HOUSE OF COMMONS

Environmental Audit Committee

Oral evidence: Addressing the risks from Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS), HC 852

Wednesday 10 December 2025

Ordered by the House of Commons to be published on 10 December 2025.

Watch the meeting

Members present: Olivia Blake; Julia Buckley; Jonathan Davies; Carla Denyer; Barry Gardiner; Chris Hinchliff; Martin Rhodes; Dr Roz Savage; Blake Stephenson; John Whitby; Sammy Wilson.

In the absence of the Chair, Barry Gardiner took the Chair.

Questions 205-240

Witnesses

II: David Henderson, CEO, Water UK; Dr David Megson, Reader in Chemistry and Environmental Forensics, Manchester Metropolitan University; Vicky Robinson, Head of Sustainability, Agricultural Industries Confederation.

Written evidence from witnesses:

David Henderson - PFAS0120

Dr David Megson - PFAS0003

Vicky Robinson - PFAS0085

Examination of witnesses

Witnesses: David Henderson, Dr David Megson and Vicky Robinson.

Chair: I am delighted to welcome today's second panel in our inquiry into the risks of PFAS. Can you begin by introducing yourselves?

David Henderson: My name is David Henderson. I am the chief executive officer of Water UK, representing all the water companies across the United Kingdom.

Vicky Robinson: I am Vicky Robinson. I am head of sustainability at the Agricultural Industries Confederation. We are a trade association that represents collectively the agri-supply industry, which is made up of seed, animal feed, fertiliser and grain traders and distributors of professional plant protection products and advice.

Dr Megson: I am David Megson. I am a reader in chemistry and environmental forensics at Manchester Metropolitan University. I also work as an expert witness on large litigation cases for a company called Chemistry Matters, tracing forever chemicals in the environment and finding out who is responsible for the pollution.

Q205 **Chair:** What are the main sources of PFAS contamination across water, soil and the atmosphere, specifically in the UK?

Dr Megson: They are very varied. We see quite a lot coming out of waste water treatment plants. We see a lot around firefighting training zones, specifically looking at AFFF. We see specific point discharges around fluorochemical manufacturing plants as well.

Vicky Robinson: Interestingly, the HSE in 2023 produced its regulatory management options analysis, which gives a list of those. One of the things, picking up on what David said, is the biosolids and that cleansing of water, which produces sewage sludge. Around 3.5 million tonnes of sewage sludge biosolids is produced annually, which is spread on to about 150,000 hectares of farmland, the majority on arable land. That is one source that we are particularly interested in.

We heard about plant protection products in the previous session. About 16% of agricultural plant protection products in the UK contain CF3, but they contribute to about 2% of the TFA in the environment. That is evidence, but that is also corroborated by the European Chemicals Agency. There is strong evidence about the small impact, and they do not even appear on that HSA list that I referred to earlier.

David Henderson: First, thank you very much for this Committee's attention to this issue. It is incredibly important, and I am grateful for the energy that you are putting into it.

Unfortunately, PFAS is everywhere. It is probably in all of you, and me, and anyone else who is watching these proceedings, sadly. Having been invented almost 90 years ago by the manufacturers of Teflon, it has

spread just about everywhere. It has been found in Antarctica and on the top of Mount Everest. It does not break down, which is why it is often called forever chemicals.

It occurs, in terms of how it is found in the environment, in the way it is used, the way it is produced and the way it is discarded. As you have heard, it gets into our environment from each of those three sources in a variety of ways, from the shedding from textiles, from the use of pesticides, from the waste-water treatment by-products that we mentioned, from the direct use of fire retardants in our environment, and directly, unfortunately, from some paint materials.

This is a very difficult product to remove. We spend quite a lot of money as an industry on taking it out of our drinking water, and we are very keen for it to be banned because we do not think that there is any real need for it to be produced any more. There are alternatives, and that is why we have been long calling for a ban on the sale, manufacture and distribution of any product containing PFAS, other than the very small exceptions for which there may be no alternative. We think that the producers of the PFAS should be the ones that pick up the bill for cleaning it up.

Q206 **Chair:** At the moment, most of the Environment Agency monitoring focuses on water. Why do you think there is less testing of soil and air? Ms Robinson, you specifically spoke about soil contamination, so perhaps you could lead off on this.

Vicky Robinson: Absolutely. On the soil front, there have been discrete projects, but it has not been a national co-ordinated programme, which we would advocate for. There are some projects out there that are looking to do that. The challenge with soil is that it is more complex because it is impacted by the geography, the climate, the weather and the organic matter content of the soil. The higher the organic matter content of the soil, the more readily it will hang on to the PFAS. It is more complex, and I would imagine, to be honest, that it comes down to funding and priorities and the lack of use of the regulatory environment, which I am sure that we will come on to, in terms of how it is measured when it is discharged to the environment.

David Henderson: The Environment Agency can probably answer for itself, but it responds to the regulations that are imposed on it by the Government and by Parliament. At the moment, there are regulations in some aspects of PFAS and not in others. When it comes to drinking water, which is not in the purview of the Environment Agency as such, there are extremely strict standards. The Drinking Water Inspectorate, which is a different regulator, undertakes a huge array of regulatory action to ensure that we meet those very strict tests; 430,000 were conducted last year and we met every single one of them, as an industry, across England and Wales.

In some parts of the environment there are very strict tests; in others there are not. As I say, we would fully support additional testing and regulatory insight overall, but the best way to deal with PFAS is to stop making any more of it, which is why we are calling for it to be banned.

Dr Megson: I think that it is predominantly down to ease. It is much easier to test PFAS in a water sample than it is in a soil or a lot of biological samples. You have to purify it. We are looking at low levels because it is quite potent. It is much easier to purify that in water than having the thousands of other chemicals that we see in soils and biological material. There has been an historical narrative as well about these PFAS being water-soluble. They are applied on land and they go out to our waterways, so that is where we have been targeting a lot of our investigations. However, as you have heard, there are more routes of them getting into our environment through applications on soil and then going into our food and getting in our wildlife more as well. The techniques are coming and we can now do them in those other matrices, but traditionally it was much easier to do it in a water sample than in other samples.

Q207 **Chair:** You do not have a great deal of faith in the current monitoring methods, do you? You have said that 80% of PFAS at a site is often missed by the current monitoring methods. What are the benefits of non-targeted and total PFAS methods? Should there be a standard method for testing that will get us more accurate, better results?

Dr Megson: I would love there to be. From the research that we have been doing, every time we do non-targeted assessments we find new PFAS. The diversity is huge. In my opinion, the targeted methods at the moment are telling us what we already know: yes, there is PFOS, yes, there is PFOA, and the levels of them. I keep finding new ones. That is where we are identifying these new hazards. I would advocate for total PFAS methods. That gives us a bit of an estimate. We can compare that to our targeted methods. If we see that we are missing 90% of the PFAS here, we can use our non-targeted methods to identify what they are and measure them in the environment accurately.

Q208 **Chair:** How does that link up with what we heard in the first panel about looking at this with a class-based approach?

Dr Megson: It aligns nicely. There are different total PFAS methods that you can use, and different ones align better with different regulatory or potential risk assessment approaches. We can use methods like TOP assay, which in a sense convert a lot of PFAS into their most stable toxic form. That could be useful from a risk assessment perspective, or we could do total fluorine measurements and try to capture that entire world and the diversity of PFAS as well. We have a lot of tools for doing this; we just need to know which way the regulations are going, and then we can match the tool to the regulation.

Q209 **Chair:** Do we have the resource and capacity to do that at the moment?

Dr Megson: No, I do not think so. The water industry has done an amazing job to develop those targeted lists. We are lacking in support for that industry and other regulators to give them the equipment, time and funding to develop the methods to be able to do that analysis.

Q210 **Chair:** If I can push back, the Environment Agency has said that monitoring total PFAS would provide less information to inform management strategies. What should the minimum standard of PFAS monitoring be that the EA could be funded to deliver?

Dr Megson: I disagree. I think that it needs total PFAS analysis. From the research that we have been doing, there are thousands of PFAS in the environment. A lot of the time they are source-specific as well. If it wants to identify sources, you need that diverse bit of measurement, because you will only see what you are testing for, so you will miss a lot of new potential sources if you do not embrace those total methods and find out that you are missing something, then apply a non-targeted method to find out what it is you are missing and where it has come from.

Chair: Does either of you have anything to add to that? No. In that case, we will move on to Chris Hinchliff.

Q211 **Chris Hinchliff:** Mr Henderson, as I am sure you will recall, in January this year there were reports in the press that analysis of sampling data showed contamination from PFAS of drinking water across the country. Water sources used by Affinity Water in my constituency at Letchworth and Baldock showed particularly high concentrations of PFOS. The Drinking Water Inspectorate guidelines set the level of PFAS in drinking water at 100 nanograms per litre for some of the 48 named PFAS. Of course, there are about 10,000 PFAS in use. The US has proposed a limit of 4 nanograms per litre. What do you consider would be an appropriate regulatory limit for PFAS in drinking water?

David Henderson: I just want to be very clear with the Committee that the story to which you refer concerns the raw water, and we take that raw water and we treat it. We go to very great lengths to treat that water so that by the time it enters your tap and comes out of your tap and you can drink it, it is reaching the highest standards in the world. The Drinking Water Inspectorate does an extraordinary job to ensure that our drinking water is wholesome and fit for human consumption. It is regularly attested by the World Health Organisation and other leading scientific groups around the world as such, jointly with about two or three other countries, each and every year for about the last decade. So, in terms of the drinking water that comes out of the tap, there is no need for concern.

The way that we treat it is no small task. We spend about £70 million as an industry taking that raw water, which in some parts of the country has considerable levels of PFOS and PFOA and other PFAS substances, and we treat it using a range of activities such as granular activated carbon and other methods to ensure that the PFAS is removed to, as you say, a

collection of 48 PFAS, to 100 nanograms per litre. That is 12 times higher than the European level, which is for far fewer PFAS at 500 nanograms per litre.

Yes, the United States has proposed, through the Environmental Protection Agency, introducing a limit of 4 nanograms. The jury is out among many leading scientists of the world as to whether it is even scientifically possible to measure at that low level, let alone remove to that level. We are guided by the regulator and the scientists. I do not think that it would be right for the industry to set the limits ourselves. We will follow whatever limits are imposed on us by independent regulators. We will then expend the money, which sadly does have to flow on to people's bills because we are not able to have the "polluter pays" principles whereby the manufacturers of PFAS are picking up that tab.

As I say, we are really at the very edge of what is scientifically currently possible. If we can get lower, and our independent scientific experts in the Drinking Water Inspectorate ask us to go to a lower level, we would be more than happy to do so.

Q212 **Chris Hinchliff:** Dr Megson, the industry will go where the science leads. Do you have any views on what the regulatory limit should be in our drinking water?

Dr Megson: I would much rather drink drinking water in the UK than in a lot of other countries. I do think that it is doing a very good job of what it is doing. As we have heard from the last panel as well, the science is uncertain. That industry in particular has been one of the few in the UK that has taken that precautionary approach and said, "We do not have all the exact science, but we will get a bunch of PFAS together that we think are of the most concern and we will put something that is pretty conservative in there to try to protect people." I think that it has done a good job on that.

Q213 **Chris Hinchliff:** Can I just jump in briefly and ask what you think of the suggested US limit? What is your perspective on that?

Dr Megson: On the 4 nanograms? It is hard for me to comment, not being a toxicologist. You see it and you think that that is quite low. I like that they are doing individual PFAS-by-PFAS measurements, because each PFAS carries a different risk and a different potency. That is one of the limitations of our method, assuming all equal potency and summing. I do not want us to wait 10 years until we get exact individual ones for each one.

I like that we have taken this precautionary approach already and taken that sum. The only way in which we could improve it might be by incorporating a total measurement, because we know that there are more PFAS than just the 48. Even if we think that these are the main ones, there might be some specific sources that we are missing. That, of course, will require extra financial cost. I agree completely that it should

not be the water industry that is paying for other people's pollution, and it should not be us as taxpayers who are doing that either.

Q214 **Chris Hinchliff:** To clarify, perhaps as a recommendation for the Committee to consider in relation to that regulatory limit, would you suggest that we look at broadening it rather than lowering the nanograms per litre?

Dr Megson: I would, because I think that you need to do the toxicity measurements on each individual PFAS, and that will take us decades, whereas now we can spot a hazard and spot a massive chunk of PFAS that could be in there that we do not know the risks for, and be preventative against that.

Q215 **Chris Hinchliff:** Mr Henderson, you have waste treatment techniques, as I understand it, that concentrate and remove PFAS from water. How can we deal with the waste that comes from those processes in a way that does not re-release the chemicals into the environment? How are you dealing with that? Is there anything further that we could recommend on that front?

David Henderson: With drinking water, there are different methods that can be used to extract the PFAS from the raw water sources so that it is not in the drinking water that goes through people's taps, at the level set independently by the Drinking Water Inspectorate in England and Wales. There are similar provisions for the rest of the United Kingdom. The by-product differs depending on the method used. In some of the methods, in extremely high temperatures the PFAS by-product is destroyed through incineration. That is the typical mechanism by which the by-product is extracted and dealt with.

Q216 **Chris Hinchliff:** Can I ask, as a complete layperson, whether that would lead to any concern about air pollution? Are the chemicals destroyed?

David Henderson: If it is done at a sufficiently high level, which is very, very high—we are talking about over 700°C, and in some cases over 1000°—the science is clear that the PFAS is destroyed. If it is done at a lower temperature, there are higher risks that the PFAS can break into smaller chains and disperse into the atmosphere. That is not what anybody wants, so it does need to be done carefully. Another mechanism is that it could be buried, under certain conditions. It depends on the method. You also asked about waste water, I believe.

Chris Hinchliff: You have covered it: how to dispose of that waste in a way that does not accidentally lead to the chemicals being re-released.

David Henderson: If it is incinerated, it needs to be done at extremely high temperatures.

Q217 **Chris Hinchliff:** Is that happening sufficiently across the board? Is there anything that we should be recommending to ensure that that happens?

David Henderson: I would be happy to write to the Committee. It is a particularly specialised aspect of the treatment of drinking water, and it does depend on the method used. For granular activated carbon, it is my understanding that we do not need further regulation in place, but I will be happy to write to the Committee on that.

Q218 **Chris Hinchliff:** That would be very helpful, thank you. Ms Robinson, another issue that many of my constituents write to me about is that of sewage sludge being spread on our farmland, although admittedly that often has more to do with the smell than with the chemicals within it. You have already referred to the scale at which that is happening and the persistence that we have already heard about, with it potentially remaining in our soils for hundreds of years. What is your assessment of the risks posed by PFAS in sewage sludge biosolids when applied to farmland?

Vicky Robinson: At the moment, there is an evidence gap as to the PFAS in the sewage sludge and the pathways that they use to move into the soil and into the water, but there is evidence that that does happen. With sewage sludge, at the moment it is governed by regulations that were made in 1989 with a code of practice in 2018. There is a lot more evidence out there now about how those could be updated.

We need to look at a risk-based approach to it. One thing that we are keen to look at is how the EU is looking at its fertiliser product regulations. It looks at a matrix of the category of products. Ultimately, you are applying a product with nutritional and organic matter properties to the soil. It is a valuable product from a farming perspective, but at the moment what PFAS are in there is not included in any analysis. It is around the metals and it is around the nutritional component of it. It is looking at the combination of what it is being used for and what its component material is. There is this matrix approach that Europe is looking at, because ultimately you have the product but you want to look at how it is being applied to the land and what it is being used for, and potentially you have that accumulation approach as well.

We would advocate for sewage sludge to be part of the fertiliser product regulations that are currently being reviewed in the UK, and to bring PFAS in and look it in a slightly different manner than is currently happening.

Q219 **Chris Hinchliff:** Very briefly, before I turn to my final question: you mentioned the gap in the evidence to inform our understanding of the risks in relation to sewage sludge. Who do you think should be filling that evidence gap? How can we fill that evidence gap?

Vicky Robinson: In terms of who should be doing it, we have a fantastic scientific community. There should be some government funding, potentially with industry as well; I am using "industry" in the broadest sense of the word. Another evidence gap relates to the application of sewage sludge with PFAS on land and how that moves through the

system and ends up in products that we could be consuming or exposed to and what the safe levels are. These are the areas on which we need more evidence.

Q220 **Chris Hinchliff:** Thank you. Finally, Mr Henderson and Ms Robinson, you will both be aware of the reports from last year that sludge fertiliser being sold to farmers by water companies contained a banned type of PFAS at levels in excess of those considered safe by emerging science. Should water companies be required to check for PFAS in sewage sludge and treated waste water as well as drinking water? Mr Henderson, I invite you to comment on how that might be funded.

David Henderson: As you will know, we do not make PFAS. It comes into our network from a variety of sources, and then it goes into the environment through the treatment process. We would welcome and happily endorse any action that any regulator wishes to take concerning that process. We were encouraged by the Government last week, through their environmental improvement plan, setting out that one of the actions that they will carry out concerns PFAS and that they will report next year. We would welcome whatever limits the Government seek to set. This waste product does need to go somewhere, and we would be very happy for the broadening of the regulations concerning other aspects of environmental treatment to cover this, too.

On the cost, we do not think that it is fair for it to be borne by customers. They are not making this stuff. It is created by the manufacturers, and they should be picking up the tab for having to extract it if that is what the Government and their regulators decide should occur.

Q221 **Chris Hinchliff:** Ms Robinson, what is your perspective on this? Are farmers concerned that they might be spreading something that subsequently they would be criticised for?

Vicky Robinson: There is that concern. The level of knowledge of the PFAS that could be in there and the microplastics that could be in the sewage sludge at the moment is not given to them as part of the datasheet. The testing could coalesce around the sewage sludge. It is coming through and then goes out to multiple farms, so it does seem an obvious point to do that testing.

Q222 **Chair:** To pick up on what my colleague was saying, Mr Henderson, would you therefore support the idea that we heard in the first panel about the superfund Act in America?

David Henderson: I am not familiar with the superfund Act.

Chair: Ah, sorry—you were not here at that point in the discussion.

Dr Megson: We do have the equivalent in the UK. Part IIA of the Environmental Protection Act was developed to mirror what happened with the superfund, to find our worst sites and clean them up in the UK. It has lain a bit dormant for the last few years, because we felt as though

we had dealt with the problem and the ringfenced money disappeared. We cut down from local authorities, so they have not been able to enact it as well as we would have liked.

David Henderson: We would endorse polluters contributing to any fund to help with the job of cleaning up PFAS that they have created.

Q223 **John Whitby:** Ms Robinson, Denmark's Environmental Protection Agency withdrew approval for eight additional PFAS-containing pesticides, following an earlier ban on 25 products. What would be the economic and practical implications for the agricultural sector if PFAS-containing pesticides were phased out?

Vicky Robinson: Looking first at Denmark, it is phasing them out in three different stages. It has categorised them, starting with ones that are not actively sold and going on to those that have alternative solutions and then those that do not. That is really important: considering whether there are alternative solutions. The challenge, if you remove actives, is whether there is an alternative and how that alternative will impact on the environment. It takes 12 years from synthesis through to market for a new active to come to the market, and it costs the manufacturer about £230 million, so it is not a quick "We'll take that one off and replace it with another."

At the moment, we go through a very vigorous process. The reason that it takes 12 years is that there is a huge amount of testing before it even comes to the chemicals regulation division, which looks at the dossier and ensures that the whole life cycle is looked at, including what it degrades into. There are those trade-offs to consider in whether there are alternatives and is it a phase-out. If that had to happen, that would be something that we would be keen to look at and support.

Interestingly, the plant protection products will come in scope of the sanitary and phytosanitary agreement, and there is some research going on in the EU at the moment by the chemicals regulation, looking at PFAS and TFA as well. That is due to report next year. The expectation is that we will be aligning with those requirements.

Picking up on a point that was referred to in the previous session, we have to be careful that we do not offshore our environmental footprint. If you are thinking of the economic impact, what impact would that have? If we simply import, it raises the question of why we are doing it in the first place.

Q224 **John Whitby:** Dr Megson, what are the risks to humans from PFAS entering the food chain? How could they be managed?

Dr Megson: You heard from the previous panel that there is almost a bit of uncertainty as to what the effects are on humans. I would like to echo the words of Professor Sunderland about taking a precautionary approach. I do not want to wait 30 or 40 years to nail down the exact mechanism for every single PFAS, but find out that in the process 30,000

people in the UK have died. I would much rather that we took a precautionary approach now, because there is a huge weight of evidence, which is growing and growing, that shows that PFAS can harm us in a variety of ways. It is not just the pesticides; a lot of these PFAS are in our food chain already through consumption of fish. We need to look a bit wider than just thinking that we can better regulate pesticides and get rid of PFAS in our food. The bulk of it is coming from stuff that is out there, and we need to reduce industrial emissions to make sure that it is not going up, with new and diverse PFAS, and getting into our food that way.

Q225 **Blake Stephenson:** Ms Robinson, NGOs argue that alternatives exist for the approved PFAS active substances in pesticides. First, do you agree with that? Secondly, would you support a phased approach to removing PFAS from pesticides if alternatives are proven effective? You may have answered that in the previous question. If so, what dependencies would there be on you supporting the phased approach?

Vicky Robinson: In answer to your first question, I would need to take that away and come back to you about whether there are direct like-for-like replacements. There might be alternative products that have a similar impact, for example if it is a herbicide and there is another product that would take out that class of weed. The challenge might be that it might be less selective. One of the roles of PFAS is that they make it a damn sight more sticky. It is more effective because it is sticking to the intended recipient. The challenge is what that means, in terms of more plant protection products you might need to use. There is that challenge there of what the alternative is, and it comes back to those trade-offs.

We would want to be reassured before you ban anything, to come back to my previous point about whether there is an alternative or whether you would simply offshore your production. We are 62% self-sufficient in food, but there are different classes of that. Although we might be over 90% self-sufficient in wheat, that drops down to 50% for vegetables and it is even lower for fruit. We are in a global trading environment, and that has to be part of the consideration as well, along with the importance of food security. We would want all those to be taken into account before we have any knee-jerk reaction. We do have a very strong regulatory environment already around placing plant protection products on the market, hence why it takes 12 years for that evidence dossier to be gathered and for all the testing to be done, and hence the cost as well. They do not come on the market willy-nilly very readily.

Q226 **Blake Stephenson:** That is very helpful. I totally understand the points about food security. If you could follow up on your answer to the first question, the Committee would appreciate it.

My second question to you, Ms Robinson, and to Dr Megson is what your assessment is of the evidence regarding TFA contamination in UK rivers and how it relates to the use of PFAS containing pesticides. Shall we start with you, Ms Robinson, since you are on a roll?

Vicky Robinson: First, coming back to my first answer, pesticide plant protection products do not even appear on that HSE list. Only about 2% of TFAs are deemed to come from plant protection products. What was interesting, looking at the Fidra map of the hotspots of TFAs in rivers, was that it had the River Clyde in Glasgow[1]. Omagh had two of the hotspots in Northern Ireland. Neither of those are huge agricultural areas. You would have expected them, if they were very much plant protection products, to be in those areas where more arable crops are grown, which would be further to the east.

It comes back to the challenge that there are so many different sources. Trying to pinpoint where they have come from is a challenge, and I would refer to Dr Megson about pinning them back to their source. I would argue that plant protection products are not the main contributor of TFAs in rivers.

Blake Stephenson: Dr Megson, do you want to add something to that?

Dr Megson: With TFA, it is one that has jumped out by surprise, again with the benefit of not just assuming that we know what we are looking for and monitoring the same PFAS over and over again. Let's actually do some science and find out what is there. That is where we are at the moment, trying to identify the magnitude of the different sources, and that is challenging, but we have the tools to do it.

One of the interesting things with drugs and pesticides specifically is how we put this CF3 group into a molecule. We do it, and it is good to make it more persistent and make sure it gets to the right place in the body, but is it essential? I was at a Royal Society of Chemistry meeting earlier in the year, speaking to people who make these chemicals, and in a lot of cases it might be possible to swap that CF3 for a single fluorine. Then it is not a PFAS and the CF3 does not break off and create something new. The downside of that is that it will take 12 years or so to check if that chemical containing just fluorine works in the same way and is safe.

I would avoid trying to be too rash on banning things now, but I would definitely look to see whether you can remove that CF3 group from drugs and pesticides, so that issue disappears for the future.

Q227 **Blake Stephenson:** In terms of monitoring, do you think that the agricultural sector has a potential role to play so that we can better understand the scale of the issue across the country?

Vicky Robinson: Coming back to my earlier point, if we are talking about sewage sludge, at point source at the waste-water treatment plants would be a more effective way of measuring it.

Dr Megson: Yes, I think that we all do. The Environment Agency has been doing a good job of going round and gathering data from different regions. It is looking at trying to identify the main sources now. So rather

[1] Correction: it had the River Kelvin in Glasgow not the River Clyde

than lots of people doing a bad job, let one person do a good job and fund and support them properly.

Blake Stephenson: I am pleased you have said that, because I would not want to tell my farmers that they have to start monitoring PFAS.

Q228 **Carla Denyer:** I am moving on to enforcement and money. I will start with what is happening in France. Other countries are introducing PFAS discharge levies to reduce pollution. In France, it is €100 per 100 grams discharged into waterways. Dr Megson, do you think a measure like France's will genuinely drive reductions, or does it risk shifting emissions, for example, from water to air? Do you think that the UK should consider something similar or not?

Dr Megson: I like it as an idea. Yes, there is that risk, obviously, but it will be difficult to get a lot of that into air or elsewhere. Alongside having those levies, we should be supporting industry to find solutions so that we are not just hitting them with the levies but giving them support technologies, working with drinking water and other people that have these solutions already for their products and getting them on waste streams. We can do both, I think.

Q229 **Carla Denyer:** This is a question for Mr Henderson to start with, although if others want to come in afterwards, they are welcome. You have made it very clear that you support the "polluter pays" principle. Do you have further thoughts on how that could practically be implemented, working out who precisely is responsible and how much they are responsible for?

David Henderson: The first thing that we are after is a ban on the manufacture, sale and distribution, which would deal with the international issue that was raised earlier. In terms of ensuring that the polluters pay, France is an interesting example. As a matter of principle, we would support it. Whether it is at exactly the right level, time will tell. As a matter of principle, any manufacturer of any PFAS, in my view, first should not be able to keep manufacturing and secondly should start to pay for the clean-up job. I think that that should be across the entire economy. The costs involved will be very large. That should not be borne by taxpayers; it should not be borne by water bill payers; it should be borne by those who have made a fortune out of making this stuff.

Vicky Robinson: My only thought would be what impact that would have on industry, on the growth of industry, and on innovations and ensuring that companies remain in the UK. Is there a risk, again going back to that offshoring, depending on how that was implemented, because ultimately it is society? I suppose you could argue that we also have benefited from some of the benefits that the PFAS provide us. There are obviously some essential and some less essential, as we have been hearing. That challenge is whether there is a role for society through taxpayers to have a part in this.

Dr Megson: We have the tools to find out who is responsible for the PFAS pollution. Certain manufacturers make specific PFAS. We can look at chemical—

Carla Denyer: That is the benefit of there being 7,000 of them, presumably.

Dr Megson: It is, exactly. When we got rid of PFOS and PFOA, a different chemical manufacturer started developing its own proprietary materials, so we can nail down specific producers based on their unique PFAS. We can nail them down based on their chemical fingerprint. We have the techniques and tools to do this; we struggle to have a regulatory system to make the polluter pay and to go after people. It seems to be there protecting industry rather than protecting your constituents and the individuals who believe that they have been exposed.

Q230 **Carla Denyer:** The Royal Society of Chemistry estimates that PFAS remediation could cost up to £9.9 billion annually in the UK. What do you see as the environmental and financial implications of failing to act on prevention or remediation on PFAS production and pollution? You have all touched on it already, but is there anything in particular on the cost of failing to act as opposed to the cost of acting?

Dr Megson: People and animals are going to die, aren't they? That is the fundamental one. How much does a life cost? That is what we have to get our heads around, which is not a particularly nice thing to think about, but it is the truth.

Q231 **Julia Buckley:** You have each mentioned various examples from other European countries and from the regulation that is coming through the EU. Does any of you have a view about whether there would be any value for the UK in considering rejoining the European Environment Agency to be part of that regulatory landscape?

David Henderson: In terms of drinking water, the standards here are much higher than they are in Europe, as I explained: 12 times higher. On the standards in the United Kingdom for drinking water, there would be no benefit in aligning them with other parts of Europe. In terms of the Environment Agency, across the world we are learning more about PFAS. Across the world we are undertaking more efforts scientifically and environmentally to understand and determine the source and the costs involved in cleaning this stuff up. As we know, this stuff is harmful to human health and that of animals, and the longer we take to address it, the bigger the job it will be to clean it up.

Julia Buckley: It was more on the pollution measurement and data comparison that they are working on, rather than the UK. Are there any other thoughts before we move on?

Vicky Robinson: I am not familiar enough. I imagine that there are pros and cons, but I would not want to take a view without being more informed.

Dr Megson: I would like to. I feel that at the moment we are sitting back and observing what is happening, and we are making a decision on that. I would love to be more involved with the process and working with our partners in Europe to do that.

Q232 **Julia Buckley:** We will move on to the UK regulatory system and get into some detail on that. The PFAS management currently involves multiple regulators—drinking water, which we have touched on, food safety, environment, health and chemical registration. Does this multi-agency approach create challenges for the development, consistency and enforcement of PFAS regulations? Conversely, therefore, do you think that establishing a single UK chemicals agency would help to address any such challenges?

David Henderson: There are two Secretaries of State involved in this: the Secretary of State for Environment, Food and Rural Affairs and the Secretary of State for Work and Pensions. Underneath those two members of the Cabinet are all the various regulatory bodies that are involved in this. With two Secretaries of State, we could ban PFAS, we could institute the "polluter pays" principle, we could stop the sale, distribution and marketing of PFAS products. Whether underneath those two Secretaries of State we have new regulatory institutions created is probably a second-order question as to the political will by the Government of the day in the United Kingdom to address this issue.

Q233 **Julia Buckley:** You could argue that there are even potentially three, with the Department of Health, because when we get on to the health implications, if we can demonstrate cost savings to the health service, that can sometimes justify increased regulation. Vicky Robinson, how would you address that question around the multiple regulatory landscape?

Vicky Robinson: If you can streamline, it breaks down silos and increases communication, and I think that that is a great thing. Obviously, you can still have silos even within one agency. On that regulator side, I think of it as a three-legged stool. You need the regulations to be fit for purpose and you also need the monitoring to be in place as well. You need all three to be working together rather than just changing one aspect to the regulator. If the regulations and the monitoring are not there, it may not give the outcomes that we are hoping for.

Julia Buckley: Looking for the Holy Trinity?

Vicky Robinson: Absolutely.

Dr Megson: I strongly back the RSC's call for a UK chemical agency. I think that PFAS is a classic example of what a mess it is. We go to water and we are looking for 48 PFAS. I go to food and I am looking for four PFAS, and now I am concerned if it is linear or branched. I am looking in water and I am looking for one or two, maybe 26 if we get things from

Europe. It is constantly changing, depending on where we are taking our sample from. The chemical itself is not changing. We should be risk-assessing that and applying that to all our different areas.

At the moment, it is so scattered. It must be a nightmare for somebody in a Government agency as well, picking up the phone to speak to somebody about PFAS and giving them the right advice: "Oh, no, sorry, you're talking about your drinking water. Yes, this is what applies there. Oh, now you're talking about your fish. That's a completely different regulation."

Q234 **Julia Buckley:** Are you suggesting that there could even be efficiencies within government, should that be simplified?

Dr Megson: I think that there is a really good opportunity to do things better through that.

Q235 **Julia Buckley:** Is a ban more efficient, so that you are costing the Government less?

Dr Megson: Definitely, yes.

Q236 **Julia Buckley:** Thank you, that is very helpful. David Henderson, can we talk about the water sector? The Cunliffe review recommended, as you know, a single integrated water regulator. Would that be a useful step, in your perspective, for that regulator?

David Henderson: We are extremely pleased that the Government appointed someone of the calibre of Sir Jon Cunliffe to conduct that commission, and we very strongly welcomed the Government's decision, on the day that it was published, to create a single regulator for the water industry in England—in Wales there will be a separate arrangement—and, through that, see the abolition of Ofwat. We think that the sooner that is done, the better.

There is an absolute regulatory mess at the moment. The Government are right that it has failed. It is completely broken, so we need the new regulator set up as fast as possible. We do not see any impediment to appointing the chair, the board and then the CEO of that regulator today, so we can start to get new policies that have all the contradictions, incoherence and inconsistencies in the current set-up done away with and so they have a much simpler, cheaper and faster system to get us the environmental improvements that we know the country rightly wants and deserves. We are calling on that to happen as soon as possible, so that we can start to have policies delivered that will see the investment flow faster and in a more simple way, which will ultimately be cheaper for everybody too.

Q237 **Julia Buckley:** That is very clear. We can make sure that that recommendation gets through to Government today, based on your advice. I have a final question, and then we will all wrap up in time for votes. Dr Megson, the Government have announced, through the environmental improvement plan, that a PFAS plan will come out in the

new year. What do you hope to see in that plan? How do you think it could be fed into a national PFAS strategy?

Dr Megson: I am delighted by it. I am really happy that this Government are taking this issue seriously. It feels as though scientists and industry are being listened to, which makes me really happy. Looking at it, I think of my colleagues who are regulators and working in local authorities. They are probably saying, "Oh my God, that's quite a big ask for us. I hope we get some support." I would like to make sure that the right people are supported in local authorities and regulators to be given the staff, time and finance to do the jobs that they desperately want to do.

Q238 **Julia Buckley:** By support, you mean that they need adequate resourcing in order to deliver efficiently?

Dr Megson: Yes, environmental health officers and contaminated land officers in local authorities have been decimated recently. You get one poor person who has to deal with noise, waste and all these different issues. Going back to staffing that properly, giving them financial support to undertake investigations and trying to get funding for remediation is vital.

Q239 **Julia Buckley:** The plan is that the fines pay for the investigations, like recycling. Vicky Robinson, what do you want to see in the new year?

Vicky Robinson: First, we welcome its inclusion in the environmental improvement plan. As we have heard, there is quite a lot of work going on in this space, so for us it is about ensuring that it complements rather than duplicates existing work.

A couple of areas that did not seem to be mentioned in the three bullets in the environmental improvement plan were monitoring and more research that needs to be done. As we have heard, there are evidence gaps, particularly around those pathways and how it moves through the environment. Those are two areas that we would like to see, in addition to what is written.

Q240 **Julia Buckley:** For a final word, back to you, David Henderson. Is there anything you would like to see in the new year in that UK plan on PFAS?

David Henderson: We would like to see the new regulator, as I say, set up as fast as possible. On PFAS, we are looking forward to stronger evidence and stronger regulation, and then we will get on and deliver the implementation of that as fast as we possibly can. We are committed to ensuring that the very high standards of drinking water are continued and, with the wider environmental rules around it, waste water too.

Chair: I thank the panel, not only for the quality of their answers but for the efficiency with which they have dispatched us to finish almost back on time. I am grateful to you for doing that this afternoon.

We have certainly heard a lot that has resonated with the first panel: a total PFAS monitoring approach, aligned with the class-based approach that we heard about from the first panel; informing our regulation of the

level of PFAS in drinking water and not just the current 48 specifics that we were looking at; more monitoring of soil and air-based PFAS, funded perhaps by the chemical industry, as you suggested; a precautionary approach; a "polluter pays" approach; and streamlining the regulator. They are all very good things that we need to put into the mix in our report. Thank you very much for your evidence this afternoon.