolk I am the MP that is seeing most of them come through my constituency. That is a case in point. It is the regulatory and legislative framework that is holding up our transition to what we think is a much better way to roll them out and use the offshore transmission network.

I must move on to the next question, and there may be time to come back here. Off the coast I have a particular interest in the Bacton Gas Terminal, which has a third of the nation's gas supply coming into it. It is ripe for transitioning in the future. What are the benefits of investing in hydrogen and carbon capture use and storage infrastructure now, and what prospects are there for green jobs arising from that up-front investment?

Peter Walters: We are well placed to use our North Sea oil and gas infrastructure and skills heritage to become world leaders in the CCS industry. As an early mover, we could provide carbon storage as a service also to neighbouring countries, so that could be a bit of a USP for moving first and early. Combined with balancing policies like carbon border adjustment measures, early deployment of hydrogen and CCS could also provide a commercial advantage to domestic products. It is a lower carbon than those manufactured elsewhere.

Supporting our hydrogen industry could see us exporting hydrogen-related products and services around the world. Access to CCS and hydrogen infrastructure provides a route to the future and decarbonisation of heavy industry that would also, in turn, attract inward investment, not only to those heavy industries but to the downstream industries that rely on those heavier industries as well. Those are the likes of wind turbine manufacturers and eFuel manufacturers. Hydrogen also provides a route to decarbonise our heavy transport system, so early investment could also, in that case, provide a comparative advantage to domestic transport supplies.

Q150 **Duncan Baker:** I will ask you the same question, Andrew. What are those early benefits of investing now in hydrogen?

Andrew Mennear: At the moment the UK would be world-leading if it manages to start up a large-scale hydrogen business. There are some small-scale investments in other countries at the moment, but the real benefit in the UK is the UK is pursuing both green and blue hydrogen, and

that would be a kickstart to the industry internationally. There are undoubtedly going to be export opportunities. The North Sea was the world's first offshore oil and gas province, and that has meant opportunities have opened up globally for UK companies who became world leaders, particularly on subsea developments. By moving fast on hydrogen and on the back of CCUS in particular, there are going to be huge opportunities.

The Government would need to be clear early on about what their expectations are on UK content, because companies will be soon going into discussions from these clusters and projects with parts of the supply chain, and they need to understand which elements need to be sourced locally and which are the priority sectors.

In that sense, it is probably important to focus on particular key technologies or parts of the chain as well. We are waiting for a little bit more guidance on that. We know it is being looked at in Government, it is just understanding that sometimes the commercial joint ventures move very quickly in terms of the planning and the preparation because they do not want to spend over long developing a project once they have had the green flag to go ahead. You then have to start building up teams, not laying off, but redeploying teams elsewhere if the pace does not keep on quickly enough and it becomes very stop/start.

In order to win the race—and there is a race; there was an announcement of support for CCUS projects in the Netherlands at the start of this week—the UK does need to make sure it is keeping up with the international picture.

Q151 **Duncan Baker:** You call it a race, and you say that we will be world leaders. That is the bit I am a bit concerned about, because it feels like we are slow; it feels like we are not getting going yet. We saw that with wind energy. There has been a tremendous uptake since about 2015, but until that point things took a while to get going. I personally believe that hydrogen will very much overtake other forms of renewable energy. How does the Government support those opportunities for UK jobs in hydrogen carbon capture?

Andrew Mennear: The Government have made announcements of £240 million to go into hydrogen projects. They have the £1 billion fund for CCUS as well. Those are great and they will be helpful, particularly in smaller projects on the green hydrogen side, and they will be helpful in producing some parts of the infrastructure and some of the industrial decarbonisation on the CCUS side as well. But to get the large-scale models going, you need mechanisms like a CfD in place that would help with larger-scale industrial processes on the carbon capture and storage and the hydrogen side, and probably something like a rateable asset base system on the transport and storage side so people know how they are going to be funded for taking away CO_2 and safely storing it.

There is work still to be done there. Looking back to last year with the response to Covid and the pandemic, the UK was incredibly successful in stimulating greater production of ventilators and then with the vaccine production. It did that in part by helping companies to identify openings and in stimulating innovation in those sectors. Some of that was through loosening some regulations as well. We also had sectoral meetings with Ministers on Zoom and Teams very regularly to discuss, "What is needed? What is not happening right? Where can things be going?"

We have seen the organs of government moving to create much more cross-departmental working. To address the climate emergency on the scale of the pandemic at least to 2030, given all the advice from the Climate Change Committee that the earlier the action, that is where most of the heavy lifting is going to have to be done, maybe we need to have this very regular engagement with key sectors to just talk through and try to identify very promptly those issues that need to be addressed and get them addressed very promptly.

Q152 **Duncan Baker:** Pete, how can Government support opportunities in hydrogen and carbon capture?

Peter Walters: Andrew has raised several very good points there that I was planning to raise myself. The point around the international competitiveness on this is again present, as it is in many features of the work we do. That is in part looking at what other countries are doing. It is what we can learn from them and copy with pride and also looking at where we can create some additional advantages. The UK's investment in hydrogen has been relatively low in comparison to some of our competitor nations. For example, Germany has committed €9 billion to its hydrogen strategy. It does not stand up too well in comparison to that, and we need to see it through the lens of what other countries are doing as well.

One other thing to note perhaps is that there are prospects beyond hydrogen and CCUS for green jobs creation. We have touched on the circular economy already and the way that can benefit employment and the net zero transition and improve impacts on resources and waste. To do that we need a legislative framework that is written with circularity in mind, and we need to increasingly see waste as an additional potential resource that is yet to be utilised.

One such mechanism to do that is chemical recycling. I know that came up in the first panel discussion. The current focus of chemical recycling is on post-consumer plastic waste that is generally of relatively low quality, which is hard to mechanically recycle and generally at the moment goes through the route of incineration and perhaps energy recovery. There are also opportunities for future applications to broaden out that type of technology to other types of post-consumer and industrial waste.

We also need a financial system that recognises the benefits of not only investing in traditionally green industries, but also investing in the

transformation of industries to meet sustainability challenges. The upcoming policy on UK green taxonomy will be an important feature for that.

Duncan Baker: Thank you, that is very helpful.

Q153 **Jerome Mayhew:** Mr Walters, there is a cost associated with being a market leader, in that as we raise the price of energy through renewables, it has the effect or runs the risk of driving away our manufacturing base to lower cost, higher carbon alternatives. How can we ensure that jobs in manufacturing industries are not outsourced overseas in the net zero transition?

Peter Walters: Thank you for the question. In order to ensure that the transition is just, we absolutely must retain competitiveness and, where possible, improve the competitiveness of our domestic industry, particularly as we transition to net zero. Energy often is the number one cost, along with feedstocks for chemical and pharmaceutical manufacturers in some cases. That means that the high energy costs in the UK do disadvantage us compared to other parts of the world. Adding further policy costs on to those already existing quite substantial costs does need to be avoided and mitigated as far as possible. We need an incentive-based policy framework that promotes innovation and green solutions.

Without skilled, equipped and competitive assets, there is a high risk that our emerging industries and associated new jobs will route elsewhere. Continued access to the diverse and innovative chemical sector at home will provide the UK with the raw materials to complete these newly arising low carbon industries and act as a focal point in order for them to further establish themselves. There have been some recent examples of missed opportunities in the UK. There were plans for a new hydrogen storage project to take place in salt mines, but that then lost out to a bid from France, owing to better Government support.

The comparatively high energy and carbon price for large energy users in the UK can serve to lower profit margins, which in turn also reduces the ability to attract investment in the UK. About 70% of our sector is comprised of multinational businesses with a global footprint. The comparatively high energy and carbon prices that the UK has in place can erode the business case for new investment here. Each year during the budget reviews of chemical companies, new investment can be allocated to sister assets in other parts of the world. The result can be that some UK assets are not invested in, renewed and updated, and therefore the competitiveness can in turn be increasingly impacted as a result.

It is worth noting that carbon leakage does not come only in the form of site closures; it is also the opportunity costs as a result of those investments going elsewhere and that subsequent loss of market share. We saw during 2009 China overtaking Europe in chemicals production, and that has been a continuing trend as we have been going forward over

that decade or so. That is something we need to keep in mind when we are going forward with additional transitioning costs in the future.

Q154 **Jerome Mayhew:** One of the policy initiatives that I have been very interested in and have been proposing for a number of months is a carbon border adjustment mechanism, not to protect our domestic industries, but to apply a level playing field between the domestic and energy environment, given the increased costs associated with renewable and low carbon supply and the inputs for importers who may have a lower cost because it is a higher carbon environment in which they are operating. What impacts do you think the carbon border tax or carbon border adjustment mechanism would have on UK chemicals specifically and then more widely on the manufacturing base?

Peter Walters: A carbon border adjustment measure could help, as you say, to put cleaner UK chemical manufacturing on a level playing field with perhaps more carbon-intensive competitors outside of the UK, giving the domestic industry a chance to retain that competitiveness while transitioning to net zero. To be effective, however, the measures must provide sufficient carbon leakage protection and be accompanied by a framework of supporting policy to help business invest in the net zero transition, without also restricting trade for UK manufacturers. The recent BEIS Industrial Decarbonisation Strategy is certainly a good step forward in that respect.

Q155 **Jerome Mayhew:** What impact do you think the proposed CBAM from the European Union might have on the UK chemicals and wider manufacturing if the EU progresses with a CBAM and the United Kingdom chooses not to and is otherwise on the outside of a barrier or tariff like that?

Peter Walters: Logic might dictate that the reverse of the situation could potentially be true, but because of our substantial decarbonisation efforts so far and the fact that we have already in place strong policies around decarbonisation, there may be reduced impacts for the UK compared to other parts of the world.

Q156 **Jerome Mayhew:** What support do you think we should be supplying in specific regions in the transition to net zero?

Peter Walters: This also has quite a bit of relevance to the just transition. I mentioned some of the industrial clusters earlier. A lot of those jobs are based outside of the south-east of England, which makes the chemical sector also a key partner in the Government's levelling-up agenda. I reiterate that those jobs are high quality and they are supported by the strong labour productivity that the chemical industry enjoys. At a national level, the chemical and pharmaceutical industries' productivity is about 82% greater than the manufacturing average and 92% greater than the working economy. When focusing on regions such as the north-west, those numbers become even more stark in their contrast.

Looking to the future, the way in which we decarbonise those clusters is going to be important. Through some of our analysis at CIA, we think that about 70% of our sector's emissions under emissions trading schemes are currently covered by public greenhouse gas commitments. About 65% of those emissions are related to cluster decarbonisation projects and about 35% of those are covered by carbon neutral commitments. These ambitions can only progress if there is a clear business case for continued investment in the UK industry.

We think that the regions would benefit from a co-ordinated funding approach that reflects the integrated nature of supply chains and regions and the balance between prioritising specific regional and clustered decarbonisation, to ensure that parts of the UK are not left behind and that we create a competitive and ambitious environment.

Q157 **Jerome Mayhew:** Thank you. Mr Mennear, we just heard it suggested that a co-ordinated funding approach would benefit the regions. What benefits do you see of there being a partnership between industry and local authorities in the net zero transition, and what can be done to enable this, in your view?

Andrew Mennear: It is clearly very important, because no company and no part of the Government is going to be able to solve or address all the issues that arise out of the path to net zero all on its own. It requires companies to work with other companies, companies to work with different levels of government and Governments to work with one another as well.

Within BP, when we embarked on the reinvention of the company, as we move towards being an integrated energy company, one of the things that was done was to create a new part of BP called Regions, Cities and Solutions. The aim of that team is to do precisely that: to create new partnerships, working with cities, regions and other companies to try to work together to deliver net zero. We have already signed two deals with different cities.

We tend to look at cities where we have a connection and where we see they have their own advanced decarbonisation goals. In the UK we have signed a memorandum of understanding with Aberdeen and in the US with Houston. We are working with both those cities to map out some of the steps they may need to take to deliver net zero outcomes for their local populations.

We have also signed deals with companies in different sectors and we are primarily looking at three different industrial sectors: high tech and consumer products, heavy transport and heavy industry. To take just a couple of those, we have signed the first such partnership with Qantas, which is the first one in any part of the heavy duty transport sector. The aim there is to look at ways of advancing the rollout of sustainable aviation fuels and to help with the supply of those. We have also signed deals with companies like Amazon and Microsoft. We have a couple of

different types of deals in place with Uber in terms of the provision of rapid charging points for Uber drivers to help them move towards having cleaner vehicle fleets. We see different ways in which it is possible to partner and work together.

Q158 **Jerome Mayhew:** That brings me neatly on to the skills needs for transitioning industries. I am very interested in your view, Andrew, of what low-carbon skills gaps there are in these sectors. What help do you need to address these or what can the Government do to help address these shortfalls?

Andrew Mennear: In some areas like CCUS and hydrogen, it is still a little bit early to be able to give you the rundown of all the precise skills or areas where you need to start looking for apprentices. The key thing at the moment is to concentrate on the underlying skills that those people would need. These largely go back to STEM skills. It is a case of making sure that the UK has the right school leavers coming out—school leavers who have maths and sciences and are able to communicate properly with other people they are likely to work with wherever they go.

We heard in the earlier evidence session very clear reasons why it is important for the UK to boost the percentage of women who have engineering skills out of the total number of engineers. BP has long supported work to be done into the reasons why the UK has such a low number of women with engineering skills. We have worked with King's College, the Science Museum and IPPR over the years to try to do more research on this.

A lot of it goes back to that transition between primary school and secondary school. There is little difference between any of the pupils when they are at primary school in terms of their interest in science. What tends to happen is when they go into the secondary school, families, teachers in some places and people who know them start to discuss different career paths. There is quite a low level of knowledge about the openings that are available to people if they take maths or sciences through to A-Levels. There is still this notion that you become a doctor or a nurse or an engineer and no one quite knows what an engineer is. They always have the idea of a car engineer, rather than someone who might be a digital engineer or a fashion designer, which also has a concept of engineering.

There is a lot to be done about role models and getting good, clear signals to young people at the right ages, so they are aware of the opportunities in activities like chemicals or the energy sector, which traditionally, as Pete said, have been very well-paid jobs compared to other parts of the economy. That is where you need to focus, because there is going to be this big push for more jobs in the near future, but we are not quite there.

Q159 **Jerome Mayhew:** What I am picking up from you is that it is not the specialist skills you want supplied in your workforce because you can

provide those yourself or you can train them up; it is the building block skills—core STEM. As a former employer myself, I know that there is deep frustration around the inability of a lot of people to write coherently and to create an argument on paper or digitally now. That is another core building block skill. Do you agree with that?

Andrew Mennear: Yes, I do, largely. I did not mean to say there will not be particular skills gaps later on. At the moment it is slightly too early to identify them in CCUS and hydrogen until we see the scale and scope of the projects that need to be developed.

Jerome Mayhew: Mr Walters, do you have anything to add in that area?

Peter Walters: I would like to add a few points more specifically to the chemical industry around green chemistry, which is an established concept. Frameworks like the 12 principles are increasingly present in chemical manufacturing, product design and managing the risk associated with the use of hazardous substances. Such skills will play an increasing role in our data as we go forward in the coming years. The need to find novel ways of reducing our dependency on non-renewable, natural materials and decreasing greenhouse gas emissions is driving a more bio-based and circular chemical industry. Those come with the need for additional skills, which are increasingly being ingrained in university services.

We believe our workforce of scientists and engineers are well placed to enact many of the transitions we are talking about today. About 40% of the chemical industry employees hold a degree or equivalent level qualifications. It is a highly-skilled workforce on balance.

Assessing skill gaps accurately is difficult. On Andrew's point, over the short and medium term companies are either equipped with the skills they need or have plans in place in order to address the skills that they need. Looking beyond that, maybe a bit beyond three years or so, there is more of a challenge. The way we go about addressing that is working with the education sector to have that discussion about what is going to be needed over the longer term.

Q160 **Jerome Mayhew:** Andrew, we have heard evidence that the oil and gas sector is quite well placed to transition to the new economy, at least as we see it at the moment. Do you agree with that basic assessment? I am sure there will be additional training required, but the base skills are remarkably similar.

Andrew Mennear: A lot of people working in the industry have highly transferable skills. As I said earlier, we have engineers, we have chemists, we have scientists, we also have health and safety specialists and people working on digital. A lot of those are the sorts of skills that we think can transfer quite well. We find a lot of enthusiasm in the company when things like jobs in offshore wind are advertised and people move through and look at different areas. Just this week we advertised online, opening a new supplier portal for offshore wind, looking ahead at the

ScotWind licensing round. We had a huge amount of interest come back externally about the opening of that portal for the suppliers. We know that there is an interest in the supply chain as well. They are looking for opportunities.

It may be that some of the companies in the supply chain that are highly specialised may need a little bit more assistance in order to transition and find the roles in the newer, greener industries. You have to remember that at the moment, globally, the opportunities to work on oil and gas projects still far exceed the opportunities, which are growing fast, on the renewable side. It is a big decision for smaller companies that have an established place in the supply chain in oil and gas to spend money on developing new product lines or to start to shift the business without quite knowing what the market looks like. For the new technologies like CCUS or hydrogen, it is very important that we learn very quickly what the expectation is with industries or for those companies that are looking to develop projects here in the UK.

Q161 **Jerome Mayhew:** You have given interesting answers about the building block skills, the STEM skills that we need and also the writing skills. When it gets to that next stage, where you are applying industry-specific skills, what is your view on the role of apprenticeships? What role do you see that playing in the future? How useful are they in this transition phase?

Andrew Mennear: We think apprenticeships will be extremely important. As Pete made clear, a lot of the new energy infrastructure will be built in the heavily industrialised areas—many of the areas of the country that are identified as being the targets for levelling up. It will create a lot of opportunities in terms of social mobility as well as locally. People will undoubtedly look to have apprentices in a number of different companies.

Sometimes this gets a little bit mixed up about whether we are talking about apprentices joining companies or whether we are talking about FE colleges providing courses in particular areas. What Pete and I have been saying is that it might be a little early to try to decide whether there are specialised courses at the FE end, but once you get the projects underway, you will have quite a large number of jobs being advertised. First of all, you need construction. You have to make sure there are enough people able to participate in construction, because there will be massive amounts of construction necessary around the UK, then the more specialised jobs will come on the back of that.

Q162 **Jerome Mayhew:** Yes, but if you do not have a market that you can already easily exploit, you have to create it. That is where apprenticeships surely come in. Particularly in a business the size of BP, you have to take responsibility for generating your own skillset, do you not?

Andrew Mennear: Precisely. There is an awful lot of training that is done in-house in BP as things stand. Given that we have just entered the

offshore wind market, as I said earlier, we have just been advertising this week for 100 positions in offshore wind. When it comes to CCUS and hydrogen, there will be similar posts advertised. Initially you put together the teams that are going to be working on what the resourcing requirements are for the new projects and because of where we are within the project cycle, I do not have the information at hand about precisely which areas people will look at and say, "That is particularly what we will want in terms of apprentices."

Traditionally within the industry we have tended to have general entry apprentices who then go on internal company training programmes to be skilled up and then put to work in particular parts of the North Sea business, or through BP Shipping we have had master mariner apprenticeships. For Castrol, it has been on the lube side. In terms of CCUS, and after that H2Teesside, our Teesside hydrogen project, those will be designed a little bit further down the road from where we are at the moment, but they will definitely involve local apprenticeships. We will be getting into conversations with the educational establishments in Teesside and Humber through the Northern Endurance Partnership, because we recognise the importance of these projects to the local communities and we want to make sure that the local communities benefit from our presence.

Q163 **Chair:** I am going to conclude with a couple more questions on the topic of employing a diverse workforce. You have already touched on this. In particular, Pete, you emphasised the extent to which chemists tend to include a large proportion of graduate-level women. Can you give us a sense of the significance of workforce diversity to establish green jobs in traditional industries? Apart from being a good idea generally, is this a significant issue for the chemicals industry? If it is, perhaps you could explain what you are doing to facilitate it.

Peter Walters: The simple first response is, yes, it is absolutely an important issue for us. We think that bringing new people into organisations from a variety of backgrounds can help to break old habits and hopefully form new ones with new thinking. We think that demographics that have historically been underrepresented have the potential to cause shifts in company cultures. In order to do that, increased diversity needs to be combined with putting the right inclusivity structures in place to ensure that those real actions will be taken forward. Chemical companies understand the need for a green future, which is a priority. Workforce diversity has helped that, and I think it will continue to do so.

A more representative workforce can help promote directional change within organisations, and the workforce is also essential to not only ensure the direction is followed but ensure that the right questions are asked at the right time while travelling in that direction. Beyond direct employee involvement there are also important functions for employee representatives and trade unions. That is one of the mechanisms through

which the industry works with the workforce in order to try to drive forward change.

Q164 **Chair:** Do your members tend to recruit domestically or do they recruit internationally and seek to bring people in? Because a number of the jobs are well paid, as you have indicated, you may be able to meet the Government's immigration threshold. What proportion of the workforce is home-grown?

Peter Walters: I do not have that specific stat in front of me right now. What is worth noting is that there is significant diversity in the types of roles that the chemical industry offers. Those might range from roles that are traditionally taken from the local communities that surround chemical manufacturing sites, maybe more on the operational side, looking to draw in apprenticeships and roles of that nature. When we get up to the cutting-edge leading scientists, in order to get specific expertise in certain subsectors or types of chemistries it becomes necessary to look a bit further afield. There might be certain academic institutions that specialise in one type of chemistry or another, therefore those are the types of employment where we tend to look further afield. On top of that, we have a substantial amount of contracted workforce, which tends to move around countries and parts of the world. There are a number of different factors at work there.

Q165 **Chair:** Finally, is retention an issue with the more diverse workforce? I get the sense that recruiting graduates is relatively straightforward from a diversity point of view, but how long do they stay? Do people maintain their careers or is retention an issue for diversity?

Peter Walters: It can be, but perhaps in a similar way that those same diversity challenges are faced by other manufacturing sectors in the broader economy. There is an issue with attracting and retaining—particularly on the retaining point—certain demographics and parts of society. Women perhaps do tend not to be able to stay in the workforce as long as some men, but that is improving with the development of diversity and inclusion policies.

Q166 **Chair:** Thank you. Andrew, I will ask you the same question in relation to BP. Do you envisage that it will be easier to develop a more diverse workforce for green jobs than it is for your existing oily jobs?

Andrew Mennear: I should say first of all that our CEO, Bernard Looney, is very determined to make the company much more reflective of the world in which we operate, in terms of gender, ethnicity, sexuality, neurodiversity and disability. This is an aim of the organisation. We have been making some progress as well. Out of our current 12 leadership board, five are women and a third come from outside the UK or United States. BP is a global company. Our top positions are very mixed in terms of nationality. One third of our top leadership team—the top 120 leaders in the company—are women, and I think over 20% of the leadership team come from outside of the UK and the US.

At the top levels of the company we are certainly showing that BP is taking steps to be as representative as possible of the community in which we operate, and it is our desire to do that throughout the organisation. Some specialised skills may take a little longer to reflect back in because, similar to the discussion previously on the STEM skills, the oil and gas industry traditionally had issues coming through some jobs, like offshore work in terms of oil and gas or if people are going out to work in the desert on rotation for a long time. We are seeing less and less of that.

Again, the silos are breaking down. There is a lot of progress being made, so we are very hopeful that we will be able to carry that through. I listened to the other sessions, so I heard that at the moment the renewable section of the economy is not the most diverse and we are probably ahead. There might be lessons that we can take from our business into the renewable industry, and we hope to share those with the other companies there.

Q167 **Chair:** In terms of recruiting people at the beginning of their careers, the STEM requirements are growing across all sectors of the economy. It is becoming harder and harder to attract people unless you make very specific efforts to do so. What is BP doing to try to stimulate enthusiasm among young engineers or other qualified people to come and work for the company? Are green jobs part of the attraction package yet?

Andrew Mennear: Yes and yes. When we have been recruiting graduates, we have generally had a roughly 50:50 split in terms of gender balance for a number of years. We do not have difficulty in attracting recruits. We are always seen, as I think Unite union once said, as a premier league in terms of the companies people want to work with. We do worry about the supply chain, and certainly the supply chain has the need for many engineers and many people with the right skills to go and work in them. We have been keen, as I said, for many years to work with places like King's College and the Science Museum to try to find ways to understand why we were not seeing such a diverse set of people with STEM skills come through to the universities.

At one time there was definitely an issue about the availability of single science subjects being taught in secondary schools, because many schools—about 25% of schools—were only offering a combined science course at GCSE, and that was not appealing to many of the universities that were going on later to teach some of the disciplines we were recruiting from. That has mostly been addressed, but there is still this aim to try to increase what we have termed "science capital"—the understanding of the benefits of a science education or a STEM skill education among families and teachers, so they can pass that on to young people and enthuse them.

There are also a lot of programmes where people go into schools and discuss their careers. We do that. We have lots of employees going in for mentoring sessions. We have had the BP Educational Service up and

running since the 1960s to try to work with schools and provide resources to schools to help them teach some of these subjects. This is an area we have been active in for quite some time, and we appreciate the work and the interest that is being shown in it. It is not easy, because it is a case of changing the mindsets of people whose whole families have had very little experience of what the opportunities are.

Frankly, we have not always been in some of the local communities that have the biggest issues. If you go around some of the areas outside the south-east of England and outside the north-east of Scotland, we have not had too much of a presence there for quite some time. We are getting to know people in places like Teesside, north Wales and the north-west with our investments now. We are going to find out and learn a lot from them, just as hopefully they will from us.

Q168 **Chair:** You have mentioned some specific universities. Do you have relationships with universities where you try to craft the syllabus to develop modules that are directly relevant to what you are trying to do now and in the future?

Andrew Mennear: I cannot answer that question. I do not know.

Q169 **Chair:** Could you ask somebody? I am very interested to know. It is one of the largest corporates in the country. What influence do you have on the education sector? One of the concerns that I have, which is emerging through this inquiry, is that many of the skills that are being taught at schools, colleges and universities reflect the economy that we have been in rather than the economy we are moving towards. We have to find a means of encouraging people to be taught the right skills for the future, rather than the skills of yesterday. Corporates that are at the forefront of making investments into these technologies are well placed to try to ensure that the skills you are going to require are being taught. Perhaps I could ask you the same question, Pete. If you cannot answer, can you write to the Committee and give us some examples of good practice from your members?

Peter Walters: Yes, I am happy to take you up on the second part of that offer. We will be happy to write in to supply that information.

Chair: Thank you. Andrew, will you drop me a line if you can find some examples that we can use to cite good practice in that regard?

Andrew Mennear: Yes, absolutely.

Chair: Thank you very much. That neatly draws us to the end of this panel. Thank you, Andrew Mennear from BP and Pete Walters from the Chemical Industries Association, for your evidence this afternoon. Thank you to the Committee members for being with us, and in particular to Amy Brew, the staff member who has been preparing our brief. Thank you all very much indeed.