House of Commons

Environment, Food and Rural Affairs Committee

Oral evidence: Regulation of the water industry, HC 1041

Wednesday 20 June 2018

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Watch the meeting

Members present: Neil Parish (Chair); John Grogan; Dr Caroline Johnson; Kerry McCarthy; David Simpson; Angela Smith.

Questions 1 - 105

Witnesses

I: Rob Lawson, Chair of Water Resources Panel, Chartered Institution of Water and Environmental Management; Stephen Wielebski, Senior Consultant, Home Builders Federation; Nicci Russell, Managing Director, Waterwise; and Hannah Freeman, Chair, Blueprint for Water coalition.

Written evidence from witnesses:

- Chartered Institution of Water and Environmental Management
- Home Builders Federation
- Waterwise
- Wildlife and Countryside Link

Examination of Witnesses

Witnesses: Rob Lawson, Stephen Wielebski, Nicci Russell and Hannah Freeman.

Q1 **Chair:** We have a good mixed panel here, with a mix of gender. That is always good because we have to report every now and again to the Liaison Committee as to whether we have balanced panels. That is very good. Welcome very much to our inquiry into water. Starting with Stephen, please, could you introduce yourselves?

Stephen Wielebski: Thank you, Mr Chairman. My name is Stephen Wielebski. I am a consultant to the HBF. My background is civil engineering. I have been involved in the water and sewerage sector since I came into the industry in 1969.

Chair: Only yesterday.

Stephen Wielebski: It feels like only yesterday at times. In addition to water and sewerage matters, I am well versed in things like highways, contaminated land, geotechnics, foundations and the usual gamut of civil engineering matters.

Nicci Russell: I am Nicci Russell, managing director of Waterwise. We are a UK NGO driving water efficiency across the UK.

Rob Lawson: I am Rob Lawson, the chair of the water resources panel for the Chartered Institution of Water and Environmental Management.

Hannah Freeman: I am the senior government affairs officer for the Wildfowl and Wetlands Trust, and I am here as chair of the Blueprint for Water coalition, which is part of the Wildlife and Countryside Link.

Q2 **Chair:** Well done. Thank you very much. Thank you, all of you, for coming this afternoon. This is my first question: generally speaking, is the water industry fit for purpose and has enough been invested in infrastructure? I do not know who would like to start with that one. It is a very broad question. Stephen, seeing as you have so much experience, we will allow you to answer that one first.

Stephen Wielebski: I thought that was a disadvantage. It is an important question inasmuch as, relating to my experiences and looking at how the industry has evolved over the years, privatisation was looked upon as being a positive step forward, but one of the disappointments that have come from that privatisation has been a lack of investment. In particular, as we as an industry contributed to that investment through infrastructure charges, one of our primary concerns has been that it was never ring-fenced. We, the water and sewerage companies and, indeed, Ofwat have no idea of when, where and how that investment was made. We see across the United Kingdom that we have constraints in terms of infrastructure. We have water supply issues. In response to the general question, is it fit for purpose? It is probably nearly there, and there are aspects of the industry that need refining.

Q3 **Chair:** In some ways, some of the private companies would argue that at least, when it has been privatised, for all its faults, it has enabled investment to happen, whereas sometimes Government were not stepping up to the plate to make those investments. Is your argument very much that, while they have made investments, they have taken too much out of what the consumer pays and not enough of that has gone back into infrastructure? Is that your argument?

Stephen Wielebski: Very much so. A figure of £150 billion invested since privatisation in 1989 has been tabled. Our response to that has been, "Great, we are glad to see it, but where has it actually been invested?" We understand that you have to maintain the assets. You have to make sure there are no infraction proceedings under the wastewater directive and the water directive, but nothing has ever been disclosed in terms of how that investment has facilitated the development process and, indeed, the discharge of the water and sewerage companies' statutory obligation under section 94.

Nicci Russell: There are a couple of things. First, water resources as a whole have failed to be factored into economic growth under successive Governments. It is great that they are now at the table, but they have not always been. Secondly, it has traditionally been an infrastructure-heavy sector. The skills mix still reflects that, but infrastructure will not solve all the problems now. We need some of the more flexible approaches. The skills mix of the industry needs to reflect that: more data scientists, behavioural scientists and that kind of thing. We still need engineers, but not such a majority.

Q4 **Chair:** You are saying we need to take a slightly different view on the way the industry is delivered and water is delivered. Is that what you are saying?

Nicci Russell: Yes.

Rob Lawson: On the whole, the investment over the past 30 years has delivered positive outcomes for customers and the environment, but we are at a stage now, with factors such as climate change, population growth and the increased focus on environmental objectives, where a re-evaluation is appropriate. In terms of investment, there are some areas where investment is needed, particularly in water infrastructure. The current replacement rate is about one in every 200 years, so it will take 200 years to replace the current distribution network. That is obviously not sufficient. The risk is that that would lead to higher rates of leakage, more interruptions and less positive customer service. The solutions are challenging, because of the costs of doing that and the need to look at new technologies around smart networks. Continuous monitoring is probably the best solution there.

Q5 **Chair:** Hannah, what is the ecological point of view?

Hannah Freeman: There has been significant investment by water companies in the environment, and going into the next business plan round, but most of it is to do with meeting regulatory requirements. If those regulatory requirements were not there, what would happen? If we got them weakened, would we see more pollution incidents? We still had 1,902 pollution incidents, category 1 to 3, in 2016. To me, that is not good enough and we need to deliver more reduction in pollution incidents.

The other point I wanted to make is that, a lot of the time, wastewater infrastructure gets missed out of the conversation. That has a significant impact on the environment. We need increasing capacity with climate change and growth, yet the investment is not there to deal with that.

Q6 **Chair:** It is interesting that South West Water in particular, which is in my constituency, has had to do a lot because of the beaches and the cleaning of the beaches. Of course, that is where there is an issue about 3% of the population and 30% of the beaches. That is a real issue. It varies with water companies, but they probably need to do more. Your argument is probably beyond the water that comes out into the sea, but covers the way we manage our wetlands and issues like that, I suspect.

Hannah Freeman: Yes, the combined sewer overflows that allow releases not only into coastal water bodies but into our rivers, and the discharges from wastewater treatment plants.

Q7 **Chair:** Hopefully the Thames Tunnel will do some good here.

Hannah Freeman: The Thames Tunnel was a result of EU regulation. It was not a result of anything else.

Chair: That is an interesting point.

Q8 **Angela Smith:** Hannah, I read the comments you made about the overflows and the pollution incidents. My own view is that more written evidence giving more detail about exactly what the profile of that looks like would be helpful. To go back to Stephen, I take your point entirely about transparency; I really do. It is a really valid point. You say in your evidence that about £2.6 billion has been contributed by your industry since privatisation. Can you specify exactly where you think that investment and contribution should have been spent, in your view? It is such a broad investment profile that it would be really good to know where you think it should have been spent.

Stephen Wielebski: The original intention was that it was a contribution towards the delivery of infrastructure to meet the needs of a plan-led planning system. It did not satisfy all the investment requirements or the capacity needs. The industry signed up to it as being the right thing to do. We are part of this overall problem in terms of capacity; why should we not pay for it? The concern we have is that, having been targeted for specific investment in water and sewerage infrastructure, there are no indications and no records of where this investment actually took place.

Ofwat confirmed that it was just classed as general income for a water and sewerage company to deal with as it saw fit. It seems a shame that it was a lost opportunity: here was specific funding for specific intent and that intent was not followed through.

Q9 **Angela Smith:** What do you think is the outcome of all that? Where are the pinch points for your industry now as a result of what you say is lack of investment in key areas?

Stephen Wielebski: There are certain parts of the United Kingdom, particularly in the south of England, where until we had the market reforms, which came into being with the new charging arrangements in April, several water and sewerage companies were using the planning process to secure and leverage additional funding from developers for improvements in the network and wastewater treatment works. The industry was then saying, "Just a minute, we are paying infrastructure charges as well; we are gifting you income-generating assets and you want more?" We kept going back to the concept of the legislation under section 94. It was quite clear what a water and sewerage company had to do. If we have to pay for something because it is the right thing to do and it is what the legislation says, our industry has never, ever had a problem with that.

Q10 **Angela Smith:** In my constituency there is a building development starting now and the sewage treatment centre is being moved and enlarged through the contributions. There is a very transparent example of what can be done. Do you not think it is time now to think afresh and perhaps consider a more serious partnership arrangement, in which the builders recognise and accept the importance of building regulations in the planning framework and the contributions that they have to make, for instance embedding sustainable drainage in building regulations and planning frameworks; and, on the other hand, the water and sewerage companies perhaps recognise that they need to accept their responsibilities?

Stephen Wielebski: I would agree. They have to demonstrate leadership in this. We are a customer of the water and sewerage sector. It is beholden on them to engage with the industry. It has not been without our attempts to engage with them. We have come along with initiatives that have attempted to reduce leakage. We have a phenomenal working relationship with United Utilities in the north-west of England, where we have brought about a whole new concept of service pipe installation and dedicated training, with the aim of reducing leakage. It was through United Utilities that we produced above-ground automated meter reading.

We want to take that one step further. We do not have smart metering in the water and sewerage sector. It is far from smart. We want to be in a position and have been advocating a position whereby the customer can see their water usage. Another concept that we are developing is, with the likes of the Water Regulations Advisory Scheme, to produce an information leaflet that tells the purchaser of a new home the water-saving features we have provided and how they can respect and reduce their water consumption. We are very much an advocate for compulsory metering.

Hannah Freeman: Water resources have just started looking at a regional approach, to understand the regional needs of an area, rather than the particular water company needs or requirements, although this has not quite fed back into the PR19 business plans. Together with that, the water companies are also starting to develop drainage and wastewater management plans. There will be a regional requirement in that. We need to keep an eye on this, so the idea of place-making and the needs of an area get fed into the decision-making of the business plan and these management plans.

Q11 **Chair:** As we ask questions, if any of you want to chip in, that is fine, but do not necessarily feel the whole panel has to chip in on every question; otherwise, we will never get through it. My question is partly this: are there major infrastructure projects that are required in the next 30 years? Do we need more reservoirs? Can we rewet land and hold that water, to do it in a more natural way? Is it a combination of all those things? What are your views?

Rob Lawson: It is a combination. The National Infrastructure Commission report is quite clear on that, in terms of its focus on transfers in particular. Also, there is a likely need for new storage. There is a plan in the Portsmouth Water draft water resources management plan for a shared resource in its area for the south-east companies. Our view is that that needs to be at least accompanied if not preceded by effective demand management through metering. CIWEM believes that the fairest way to pay for water services is through metered charges. It also brings in the other things you mentioned around rewetting of land, particularly in terms of catchment management, which is part of the solution as well.

Q12 **Chair:** It is interesting. We have a lot of the population living in the east of England and a lot of the water in the west or the north. Can we balance the two?

Rob Lawson: It is an issue that has been under review for probably over 50 years. There were quite extensive studies in the 1970s about national water grids. They fell out of favour for a number of years. The NIC reports brought them into focus a little more. I know that companies like UU, Severn Trent and Thames were looking at some joint arrangements of a system operator model where they can transfer and share resources. Those kinds of schemes are possible. There are lots of challenges on the environmental issues around transfer of non-native species and water quality, and the impact on the indigenous species in the catchments that are receiving the water. There is also the challenge of the infrastructure itself. At the moment, leakage is around 22%. The risk is that, if the water goes from the north to the south, you could lose significant amounts on that journey if you are not careful.

Nicci Russell: Rob raised Portsmouth Water, which is a really good example of the need to look holistically. Portsmouth Water is clearly in the south-east of England. All its neighbours are seriously water stressed. Portsmouth Water is not, but it has identified a supply-demand gap as a result of its need to produce a reservoir for regional use. It needs to do more water efficiency to be able to provide that regional reservoir. It is really important to look at the issues holistically.

Stephen Wielebski: To pick up on that point, Portsmouth Water is probably the exemplar water company in terms of metering arrangements. It really does sanction smart metering. Coming back to the point that was made by my colleague at the end of the table here, one of the things that we constantly look to the water and sewerage companies to do is to map their assets and know the capacity of their assets. You really need to know what you have in terms of infrastructure capacity. Again, we have an exemplar water and sewerage company out there that has done that, which is Northumbrian Water. The net result of that is that developers know exactly where the constraints are and how they can overcome those constraints. A lot of the developments that take place in Northumbrian Water are the result of collaborate working betwixt the developer and Northumbrian Water itself.

Q13 **Chair:** The second question I have is this: does Ofwat's price review add enough competitive pressure to a monopoly water market? This is something I am quite keen on because, in their own areas, water companies are all but monopolies. They are private monopolies. Are they being controlled enough on price, and are they being controlled enough not only on the price but on the investment they make into infrastructure?

Nicci Russell: I have a confession: I spent four years in Ofwat. In terms of water efficiency, for example, the regulatory regime is really positive incentives-wise now. I support the fact that Ofwat has stepped back a bit and required the companies to talk to their customers rather than to Ofwat about what their customers need. That is really positive. It does mean you lose an element of control, but the rewards and penalties have been really positive. Southern Water had a financial reward for per capita consumption. It achieved a 10% reduction in the current price review period.

It is really positive in some areas, but there are other things we could look at. For example, Ofwat set a leakage target to the companies, and they are delivering it at a 15% reduction, which is no mean feat. It is not easy, but Ofwat said to do it and they are now doing it. It would be fabulous to see something similar in terms of per capita consumption or even requiring companies to look at smart metering across their entire customer base and how much that would cost.

Q14 **Chair:** I think the companies have to come and justify their capital investment, and then relate it to the charges they place on customers. Is there enough pressure there? I feel they get away with plenty enough and they spin you a line that they want all this money. I am not so sure that we entirely get value for money. I would prefer some competition. Private companies work better with competition and there is not really any.

Stephen Wielebski: We were hoping that the market reforms, in terms of the charging rules set by Ofwat and the charging arrangements, would have made that difference.

Q15 **Chair:** The trouble is that the competition at the moment is only really billing. There is not much you can save. A big company like Tesco can have somebody to do the whole lot, but it just saves the billing. Everything else is the same.

Stephen Wielebski: That is a fair point, but the whole idea of the market reforms was to introduce NAVs, which are going to be the alternative to the incumbent water and sewerage company. The problem we have is again down to performance KPIs. By the time Ofwat has determined that a licence can be given to a NAV and the NAV can go back whatever customer it wants to serve, it has gone past either the land acquisition due diligence stage or even the stage where an application has had to be made for water and sewerage. The whole question of competition is still quite undermined here by the way Ofwat is approaching the charging arrangements.

Q16 **Chair:** Some of my water companies will tell me, "Be careful what you wish for with competition. It will be the more rural population, because it costs more to get the water there, that pays for it". I feel that is a little bit of a threat.

Rob Lawson: The companies are scrutinised quite thoroughly on whether they spend what they said they were going to spend in their business plans. Whether that is transparent to the world outside, the members of the public and people like you, I am not so sure. It sounds like it could be better in that regard. On the whole, I would probably agree with Nicci, in that the ODIs and performance commitments that were introduced in PR14 have been positive. They have started to focus more on non-financial outcomes, outcomes for environment and consumption.

The point about leakage is really important. It is probably the single biggest step change in commitment that the water companies have made, on leakage certainly, since the 1990s. It has largely taken the financial aspect out of the equation. It is saying: achieve a 15% leakage however you think it is best to achieve it. That is quite revealing as to how the water companies will react to regulation.

Nicci Russell: I wanted to mention that, in driving for competition, we must be careful not to increasingly fragment the industry, because water is a holistic cycle. At the moment, we have water resources, wastewater, the water retail market, and we have kind of the environment over there as well. It is becoming increasingly fragmented with water management, which needs to be considered much more holistically and integrated.

Q17 **Dr Johnson:** Stephen, you talked about the charging of water companies and the charges that they face. In the last meeting here, we talked about the penalty charges that they can face when they do not provide the service they are supposed to. I am thinking about examples where people, particularly in the freeze/thaw that we had earlier this year, went for some period with no mains water supply at all. If you go without your broadband, your telephone or your electricity, you get your money back for the days' service you did not receive. Apparently, you are supposed to get that with water as well, but it is not clear to me either that that is happening or that anybody is watching to make sure that it does.

Stephen Wielebski: I have an isolated experience whereby certain water and sewerage companies, when they have failed their general customers, have provided them with a nominal level of compensation, but that is about as far as it goes. I am not aware of any other issues involving customers generally. To us, in terms of developers, our members and levels of performance, the best example we have is what takes place in the energy sector where, if certain KPIs that have been determined are not met, there is a level of compensation to the developer customer. That is the sort of thing that we should have in play with another part of the sector, which is the water and sewerage sector.

Nicci Russell: There are the general standards of service in the water sector. That is probably what you are referring to, but they are only about £10 or £20 a customer. In the recent freeze/thaw incident, quite a few of the water companies did offer more. Ofwat has said it is going to review it.

Q18 **Dr Johnson:** Some people got offered nothing. Some people are not aware that these even exist. Unlike a train where, if your train is late, they will hand you something on the way out, and the broadband people do it automatically, it seems for the water companies you have to know that it exists and how you apply for it. Do you not think it should be automatic? From what I can tell from my constituents who experienced the problem earlier in the year, there was nothing provided to them at all and they were not aware of any compensation mechanism.

Nicci Russell: Ofwat has said that it is going to review it, specifically in a document that it released this week. That argument is exactly the kind of thing that needs to be fed into that review.

Stephen Wielebski: I have one further point on that. As part of the charging arrangements, the indication was that, where developers provided a SUDS system, did not actually connect to the surface water drainage system or provided reduced water consumption below what was in the building regulations as they currently exist, water and sewerage companies would supposedly offer a discount on infrastructure charges. Some do, but others have taken the rather ambivalent approach and said, "You have done it, but you are not getting anything for it". We believe that sends the wrong message. We are all in this together. If we are making these commitments, surely there should be a reciprocal commitment that recognises our contribution to sustainable construction.

Q19 **Angela Smith:** Stephen, your evidence or the evidence your federation submitted was quite fascinating, because it recommends—tell me if I am misrepresenting it—much tighter regulation of the industry. The phrase you use is that the present light-touch approach is not working. Then you also talk about the new charging rules, and I almost got the impression that you would welcome an alternative approach, which would see liberalisation and the creation of a much more competitive market. Perhaps you could tell me where you are between the two, because on the other hand we have the case for integrated water management. I think this point about regulation is really, really important and I know that the institution has views on this as well.

Stephen Wielebski: There is a sequential approach. Our concern has been, with the latest reforms, that the light-touch approach really has not worked. We would have expected, and in our consultations with Defra and Ofwat at the time we advocated, far more prescription from Ofwat in terms of a clear direction to water and sewerage companies on how they should approach their new charging arrangements. Ofwat decreed or suggested that a light-touch approach should be the way forward, allowing as much flexibility as possible within the water and sewerage sector. We said, "I do not think that is going to work".

In fact, in our discussions following the introduction of the new charging arrangements of April of this year, there have been water and sewerage companies that have said, "We wish Ofwat had been far more prescriptive in its direction in terms of how the charging arrangements should come about".

Q20 **Angela Smith:** It is really interesting, because you then get someone like Dieter Helm, and I think the Social Market Foundation has had something to say about this, along the lines that Ofwat has been far too focused on analysing water companies and not focused enough on an outcomes-based approach. This is a fascinating debate, but you seem to veer more towards Ofwat being focused on the minutiae of how a company operates, which I am not sure about. I am not convinced.

Stephen Wielebski: We would like to see them being far more prescriptive in how they manage the water and sewerage sector. Once you have confidence in that sector, you can start to look at a light-touch approach. It is a case of saying, "Let us get the principles right first. Let us make sure we have consistency in the sector. Let us make sure we have no major outliers", which is what we have at the present time. If I say to you that the current state of affairs regarding the charging arrangements is such that we are even suggesting it should be the subject of an independent review, because it has not delivered what the industry customers are looking for, that gives you a flavour. They did not quite get it right. There should have been far more effective management of the sector by Ofwat.

Rob Lawson: CIWEM would say that the outcomes-based arrangements that were introduced in the last price review have been largely effective at a large scale across the industry, in terms of the ODIs and performance commitments that were defined. I have heard what Stephen is saying and I have talked to other colleagues from housebuilders who feel the same. The specific issue is something to consider. We have to listen to the concerns they have, because housebuilders are crucial in delivering sustainable new developments in terms of SUDS, water efficiency and so on.

I know that a number of water companies are looking at variable infrastructure charges to encourage water efficiency in developments. If that sort of thing is going to work, we all have to be on the same page, effectively. Overall, the industry has been privatised for 30 years. It has gone through its growing pains, and the move to more outcomes-based regulation on the whole is a positive move away from excessive, prescriptive regulation.

Q21 **Angela Smith:** You would want a review now of that regulatory approach.

Rob Lawson: Yes. The issue is that the picture is growing and it is wider. It is not just about prices and charges to customers. There is a much bigger need to focus on environmental outcomes. There is a much bigger need to engage with customers. There was a good quote, in one of the documents I was reading in preparation for this, that said it should be done with customers and not something we do to customers. Obviously, the industry exists to serve customers. It has to be done in a resilient and fair way, et cetera. Yes, the picture is bigger and that is why we recommend a review.

Q22 **David Simpson:** What impact has the new retail market for non-domestic water had on customers and the environment?

Nicci Russell: This is one of my favourite subjects in terms of water efficiency and retailers. It was a great promise of the retail market that we would see more water efficiency. We have seen pockets of it and there are some good examples, but year 1, as you said, Chair, has really been about other issues. We are working closely with the retailers, and we did an analysis that showed that more than half of them are not offering even basic leakage detection services to their customers. We would really like to see those retailers stepping up in terms of the water efficiency services they offer to customers. We think that will benefit the customers in terms of water and energy bills, but also the resilience of the service as a whole. I think those retailers will be the next in the political spotlight after the wholesale companies. They are now in a public sector service, so we are really keen to work with them to drive more water efficiency.

Q23 **David Simpson:** You believe it is helping the whole process.

Nicci Russell: Yes. The balance between competition and resilience is a difficult one and probably a longer conversation than we have time for today. I was expecting to see more water efficiency in year 1 than I have seen.

Chair: This is the non-domestic market, where there is actually competition.

Hannah Freeman: I would echo that. We have been seeing a lot more drive from Ofwat regarding residential water efficiency and assuming that competition would drive water efficiency in the retail market. We have not seen that. Also, over winter with the freezing pipes and stuff, the water retail market did not really cope. We are not sure they quite understood their role in events such as droughts, flooding and freeze, or the way to work together with water companies more widely.

Q24 **David Simpson:** Should domestic customers also be able to choose their water supplier? Rob, I know you are aching to get at it.

Rob Lawson: That is a tough question. There was an Ofwat review about 18 months ago, I think, that showed the benefit of being able to choose in financial terms to the customer was relatively limited, in the tens of pounds. The evidence from the energy market is that the driver for change in choosing a retailer in that market is more in the region of hundreds of pounds. The challenge is whether allowing retail competition for households would drive the market in the way that is envisaged. I am not 100% sure that it would.

Q25 **Chair:** Is it not "Lord, make me good, but not just yet"? You want a bit of competition, do you not? At the moment, you are chiefs in your fiefdoms. You have your fiefdoms. Nobody else can compete with you.

Hannah Freeman: It has not been shown to work yet.

Chair: I am not convinced there is not some competition that can be had there.

Rob Lawson: There may be some competition that can be had. I also refer back to Hannah's point about the benefits of having a vertically integrated provider that can address the customers as the guardians of the environment in which they live, and can have some credibility in that regard, which you may not have if you end up with a bundled service where you buy your water along with your gas and broadband. That is a different relationship and it risks water becoming commoditised.

Chair: There is the environmental side of it.

Q26 **David Simpson:** Nicci, why has water use increased since the market opened and how should water retailers improve efficiency?

Nicci Russell: They should be offering a water efficiency service to all their customers, however big or small they are. We would really like them to report on the carbon and energy savings, as well as the water savings, that they provide their customers right across the board, in their annual returns to Ofwat and the others that police the new retail market. There are all sorts of things. For a small or medium-sized enterprise, for example, most of the use in that business would be domestic. Taps, toilets, showers and the usual retrofit, which is not expensive, the fixing of leaky loos and these kinds of things would be really powerful for reducing the bills of those customers. We would like to see that across the board.

The other thing I would like to see, in the spirit of the retailers now being in the public service sector, is a commitment from retailers to specifically cutting the bills of schools and hospitals, for example, so public sector organisations that could really do with that money. That would be a really great thing to see from retailers.

Rob Lawson: One of the potential benefits of the retail separation is that non-household customers tend to have quite long supply pipes, which are the pipes that they own and are responsible for, but which the water company has to deal with the leakage on. Because those long pipes potentially can leak more than in the domestic setting, where they are relatively short, that is something that I know retailers are looking at more and is something that can deliver not only water savings but obviously environmental benefits in terms of leaving that water in the environment in the first place.

Hannah Freeman: We also see that there is potential from a sustainable drainage perspective with respect to surface water drainage charges. If a water retailer can work with customers through putting in SUDS to reduce their surface water, they can get reduced charges on that. That is a potential area where it could work but we have not seen it yet.

Stephen Wielebski: The retail sector is not one that really affects our members. We are mostly committed to our dealings with the wholesaler. The only time that we come into contact with them is when we have to separately secure connections and suppliers for things like show homes and site offices. Our commitment to them or our engagement with them is quite limited. In terms of competition, as I say, we have things like NAVs and self-lay providers.

Q27 **Chair:** To play one member of the panel against another, you talked about SUDS, Hannah. In the Home Builders Federation, you have the automatic right to connect to water. Some water companies may have difficulty with the drainage systems and so on, yet you do not necessarily have to contribute towards those, but very often you do. What is the balance? I can see both sides of the argument. The trouble is that, if the water companies had the ability to say you could not connect, they could then hold you to ransom. I do not want that. On the other hand, I think sometimes you guys get away with more than you should, because you have that automatic right to connect. Whose responsibility is it to make sure the drainage system works? It is not those who buy the houses, because they expect that to have been done. What would your answer be to that?

Stephen Wielebski: The automatic right to connect has been diluted a little bit. That is not a pun. In terms of surface water discharge, it is limited; it is what is agreed through the lead local flood authority in terms of the drainage strategy for a site. In terms of foul, one of the areas that we miss is that we do not really have any hard and fast data about water usage. Water usage is waste that comes out of a building. We are seeing in more recent reports that what water and sewerage companies have relied on to assess the capacity of their network have been some fairly high figures. If we have accurate figures, we can start to model the system to ensure we are getting the best out of our network.

Q28 **Angela Smith:** I totally take that point, but there is no mapping of sustainable drainage installations across the country at present. We have no means of benchmarking the development of sustainable drainage technology. You said earlier that you accept the principle of sustainable drainage. Do you not think we need to be properly mapping usage and installation of green solutions? Green SUDS, of course, are the answer, in the long term.

Stephen Wielebski: It is a very valid point, and we are looking eagerly at the work that MHCLG has been doing in evaluating the extent to which SUDS have been applied. From my own experiences, I did my first above-ground attenuation system back in 1976. It still works today. If you ever want to see the photographs, I am happy to provide them. It is the right approach. One of the problems that we have is that SUDS are not authoritatively defined. I think it was Peter Ellis at DCLG at the time who said that they really are a combination of things. Our overall objective is the effective management and control of surface water runoff, using a suite of options and recognising that water quality and discharge volumes are of equal importance. That is what we have always tried to achieve.

Q29 **David Simpson:** As a final question from me, what effect has the financial behaviour of water companies had on water supply infrastructure and customers?

Rob Lawson: I will make a start.

Chair: Go on; go for it.

Rob Lawson: I will go for it. In terms of customers, it has presented a challenge because it erodes trust. That is crucial. In terms of infrastructure, as I said earlier, the regulation for how companies invest is fairly robust and I do not think the arrangements that the companies have made for investment have affected that specifically. I know that the recent attention that has been on companies from you has driven some changes. More companies are taking stronger action in terms of their financial situation in places like the Cayman Islands. They are looking to invest long term in more of what you might consider to be appropriate investors, such as pension funds and so on.

Nicci Russell: There used to be a very heavy capex bias in this sector towards infrastructure because that is what the investors wanted to see. It is seen as a safer bet for them. We do not have that any more; we have totex in the regulatory framework. I hope that will deliver more for customers that they need, with all the uncertain challenges that we face.

Q30 **David Simpson:** This is the last point on the question. Are water companies taking enough action to increase transparency and share the benefits of their financial arrangement with customers? You are shaking your head, Stephen.

Stephen Wielebski: Definitely not.

Q31 **David Simpson:** Do you not want to think about that?

Stephen Wielebski: The evidence for that is very, very clear, in the way we try to tease out of the water and sewerage sector the data that supported their new charging arrangements. We were effectively presented with a fait accompli come 1 February. Since then, we have had further revisions to those charging structures, which have made it quite difficult for our members to look at what their costs are likely to be when they are investing in a new land and development opportunity.

David Simpson: More transparency is needed.

Q32 **Dr Johnson:** I have a supplementary on the use of sharing financial arrangements with consumers. Michael Gove, the Secretary of State, in March commented on the remuneration of water company CEOs and corporation tax.

Chair: He was not very complimentary.

Dr Johnson: He said that some companies pay no corporation tax and Thames Water had not paid any for a decade, and chief executives were being paid quite a lot. Do you think that being a CEO or chief executive of a water company is so arduous or so challenging that it is really worth five to 15 times the Prime Minister's salary?

Chair: Rob, that is a hard ball. Do you want to give an answer?

Rob Lawson: I am reluctant to give an answer to that one. They are private companies and, as such, it is difficult for us as an institution to respond on that point.

Chair: They are private companies that are monopolies. This is the interesting one.

Q33 **Dr Johnson:** If they are private companies, they should pay tax, should they not? If they are a monopoly provider of a public service, not paying tax is perhaps more understandable. They are private companies that are taking their profits to then give their chief executives salaries of 2.5 million quid a year. You cannot have your cake and eat it.

Rob Lawson: No.

Chair: Stephen is tempted with this one.

Stephen Wielebski: I am definitely tempted. We have dipped into various companies' accounts. Some of the things we find are quite interesting. I am not an accountant; as I say, I am an engineer. But when you start to look through the balance sheet, and you see amortisation costs of something like £345 million, you think, "That is in there for a purpose and that is impacting upon that company's ability in terms of paying corporation tax". Our belief is that Ofwat, although it says it is not really there to govern the financial management of a water and sewerage company, should take far more interest in it. At the end of the day, the benefits then accrue to customers, not just developers, but the general customers like you and me. There should be far, far more scrutiny of accounts.

Chair: Hannah, go on. Are you going to put your two penn'orth in there?

Hannah Freeman: I will reiterate the fact that water companies are still polluting. Their wastewater networks are reaching capacity and are ageing. There is a lot more investment that could be put through. Yet many water companies argue against such investment according to affordability.

Q34 **Chair:** Can I tempt you to say that the money that is paid to the chief executive should be spent on procuring that?

Hannah Freeman: A lot more investment is needed in the environment and in assets to keep them going for long-term sustainability and resilience than they are currently putting in.

Q35 **Angela Smith:** It is the money that goes to shareholders that is really the problem, rather than the remuneration of the chief exec. It goes back to that point about the regulatory function, and whether financial regulation is to be a fundamental part of any review of regulation.

Rob Lawson: It also goes to the point of trust, the leverage the companies can have and the conversations the companies can have with their customers about things like water efficiency and demand management. Ofwat is looking at this topic. It has brought out this thing about bringing the sector back into balance. It is looking at how the industry is financed and funded. The point that Hannah made is a valid one.

Chair: A lot of these questions we will naturally put to Ofwat on the 11th, but it is interesting to get your views. Kerry, you have been so patient.

Q36 **Kerry McCarthy:** I want to ask about water abstraction in the first instance. Defra brought forward plans at the end of last year, but we have been there before in terms of it being flagged up as an issue. I particularly wanted to know whether you thought the voluntary approach was sufficient on this or whether the Environment Agency should have increased powers. I am looking at Hannah and Rob to start with.

Rob Lawson: Generally, we are supportive that the new abstraction plan has come out. There is a concern that a voluntary approach is not what was expected when the consultation on this was originally put forward. There was an identified need for primary legislation relating to a new way of abstraction licensing in terms of water shares, current system plus and so on. That is no longer happening. It is now on this voluntary basis with catchment partnerships and so on. The catchment partnerships side of things is correct; the concern is around how effective the voluntary aspects will be and how well they are funded and supported by all the interested parties.

Q37 **Kerry McCarthy:** There seems to be quite a clear consensus that the catchment approach is the right way to go. It hinges on the voluntary thing.

Hannah Freeman: And on the Environment Agency's ability to monitor and have the resources to manage it correctly. The abstraction plan that came out is obviously just tweaking the current system, yet people have been saying for years the current system is past its best before date and it needs updating.

Q38 **Kerry McCarthy:** We have obligations under the water framework directive. Will this get us towards meeting those obligations?

Hannah Freeman: We see in the abstraction plan that it is possible to reduce current levels of abstraction with the current abstraction plan, so that we get to a point where we might have a sustainable abstraction process, with the restoring sustainable abstraction plan and the current ability for the Environment Agency to do what it does. However, it is not future-proofed. I do not believe it is a system that will deliver long-term sustainable abstraction, with climate change, growth, growing industry and the needs of a growing economy. How will the current system ensure a fair abstraction system for abstractors, if some existing extractors will never get their licences looked at, whereas new extractors will be required to have a reviewable process?

It is an unfair system and, unless we sort it out, it might be able to deal with the current problems, but I do not see it being able to deliver for the future problems. We would like to see the ability to review all licences if there is a trigger that suggests that a water body catchment is reaching levels of unsustainable abstraction. Then you can look at the whole system and all the abstractors and work out between everybody how to ensure abstraction remains sustainable. All licences would have to be reviewable, then, on that trigger.

Q39 **Kerry McCarthy:** Have the Government or Defra rowed back from primary legislation? Do you think they would accept that primary legislation was the way forward, were it not for the fact that there are so many other demands on their time because of Brexit? I think, Rob, your organisation gave evidence to that effect. Do you think Defra really knows that this approach is half-hearted and is unlikely to achieve the end goals, but it is simply not in a position to push it further?

Hannah Freeman: At the moment, it is all that is in the 25-year environment plan.

Q40 **Kerry McCarthy:** Yes, exactly. I think you also said that nothing is going to start happening on this until 2020 anyway. I do not know if Rob or the other members of the panel want to come in on that.

Rob Lawson: As you said, it is in the evidence we have provided that that is our understanding around the legislative timetable.

Q41 **Kerry McCarthy:** It is not driven by evidence as to what we need for our water system; it is driven by the practicalities of getting laws through.

Rob Lawson: Yes, there was surprise in the institution when the consultation that had previously been carried out on the future options was not being implemented. In terms of how well it will be delivered, I know from Environment Agency colleagues that they are totally committed to it, behind it and are taking it forward through the pilot catchments and so on. It really needs that senior level of support from Defra to make it happen.

Q42 **Kerry McCarthy:** I think we have seen this in other areas where it is the Environment Agency's role, such as flooding. The Environmental Audit Committee, which I also sit on, did an inquiry into nitrates. It is one thing even having the powers, but I think there is a whole future inquiry on funding and resourcing for the Environment Agency that needs to be done, because so much is being put on its table, but it will not mean very much unless it can do its job.

If I can ask about pollution incidents, at the moment—I am juggling lots of bits of paper—I think there has been increase in the number of fines that have been imposed recently. Are they enough to change the behaviour of water companies? Do they have much effect?

Rob Lawson: The fines get the headlines.

Q43 **Kerry McCarthy:** Is it more of a reputational risk than a financial hit?

Rob Lawson: It does have a reputational effect. One of the concerns we have is that the fines are the least bad option. Whether they are proportionate in terms of the capital cost or the operational costs of remedying the issues at source is something that needs further investigation.

Hannah Freeman: Looking at some of the biggest investments by water companies, such as the Thames Tunnel and Welsh Water in Llanelli, there is a real risk that that sort of investment might not happen if there is no risk of UK infraction at an EU level. The Thames Water fine apparently is equivalent to 10 working days' profit of Thames Water. Although the scale has got bigger, given a water company's profit margins, they are still small.

Q44 **Kerry McCarthy:** I know water companies have said in the past that they go beyond the call of duty in some ways, in that, when agricultural pollution enters the water supply, they are voluntarily paying to clean it up, because it has an impact. Do we need to perhaps look at this? You have a catchment approach to water abstraction but, in terms of pollution, do we need to be casting the net further and not just looking at the water companies' role?

Stephen Wielebski: We do. When you look at the agricultural industry, the runoff of nitrates and phosphates causes a lot of problems in our river system with eutrophication, which is algal growth, which in turn can affect river capacity by as much as 25%. This idea of the polluter pays principle is the right principle to have in place. It is a case of having the penalties appropriately matched to the organisation.

Hannah Freeman: The potential of a new agricultural policy is huge. We could get real opportunities for delivering public benefits from a new land management policy, but it needs to be based on a strong, monitored and enforced regulatory baseline.

Chair: Do you also feel that the water companies need to be more involved in that policy? At the moment, they are not enough.

Q45 **John Grogan:** The big vote is only four or five minutes away. I will just throw two topics on the table, if any of you have any quick thoughts on them. On smart water metering and so on, it has been suggested it should compulsory. Do you have any thoughts on that? Secondly, for any of you who deal or whose colleagues deal with the whole of the United Kingdom as opposed to just England, the way water companies work in Wales, Scotland and Northern Ireland is slightly different. Does it make any difference to your organisations, either better or worse, in dealing with those sorts of models or do you not notice the difference? Those would be the two questions.

Chair: Especially Scotland, which has one company, so no water companies compete with each other.

Stephen Wielebski: I will deal with the metering aspects of it. We do not have smart metering in place. It is far less than smart. As we said earlier, Portsmouth Water is probably the exemplar water company to go and have a look at. It is an area that we really need to focus on. We need to have that ability for customers to look at their water consumption. At the moment, it is lying down in the road, looking at a water meter in a chamber. Some of the more advanced companies have readers on the back of bin wagons, but that is not smart metering. Smart metering is being able to monitor your consumption. We have seen, by being able to do that, that consumption falls quite dramatically.

Nicci Russell: On smart metering, and the National Infrastructure Commission made this clear, a smart meter in every home would be at worst cost neutral. CIWEM mentioned that in its evidence. On metering, the body of evidence is heading towards everybody having one, but really they should not be putting dumb meters in the ground any more; they should all be looking at smart meters.

Chair: Do not talk too much about meters. We have a question about that in a minute.

Nicci Russell: In terms of structures, there needs to be more water efficiency under whatever structure of the industry. The greater the Government interest in the water company, the greater ability there is to bring planning, energy policy and economic growth all together with water resources. That would be a really positive element.

Hannah Freeman: Welsh Water in particular, which puts all its profits back into its company, is an interesting one to look at, because the emphasis on customer, environment and public benefits, where it is a public interest body, is much, much greater.

Rob Lawson: I would agree and, as a Welsh Water customer, Welsh Water as a company has greater trust, going back to that point, when it is not paying out to shareholders. If the metering point is coming up later, I will hold off making any comments on that question.

Q46 **Angela Smith:** I wanted to check something with Hannah before going on to my question. Hannah, you said something about the Thames Tunnel. I am assuming you meant the Thames Tideway Tunnel.

Hannah Freeman: Yes.

Q47 **Angela Smith:** The cost of building the tunnel is £4.2 billion. That cannot possibly be 10 days' profit for Thomas Water. It is just for the record, so we get that clear.

Hannah Freeman: No, sorry. The 10 days was with reference to the last Thames Water fine, which was I think £20 million.

Q48 **Angela Smith:** In terms of the overflows that had led to the building of the tunnel. Sorry, both Caroline and I misunderstood you.

Hannah Freeman: I do not think it was with reference to that. It was its last fine, which was last year, I think, for water quality. It was charged £20 million.

Angela Smith: They are not fines from the European Union. They are talking about fines from Ofwat, because European Union fines would have been quite significant, if they had been levied.

Sitting suspended for a Division in the House.

On resuming—

Q49 **Angela Smith:** We have seen all the plans that have been presented for balancing supply and demand. I think everybody on the panel believes that reducing demand should be given priority over increasing supply of the resource. Do you think water transfers between regions are a realistic way of improving resilience in the long term? I know we have to build some new reservoirs and all the rest of it, and Yorkshire Water does a lot of transfer within the region, but do you think it possible to do it between regions?

Rob Lawson: It is certainly possible to do between companies. Water Resources in the South East, which is the collection of various companies that have collaborated on water resource planning in the south-east over the past 10 years or so, is looking at quite a lot of intercompany transfers of that scale, in that part of the country. Thames Water is also looking at a Severn to Thames transfer using various different routes. That could go as far up into the Severn catchment as the Elan Valley, so that is quite a significant transfer.

Q50 **Angela Smith:** Is that mid-Wales?

Rob Lawson: Yes and, as I said earlier, that sort of scheme has been mooted as a potential solution for many decades. I referred earlier to some work that UU, Severn Trent and Thames have looked at around a system operator-type approach to sharing resources, presumably across those company boundaries.

Yes, it is feasible, but there are very many challenges. There are infrastructure challenges. As I said before, the current levels of leakage suggest there is a risk of losing a significant amount of that water before it gets to its destination. The environmental challenges are not insignificant either. There is a balance to be struck between those sorts of transfer schemes and more local resource schemes. It would be interesting to see what role the water industry national policy statement has for those large schemes and how it will influence how schemes of that magnitude go through the planning process.

Q51 **Angela Smith:** It is interesting that some of Sheffield’s water comes from Severn Trent, even though we are in Yorkshire Water, because we are right on the boundary. In fact, one of Severn Trent’s reservoirs is in my constituency and the infrastructure has been there for some time. That is a very local example. I understand from what you are saying, Rob, that the capacity for transfer may, in the end, perhaps be limited by the economics and the structural challenges.

Rob Lawson: To some extent, it is pure engineering, but one of the challenges is that regulation of the industry is set up so that individual companies can be self-sufficient. To date, there has been relatively little focus on how companies can share resources in an optimal way. One of the key points of the NIC report is to move away from that pure self-sufficiency into a system of more engagement between the companies.

Hannah Freeman: At the moment, the solutions to the water quality issue and the invasive non-native species issue tend to talk about having to treat the water before it gets put back into the river, for example from Severn Trent to the Thames. Before it gets to the Thames it needs to be treated and, therefore, has to undergo all these treatment costs. Those costs are not insignificant.

Q52 **Angela Smith:** Those costs would be there anyway, because the water is being used.

Hannah Freeman: No, because it goes back into the river, then has to come out and be treated again.

Q53 **Angela Smith:** Is that right?

Hannah Freeman: Yes.

Q54 **Angela Smith:** I do not think that is the kind of solution that we are looking at, is it? I would have thought we are looking at directly piped transfers.

Rob Lawson: Some of it is piped. Some of it would be through transfers such as the Cotswold canal.

Q55 **Chair:** Some would be raw water and some would be processed water.

Rob Lawson: Exactly.

Hannah Freeman: Of the water companies I have spoken to, not many would consider taking from the river and then treating it to water potable. Not many water companies are considering that. From what I understand of transfers, it is from another water source to another water source, and then it is abstracted at a normal abstraction point.

Q56 **Angela Smith:** That is my point; you would not do it. The regulatory challenges here are potentially around cost, and the charges that one water company may want to levy against another.

Rob Lawson: At the moment, the arrangements tend to be commercial if they are there at all. Some are more gentlemen's agreements, if you can put it that way. Whether they are sufficient for a national infrastructure scheme that is providing a significant supply to London, say, is a question that would be interesting to consider.

Nicci Russell: The central assumption of transfers is that the donor company will not be in drought at the time the recipient company needs it.

Q57 **Angela Smith:** That is where I was coming to. This is the point that we heard yesterday at the launch of the report by our APPG on Water, *Bricks and Water*. East Anglia is drier than Tel Aviv and, in the long term, it is considered that the north-west and Yorkshire will suffer periods of drought. It is hard to believe at the moment: I have 15 reservoirs in my constituency. In the context of climate change, to Nicci's point, this is surely not a comprehensive solution to the challenges that we face at all.

Rob Lawson: No, I would agree with that. It is evident in the NIC report, in which it is stated that there is a potential deficit, under an extreme worst-case scenario, of 4,000 megalitres a day. It estimates that 1,300 of that needs to come from transfers and other supply-side schemes, so you are right: it is not a comprehensive solution and it would require an increase in existing storage capacity in certain case studies, examples or options. We live in a weird part of the world for weather. Often we have droughts in one part of the company and not another, so it is not a given that the whole of the UK will be in drought at the same time. Equally, the opposite is not true either. That could happen.

Q58 **Angela Smith:** Yorkshire is pretty dry at the moment, it has to be said. The converse of this of course is demand management. The water resource management plans that we are now seeing from the water companies are surely a start to the process of reducing demand. There are all sorts of things there about labelling, meters and making sure that we understand the social science behind customer behaviour, culture and all the rest of it. Do you think that the development of these plans and this integrated approach are ambitious enough?

Stephen Wielebski: If I could offer a comment or an observation, as we come to grips with climate change and an increase in demand for potable water, it may be that this has to be a longer-term option from a strategic point of view. That may be the way to look at it. Look at what we have at the moment; get the best out of what we have at the moment. Look at reducing our demand for water supply, but have an eye on the long-term picture, which might mean that we have to invest in water transfer.

Q59 **Chair:** When you transfer water, it is alright if it is coming downhill but, as soon as you have to pump it uphill, it takes an enormous energy resource. You have to balance that environmentally. Also, do we need more water or should we recycle more in the areas where we particularly need it? Some of that could be used for agriculture, and then the water that we may have used for agriculture could go back for human consumption. We talk about the environmental aspects of bringing the water there, but there are also energy aspects of pumping it. Would anyone like a go at that?

Nicci Russell: On the ambition of the water resource management plans and then briefly on rainwater recycling, some companies are very ambitious in their water resource management plans; others have very little mention of water efficiency at all and certainly not an endpoint target. Some of them are very poor. Southern Water targets 100, which is a really positive ambition. United Utilities is the most ambitious, although it does not have a serious water resource problem coming in the immediate future, but it is doing it for affordability. There are multiple benefits from water efficiency.

We would like to see all the water companies in England and Wales committing to 100 litres per person or less, within that 25-year water resource management plan period. Within the five years of the next price review period, it would be brilliant to see them committing to double that reduction across the sector; it is about 5% at the moment. On greywater and rainwater, it is absolutely essential in terms of closed-loop systems, tying in with SUDS. It is a really good way of tackling drought and floods at the same time and we would love to see it in new build. It is more expensive in terms of retrofit, so it is important to build it in at the new-build stage.

Q60 **Angela Smith:** You already have ideas on all of that. My point is that water resource management plans are a really good idea within a water company and need to be more ambitious. There are lots of targets that all of you have recommended in your written evidence, which all concur. But when you look at the Thames catchment—I had a look at it yesterday—it has about six or seven water companies within its boundaries. Surely there is a need for an integrated approach. These plans need to knit together. We need more co-operation between water companies, housebuilders and your institution, Waterwise.

Rob Lawson: One of the points that we make is that collaboration in this area is key, as well as the need for leadership. All the stakeholders you mentioned, everyone from plumbers to academics and so on, need to be part of this, because it is about understanding customer behaviour better, as well as the nuts and bolts of more efficient fixtures and fittings.

Nicci Russell: Water Resources in the South East brings together those six companies. It has been successful in driving a regional approach. It would be great to see a regional water resource management plan. That would be really powerful.

Q61 **Angela Smith:** So not a water company plan, but a regional water resource management plan. That is a really interesting idea.

Hannah Freeman: Some of the outputs from the Water Resources East are different from the concluding options in the water resource management plan. Somehow, the connectedness between those regional requirements has not fed back into the water resource management plan. I would add that this regional outlook should not just be about water resources; it should also look at wastewater and solutions that meet both requirements and the environment, and bring the stakeholders together so that we can look at the regional needs of a place.

Q62 **Angela Smith:** Is the task of customer engagement harder on a regional level? I know that there is a lot of social science ongoing, in terms of understanding how to put consumers at the heart of all of this. Consumers in the Cotswolds, Cirencester, are Thames Water customers, so are paying for the Thames Tideway Tunnel. Apparently, Thames Water had quite a job, initially, to persuade customers that they should pay for the tunnel. I am sure that that challenge can be met, but would it present new challenges if we did things regionally?

Rob Lawson: It is an interesting question, because some of the evidence on drought responses would contradict that, in that the customers of companies adjacent to those that imposed hosepipe bans during the last drought also made reductions. There is a kind of spillover on a regional level. If you are in South East Water and Thames has a hosepipe ban, you would think, "Perhaps I had better save a bit of water as well". Sometimes regional answers work, and there was co-ordination about that across the companies in 2010 or 2011, during the last large summer drought. That is a positive and it can work. The question about the Thames Tideway being funded by customers in Cirencester is different really, because it goes to the point of how everyone in a certain region pays for the investment in that region, tariff baskets and so on.

Angela Smith: The principle is right. It is a bit like the postal service: you cannot have people paying more for a stamp in one area than they do in another.

Rob Lawson: It is an averaging thing. If you start unravelling that, you are into quite difficult territory between rural, urban and so on.

Nicci Russell: If you had a national campaign that regional and local campaigns could bounce off, like Love Food Hate Waste or that kind of thing, it would enable a more sustained or higher baseline level of knowledge among a lot of customers. If specific regional and local campaigns could bounce off that, it would be quite helpful.

Hannah Freeman: We need to increase the general awareness of the value and importance of water, where it comes from and the need for behaviour change across the board.

Q63 **Angela Smith:** Do you think water companies would face more pressure to reduce leakage regionally if they did that? That would be good.

Rob Lawson: The message should be—you might have heard it somewhere before—"we are all in this together". Companies that address those broader issues in an honest and open way have a better chance of engaging their customers to reduce or manage their own consumption. It is not about education or forcing down the message of reducing consumption; it is about providing people with the right nudges in lots of different ways to think about water, as Hannah said, and to use it in the most appropriate way possible.

Q64 **Chair:** Droughts and the need for water is an interesting one, because there could be a water company that has done better management, more metering and less leakage, which has a company next door that leaks like a sieve. Why should we say, "You have done a bad job, so you can have their water"? Why should I give you the water, if you have not done a good job? They are all private companies, so there must be a method in which they buy water from each other. On the other side of the coin, could you hold somebody next door to you to ransom on price when selling that water?

Stephen Wielebski: Is the role of an effective regulator not to bring about the consistency we need?

Q65 **Chair:** Exactly, but I am not sure they do much about that at the moment.

Stephen Wielebski: No, they do not.

Chair: We have Ofwat coming in, so it is probably a fairer question to them.

Hannah Freeman: I go back to what we all said in our responses. We have to see demand management first. We have to see ambitious demand management, before saying, "Yes, you can go ahead and deliver this supply-side scheme". It is an Ofwat role to manage the ambition of demand management against agreeing to supply-side options.

Rob Lawson: I have heard almost exactly what you just said, Mr Chairman, from customer groups of certain water companies that will remain nameless. The flipside of that is that water is a national issue.

Q66 **Chair:** It is not one big company, is it? The different companies are managed in different ways, you see.

Rob Lawson: Absolutely, and there are lots of those dilemmas or dichotomies that need to be addressed through the review that is ongoing at the moment.

Chair: What has been good in your evidence this afternoon, all of you, is that it has also given us lots of questions for Ofwat.

Q67 **Angela Smith:** I will change my question slightly, because some of the ground has been covered. I am increasingly interested in labelling. We have labelling for appliances for energy use, and this is what I am hearing constantly from different bodies interested in water: "Can we please have compulsory labelling for water use in appliances?", which of course reduces energy use as well. Everybody is nodding; you are all concurring with this. Perhaps explain why it is so important.

Nicci Russell: You can hang other things off it. You can hang incentives off it. It is really good for customer engagement. Water companies can offer rebate schemes. There are all sorts of other things you can hang off it. It is powerful in its own right, in terms of saving water, but also in consumer engagement.

Rob Lawson: I agree.

Hannah Freeman: There is current legislation that requires appliances such as taps to have a certain water efficiency measure, but the onus is on the owner at the point of installation. The companies that produce it do not currently label whether they meet that compliance. There has been evidence to show that customers, people like me going out to buy a tap, expect their appliance to meet those requirements, so do not ask about them. Therefore, there is no recourse for action for the producers that do not have the end responsibility to produce them. There is actually quite a lot of non-compliance in what is provided because nobody knows about it. If there was compulsory labelling, it could be managed a lot better.

Angela Smith: That is absolutely true: my energy use is much more consistent than my water use, it has to be said.

Rob Lawson: It is exactly one of those nudges that I mentioned in the last response that will help consumers understand what they are using and help raise the profile of water. It can also act as a ratchet over time, so the standards that might be enforced now on a water label would change over time and ideally be tighter in 25 years' time as technology advances. It drives the whole technological change as well.

Q68 **Angela Smith:** You get to AA+ and AA+ itself gets tighter. Just on rainwater recycling and greywater recycling, which Neil mentioned earlier, the Home Builders Federation was not exactly complimentary in its evidence. I have heard about problems in relation to these technologies, but I have to be clear about my own view. We should not give up on this at all, because it is a significant means of reducing demand in the long term. I absolutely think it is right.

Chair: You do not want to build the tanks to hold the water, do you? That is the trouble.

Angela Smith: We have green sustainable drainage options that help to deal with some of these rainwater issues. I will not go through it all, but it would be good to have the whole panel's view on the long-term prospects for innovation in greywater and rainwater recycling and harvesting.

Chair: We could be flushing our loos with rainwater.

Rob Lawson: There is an excellent example in north-west Cambridge of a development that has been built and is now occupied, where there is a community-level rainwater harvesting scheme, which was delivered partly because the landowner is Cambridge University and it wanted to deliver a green development. Also, there was a local planning requirement to build to 80 litres per head per day, which was the old Code for Sustainable Homes level 5/6. That is just about to be put into operation. The plant will be adopted by Cambridge Water. It looks like a very good example of what could happen with rainwater harvesting at a community level. I can provide more details to the Committee if you wish. At the individual household level, the challenges are greater, particularly in terms of the homeowner taking responsibility for maintenance.

Q69 **Chair:** Should it be part of planning permission to build all of this in? It is all very well to build it afterwards, but it is very expensive. Build it at the time. Put an underground tank under the drive or something as you are building the house and it would not be so difficult.

Angela Smith: Start with new build.

Hannah Freeman: There is also a discussion between the wastewater and water resources parts of the company. Greywater and rainwater recycling does not really add up on either side but, if they had to collaborate a bit more and work on more innovative solutions that met both wastewater and water resource requirements, we might see a different balance on their spreadsheets, which might be worth them looking at, in order to have a pilot project or innovate that way.

Q70 **Angela Smith:** The potential with rainwater harvesting and greywater use to release capacity in the sewers is quite significant, if we were to get it right. I wondered if we could have more of that information from the chartered institution. Finally, you all seem to agree that we should have strong targets for water consumption on a per capita basis. Do you all agree that Ofwat should set those targets?

Chair: Do you all say yes or no?

Angela Smith: And what should they be?

Nicci Russell: They should be 100 litres per person per day at the most, for the next 25 years. Recent research, including from Ofwat, has shown that we can get to 50 or 70 in 50 years. There is a need for a culture change within water companies. If chief execs could commit to this kind of stuff, it would just get delivered. Ofwat could set a frontier target in the period between draft and final business plans. It could set that at 10%, for example. Government are also working with us, the industry and others to develop a target. We do not really care who owns the target, but it would be great to have a target, and then everyone will just deliver it. That is my optimistic view.

Q71 **Chair:** You can probably all sign up to that, can you?

Rob Lawson: I agree with Nicci.

Q72 **Chair:** I do not want the Home Builders Federation to get away with this one, because you have not really answered the question about rainwater harvesting. It is very much down to new build because, if you try to do it afterwards, it is vastly expensive. What is your attitude and your members' attitude? I suspect they drag their feet.

Stephen Wielebski: Not entirely.

Chair: What does that mean?

Stephen Wielebski: To be perfectly honest about it, any system that deals with recycled water, whether it is rainwater harvesting or greywater recycling, has to be safe. We have cases in East Anglia where a family suffered as a consequence of the plumbing system having been altered post-occupation. If you go to Holland, where a well-supervised greywater recycling system was installed, it eventually killed two people, which resulted in the Dutch deciding that this is not the way forward yet. We need the technology to move forward. These are important issues. They are important for me as a designer, so I can ensure that the future occupant of that building is acutely aware of what they can and cannot do.

Q73 **Chair:** You could get that right, but I am not convinced that your guys are that interested, really. I think you are a bit more interested in finding reasons why you should not do it than reasons why you should.

Stephen Wielebski: Something that has not been discussed today as part of conserving natural assets is that, after the floods of 2007, the Environment Agency advocated water cycle studies. The water cycle study informs the local plan process. A part of looking after those important assets, as a planning policy, is rainwater harvesting. If it is dealt with in the appropriate way, it creates a level playing field. The next question is whether this particular Government moves to a carbon-counting economy, which is a possibility. We know that rainwater harvesting has a very high carbon footprint, so it could be that we make that decision only for it to be reversed another day, because of other considerations that have assumed far greater importance. Look at these things in the round; look at it as part of an overall package of options. The water cycle studies are the means of saying, at a local level, what the strategy should be for water delivery and, more importantly, how we manage wastewater discharges.

Chair: We also move into flash flooding and all these issues, where we have a lot more drives, tarmac and runoff. If you could store some of that water without it running off, there is another issue. We can probably debate this one all day. It is a virtuous circle. I do not think enough thought has been put into it, really. It has been dismissed too readily because of all sorts of issues, but mainly because you do not want to put it in, in the first place.

Q74 **Angela Smith:** If Innovate UK was to offer the federation the opportunity to engage in a project to develop the technology and make it usable, surely you would sign up.

Stephen Wielebski: Of course we would. We have a completely open mind. We are looking at SUDS attenuation ponds. Is it possible to use the water that they collect at certain times in a recycled context?

Q75 **Angela Smith:** Does the federation understand that it has a part to play in the social aspects and corporate responsibility?

Stephen Wielebski: Absolutely, it does.

Rob Lawson: Steve mentioned water cycle studies, which I have much mourned as a hydrologist. They were a really useful tool for delivering sustainable developments in the water cycle and took account of the aspects of floods, droughts, water supply, wastewater, SUDS and all of that. That is sad. Yes, on the carbon front, some of the joint solutions for SUDS and so on that you were referring to, Chair, address the concerns that were highlighted, by specifically looking at individual household rainwater systems.

Stephen Wielebski: To elaborate on that, we have had the devil's own job of trying to encourage water and sewerage companies to be part of a water cycle study. They have a part to play, but it is not their statutory responsibility.

Q76 **Chair:** We will encourage them to play that part, as long as you promise to play your part. That is the deal.

Stephen Wielebski: That sounds like a deal.

Q77 **Dr Johnson:** Mr Chairman, before I ask my questions, I wish to declare a potential interest, in that my husband's business has a contract with one of the water companies. I want to talk to you about leakage, because we know that the level of leakage currently stands at a quite outstanding 23% to 25% of all water supplied. That seems phenomenal and reading this was quite a surprise to me. Do you think water companies are doing enough about that?

Rob Lawson: They could do more. The Ofwat target has, as I said earlier, been a game changer. I am not sure that Ofwat expected that reaction when it was set, but one of the potential positives of regulatory competition is that, once one water company commits, others feel obliged to do the same, because they do not want to be left behind. Delivering that target will be hugely challenging; it will not just be 15% more than what they are doing at the moment. Maintaining leakage at current levels is a bit like standing on a big spring: if you take your foot off, it shoots up quickly. Getting down to that 15% will be a big challenge, but it is a positive step.

Q78 **Dr Johnson:** Can I clarify that? We have been told companies have been challenged to reduce their leakage by 15%. Presumably from 24% we are looking at a three or four-point reduction, so we would still be at 20%, or are you suggesting that they would reduce it from 24% down 15 points to about 10%?

Rob Lawson: No, it would be 15% based on their current levels.

Dr Johnson: We are talking about a three or four-point reduction.

Rob Lawson: Yes, in five years.

Q79 **Dr Johnson:** Why is that so difficult to achieve? Where is all this water going?

Rob Lawson: Over the last 10 years, the focus on leakage has not been as strong as it might have been. Resources and manpower have not necessarily been as focused on the job as they should be.

Q80 **Dr Johnson:** Where is the water going? They take the water out of the reservoir or wherever, they process it through their treatment plants to make it nice and clean, and then they send it in a pipe to somebody's home or business. Where is the water leaking?

Rob Lawson: It is across the whole infrastructure, from the large trunk mains that come out of the treatment works, through the distribution network, through service reservoir leakage, through the smaller pipes that distribute water to homes and through the supply pipes that sit between the water company and the house itself. That is something that we think is potentially a big problem.

Q81 **Chair:** Is that from the meter or the connection from the road or whatever into the actual property?

Rob Lawson: Yes, exactly. At the moment, 22% of leakage is on those supply pipes.

Q82 **Chair:** That would be the homeowner's responsibility, not the water company's.

Rob Lawson: The homeowner owns the supply pipe. The leakage belongs to the water company. Most companies offer some kind of free repair service, but the repair is quite challenging because it is on the homeowner's property, and the reinstatement costs and labour requirements are quite different from digging a trench in the road and repairing it with tarmac on top.

Q83 **Chair:** If you have a leak between the meter or the connection from the water company to your home, I always thought that was your responsibility, but you are saying it is the water company's responsibility.

Rob Lawson: It is the homeowner's responsibility. Many homeowners are not aware of that, though. If you are not on a metered supply, you will not necessarily be aware that it is leaking, unless you start seeing it appearing at the surface in some way. It is the homeowner's responsibility to repair it, but the leakage "belongs", in inverted commas, to the water company.

Chair: It is more difficult when it has been through a meter, because you do not know how much has been used and how much has been leaked, but I suppose you can look historically.

Rob Lawson: If it is through a meter, the homeowner is likely to be more aware that they have a problem, because they will see it on their bill.

Q84 **Dr Johnson:** You talked about smart meters. If you put a smart meter in somebody's home, it will show them every day how much they are using. Is that right? If you had a leak on your premises you would be aware of that much more rapidly. At the moment, unless you go down the garden and lift up the cover to look at your meter, you will not know that you have been leaking water until you have a horrendous bill.

Rob Lawson: That is correct.

Q85 **Dr Johnson:** At the moment, there does not seem to be a lot of incentive for companies. They might have bought into this target or they might not, because it is entirely voluntary. There is no great incentive for them to do it. I have personal experience of this: when we moved into our current home, we got a water bill for £1,700 very quickly. It turned out the meter itself was faulty and leaking. It took well over a year. Every three months they threatened to send the bailiffs round because we had not paid this bill and I would say, "I am not paying the bill until you fix the meter and tell me how much it leaked". We ended up in a situation where, for more than a year, the water company was not particularly interested in fixing it and I did not pay for any water. Eventually, they came and fixed it.

The question, I guess, is why they are so uninterested in fixing a meter when clearly they are not getting any money for the water I am using or for the water that is leaking. Is it that, because they have a monopoly, it does not matter?

Rob Lawson: That is something that you could surmise from that situation. It is not good enough really, from our point of view. It is water that is being lost and it is poor customer service. As you say, it is to the benefit of no one in terms of any financial situation, so they should have done better.

Stephen Wielebski: One of the things that we are battling against, and this may be a question that you pose to Ofwat, is that Ofwat sets what it calls an economic level of leakage. In other words, it costs more to deal with it than the cost of the water lost. That drives all the incentives within water and sewerage companies for when they intervene to deal with a particular leak. That is definitely something that needs to change.

Rob Lawson: It is changing with the 15% target.

Stephen Wielebski: That is only as long as it is enforceable.

Q86 **Dr Johnson:** One person's meter is not leaking as much as a meter in the middle of a town. I also wanted to question what you said about who is responsible for what. What happened with us is that this bill was mounting up into thousands of pounds. They were very clear that, once the meter had been fixed, they would set a fixed period of a fortnight, check how much was used then and send a bill for the whole of the period that the meter had not been fixed based on that fortnight.

Chair: So you did not use any water for that fortnight.

Dr Johnson: We did use some; of course we did. That was fine but, when it came down to it, because it had been more than a year they tried it on a little bit and said, "That allowance is only available for a 12-month period. After that, you have to pay the whole amount". They were not going to get away with that with me. I do not know whether they have got away with that with other customers, but it is a huge burden for individuals. For people who are particularly vulnerable, living with that kind of debt mounting up and letters threatening you every few months, coming to your home, is not pleasant.

Rob Lawson: I can understand that. As I said, different companies will have different policies on supply pipe replacement and the adjusted charges they make in those sorts of situations. It is an area that could be better dealt with. Personally, I had a similar experience when we moved into our house. It was not quite as extreme as your situation and, being a water geek, I was able to rationalise it quite effectively. It is a situation that occurs quite frequently and it would be better if it was dealt with in a more consistent and effective way. The 15% target will focus minds, but the need to address this whole supply pipe issue is not insignificant. At the moment, they are assets through which every single drop of water ends up going to get to any property and a significant part of the asset base underground that has not been addressed in any asset management strategy.

Q87 **Dr Johnson:** Also, we have to bear in mind that we are asking housebuilders to put in relatively expensive bits of kit. I tell my children to turn the tap off while they are brushing their teeth. We are all doing lots of these small interventions, but they are absolutely dwarfed by this leakage. I represent a very rural constituency and we hear about agricultural uses of water but, if we look at our graph, agriculture is in green; it is not even visible on the chart, because it represents 74 million litres out of over 54,000 million litres. We seem to be trying to look at how to save tiny little bits here, there and everywhere, without realising that there is an enormous amount that can be saved somewhere else.

Rob Lawson: I agree.

Stephen Wielebski: I agree.

Nicci Russell: You would expect me to say that we need both.

Chair: The point Caroline is making is that you need both, but one is disproportionate to the other and there is a massive amount of leakage out there in percentage terms. Are water companies and is everybody doing enough about it? That is the question.

Q88 **Dr Johnson:** We have a lot of finger pointing going on: it is the farmers; it is people not turning off the tap when they brush their teeth; it is people flushing their toilets too often; it is people washing their car. All of that pales into insignificance when you compare it with what the water companies are just allowing to leak.

Rob Lawson: Ofwat is attempting to address that.

Chair: It has had a long time.

Rob Lawson: It is right to bring up the point about economic levels of leakage. That has been in place for the last 15 or 20 years and, as the evidence that we submitted shows, leakage has not decreased over the last five to 10 years.

Q89 **Chair:** It has a huge impact from an environmental point of view, because you are using all that extra water that you did not need. Stephen, you wanted to come in.

Stephen Wielebski: I was merely going to go back to one of the early comments that I made. We as an industry have recognised just how vulnerable service pipes are, and that is why we spend quite a bit of time with pilot studies and procedures with United Utilities, and have a training scheme in place now, delivered through the water and sewerage sector, which costs developers nothing to ensure you have consistency in that connection and that it is a much better quality form of connection. Our difficulty has been trying to embody that in other water and sewerage companies. We have approached Water UK. There is a reluctance but we are not giving up, because this is an extremely useful sort of initiative and it saves the water and sewerage companies money.

When you match that to smart metering, and we are talking about real smart metering or metering within the house, it saves an awful lot of money. You do not have stop taps in the footpath, which are constantly being broken and need repair. It is a much better option altogether and, through our persistence, we hope to get this across all 19 water companies.

Q90 **Dr Johnson:** What do you think should happen if this target is not met?

Stephen Wielebski: Financial penalties.

Q91 **Chair:** The money for those penalties could be put back into fixing the leaks. We could do it that way, I suppose. Why has Ofwat not done this? Do you have any idea?

Stephen Wielebski: I do not know.

Chair: Again, the questions are queuing up for Ofwat.

Dr Johnson: The question is what should happen if the target is not met. Does anyone else want to come in on that?

Rob Lawson: I am assuming there will be performance commitments from the water companies to whatever level of leakage they decide is appropriate from them. They will suffer financial penalties as part of that ODI target if they do not meet that outcome. They will have a financial benefit if they exceed it.

Q92 **Dr Johnson:** We talked about the highly paid chief executives. Should they receive a penalty if they are not achieving what they are supposed to? Ultimately, who is going to pay these fines for not achieving the target? Presumably the customer is going to pay in the cost of their water.

Stephen Wielebski: I would venture to suggest that it should come off the water and sewerage companies' profits.

Chair: Also, if they wanted to extract any more water, we could say, "You cannot do that until you have brought your percentage of leaks down". That would concentrate the mind quite well. It is just a thought. Again, it is not for you all to decide that. I am just thinking out loud now.

That might be quite interesting.

Q93 **Dr Johnson:** What do you think could be done to reduce leakage? What could you see being done? Is it just a case of them not going out and fixing it at the moment, because it is not commercially profitable for them to, and it is entirely possible to reduce leaks, or is there more difficulty than that?

Rob Lawson: It is technically difficult. It is distributed. It is not a big leak that you can envisage bursting out of the ground. There are hundreds and thousands of tiny leaks and seeps on joints.

Q94 **Dr Johnson:** Do they know where they all are?

Rob Lawson: No, that is one of the big problems.

Q95 **Dr Johnson:** What is stopping them from working out where all these leaks are?

Rob Lawson: Technically speaking, they monitor at a detailed level at what are called district metered areas. They identify district metered area meters that are showing spikes in flow going through them, and they target those areas. That will be an area of several hundred properties, and they will try to identify the leaks within that area. The key point is that, in making that step change from where the industry is now to where it needs to get to with 15% leakage reduction, it will not do it through doing 15% more, as I said before. They will need to do things differently with things like smarter networks. If there were more smart meters, you would have a much better idea of the water balance. Who is using the water or how much water is being used compared to how much is being lost?

Q96 **Dr Johnson:** If somebody does not have a meter at the moment, there is absolutely no way of knowing whether their water is leaking.

Rob Lawson: That is correct.

Dr Johnson: That would be an argument for everybody having a meter and there being meters further back up the chain. Then they would be able to identify where it is very easily.

Rob Lawson: It would be easier. It is technically difficult to make those balances sometimes, because of the accuracy of meters and the sheer size of the network.

Q97 **Dr Johnson:** Is the leakage of 23% to 25% an estimate?

Rob Lawson: It is, yes.

Dr Johnson: They do not know what is leaking. The other question on leaks is who should be responsible for water that leaks on the customer’s side of the meter or within the customer’s boundary.

Rob Lawson: As it stands, it is the customer.

Q98 **Dr Johnson:** Do you think that is the right balance?

Rob Lawson: It was reviewed. There was a Defra review about three years ago and the recommendation was for water companies to adopt customer supply pipes. There are legal issues around the ownership of an asset beneath someone else's property. It never ended up being progressed, but that was the recommendation from the industry group that looked at that.

Dr Johnson: Is that everybody's view or do you have different views?

Chair: I am certain it is.

Q99 **Angela Smith:** Very quickly, the point about leakage is that there is quite a lot of innovation—there are so many puns in water—in the pipeline, in relation to robotics, diagnostics and so on. It should get better in the future, should it not?

Rob Lawson: Yes, and the argument is that that is probably the only solution, given where we are with the asset replacement rate. To improve on that will be to too expensive. To solve the problem of avoiding an increase in leakage but driving it down will require smart networks, data diagnostics and things like robotics.

Hannah Freeman: A good target will hopefully help drive that innovation in technology.

Q100 **Chair:** There must be some technologies out there. Are there?

Rob Lawson: Yes, there are definitely.

Chair: We are just not really using them enough.

Rob Lawson: That goes to the innovation question to some degree.

Q101 **Angela Smith:** The vast majority of clay pipe making in the country is in my constituency. There are increasing connections between the manufacturers and people doing the work in universities. Finally, the National Infrastructure Commission report recommended a 50% target by 2045.

Rob Lawson: It was 2050.

Angela Smith: Do you think that should be adopted by Ofwat in the control period 2019 as a long-term period, rather than just having the 15% to 2025?

Rob Lawson: It is a good question, because the obvious question, after that 15% reduction over the next five years, is what is next. The industry would prefer to plan for the long term, rather than just in five-year chunks. How they respond now in PR19 would probably be different if that was the case. A longer-term view would be appreciated, no matter how challenging it is.

Hannah Freeman: With respect to the five-year targets and then 25-year targets, if those five-year targets are not met, the next business plan is likely to reduce the long-term target, so that they do not have such a big jump in the next section. There is no follow-up on why you still cannot meet the target that you had put in before.

Q102 **Chair:** It is not good long-term planning. I think that is really what you are saying.

Hannah Freeman: Those long-term targets are movable over time, at the moment. It would be good to have more recourse against why they are being moved.

Q103 **Chair:** Very finally, I have a couple of questions here on smart metering. We have covered a lot of this. Should they be compulsory? If they are compulsory, how can we help those customers with larger families on lower incomes, so they would not be unfairly disadvantaged by metering? I do not know who wants to do a quick round-up on that.

Nicci Russell: We would like to see a smart meter in every home. They will enable water companies to know more about their networks as a whole, as we were saying just now, not just about the customers' use. They would not need to charge on meters. Some companies are already doing this: you have a soft landing. You say, "This is what your metered bill would be". It is easy to build in social tariffs. The second thing is water efficiency.

Q104 **Chair:** It would need to be a social tariff really.

Nicci Russell: Yes, that would help vulnerable customers pay their bill but, if you build in water efficiency as part of the metering package, it would help them manage down their bill as well.

Q105 **Chair:** My view is that, if you have to pay for every litre of water you use, you will always be a bit more careful with it than if you can just turn on the tap, do your car and water your garden. However much you love your garden, should you necessarily have the hose on all the time? You are all roughly on the same page on that.

Finally, one of my pet subjects is cisterns on toilets. I have an old one out in a shed. If you flush that one, I reckon it uses three or four times as much water as the modern ones do. They needed that much water to flush a loo for years, but then we moved to less water being used. Can we move to less water being used again? It is not only the water it uses to flush the loo, but how much goes into the sewer. The whole thing is linked. At some places you go to now, there is no water at all in the urinals. I am sorry to talk about these things, but is there a better way of managing water? This is linked not only to the water we use in the first place, but what we then have to process afterwards, so it is quite a serious question, albeit perhaps an interesting one this late in the day.

Rob Lawson: The regulation now is for a maximum six-litre flush. That has been the case since 1999. That includes six/four-litre dual-flush toilets, for example. Your old toilet is probably siphonic, which means there is no chance whatsoever of it leaking. Many newly installed toilets have flap valves and there is good evidence to show that between 4% and 10% of those toilets leak after a period of time, and those leaks could be quite significant, in the region of 200 to 400 litres per day.

Chair: They need to be put right as well.

Rob Lawson: Absolutely, yes.

Nicci Russell: Yes, here in Portcullis House.

Chair: We will get on to the authorities about that immediately. We must put our own house in order, as far as loos are concerned. Thank you very much for your very good evidence. Thank you for waiting while we went to vote. Luckily we only had the one vote, so we have finished around 5 o'clock. That is good. Thank you again. You gave us, like I said, not only good answers today, but a lot of ammunition for when Ofwat comes in on 11 July. Thank you all very much.