



Industry and Regulators Committee

Corrected oral evidence: Ofgem and net zero

Tuesday 29 June 2021

10.10 am

Watch the meeting

Members present: Lord Hollick (The Chair); Lord Allen of Kensington; Baroness Bowles of Berkhamsted; Lord Burns; Lord Curry of Kirkharle; Baroness Donaghy; Lord Eatwell; Lord Grade of Yarmouth; Baroness Noakes; Lord Reay; Lord Sharkey.

Evidence Session No. 2

Virtual Proceeding

Questions 12 - 22

Witnesses

I: Joe Perkins, Senior Vice-President and Head of Research, Compass Lexecon; Catherine Waddams, Emeritus Professor, Norwich Business School; Cloda Jenkins, Professor of Economics, University College London.

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Examination of witnesses

Joe Perkins, Catherine Waddams and Cloda Jenkins.

Q12 **The Chair:** Good morning. I welcome to the committee today Professor Catherine Waddams, who is emeritus professor at the Norwich Business School and a former director, now a member, of the Centre for Competition Policy; Joe Perkins, senior vice-president and head of research at Compass Lexecon and former chief economist at Ofgem; and Professor Cloda Jenkins, professor of economics at University College London and a member of the expert advisory panel to the UK regulators. Indeed, she headed the Ofgem regulatory review in 2008-10. We have three very good witnesses who know of what they speak and what we are interested in.

We have heard from quite a few sources that there are significant reservations about Ofgem's remit and its span and scale of activity. The recently published report from Iain Duncan Smith and his colleagues called for fundamental reform. Last week, we heard from two witnesses. You may be familiar with what they said. They were, essentially, also calling for fairly fundamental reform.

In your view, what needs to happen or needs to be changed to make Ofgem fit for purpose, in particular in the context of its responsibilities to regulate the journey to net zero? Perhaps I could ask Professor Waddams to start.

Catherine Waddams: I think there are two sets of questions. One is: what is Ofgem given as its objectives? There is a set of questions on that later in your list, so I will perhaps save some of what I am going to say for that.

There is an issue of what we expect Ofgem to do, and whether that is clear. There are real questions around that. We have a parallel at the moment in health, where we know that the Government have to make difficult decisions but informed by experts, and experts will have to implement them. We have the same issue here, where there is sometimes a lack of guidance to the organisation.

There is another question about how Ofgem is organised. Although I am from a business school, I am not an expert in organisation. I just point out that if we split it up and separate its functions, which may be very good for the clarity of the functions, we will not necessarily save money or have fewer people involved. Indeed, we may need more because we will need some co-ordination. This goes back to what Joe Perkins has been saying: we need to consider Ofgem in the context of all the other organisations and how it relates to them. That is my high-level approach to that basic question.

Joe Perkins: There are two levels of response to that question. One is: what could you do that would allow Ofgem to perform better within an overall energy system that broadly functions as it does at the moment, with BEIS as a cross-cutting business and energy department, and with a

system operator that is broadly part of National Grid, the infrastructure owner? Within that structure, I think you can give Ofgem more focus. You could take away some of the extraneous functions it has gathered over time, such as the delivery of some environmental schemes. You could perhaps strip away some of the slightly lower-priority objectives. That could help, but it will not make a fundamental difference.

The things that could make a fundamental difference are more systemic changes, which might be to create an independent system architect role, for instance, as opposed to the very narrow system operator that we see at the moment, and perhaps a more focused role from government. There has been talk in the past about a department for net zero, for instance, and a governmental push to drive net zero as opposed to the somewhat more fudged approach we have at the moment.

There are certainly much wider systemic changes you could make that would make a big difference. Narrowly looking at Ofgem, there are some tweaks you could make, but I would not expect them to be revolutionary.

Cloda Jenkins: In the interests of time, I will build on what the others have said and emphasise what the role of an economic regulator is. It is to ensure that the industry is delivering on its obligations. There are big questions around whether the industry's obligations are clear enough, but also what is relevant for net zero in energy is very different from retail generation and the networks. It is way beyond that in both governmental and private sector organisations. The message is that if Ofgem had clearer guidance on what was needed then its classic role of ensuring that that is delivered at least cost-efficiently over the long term and all that comes with that from competition and regulation can work, but it is the first stage that is and has been the stalling block for a long time.

Personally, I think that you can do a lot about protecting existing and future consumers. If there is any risk of legislative delay in tweaking its duties, then the cost of inaction is quite big. I would be tempted to work with what you have. There is a cultural issue around allowing the things that need to happen both in government and at Ofgem that needs to be explored as well.

The Chair: You are saying that the missing part—a rather important part—is the overall plan. Has Ofgem been pressing for the publication of an overall plan? Is it leading the charge for that? Is it participating in discussions on that? Can you give us any idea of what its role is in ensuring that we have an overall plan?

Cloda Jenkins: Maybe I could go back in time a bit. Certainly when DECC was around, Ofgem had quite a lot of joint working on plans—there were long-term energy network strategies, smart metering plans and Project Discovery—but everything seems to come up against political blockages. There is a real question about whether it is Ofgem's role to come up with the plan. The Climate Change Committee has obviously come up with a plan of some sort and is waiting for responses to that. I am not sure that it is Ofgem in isolation.

The Chair: Would anybody else like to comment on the missing plan?

Joe Perkins: I led Ofgem's decarbonisation action plan, which was published towards the start of last year. Although I would say this, I think it was a good document and put forward some interesting and, I hope, valuable proposals, but, if I am honest, it is not really a plan. It lays out a set of ambitions that Ofgem wants to achieve over the coming years, but not a comprehensive plan that could be a real road map towards net zero. There is a gap in the system. The general expectation in Ofgem would be that that would come from the Government, but there has not been a strong steer, particularly on very difficult issues like heating. We have not seen the kind of action that perhaps people like the Climate Change Committee suggest we need.

Q13 **Lord Burns:** In a sense the conversation has already started, so perhaps I could take it on to the whole issue about cost considerations in supporting the transition to net zero and what Ofgem's role is in that. As Professor Jenkins said, this issue is way beyond its normal role—the issue of how far there are costs on the industry and to households, and how they are going to be managed.

First of all, maybe you could help us on what the balance of the costs in getting to net zero is likely to be. How far have they fallen on wholesale? How far have they fallen on households? How is Ofgem going to take that into account in its pricing mechanisms?

Catherine Waddams: Perhaps I could start on that, linking it a bit to what we have already said. We have talked about the duty to consumers. Ofgem does not have a duty to citizens, but I wonder whether it helps for us to think separately about citizens, for whom net zero is really important, and consumers, who pay for electricity through bills. That makes a real difference in whether you want costs met through taxation or through prices.

This is not so much about the scale of the costs, although they will be large, particularly in the short term. We do not know how they will emerge in the long run. The costs of renewables have come down, for example, as we have used them. There is a real case maybe for subsidising new technologies, but certainly for recognising that they are going to be more expensive to start with.

Some of those costs should be borne by the taxpayer rather than by the bill payer. It makes a real difference, particularly if you charge per consumer. That is very regressive and falls very heavily on low-income households. There are other ways to do that—for example, through capacity or through maximum demand.

It helps a lot to think that maybe Ofgem at the moment has an unexpressed duty to the citizen, which is to do with net zero and which is for all our benefit, and a separate duty to the consumer, which includes what Professor Jenkins was saying about keeping costs as low as possible and delivering what you want to deliver. I find that quite helpful, and

maybe that is one way of thinking about these costs and where they should fall in the future.

Cloda Jenkins: None of us has a magic ball to tell you what the costs are going to be, because there is so much interaction. It goes back to the co-ordination issue. The question is not really about the best way to connect X gigawatts of wind to the network; we do not know the answer to that at the moment because we do not know where the wind is going to be. A real problem up to now has been waiting for some kind of certainty that is probably not going to arise in the timescale we are talking about.

You can turn it around and think, given that we want to connect X gigawatts of renewables to the system, about what is the plan for doing that. If we have the plan then there is international evidence and all sorts of things that we can do to try to make sure that that plan is implemented as efficiently as possible. We need smart metering to be rolled out more quickly and effectively so that we can make full use of energy efficiency at one end of the system. We probably need to do something about the system operator and its role, and how it interacts with the networks to make sure that the costs of balancing the system keep working.

Ofgem has done a huge amount on that. It is important not to underestimate how much has happened since the Climate Change Act 2008. A lot has been done with the existing duties. I am not going to pretend that it is perfect, but there are ways to manage the cost. I completely agree with Professor Waddams that this is what we call an economics and market failure problem. We do not normally expect bill payers to pay for these kinds of huge changes through a regressive system. For me, it is a bit like space exploration. There are risks to this that are possibly best borne by the Government, who have, at the moment, an incredibly low cost of debt compared with the private sector. The role for the public taxpayer in this is important to consider alongside the bill payers because the costs will be there.

Lord Burns: Many of us on this committee lived through the transition to North Sea gas in the 1970s. The bulk of that was done and funded centrally. It was rolled out in much the same way, as I recall, as the vaccine programme is being rolled out now. None of us paid any costs, as I remember, or they were very small costs in relation to households. Devices were adjusted and transformed. That was when it was one gas company. In this world, where it is heavily distributed, how are all the different parts going to be brought together so that something like the same sort of timetable can be achieved? I am very puzzled about that.

Joe Perkins: It is a very difficult question, which is right at the core of the problem. There is no real, central co-ordinating body in the way that perhaps there was in the 1970s. The system operator tends to see its role in a fairly limited way. It is essentially keeping the lights on. It has been pretty successful at that, but it does not have a wider planning role.

Ofgem and the Government do not really see it as their place either. I sometimes think that we have what, in practice, has been something like a command and control structure but without the drive to make things happen. We do not have, as you might want from a decentralised market structure, very clear price signals that lead all agents to want to transition to electric heating, for instance. At the moment, some of the pricing is actually going the other way and turning against electric heating. At the same time, you do not have the centralisation and co-ordination that you would need to make the transition work. That is a core problem, which is why, although there are things that Ofgem could do, I suspect that to get a real push you would need something like a department for net zero or a real governmental push to make it happen.

Catherine Waddams: I remember the transfer to natural gas. I might remind Lord Burns that in fact the British Gas Corporation was invented. It brought together the different gas boards, partly in order to enable that rollout. There were structural changes then, and perhaps that is what we need to look at now.

Q14 **Baroness Noakes:** I am going to develop a bit on what Lord Burns was probing, which is the costs that end up with consumers. It is all very well to think of Ofgem having a duty to citizens, but it does not; it has a duty to consumers. I would be interested in your views on how Ofgem can realistically interpret that, which is its primary duty, as it starts to take on obligations in relation to delivering net zero. Unless the Government make separate arrangements for taxpayers to pick up some, or all, of the costs, it will involve costs being imposed by the industry. Ofgem will, therefore, have the problem of being required to impose costs on the industry, which will flow through to consumers directly or indirectly unless something else happens. Is that an inevitable outcome of the current arrangements?

Joe Perkins: Ofgem's objectives are slightly more nuanced than being just about consumer interests. They are the interests of current and future consumers, including their interests in reducing greenhouse gas emissions. What that means is that there is some hook, at least, for Ofgem to take action on climate change issues, including if it were to increase consumer costs in the short term, for instance.

There is a fundamental issue. There is a wide range of trade-offs. Even if the overall costs will not be much higher—estimates from people such as the Committee on Climate Change say that they probably will not be—there are real trade-offs between different generations, different groups of consumers and potentially between how much the taxpayer is paying and how much consumers are paying. Those are not trade-offs that technocrats are well placed to make. That is a fundamental problem.

I draw an analogy—something that I am sure Lord Burns in particular will know very well—with Bank of England independence, where you have a very clear target for hitting a 2% inflation rate, and that is it. The technocrats just have to achieve that. In Ofgem's case there is a wide range of trade-offs that it has to try to manage, which it is not

necessarily well placed to do. I tried to do that and I am sure the current Ofgem people will try to manage those trade-offs sensibly and intelligently, but it is not something that technocrats are intrinsically well placed to do.

Cloda Jenkins: There are a lot of mechanisms—certainly on the price control side—that you can flex to stretch the cost. There is the length of the controls and how you set depreciation charges. There are three decisions to make. First, what is the total cost of delivering this efficiently? Secondly, how do we set charging for access to the network? There are issues around how the charging structures work that Ofgem has shied away from trying to deal with. Thirdly, there is how that transfers down to bills and tariff structures. Those three layers, certainly from my time at Ofgem, although it may have changed, were looked at very separately by Ofgem. That is something it could work on, without anything else needing to happen. That is all within its remit.

As has happened in water and in rail, as soon as you have to undertake investment, such as happened in the 1990s with water with the Environment Agency and the Drinking Water Inspectorate, when bills needed to go up to make our drinking water safe, there is always a push-back: you get utilities taxes or the NAO criticising the bill increases. There is a kind of lose-lose situation for regulators. As soon as they try to deliver on the environment or something that is more for the public good than the current bills, they get push-back on it.

There is a whole culture in government and in consumer associations such that we need to think about what our priority is. Is it net zero as low cost as possible, or is it not? If it is, we have to work on how to protect the most vulnerable consumers and make sure that those who can afford it pay the most and those that have the biggest impact on the system pay more. All those questions need to be looked at. As soon as we have the knee-jerk reaction, “Oh, prices have gone up. We can’t do this anymore”, we are never going to get anywhere.

Baroness Noakes: Is Ofgem well equipped to handle this?

Catherine Waddams: Before I answer that question, which I will come back to, I want to say how much I agree with the previous speakers. There are two ways forward, in a sense. One is that I know that Ofgem is looking quite carefully, for example, at the distributional issues of its policies and how it can measure and incorporate them in the decision-making of the organisation, both at executive and non-executive board level. That is very encouraging, but it also needs guidance. It can be an expert on what the trade-offs are, but not on what trade-offs to make. I think that is a really important distinction to make. I have now rudely forgotten the question.

Baroness Noakes: I asked whether Ofgem was set up well to handle those complex trade-offs and issues.

Catherine Waddams: I suppose it can handle the technical side, but it is not equipped, nor should we ask it to be, to make the other trade-offs that have been so well explained as regards the push-back whenever there is a price increase or something difficult. Net zero is difficult—very difficult. Somebody needs to say, “We’re going to do this”, and that probably is not the regulator.

Lord Eatwell: Could I ask about the philosophy behind the pricing strategies in Ofgem in this respect? Is the pricing strategy primarily geared simply towards distributional aspects with respect to consumers, or is it supposed to play the role of an incentive structure for the industry? Are those incentives supposed to guide the industry in the desired direction?

Joe Perkins: There is no one pricing strategy across Ofgem. There is a question, for instance, about how much money network companies should charge during the course of a particular price control. There is a question in the retail markets about retail price caps. There is also the question, which I think may be most on point here, about the structure of charges for the network: if you are using the energy network, how much should you pay if you are a generator? How much should you pay to connect? If you are a consumer, how much should you pay towards network charges? How that should be structured should be based on perhaps just a per-user fee or on how much energy you are using.

This is something Ofgem has been looking at for quite a while. I would not say that it has the answer yet. The fundamental questions it tends to look at are, first, whether the charges are cost reflective. For instance, if a new housing development needs to be connected to the electricity network, are the people who live there paying charges that reflect the cost of connecting to the network? They may also reflect things such as the cost of using the network at different times of the day.

Secondly, there is the distributional question. Are vulnerable consumers in particular paying more or less than other types of consumers? Is there a fair balance across different groups? That trade-off is the fundamental one that Ofgem faces with its—

Lord Eatwell: But, with all respect, the considerations you are discussing are all static; they are with the system. What we are talking about is a changing system and creating incentives for the system to change appropriately. It is not clear to me that incentives will work very well, but others would disagree. Is there thought about that in the pricing mechanism?

Joe Perkins: Yes. The charging reforms that Ofgem has been progressing over time, frankly far too slowly, although I would not particularly blame Ofgem—perhaps I am biased, but the system as a whole moves quite slowly—are trying to bring forward flexibility over a 10 to 20-year period. They are trying to set up incentives that mean, for instance, that the battery providers, pump storage providers and the

types of firm you would need to provide flexibility in the future have incentives to invest.

Q15 **Baroness Donaghy:** Following on from that, I was interested in Professor Waddams's statement about the taxpayer rather than the bill payer. Professor Jenkins talked about bill paying being a potentially regressive system. My question is about vulnerable consumers. Do you think that there should be greater emphasis on the costs for vulnerable consumers? What support will they need in the transition to net zero? Could it involve other agencies such as the DWP, or could it be fining bad landlords or something like that? There seems to be a particular problem about those who are vulnerable.

Cloda Jenkins: I completely agree. With my UKRN hat on, this is not unique to energy; it is an issue across all the regulated sectors and an area that needs a lot more work. Simple things like impact assessments and having to take more account of distributional impacts and average household bills would be a good starting point. We need better data on who these vulnerable consumers are and what they need. I am not sure that fuel poverty is the best measure anymore. The idea of the "just transition" is very important, and who pays for it.

I would like to flag that all the regulators, including Ofgem, are doing a lot of work trying to engage with stakeholders and consumer groups. Vulnerable consumers cannot represent themselves; I think that goes without saying. The resourcing for consumer groups is not great. There has been a lot of change over the years. We have lost Energywatch, which has been combined with "consumer first", or whatever it is now called. That means there is one person responsible for dealing with all these issues, who probably does not have the expertise to engage with them. Better resourced representation for vulnerable consumers is really needed, as well as more joined-up data.

A lot of the innovative behavioural things that people talk about do not work for vulnerable consumers. I can go out and buy a Google Nest and use it with my mobile phone, but the average vulnerable consumer will not know about that and will not be able to afford it. Different tools will be needed at that end. I am sure that Professor Waddams has more to say.

Catherine Waddams: I am afraid so. I want to distinguish, particularly in the context of this discussion, between two sorts of vulnerability, one of which is affordability. I think that is mainly what we are talking about here because of the increase in prices, but not only. There are other issues around consumers who cannot access, for various reasons, all the benefits or opportunities that are there. You might need a different strategy for each.

Fuel poverty is not a very helpful mechanism for protecting vulnerable consumers on the affordability side, and it varies enormously. It depends how you measure it, and the Government have for the third time just changed the way they measure it. For example, more older people tend

to be fuel poor according to expenditure measures, but if you ask people whether they feel they can afford energy, older people are less likely to say they cannot afford it. It is really important for policy how you actually define fuel poverty.

The other thing is that better insulation and better housing is really good for net zero. It is important that we pursue that. You heard from Catherine Mitchell last week about her personal experiences. It does not help a lot with fuel poverty, particularly if you look at how much people actually spend. It is important not to pretend that one mechanism or one tool that helps net zero a lot will help with the affordability issue.

You asked about other agencies, and I think that is absolutely right. The problem is usually one of low income, which we see particularly through energy because energy bills are such a high proportion of the expenditure of low-income households. The real issue across utilities, as Professor Jenkins said, is often low income rather than energy. That just exacerbates it.

The Chair: Mr Perkins?

Joe Perkins: I have no further comment.

Q16 **Baroness Bowles of Berkhamsted:** I have a cluster of questions about issues that, to some extent, we have gone a little way on. How do you think Ofgem's price controls have performed to date? How should they be adapted in the context of the transition to net zero? In particular, as we may slightly have touched on, what should Ofgem do to promote the investability of the transition to net zero? Is that where the state should be coming in, or is it all down to Ofgem?

In previous sessions, we have received the suggestion that the gas companies are being allowed to spend too much, bearing in mind the uncertainty around the long-term role for the gas network. How does that all fit together? What is being done right and what is being done wrong?

Joe Perkins: Taking a long span on price control, there was a very big surge in productivity immediately after privatisation, which suggested that the structures that were aiming to increase efficiency were having an effect, and that the price control process Ofgem went through was having an effect in increasing efficiency and getting benefits for consumers as a result.

That has stalled over the last 10 to 15 years. We did some work on this and found little progress over a 10 or 15-year period. RIIO-1, the previous price control, was trying to change that. It tried to make companies more innovative and more reflective of the needs of consumers, on the basis that there would be very big changes to the energy system. In practice, frankly, it ended up overpaying companies quite a lot without really leading to the fundamental change in approach that you might want to see. Companies did very well, but we have not seen fundamental change in the energy networks. There are some good

moves in RIIO-2, the price control that is coming up, but we will wait to see whether it really has that type of impact.

On your question about gas networks, a lot of it comes down to the lack of a strong steer on the future of heating. Gas networks are being upgraded to take hydrogen. That is a very costly process and may prove fairly pointless if we do not actually transition to hydrogen heating. In a situation where there is no very clear steer about what the future will look like, of course it makes sense, to some degree at least, to make those kinds of investments.

Cloda Jenkins: I feel that I should come in and defend RIIO a little bit. RIIO was designed post Climate Change Act with the delivery of a sustainable energy sector in mind. The scale of that is obviously huge when you put it into net zero.

The design and the potential is there. Joe is right: RIIO-1 did not deliver as expected. It goes back to my point about knee-jerk reactions. This is supposed to be a longer-term framework. If you move too early, you will undo some of the incentives that are in place, but I think the implementation of the price control is what Ofgem needs to work on.

Going back to the earlier conversation, having a plan would really help. RIIO is all about what outputs need to be delivered. If you come unstuck there, as in there being no plan of what the outputs are and how much people are willing to pay for them, you need to have honest conversations about how much they cost to deliver. This is where Ofgem has been quite cautious historically. Some of us remember that, after the transmission review of 2014, renewables could not connect because investment had not been allowed in the grid. The old standard of allowing investment only if there is evidence that it is definitely needed will not work here.

Ofgem has to be allowed to take some risks. There is a risk of overinvesting, but there is a real risk of underinvesting too. What Joe is referring to in RIIO-2 is more adaptability and building correction mechanisms in a longer-term control. I am disappointed that Ofgem has gone back to five years, but there are other ways of getting a longer-term focus into the planning. The industry has to take risks, but Ofgem needs to take some risks too and be less cautious than it was in the past. That reinforces the culture of not taking the risks that are going to be needed.

Q17 **Lord Grade of Yarmouth:** All roads in these discussions seem not necessarily to end up with a plan to replace Ofgem or break it up but to lead to a complete political vacuum. If there is no overall long-term plan you cannot expect Ofgem to adjust accordingly and so on. Do you feel that, or do you feel that there is a long-term plan and Ofgem is just not capitalising on it?

Catherine Waddams: We have heard how difficult it is to make a plan when the bits round the edge are not there. There is a political vacuum.

The National Infrastructure Commission pointed that out in its report and wanted to introduce a duty on the Government to give guidance within three months on these sorts of trade-offs.

Regulators are damned if they do and damned if they don't. Having just been a non-executive director of the water regulator for eight years, with much less difficult lines, in some ways, to tread, it seems to me that it is a huge problem for Ofgem to know how it is supposed to plan when it does not know what the trade-offs are, or indeed what the environment is within which it is making those decisions. You view correctly where the roads are leading and I would agree with you.

Lord Grade of Yarmouth: Moving on from there to a very general question, would you advise your children or your students to take a job at Ofgem? Is it seen as an exciting opportunity? Is it able to recruit the best and the brightest, or is it seen as a bit of a dead end?

Cloda Jenkins: That is a really good question. I teach a regulation economics course and regularly encourage students to apply to all the regulators. I think Ofgem struggles to retain good people. Staff retention is a problem, particularly among the economists and probably the top engineers and top lawyers as well.

Lord Grade of Yarmouth: Why is that, do you think?

Cloda Jenkins: For me, it is about the silo approach. You do your price control review and then you wonder what you do next. There is no joined-up view of, "There is this big challenge, so how are we going to do it?" Most of my students are more interested in going to work for Defra or for BEIS on energy than they are for Ofgem. That might be a sign of where they think the action is. There is a whole group of economists in BEIS doing things, which are not necessarily getting through to Parliament.

On your previous question, the places where this has worked best are not government, Ofgem or industry. It has been in joint working groups. If you think about getting onshore transmission off the ground, and even smart metering, which took a very long time to get off the ground, it started working best when people got in a room and put their heads together. That is what this needs. It might ultimately need Secretary of State guidance to Ofgem, but the department probably needs some help working out what that might be.

Lord Grade of Yarmouth: The last question from me is this. Leaving aside the decision on who is going to pay to get us to net zero, whether it is through general taxation, billing or a combination of both, do you think that the way to protect the public from excessive profits, et cetera, is more competition, or is it more price control? You are probably going to say that it is a balance of both—that is what people usually say—but if it is about more competition, is the present environment conducive to new operators coming in and making a difference on pricing?

Joe Perkins: I am rather sceptical. There has been lots of effort by the Government and the regulator to bring in competition on networks. I am fairly sceptical about the scope of that. There is some ability to contract out, particularly if you have an independent system operator. It can perhaps run competitions and auctions to bring forward more competitive provision of network infrastructure, but fundamentally it is a natural monopoly. The scope for competition is relatively small.

In other parts of the system, such as in generation and contracts for difference, there has been much more ability for competition, and prices get driven down very significantly. I think the scope for much more expansion there is limited. I would love to be wrong, certainly as an economist, but the scope is probably fairly limited.

Q18 **Lord Eatwell:** I would like to ask about the systemic issues that Ofgem is required to assess, the key one of course being security of supply. Previous witnesses have said that the structure is going to be very complex and diverse, and that they hoped it would cover security of supply. I find the word "hope" rather disturbing in this context. In the transition to net zero, do you feel that adequate attention is being paid to security of supply?

Cloda Jenkins: I think that it is on the electricity side. The system operator has incredible technology and data now. The world has moved on a lot since the 1980s and 1990s from that perspective. It knows what is going on in its system. Even as the world has changed, with more wind and stuff, it is very adaptable to that. I am less worried about security of supply than maybe other people are.

In lots of places we have ageing transmission and distribution networks. Anything that might make them work better and be more secure has to help. We were having a discussion at UCL recently about how there is a substation preventing us from upgrading to better wi-fi for our students. If we can upgrade that and simultaneously deliver net zero, that will help with the system, so I am more optimistic.

Lord Eatwell: Can I put in a slightly pessimistic note? A significant element, everybody tells us, in security of supply will be interconnections. That depends on the policies of others. How can we be confident that the policies of those to whom we are interconnected will ensure our security of supply, unless we have some international overview, including the policies of those to whom we are connected?

Joe Perkins: Overall, of course, interconnection should increase security of supply. One of the problems in Texas was that it had very limited interconnection. That is one of the reasons why it had catastrophic failures in the winter. One of the stress situations, for instance, is an interconnection reversal. As you get much more interconnection, if suddenly the interconnector starts flowing from Britain to France rather than in the other direction, what kind of implications will that have? There is ongoing work looking at the impacts.

As you suggest, as well as the technical work on how you can manage a system where you might have those reversals, can you have slightly more political co-ordination across borders? That has not been straightforward. Even before Brexit, some of the relationships were a little strained between different regulatory bodies and between different energy departments. There is a worry that, although the system as a whole might be made more secure by more interconnection, you end up getting slightly more nationalistic control of energy within borders that could be harmful.

Lord Eatwell: You could have a Jersey situation, for instance.

Joe Perkins: Yes.

The Chair: Professor Waddams?

Catherine Waddams: I have nothing to add. I think it has been said.

Q19 **Lord Curry of Kirkharle:** Some of this has been covered already, but I would like to tease out a bit more. There is significant potential tension between affordability, which we have spent some time on already, security of supply and achieving net zero. It seems to me that those three are the overriding objectives, with net zero now becoming dominant. How do you think Ofgem can reconcile that tension? Do you think it is capable of reconciling the tension between those three key objectives?

Catherine Waddams: As you say, there are trade-offs. I think there will always be. I do not think we can make them go away. We are back to the issue of how much you leave those trade-offs to the technical people, who know what they are and can tell you what they are. The trade-offs themselves need to be made by society, however you want to make that mechanism happen. The obvious place is Parliament or government. There is no getting away from the fact that trade-offs need to be made; the technocrats can inform and implement, but they cannot do the middle bit, or it is not appropriate for them to do the middle bit. I do not think we should ask them to do the middle bit.

Cloda Jenkins: To echo that, and maybe as a reminder, what we have is a problem that the markets cannot deal with on their own, even regulated markets. In pensions reform, or even in university fees and education, there are policy trilemmas in pretty much all the big decisions to be made. Ultimately, until the Government put a stake in the ground and decide that we need to opt out of pension policies rather than opt in, or whatever it is, it is very hard for everyone else to work around them even as individual citizens, let alone as a big regulator.

Somebody needs to put the stake down and say, "We are committed to net zero and that's the priority", and then people can move forward. As long as it is a vision that has a mix in it, with nobody making a choice, it is very difficult for everyone else to work around it.

Joe Perkins: I would make a more organisational point. Certainly in my experience at Ofgem, you often had policies coming up from specific teams that were quite silo-based. You could have a policy that said, "This will deal with security of supply", without really having thought through the net zero or decarbonisation implications, or, "This will deal with the cost to consumers", without having thought through some of the other wider implications. You would see those trade-offs being thought about only at board level. Ideally, what you want, in perhaps a smaller and more focused organisation, is more of those wider implications being drawn out before you get to the late stage of policy development. As well as the wider issues, on which I agree with Professors Waddams and Jenkins, there is perhaps a more organisational point.

Lord Curry of Kirkharle: What you have highlighted is the complexity of the issue and the need for better data. Previous witnesses have highlighted the fact that the digital challenge is huge. Do you have a comment on that?

Joe Perkins: Ofgem has been doing lots of work on bringing forward its data capabilities and has worked with the industry to develop them. At the moment the data is often very poor, frankly. Historically, suppliers would not even know who their customers were, let alone whether they were vulnerable or otherwise. It is very difficult to target policies when you are sending a bill to "The Householder" at "X Privet Drive" or whatever. There are very basic data issues. Once you have solved those you can perhaps have a more data-driven system as a whole. I know that some of the suppliers are working in that space, but there is quite a long way to go.

Cloda Jenkins: We talked a lot 10 years ago about how the energy industry generally was not very good at taking on technology, and what the technology industry or the sector was able to do—even academics. Imperial has whole energy system models. We need some sort of single source of truth about energy costs—ideally, energy social costs. Again, it is about getting the best brains in the room to work that out, and they are not necessarily in Ofgem at the moment.

Q20 **Lord Sharkey:** I have two questions. First, witnesses have told us that Ofgem has around 800 employees, whereas many of its international counterparts have around 40. Does Ofgem have too many responsibilities?

The second question relates to the recent energy White Paper, in which the Government accepted the need for the system of governance to evolve. I think they intend to consult on that fairly soon. What role should Ofgem have within the broader system of governance for the UK energy market?

Catherine Waddams: International comparisons are difficult to make because different regulators have different duties. Ofgem has been expected to absorb a whole lot of duties and that is partly what lies behind its growth. Whether it is bigger than it needs to be, I do not know.

I think it is really difficult to make those comparisons. As I said earlier, those jobs still need to be done. You might contract them out of Ofgem, but somebody will have to do them. You will not necessarily save money by changing the organisational structure.

I am sorry, I have forgotten the second part of the question.

Lord Sharkey: What role should Ofgem have in the broader system of governance for the energy markets as they evolve?

Catherine Waddams: I am repeating myself, but it has a really important role in gathering data, as we have just been discovering, in analysing it and understanding the markets, and advising the people who need to make the trade-offs. It has another very important role in implementing them. Those are two important roles and it needs the capacity to do that.

Joe Perkins: In answer to Lord Sharkey's first question, I would say yes, its responsibilities are too great and its size is perhaps too large as a result. It does not particularly make sense for an economic regulator to deliver environmental schemes, in my view, which is a fair portion of the existing staffing.

On longer-term evolution, if there were a credible and effective system operator or even a system architect-type role—a really strategic role—Ofgem could step back from quite a few of its roles. The roles that it currently plays in market design and development are played in other countries by the system operator. Perhaps Ofgem could step back from those and become a leaner and more focused organisation as a result.

The Chair: Professor Jenkins?

Cloda Jenkins: I have nothing to add. Joe said pretty much what I was going to say.

Q21 **Lord Reay:** My question was touched on earlier, but perhaps you might be kind enough to elaborate. What changes do you believe are needed to Ofgem's objectives and powers to achieve net zero? What impact do you think that would have on Ofgem's approach?

Cloda Jenkins: A lot can be done with existing and future consumers. My main concern, if we started talking about changing powers and duties, would be that there would be legislative delay in getting on with things. There is a need to look at industry restructuring, particularly around the system operator. I would not make it just about Ofgem's powers and duties but would think about the industry's role as well. From that, Ofgem obviously has regulatory duties to ensure that industry is delivering on its requirements.

Joe Perkins: I have two comments. The core thing for me—the most important thing—is not just to add further duties. I am sure that Professor Waddams can say more about this in a moment. She and her colleagues have done great work on the growing splurge of duties that

regulators have over time. What that means is that you can have inaction and, frankly, far too much discretion for technocrats. Stripping down might have more effect than expanding further.

The second item is that there is scope in the existing legislation for a strategic policy steer from the Government, which would help the regulator to manage some of the trade-offs. That has never happened. There was a consultation on it a few years ago, which just ran into the ground. Nothing resulted from it, but in principle that could be quite a strong lever to help give a steer as to the quite difficult trade-offs that Ofgem has to manage and how it should balance them.

Lord Reay: Some have suggested that Ofgem should be given a principal duty to deliver on net zero. Do you think that is worth considering?

Catherine Waddams: Yes, but, as Joe said, I do not think we should just pile it on to the other duties. We should have a real reform of those. I share Professor Jenkins's concern that this will mean yet more delay. We could move towards that while using the current duties and having a clear steer from government.

The water sector has always had its strategic policy statement and has to say every year, in its report, how it is responding to that. We have a pattern that could be used, and the powers are there. We can use the existing powers, but they need to be tidied up. We have this wonderful Christmas tree diagram, as we call it. It shows how the duties have expanded. Of course, you cannot meet all of them simultaneously. There are already many trade-offs. As we have said, these trade-offs should be made by somebody else. Starting again would be good, but it will not be easy because everybody will want to keep everything that is already there. It needs a firm hand, and I do not think we should wait for it. It should come eventually.

The Chair: If it was in your gift, what would you do?

Catherine Waddams: What would I do? I would sit people down until they came to a decision about what their priorities were, and then try to enable them—I think that would be the kindest way—to pursue the decisions they had made. It is really uncomfortable. It is not good or easy political stuff. Perhaps that is why I am an academic and not a politician.

The Chair: Continuing along that path, would you put them into separate agencies or leave it all in one agency?

Catherine Waddams: I do not have a view on that. I will leave it to other people.

The Chair: Mr Perkins, do you have a view on that?

Joe Perkins: It is difficult for an organisation of Ofgem's scale to have the focus it needs. It could get more focused by stripping out some of the functions, as already discussed, but in the current structure there is a

case for spinning out particular areas and perhaps having a nimbler start-up approach.

Could I make one comment on the net-zero objective? I must admit that I am a little sceptical about this, partly because in quite a lot of what Ofgem does there is no very direct relevance to net zero. Consumer protection in the supplier market, for instance, is not particularly net zero-related. Having a primary net-zero objective could mean that some of those issues get missed.

Q22 Lord Allen of Kensington: I am interested to hear Professor Jenkins's view on international models, particularly which models we should look at and what lessons are to be learned there. The second part of the question is: what role could regulatory sandboxes play in bringing innovation to the energy sector? You made reference to Germany, South America, Argentina, et cetera. What would be the three things that we could learn from that international marketplace?

Cloda Jenkins: For me, the first is where the decisions get made: what is delivered by central government, what is delivered by the industry and what by the regulator. There is a lot of mixture around that. As Catherine said, you have to be careful with international comparisons. There are reasons why things happen in different countries, such as getting funding from the World Bank, and there are other things you have to be careful about.

The other thing is the consumer advocate role. Certainly in state governments in the US there is quite a strong consumer advocate role that gets directly involved in regulatory debates, is expert and is resourced. There is something around that. It is worth remembering that a lot of the world follows the UK but has adapted. Australia or South America have taken the UK model and adapted it. A lot of people are waiting to see what the UK does, certainly on price controls, and how it deals with them.

For me, the biggest issue is that the role of the Government versus the regulator is very different in other countries. That is certainly something worth exploring.

Joe Perkins: I would add one specific thing to Professor Jenkins's points. The German model of funding for energy improvements, and energy efficiency improvements in particular, is one to look at closely. The late lamented Green Investment Bank could have been a good opportunity to bring forward that kind of investment in the UK context. We do not really have that at the moment. It is something that should be looked at closely.

Catherine Waddams: I have nothing to add, except that perhaps more general transparency in data and in decision-making would be good. Primarily, it is where the decisions are made. With more transparency you can make the comparisons more easily.

Lord Grade of Yarmouth: Mr Perkins, you mentioned on one or two

occasions in your responses that Ofgem could shed certain responsibilities and remits. It would be very helpful for the committee if, without imposing on your time even further, you could let us have your thoughts on what it might be able to shed. If you want it to be confidential I am sure that would be fine, but it would be very helpful.

Joe Perkins: I am very happy to follow up on that.

Lord Burns: Professor Waddams referenced a number of times her involvement as a non-executive of Ofwat. I spent 10 years in the water industry with Welsh Water. That highlights some of the challenges. In the case of water, the technology was well determined. There was a requirement to improve the environment and the quality of the water, but it was using a technology that we had known almost as long as mankind. It was a question about the quantity and rate of returns that the companies could expect to have, with a framework set by the Environment Agency and the Drinking Water Inspectorate.

With this challenge, it seems that the technology is altogether much more uncertain. We are dealing with something that is hugely different from what was the case in the job the water industry had, which was meeting its environment targets. How do we structure this in a way that takes that into account? Do we need something like the equivalent of the Environment Agency and the Drinking Water Inspectorate, or do we just have to muddle along and see what the market incentives throw up as a result of people's inventiveness and what seems to be working? I ask Professor Waddams because she has seen a different industry and has referred to it twice. What it says to me is that there is a staggering difference in the scale of the task here.

Catherine Waddams: I agree. There are some disadvantages of having outside people decide standards externally. They often do not take "enough" account of the implications for customer costs. Here, where uncertainty may both delay and distort the decisions that might be made, I agree that it would be really helpful to have more external guidance, for both the companies, as you say, and the regulator. I agree absolutely on the contrast; the scale of the challenge and the uncertainty are huge. We can learn from other regulators, but this is obviously a very different and a bigger challenge.

Cloda Jenkins: Water was uncertain about what needed to be done but had the technology. One thing that may work well in energy and is worth considering is trying to break the problem down into its parts. The group of people who might need to sit down and say, "What do we need to do to get the infrastructure in place for electric vehicles?" is probably different from the group of people who need to sit down and think about home heating.

I wonder whether keeping it at the big picture, complex level is part of the delay. You probably could come up with a plan for the infrastructure for electric vehicles if you got the Highways Agency, the relevant retailers, the distribution networks and the transmission networks

together. That would be something that Ofgem could then price into the next price controls. If you spend too long saying, "How do we get to net zero?", you miss the opportunities that are there. Joe is right. The way the teams are set up in Ofgem does not lend itself necessarily well to that, if they are just thinking about price controls without talking to other parts. It would be the equivalent of thinking about bathing water, rivers and drinking water. Let us get to the things that we know need to happen and focus on them a bit more.

Lord Burns: How would you organise home heating and that side of things? I can understand the motor vehicles one more easily than who you need to get together to solve the home heating issue.

Cloda Jenkins: Me too, but I think Joe might have an idea.

Joe Perkins: In a way, we might be like Buridan's ass in this position. There are two piles of hay. One is the hydrogen pile and one is the electric heating pile. We are stuck in the middle, not able to make a decision between them, and we might end up missing net-zero targets because of that lack of ability to make a decision.

Something different is needed to break the deadlock. I saw a bit of the Pensions Commission when it developed private sector pensions reforms. That was quite an effective way of breaking what was a very serious deadlock at the time in the pensions space. I wonder whether something similar might be helpful in heating. It might quite reasonably be said, "Well, that would take quite a bit of time", and you would be right, but actually we have already spent several years not getting anywhere. Something might break the deadlock. It is really needed in this space now.

The Chair: I have a quick, final question for Mr Perkins. We talked about investability. It seems to be a common assumption that new investors are waiting to step in to help fund an unknowable amount of money. Given your experience as an economist at Ofgem, do you think that is a realistic expectation?

Joe Perkins: I was sceptical early in the RIIO-2 process. I thought we might be being too severe, and that investors would not want to come forward because the cost of capital was being lowered and the incentive packages were also being lowered. The recent transaction where National Grid bought the electricity network WPD, and apparently paid a very significant premium for that company, suggests that those worries might be overblown. What we seem to see, certainly in the network space, is that people are prepared to invest. There are differences in gas networks, and the willingness to invest in gas because of the uncertainty about the future of heating may be much less, but certainly in the electricity space we see quite a lot of willingness to invest, even with tougher price controls from Ofgem.

The Chair: Thank you very much, all three of you. That ends today's session. It has been very helpful. Mr Perkins was asked by Lord Grade to

send in his views on the restructuring of Ofgem. If anybody else would like to do a little bit of homework on that and send it in, we would be very grateful indeed. Thank you very much for your contributions today.