



# Industry and Regulators Committee

## Corrected oral evidence: Ofgem and net zero

Tuesday 30 November 2021

9.30 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; Baroness Noakes; Lord Reay; Lord Sharkey.

Evidence Session No. 18

Heard in Public

Questions 186 - 209

### Witnesses

I: Jonathan Brearley, CEO, Ofgem; Neil Kenward, Director, Strategy and Decarbonisation, Ofgem.

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## Examination of witnesses

Jonathan Brearley and Neil Kenward.

Q186 **The Chair:** Good morning, ladies and gentlemen. I would like to welcome to the 18th meeting of the Industry and Regulators Committee inquiry into Ofgem and path to net zero the chief executive of Ofgem, Jonathan Brearley, and Neil Kenward, his director of strategy and decarbonisation. We have taken a great deal of evidence about the path to net zero. Many of the witnesses have complained that there is a lack of specificity in the policy. There is very good ambition and there is now more detail, thanks to the publications over the last 30 days, but there is a lack of real implementation policy, which is acting as a brake on investment. There is confusion among those who wish to invest. The expression was used that this has created a “political vacuum”, which has made your job rather difficult. Do you feel it is so?

**Jonathan Brearley:** In a sense, we have a great deal more clarity from government. The net-zero strategy helps. It sets a real clear sense of ambition for the sector in terms of where it will get to, particularly on electricity, so there is much more clarity than there was before.

We all have to be a bit realistic about how clear we should be about the future. I do not know whether you know, but I was an official in DECC five or six years ago, where some of these concerns were laid to us. Actually, the future has turned out to be very different from the one we thought we were moving towards. It is critical for all of us to be clear about where need to be setting plans in place—I will give you some examples of that—and where we need the market to reveal the sorts of solutions we need.

We, Ofgem, see a big role for strategic planning in how we build the system that we need to support the generation that we want to build. We are very hopeful that the role of the future system operator will be able to help us, as a sector, to have a much wider, more co-ordinated and strategic plan. Equally, looking at examples such as batteries and demand-side response, we think you need more market mechanisms that will allow those things to evolve and come through. I think you will have a combination of more strategic planning and the right market frameworks to allow things to change and adapt as they go.

Having worked in energy and climate change for a long time, I can say that it is not just an energy issue; it goes across all departments. In any circumstance, Whitehall needs to co-ordinate across government, so that the building strategy, the transport strategy and, indeed, the economic strategy reflect the goals of net zero.

We have a particular need as a regulator to get more of a shared sense of ambition on where we are aiming for in things like the evolution of the grid. For example, we would like to develop a common understanding, with government and the industry, of our ambitions for electric vehicles and how they might play out in different areas. If you imagine, our job is

to regulate the local networks. One of the fundamental questions there is what we assume about the future, what we think might happen. The more we generate common understanding, the easier it is for us to build the infrastructure that we need, but also to hold the companies to account for being efficient. In my mind, there is a lot there, but we will always need to move to do more.

**The Chair:** The gaps that have been raised with us are about the infrastructure and the network that is necessary. There is deep frustration that there seems to be nobody driving this. How do you see it? Do you see that as your role? Do you have on your office wall a chart of all the things that need to be done, by when, so that you are chivvying Ministers to get along and make some decisions here? Who is actually driving the bus?

**Jonathan Brearley:** Honestly, we need the system operator to step up over time and set out that strategic plan. To set out the infrastructure that you need, you must have a deep understanding of how the system works. I will give you one example. We have a target of 40 gigawatts of offshore wind by 2030. The system operator is already working on what that underlying network needs to look like so that we build it strategically and efficiently.

Planning the system and setting how it evolves should not really be done by the regulator. The regulator's job is to make sure that that is done efficiently and effectively by the companies concerned.

**The Chair:** We will come to precisely what your role is. Given the importance of sequencing here in getting to decarbonisation of electricity by 2035, what decisions need to be made over the next couple of years to make sure that we remain on track? When Chris Stark came to see us, he said that he was slightly concerned that we were falling behind on taking decisions to get to 2035, for instance.

**Jonathan Brearley:** There are a number of different areas there. Let us start with us. We need to make ongoing decisions as to how both national and local networks will evolve. We designed our network regulation to be able to adapt quickly and so that we can target the infrastructure build at the right place. Equally, more needs to be done to make sure that we have the right charge points in place across the country, which is a network matter for us, but also a matter for government.

The biggest thing that we need to keep ourselves focused on over the next 10 years is that it is not just about changing the electricity system. It is about doing it in a flexible and smart way. Our analysis shows that you have two versions of net-zero future electricity. You have one where you are not using your network and your generation very efficiently. You have intermittent generation. You do not have much control over your demand. That is expensive.

There is a much more effective system whereby you can be more flexible about your use of electricity. You can make maximum use of new

technologies such as storage. We think that that will save billions of pounds a year. The critical thing for the system as a whole is making decisions quickly about the build of network infrastructure, but not just assuming that putting copper in the ground is the right answer to meet all our net-zero ambitions.

In terms of the transition as a whole, the biggest and most fundamental issue we all have to deal with is the transition of heat. How are we going to heat our homes and power our industry? Frankly, more work is needed, but those decisions will need to be taken relatively soon, because that transition needs to start. That is a change in everyone's home and, indeed, across a lot of our heavy and commercial industry. In my mind, that is one of the big things that we all need to focus on.

**The Chair:** Would you see that transition primarily as your role or would you do it in partnership with BEIS? How does that work?

**Jonathan Brearley:** If it comes down to deciding how we will heat our homes, ultimately that needs to be led by government. There are huge economic and political trade-offs. We see our role as making sure, once we understand the ambition, that we can then support that through the regulation that we put in place. When you have a system operator there, you have a critical adviser to government and a strategic plan that can begin to put all these things together. At that point, I would see our role more as focusing on the regulation of the companies and less on setting the goals and ambition, which we think should be set by others.

Q187 **Baroness Noakes:** You said earlier that part of the solution was to have market frameworks encourage private investment. Could you say a little more about what you mean by "market frameworks"? Where do they come from?

**Jonathan Brearley:** When we think about the transition, let us take the example of electric vehicles and where they might be located. It is our understanding that not only do you have some uncertainty about the national picture; you may well have quite a lot of uncertainty about the local picture. You may have particular streets in particular neighbourhoods in particular towns that have a greater concentration of people wanting to charge their electric vehicles.

We have seen and carried out studies that show that it is much cheaper if you find a flexible way of charging your vehicle overnight, so that not everyone comes home at 5 pm, plugs their car in at the same time and puts huge demands on the grid. You spread that out over the course of the evening and everyone ends up with a full battery in the morning.

To do that, you have to find some way of rewarding people for participating in that. We think that can be done either by asking the local networks to do that or by tendering for different kinds of services that allow them to compete against each other. What you really want for any alternative in your system—building more wires versus putting new technologies in place—is to be able to find a market framework that gets

you the cheapest and most effective solution. That is the sort of thing we think we might see in the future.

**Baroness Noakes:** Where do those market frameworks come from?

**Jonathan Brearley:** As an example, you have local tendering processes already which the local networks carry out. They tender for alternatives to network build before they build, and if that turns out to be cheaper, they will build it. There are worlds where you could see a more expanded role at that local level, where alternatives compete against each other basically on the economics of what they offer.

**Baroness Noakes:** I am struggling to see how big an impact market frameworks will make on delivery of net zero. You are talking about quite marginal things there. I thought you were talking earlier about big areas where significant innovation was required through private investment.

**Jonathan Brearley:** We think that the need to put flexibility into your electric vehicle fleet is a big thing. It is a small thing in a locality, but when you add in the fact that there will be 10 million to 14 million electric vehicles by 2030, the potential for that is enormous. You suddenly have a grid that has additional capacity on it to charge those vehicles. That changes to become a grid that gives us an opportunity to use those batteries to run ourselves more efficiently. I gave an example of something very local, but you could imagine more national schemes that do the same thing.

**The Chair:** Can I come to one particular issue, which is the increase in offshore wind? That is supposed to get to 40 gigawatts by 2030. Claire Dykta of the National Grid pointed out that we currently have only 10 gigawatts. To build the other 30 would take at least nine years. What is holding that up?

**Jonathan Brearley:** There are a number of things. You will have heard from others, I am sure, that being able to co-ordinate and develop your projects through the planning system is a challenge for any developer of big infrastructure. We are working on a RIIO-2 framework that allows people to come to us and for us to understand their investment cases quickly, in order to allow them to build, but the biggest thing is building that offshore grid in a co-ordinated way.

Right now, we build a connection from an offshore wind farm to the shore and we have an individual connection for every wind farm. Where you have 40 gigawatts, you need a strategic grid. You need something that is built to be more efficient and more capable of doing these things at less cost and with less impact on the environment. We are working with the system operator now to encourage it to build a plan that will allow us to do that more strategically. In my mind, that is the big thing that will make a difference to getting towards those targets.

Q188 **Lord Sharkey:** Good morning. You have mentioned the co-ordination already. Several witnesses have told us that there is a need for greater

co-ordination, both within government and within the public sector on a wider scale. Do you in practice see enough co-ordination already? Is there a clear cross-government drive on energy and net zero? Would a single point of reference for all these people who will build the infrastructure that we have just been talking about be helpful?

**Jonathan Brearley:** You have two separable things. Again, in my background, I ran something called the Office of Climate Change, which was precisely that: it was a unit at the centre of government that co-ordinated between departments to make sure that as far as possible we had an integrated plan. It is fundamental to hitting our net-zero goals that we have the Whitehall co-ordination that we need. As I mentioned, it is not an energy issue; it is a buildings issue, it is a transport issue and, indeed, it cuts across the whole economy. I do think that there is co-ordination there now.

However, if you are an investor in generation or in networks, you are looking for that strategic leadership within the energy sector. Ultimately, that is best placed with the system operator.

**Lord Sharkey:** You mentioned housing and the problem we have with getting housing to net zero. We have been told that there are about 6 million houses—I am sure it is a contested figure—that are not suitable or economically suitable for the installation of heat pumps. In his evidence to us, David Gray outlined the experience of his difficulty in dealing with the ministry of housing. The ministry of housing—under its current, longer—name, will have some responsibility, no doubt, for the transition. Do you think there is a need for greater co-ordination to make sure that the housing element of all this, including the ministry of housing, is responsive to the general needs?

**Jonathan Brearley:** I do not think you will hit your net-zero target without having the Ministry of Housing, Communities and Local Government as part of that. You cannot run this all out of one department, because the policy levers do not exist within that department. Absolutely, there needs to be co-ordination. Frankly, how that is done is a matter for Ministers. I am sure that is something you will pick up with the Energy Minister next.

**Lord Sharkey:** Neil, is there anything you would like to add?

**Neil Kenward:** There is one thing I would add in that space. You rightly give the estimate of 6 million homes that, right now, cannot take heat pumps due to not being well insulated enough or those sorts of issues.

I would encourage us to think of this transition as not just static. We know that innovation can happen in sectors; we have seen it in renewables and in batteries. It can also happen in things like heat pumps and insulation. There might be new forms of heat pump or insulation that enable more homes to use electric heat pumps as a source of heat. In Ofgem, we provide innovation funding for things like the integration of

EVs, the development of hydrogen and the development of heat pumps, which can then help this transition run more smoothly.

**Lord Sharkey:** Going back briefly, Jonathan, you mentioned how critical the housing ministry will be to all this. Do you have the sense that the housing ministry is fully on board and an active partner in delivering what is probably the most critical part of this transition?

**Jonathan Brearley:** Honestly, it is really hard for me to judge from where I am. I am probably straying beyond my brief as a regulator to comment on the performance of departments. All I would mention is that it is critical that they are, because that is how we will make the changes we need to make. Having been about energy and climate for a long time, making sure that your housing stock changes will have to be a big part of the solution for the future.

Q189 **Baroness Noakes:** I would like to focus on the role of Ofgem going forward and the role that you see it playing in the energy system overall. Half the question is whether Ofgem should be given more responsibility in this context of a net-zero transition, or whether it should become more focused on what its core mission always was, which is an economic regulator to protect consumers. How do you see Ofgem fitting in the future? Should it take on additional responsibilities or stick to its core purpose?

**Jonathan Brearley:** There is a nuanced answer to that, actually. We have a broad set of responsibilities now. We do everything from regulation of the sector right the way through to delivery of different schemes that the Government run. I do not see how you can have an economic regulatory role that does not contain a focus on net zero. There is a debate about whether we need a primary duty, but I and the board have been very clear that we see net zero as fundamental to our existing duty, given that it is to protect current and future consumers.

I will try to give you a pragmatic example. We have talked already about network infrastructure—building the transmission system that you need to get sufficient offshore wind on the grid or, indeed, making sure locally that people will be able to plug their electric cars into a system and not face unnecessary cost and delay. I do not see, as an economic regulator, how you cannot have supporting the net-zero transition as part of your goals. In a sense, it is part of the equation you have to make.

Having come into Ofgem to regulate networks and been involved in the price controls very closely, it is really clear to me that you have to think about the wider transition when you are making the sorts of economic decisions that a regulator has to make. I know we will come on to talk about retail, but for the future we need to think about retail's role in the net-zero transition and what that might mean.

**Baroness Noakes:** In this area, are you making policy or taking policy?

**Jonathan Brearley:** Principally, we end up taking policy. If you think about our role on electric vehicles and on offshore wind, the goals and

the framework are set by government, and Ofgem works within that framework. I do not think it is right for the regulator to make the big economic and political trade-offs, but it is part of our goal to drive the system to be able to make that change.

**Baroness Noakes:** We had evidence that a lot of your size is related to additional activities and responsibilities that you have taken on over the years, and that it might be better for you to be a leaner and more focused organisation, concentrating on consumers and economic regulation. What makes it important for you to stray beyond that core mission?

**Jonathan Brearley:** There are different things that we do and functions that we are gaining. If you look at our core regulatory role and the evolution of the energy sector as a whole, we have already had indications from government that we will be supporting the regulation of nuclear power, for example, through the RAB mechanism, and equally on CCS. There are new roles coming to us that are very close to our existing regulatory roles.

There is a distinction between our functions. There is that set of regulatory functions. There is also the delivery of government schemes. To some extent, that is different in nature. That is more about processing applications, auditing functions and supporting schemes in their evolution. I know there has always been a debate about how those two things fit together. There are big synergies that we see, but those two functions are both growing. It is working well now. We work well together, but they are slightly different roles.

Q190 **Baroness Noakes:** Can we move on to the future system operator? How do you see that in relation to Ofgem, both hierarchically and institutionally, in relationship terms? Should functions be transferred from Ofgem to the future system operator, or are we talking about static Ofgem functions and this being an additional set of activities?

**Jonathan Brearley:** We are really open-minded about the sorts of functions you might transfer when the system operator is up and running. Let me give some examples of the areas that we will need to work through together. If you have a system operator that is setting out strategic plans, it will have the role of identifying, for example, where you might tender network projects. Rather than giving it to the monopoly, you might open it up to competition. We already run the scheme that introduces competition into the offshore network.

There is an open debate about where those functions should sit. Equally, on things like code reform, where you are setting strategy for codes, there is certainly a question about the relationship between Ofgem and the system operator there. In the building and setting up of the system operator, we should be quite open to transferring functions, if we think it is more coherent and makes more sense.

**Baroness Noakes:** How does it fit within the overall structure? To whom



does it report? What is its relationship to Ofgem, in your view?

**Jonathan Brearley:** In my view, there is a process in government to decide how it is set up: is it public, is it private, how will it be organised? I think there will be a role for the regulator to regulate its functions, to make sure that it is discharging its responsibilities and, as part of that strategic planning, carrying out its own duties.

**Baroness Noakes:** Do you see Ofgem increasing its role through the system operator, even if it transfers some functions to it?

**Jonathan Brearley:** You have the paradox, in a sense. We may well end up having a role in regulating it, but that is open. Equally, I think we will be doing less.

Q191 **Lord Reay:** In your view, does Ofgem have an appropriate level of independence from government? Should there be a greater differentiation between policy and regulatory roles? Do you feel that, on occasion, you have been drawn into making decisions that should have been made by politicians?

**Jonathan Brearley:** We all have to acknowledge that the world is much more complex now, particularly with our net-zero goals. If I think back to when I first started to doing this, in 2006, in a department it felt quite separate from the regulator. A lot of the decisions that were being made in government were separate to those being made in the regulator, and actually we were already seeing some challenges with that; government would set an ambition on renewables that was not necessarily being reflected in the regulatory framework beneath it.

I think we all have to acknowledge that in this transition there will always be less clarity than there was perhaps when the system was set up between what government does and what the regulator does. As Ofgem, we need to fiercely protect our independence where we have to make our own regulatory decisions.

To give you an example, when we were going through the networks process and running our decision-making for the returns that the networks would get, as you can imagine there was lobbying from all sorts of places, including people going to government and trying to make their case there. As a regulator, you come to a certain point where you shut the doors, look at all the evidence you have and come up with your own, independent view. That needs to be fiercely protected.

**Lord Reay:** Some witnesses have suggested that there is sometimes a lack of clarity between the roles of Ofgem and government, highlighted for instance by the joint publication of policy documents, such as a joint consultation on the FSO. Do you think this criticism is fair? In what areas should the Government do more to clarify responsibilities in the sector?

**Jonathan Brearley:** I actually do not think that criticism is fair. It reflects, essentially, the need for both government and the regulator to move in a particular direction. Take the future system operator, for

example. It will need a huge amount of work by Ofgem to set up the framework and think about how we would regulate around it, but ultimately it is legislative. There is only one place in the institutional infrastructure that can drive legislation. There will be times when we need legislative change, we need the rules to change, and therefore Ofgem and the Government have to work very closely.

Q192 **Lord Reay:** On a different topic, I know that the issue of retail supplies will be covered later, but are you concerned that if the price cap has to increase by 30% to 40% in April, which is mooted by analysts and seen as distinctly possible, public support for the net-zero journey might be adversely affected?

**Jonathan Brearley:** I have been through changes in the gas price before. If you look back to 2010 and 2011, there is a slight paradox here. The increase in fossil fuel prices sometimes drives much greater questioning of the net-zero transition that we have been on. I think we saw that in the early 2010s with the political debate about this.

If you look at the pace and scale of change that we have seen in gas prices, this will change fundamentally the economics of net zero. The argument that those net-zero technologies are not only good for tackling climate change but by far the more affordable options will gain traction. Given that we will see substantial price rises in April—we have seen a fundamental change in the nature of supply of gas and the price of that—I want us all to reflect and to understand that the net-zero transition is looking increasingly cost effective.

**Neil Kenward:** Ofgem has an important role in making sure that net-zero transition is low cost for consumers. With the regulatory tools we have, for example the network price controls, we can bring down those costs of capital. We can provide certainty for investors. We can get tens of billions in investment flowing. By doing that through our regulatory toolkit, we bring down the cost of that transition for consumers. That is a really important role that we play.

Q193 **Lord Burns:** On the question of protecting your independence, how far do you see this as an issue about your independence from the people you are regulating? How far is it about independence from government? You talk about this rather interesting thing, in the sense of the people you are regulating seeking to possibly bypass you by going to government to try to get government to influence you.

I have always felt that the independence from the people you are regulating was an issue. All of a sudden the debate seems to have moved to independence from government. As you set out, it is quite difficult on issues like this to have complete independence from government, because you are involved in joint activities. Is this an issue?

**Jonathan Brearley:** As a regulator, ultimately you have to protect your independence from both industry and government. There are two problems for a regulator. One is looking at the substance of an issue, and the other is trying to translate that to the rules and processes that you

have. What I encourage my teams to do, and what I try to do with the board, is to focus on the substance, first of all. "What is the right answer? Where do we think is the right place to go?"

You need to do that independently of both and ensure that you have the space to make decisions like that. That means collecting all your evidence, and making sure that you respect and understand the industry position. This is not about ignoring what the industry says. It is about making sure that you understand it, but balancing that with evidence from consumer groups and others, and coming to the best judgment you can as to the trade-offs that you face. Naturally in regulation, particularly in a transition, some of those trade-offs are highly complex.

Q194 **Baroness Donaghy:** Good morning. Should Ofgem be given a primary duty to achieve net zero?

**Jonathan Brearley:** We are open-minded about this. We have decided as a board that we see the net-zero targets as part of our goals, so we incorporate an assessment and understanding of net zero in all the work we do. In a sense, we feel that we are behaving as if we have those goals as part of the statutory duty that we have. I can see some benefits in clarifying that.

You have to be careful not to distort the trade-offs that we might have to make along the way. With all these things there are always trade-offs between security, cost, achieving our net-zero ambitions and, indeed, the scale of disruption that customers might see. Within that framework, we are open-minded about it. As I say, as a board we have taken a clear decision that we see this as part of our function already.

**Baroness Donaghy:** Some of the trade-offs that you mentioned could be quite political by nature. Do you think that a bit more clarity of that net-zero role might protect you from, if you like, government overinterference?

**Jonathan Brearley:** I think so. Also, using the strategy and policy statements and getting a clear idea, as I said, of the shared ambition that underpins this makes our job much more coherent. Coming back to the example of how, collectively, we see the transition when we regulate, it would be good to have shared goals on that, because it gives us stakes in the ground to understand how that transition might unfold. We respect the fact that, ultimately, the big trade-offs need to be made by government, not by the regulator.

**Baroness Donaghy:** If you are already doing this and have it on your agenda, how is it affecting affordability and security of supply, which are two of your most important roles?

**Jonathan Brearley:** We have to make trade-offs for each decision that we make, and sometimes between those things. Sometimes you find that there are synergies between those things.

To give you some examples, building a system that allows 40 gigawatts of offshore wind to come on requires investment. We try to manage that by saying, "Okay, we understand what investment plan is. How do we do that most efficiently? How do we make sure that things are delivered on time?" You may know that we have an enforcement case out today where two companies did not build the infrastructure on time. That will be critical for net zero.

Then, how do we make sure that is affordable, as Neil said, for customers? We see net zero as least cost as part of our mission.

**Baroness Donaghy:** National Grid's Claire Dykta said that Ofgem's current objectives lead to the danger that Ofgem takes very short-term decisions that do not take into account the long-term costs of not achieving net zero. What would you say to that?

**Jonathan Brearley:** There is always a debate, particularly with the network companies, about how much investment is needed and what the rates of return might be to shareholders as a result of that. The outcome of our network regulation was potentially £30 billion plus, £10 billion more. That is a huge amount of investment. Equally, we have designed this price control, this piece of regulation, differently, because we have made it much more flexible and adaptable.

I know that National Grid and the other network companies are already lining up projects to come to us and say, "We need this to get to net zero". We will be open-minded about that, because we know that a lot of infrastructure needs to be built. We will turn that around, we hope efficiently and effectively, to make sure that that can be built on time.

The inevitable debate between a regulator and an industry is always how much needs to be built and how much you get paid for it. That is the nature of our relationship.

**Baroness Donaghy:** Other witnesses have suggested that Ofgem gives too much weight to short-term affordability issues. Do you think the consumer has been in fantasyland for the last few years and that the reality will start to bite in April? How do you think that might affect people's attitudes to your protecting consumers?

**Jonathan Brearley:** There are two dimensions there. Normally, when I hear that criticism, it is about investment in infrastructure. It is usually about power stations, wires, et cetera. I would assert that Ofgem is actually quite long term in its thinking, in the way I have described.

There is a second issue, which we are dealing with, which is that we have seen fundamental change in gas prices. That will affect consumers in April. They will see a substantial rise. As a result, I think there will be all sorts of challenges for us as a regulator, and indeed for society, to manage that. Ultimately, we have to be clear about our role. These are extra costs that are being borne by companies right now. Those need to be passed through if we are to have a coherent and functioning system.

Q195 **Baroness Bowles of Berkhamsted:** We have heard from several witnesses that achieving net zero by 2050 will require a move away from a centralised energy model towards a more distributed model. To some extent, we are already getting there. Do you agree with that? Does regulation need to be changed to meet that as the new reality?

**Jonathan Brearley:** In principle, we do. I have the guru next to me who thinks about this a lot. We see a much bigger role for distributed generation. We see a bigger role for batteries and for demand-side response. Really, that was in answer to your question about market frameworks. These things are very hard to plan strategically. You need to allow them to evolve in the system you have. That means, probably, different kinds of market mechanisms to allow that to happen. In terms of whether we need to change the way we regulate to allow this, yes, absolutely.

Neil spends a lot of his time thinking about this, so he is well placed to answer.

**Neil Kenward:** You are absolutely right. We are moving from a world that was quite linear, in terms of generation through transmission and distribution to consumption, and just a few hundred significant energy assets on that system. We are going to a world of tens of millions of assets that can store, charge at different times and generate electricity back to the system, whether it is solar panels, electric vehicles or storage units.

That more complex environment requires a change in how we set it up. It still requires a degree of central strategic planning, because there are huge bits of infrastructure, such as transmission assets, offshore wind farms and nuclear power stations, that still need that overall systems-wide thinking. We also need to be able to put in place the frameworks that can incentivise, send the right signals and enable the right assets to come forward in the right place and be operating at the right time. One of our goals for the coming years is to make sure that those markets are in place, that those signals and incentives are available, and that consumers and others can benefit from that flexibility.

It is really important to take that whole-systems approach to planning, but also potentially to establish more local-level planning capabilities, such as for EV charging stations. Your choice when it comes to heat decarbonisation might require heat networks in some places. A mix of local planning and national strategic-level planning will be required going forward.

**Baroness Bowles of Berkhamsted:** How will you be able to build in the kind of regulatory flexibility that allows that? Some of our witnesses have said that at the moment it is highly prescriptive. In fact, the system was meant to be difficult to change. How do you go from a system that was meant to be difficult to change to one that is—Jonathan has already used the word and tried to imply this—flexible? How do you achieve that?

**Neil Kenward:** It is a combination of providing stability in the frameworks, so investors know what the expected framework is, but then ensuring that there is responsiveness in prices and that Ofgem itself can adapt and change more quickly than it has in the past. Jonathan mentioned the RIIO-2 reopeners, where we will provide more funding for projects as they come forward. We will introduce similar sorts of mechanisms at the distribution price control, which is coming in the next year or so. We are making sure that we are adaptable and have that combination of certainty for investors and the responsive signals that they can respond to.

**Baroness Bowles of Berkhamsted:** The timescales of some of these things will get ever shorter and shorter. Reviewing things in three or five years will just not be quick enough.

**Neil Kenward:** We are looking, with government and the grid, for example at the codes that the system runs on to see if they can be simplified and channelled towards effective delivery of net zero. Code reform is one of the bits of the machinery that we are looking to to help enable the transition.

**Jonathan Brearley:** To come back on your point, we used to have an eight-year price review. I think we looked at it in 2013 until the end of 2021. I do not think we can have price controls like that. I do not think we can make decisions on that timeframe. That worked fantastically when you had big fat centralised generators. I and everyone here would simply be flicking the switch when they needed electricity. It does not work in a decentralised system.

Ofgem has been on a journey. We used to be quite prescriptive about what you build and how many you build. We had an argument with the network companies about how efficient they would be in building that stuff. We then moved to a system that is based more on outcomes, to make sure that outcomes are delivered for customers. This time, we have said that we will have to change things within those three or five years to keep up with the pace and scale of what we need.

Thinking about flexibility, we need people to have smart chargers in their homes and to use their energy in a different way. I do not think that can be done by the regulator agreeing with the company every time someone needs a smart charger. That has to be done through a pricing framework that encourages people, which says to you, "If you have a smart charger, you will get a certain amount off your bill, but you will still get all the electricity you need for your car when you need it".

There is a very different market model out there that we need to evolve towards. Ofgem is really committed to doing that. Part of that is about changing ourselves, but part of it is about changing the way we charge for things in the future.

Q196 **Lord Allen of Kensington:** Good morning. I want to focus on three things: supplier failure, business models, and capital adequacy. By my

reckoning, 23 companies have gone bust in the last few months. Since we were due to meet you, Bulb, rather catastrophically, has gone bust. This affects many, many millions of consumers. It causes real worry and angst for those consumers, and they are the very consumers who will have to pay for this failure, so all the cost goes back to them.

What I do not quite understand is this. Surely alarm bells must have been ringing in your organisation. I assume Ofgem does lots of modelling, so this did not happen overnight. This was happening over months. I am really keen to understand what could or should have been done to address that issue.

Chris O'Shea, the CEO of Centrica, says a few things. He basically said that capital adequacy was not reviewed properly or should have been reviewed differently. Consumer deposits should have been ring-fenced, because that money was used to cashflow the companies. The third thing was fit and proper persons, learning lessons from another sector, financial services, and robust business models. Why did Ofgem not address these issues, and what are you going to do moving forward? You have already said that there are a number of things you would change. I am keen to know in a bit more detail exactly what you are changing and what you would need to change going forward.

**Jonathan Brearley:** To come back to the change that we have seen inside the gas market, the scale of change in gas prices since the end of August even, but let us say across August and September, is dramatic. I remember going to a parliamentary Select Committee in the middle of all this, when it had gone from 30p last year to £1.80. It is now at £2.40 a therm. If we look across winter, that is five times the cost that we would have expected previously, so this is an enormous shock for the retail sector. I do not think there is a company out there that is not feeling the strain right now from the impact that is having on its capacity, its balance sheet and its ability to deliver.

In terms of how we managed as that change happened, we focused on three things. We had to minimise disruption to customers. We have been operating the SoLR process to do that and, indeed, the special administration regime for Bulb. We have been protecting customer balances. The price cap has protected customers so far, accepting that there will be a change in April, when these costs begin to feed through.

If you look back beyond that, we were introducing new rules about financial responsibility. We have brought in new licence conditions that talked about financial responsibility and a fit and proper test, but the economics changed so quickly that our focus really had to be on making sure that customers were looked after through what is a huge change in the sector here. And not only here; we have seen the impact across the world in terms of the things that customers see. In terms of how we managed that change, we focused on making sure that customers were looked after.

What this says to me, really importantly, is that we have a retail sector that needs to become much more financially resilient. We need a retail

sector that is more able to handle shocks like this in the future. When I look at the gas markets, talk to gas traders and look at what we think might happen over the next few months, not only is this a very quick change in prices; I think it will be sustained, potentially. I do not know; I am afraid nobody knows.

There is huge uncertainty, but we have to plan for these prices being about for the coming months. As such, we need a very different way of regulating the retail sector. In my mind, that means having very sharp, focused capital adequacy, but also the rules in place as to what you do once someone breaches that. We want to be focused on the fit and proper test and, indeed, to make sure that we have a resilient sector in the future. We also need to look at the structure of the price cap and its ability to manage when we see such a dramatic change in the sector. Those are both things that Neil is leading on for us.

I have heard evidence, and we are reflecting on this, from people here about how Ofgem has viewed switching. If you track this back to the retail sector that we need for the future, you come to the perspective that we, as consumers of energy, need to think in a very different way. I accept the point that we need to be broader in our objectives for the retail sector than simply focusing on one metric. Competition is important. It drives customer value and innovation, but we need a broader way to look at the retail sector in the future in order to get to a sustainable place.

**Lord Allen of Kensington:** Do you think the switching strategy was flawed, looking not only forward but back? Some of these companies, frankly, probably would not have met some of the criteria that you have put in place now. How adequate were your systems in reviewing their financial capabilities? We were given evidence that you did not review certain companies' basic financial information.

**Jonathan Brearley:** You will always want to encourage people to switch. You want people to shop about in a market and get the best deal that is for them. As we go towards net zero, you absolutely need to be broader in the goals for your retail sector.

There are quite a lot of synergies between energy retail and some of the things we have been talking about. If you install a heat pump in someone's home, what kind of relationship do you want to have with them if you are also an energy provider? If you are providing smart chargers, or indeed electric vehicles, new business models will emerge. Whatever we do, we need to make sure that the framework is adaptable about that.

In terms of financial adequacy, as I say we were reviewing the market. We were taking a more macro view. Given what we have seen, which is unprecedented, we need to go much further and do that quickly.

**Lord Allen of Kensington:** Surely there is a dichotomy between the short-term issue, switching, which is over months in the years, and a



long-term relationship with a provider, if you are doing energy as a service. I am trying to understand how you square that circle.

**Jonathan Brearley:** When we look at the retail market of the future, we have to answer that question. Some people say to me, "Listen, Jonathan, don't worry about that. You'll have a separate system to put in your heat pump. You'll finance it separately, charge for it separately and sell your energy in the normal way. If someone chooses someone else, it's your responsibility as a supplier to make sure you keep them". Others are arguing that we might need a very different system of buying and selling energy. That is what we all need to look at collectively.

The gas crisis is a huge challenge for customers and for companies, but I hope that coming out of it we have a different kind of retail sector and a different kind of conversation that builds in all the conversation we have had here about net zero.

**Lord Allen of Kensington:** We have heard from other people that, effectively, you need a Tesco-type player in this marketplace and that some of the players currently may not be fit for purpose because they see their role as a regulated business rather than a retail business. Have you given thought to how the industry could change quite dramatically?

**Jonathan Brearley:** The industry will need to change, actually. As you get towards net zero, there is a big and exciting role for retail here. Frankly, retail has not been in the conversation about net zero as much as it needs to be, and I think that will change, for the fundamental reason that we have talked about. Ultimately, we need customers to behave differently if we are to have an efficient, flexible system. That will mean a different way of thinking about that sector, so I think companies will change and we need to change as a regulator.

Q197 **Lord Reay:** Do you think that new rules will have to be introduced by Ofgem on hedging for retail companies?

**Jonathan Brearley:** Yes. We have to be really clear and sharp about how we apply these rules. I will articulate my way of thinking about this. This is something that we are working through at the moment. In a sense, your commercial strategy is always your own, so you make a decision on how much you want to hedge and how much risk you want to take. The rule has to be that, if you choose to take risk, you have to have the capital available to be able to underpin a wide range of scenarios.

What has changed for me, and what is evident from the last few months, is that those stress tests need to be very wide. A 500% increase in the price of gas is certainly not something we have seen before in the market. Looking back in history, over 90 of the highest price events over the last 10 years have happened in the last few months, but we need to be ready for that in the future.

I do not see a situation, necessarily—I should say "necessarily", because anyone predicting what happens in the gas price is either very wealthy or, usually, wrong—where this bubble goes away and we all carry on as

we were before. We will be in a different kind of reality. When we look at the global fundamentals, what is happening in China and a series of other factors, we need to make sure that the sector is resilient to that. That will mean having rules in place that say, "You choose what you do, but you have to underpin that choice to make sure that others don't pay for it".

Q198 **Baroness Noakes:** Can I follow up on that? I understand that the next evolution is a greater focus on capital adequacy and stress testing capital. That has a cost, potentially a very big cost, and today's retail arrangements are predicated on really quite low-margin business. It is likely that a shift to a capital adequacy basis could very significantly change the pattern of costs being passed on to consumers. What work has Ofgem done on that?

**Jonathan Brearley:** We accept that there is a balance to be struck there. As we develop the framework more, we are concerned about two things. To be open, these are live discussions we are having within the Ofgem building. First, we are concerned about the potential cost of capital adequacy and what that might mean for costs for customers. In a world where you see the dramatic changes that we have had, those costs are probably much more efficient than some of the costs we are seeing right now.

The second issue is about not regulating in a way that leaves you with a vanilla company, a company that only follows one strategy. We have to be thoughtful about how we apply these regulations and proportionate. We need room for start-ups and for different approaches to be made. The degree of risk you are carrying should be adapted to by the regulations around you. That is how we are thinking about it.

**Baroness Noakes:** Have you done any calculations of what impact it would have had on energy prices to date had capital adequacy been part of the arrangements that you were applying?

**Jonathan Brearley:** We are focusing more on what the trade-offs might be in the future, but we are happy to go back and have a look at that.

**The Chair:** When you took the decision not to carry out detailed financial prudential regulation, bluntly it opened the door to speculators coming into the market, thinly capitalised, using client money to decide whether to hedge. Did that decision follow a discussion with the department?

**Jonathan Brearley:** The design of all this was made quite some time ago, in terms of how the supply market was set up. There were discussions with BEIS and Ofgem as to how that would be applied. Ultimately, this system was designed in a world that we used to be in, where gas prices, for example, were quite benign. The shock we have seen has changed our view and we are talking actively to the department about that.

**The Chair:** I accept that the price rise has taken everybody by surprise, but the nature of a hedge fund is to hedge against these things, and the nature of a regulator, certainly in the financial services sector, is to try to

protect client deposits, not always successfully. Did you talk to the financial regulators at all about how they approach these problems?

**Jonathan Brearley:** We have talked to them previously and we are actively talking to them now. When we introduced our rules at the start of this year, as I mentioned, that focused on making sure that people had deposits in the right areas. The problem was that the economics changed dramatically in a very short time. In that prudential regime, we will be looking not only at what we measure but at how we define what happens afterwards. At the moment, our licensing regime allows us to move at a pace that is very challenging in the short-term environment that we have been working in.

Q199 **Lord Burns:** Could I return to the issue of the current energy supply model? Quite a lot of the witnesses have told us that it will have to change. You yourself have been talking this morning about some of the ways in which it might change. People have spoken to us about models such as energy as a service or subscription models. It is being said at the same time, though, that the regulatory environment is slow moving and hard to navigate for small, innovative companies. We would be very interested in your view as to whether the supply licence is too prescriptive. Does it allow for new models? What are the sorts of changes that are needed? Are you giving active consideration to those?

**Jonathan Brearley:** As the sector evolves, we need to continue to make sure that new entrants can come in. We have done a lot of work with something called Innovation Link, which allows people to come to us and say, "I'd just like derogation from some of the rules that are being applied".

Equally, we have seen companies come in and take a very different approach, not only to tackling things about net zero but in the way they deal with customers and customer service. That has been quite successful. We are seeing a change in practice across the sector that will improve things, we think, for everybody. As we have that conversation about the future and getting to net zero, there is the ongoing need to make sure that we have room for those new entrants and we do not make things too difficult for companies that want to make a different kind of contribution.

Before we move on, Chair, to your comment about talking to government, I should point out that one of the areas where we have been in active conversation with government for some time is renewables subsidies. I know that concern has been raised about how companies can collect these but have to pay them a lot later. We are in active conversation with BEIS about that as one of the things we need to change to make sure we have a tighter system in the future.

**Lord Burns:** As these models begin to emerge, and of course become much more flexible, and we see lots of different options, does it also raise new issues to do with protecting consumers, and people who will be able to cope in that more flexible world and people who will find it much more

difficult—that whole series of disengaged consumers? Will there be a challenge about how you regulate that also from the point of view of customer protection? It is not just innovation.

**Jonathan Brearley:** Absolutely, you are highlighting a big dichotomy for us when we start moving to this new world. If you think about the challenges we have with engagement with the market today, we may be moving to more complex products. We may be moving to products that require a greater degree of customer involvement than we have now.

We have to be adaptable. We have to allow business models to grow in a controlled way and then make sure that we have protections in place as we see the kinds of risk that might come to customers. Equally, we see a role for those who will take time to get on this transition in making sure that they are protected in the way the price cap protects people today.

**Neil Kenward:** That is absolutely right. This transition to net zero will be successful only if it works for consumers. That means working for the early adopters but also working for the people who struggle to engage or do not want to engage. As a regulator, and as government, companies and society, we need to make that transition as easy as possible and for the decisions to be made. We have an important role to play in that.

On the flexibility that Jonathan and I have been talking about, which is so important for a low-cost transition, it is particular assets that will be the drivers of that flexibility at a domestic level. Electric vehicles are the obvious one. There is potentially some stuff about heat storage in the future. It might be that we can target the signals and incentives on those assets and people who are not participating, do not have the same flexibility to offer and do not need to engage in the same way. It is about getting that balance right so that it works for everyone.

Q200 **Lord Sharkey:** We have been told by many witnesses that net zero is not possible unless we have a smart meter, which may or may not be the same as a smart charger, inside every household, yet after all these years only 37% of households have a smart meter in smart meter mode. That is despite the fact that the energy companies, allegedly at least, have been trying to persuade people to take these things on board. Given the importance of consumers buying into this kind of system, who should be persuading them that this is a good thing to do?

**Jonathan Brearley:** There is no single answer to that. There is a big role for government and for Ministers to persuade people. We need to work much more closely with agencies outside the regulator and government to encourage people to make changes like that.

One amazing thing I have seen in the energy sector is different kinds of NGOs and local authorities getting involved, for example, in change programmes. There are some fantastic schemes that we have funded through our network regulation. There are good schemes, funded through government energy efficiency schemes, where people work really hard to

generate understanding and buy-in to the changes you might need to make to your home.

To give you an amazing example, I spoke to a 90 year-old in Manchester who had a coal fire and nothing else by way of heating, and you can imagine the life she was leading. An NGO worked with her to transform her house to bring in a completely different heating system and a completely different way of living. We should not seek one authority on the truth. I am afraid that I do not think Ofgem or government will necessarily have the persuading power we need to make some of the changes we need.

This is where you need a dynamic and competitive sector. There is no greater force than companies designing products in such a way that people actually want to put them into their home to make some of this happen. I think there will be a range of things. Ofgem has a role in making sure that we are really clear about the changes we want to see, that we are open and transparent about the impacts that will have on consumers, and that we talk about this transition. I simply do not think we will be the only voice that will persuade people to change.

**Baroness Donaghy:** On this issue about persuading people to go for smart meters, if my experience is anything to go by there are various people who just tell lies about the advantages. When I say, "I'll wait for the fifth-generation smart meter, thank you very much", I then start getting letters to say they are coming along to change my meter because the old meter is unreliable, and could I please give them a date to enter my house? The history of this is shocking and I am surprised it is as high as 37%.

There will always be some who are vulnerable, who do not have the choice to change their heating, such as that 90-year-old lady, because they are in rented accommodation. Do you think there is a role for the social services aspect of support for a certain section of society that will never be able to cope in this jungle?

**Jonathan Brearley:** Absolutely, yes, I do. We should bear in mind, particularly for vulnerable consumers, that smart prepayment meters are a big change and a really positive change for you. If you can top up without having to go out and charge your key, et cetera, that is a very different way of doing things. We saw the difference during the pandemic. We saw the challenges of people with the old-style meters, if they are self-isolating, trying to make sure they had access to energy. These things can make a contribution in the case of vulnerability.

As I say, some of the most exciting meetings we have are with NGOs that are working with people to help them to understand how to optimise their home. When someone comes to an organisation such as Citizens Advice or one of the other voluntary agencies, they may present with a bill problem. They may say, "I can't pay my bill". A lot can be done about that and I do not think that leaving people on their own to try to navigate

things will allow them to get the best result, ultimately. Yes, there is a big role there.

Q201 **Baroness Noakes:** A lot of the aspects of my question have largely been covered, because I was going to focus on how you get consumers involved, given the history of consumers not being terribly involved with their energy supplier. We have covered quite a lot of that.

Are existing energy suppliers the right people to take this forward? They are the natural people to take this forward because they are already in a customer-supplier relationship, but there are not high levels of trust between consumers and the existing energy suppliers, for all kinds of reasons. If it is not the existing energy suppliers, how do you make a shift into having other people involved in innovation in the customer-supplier relationship? We have heard from a number of witnesses that you cannot just make it happen. Where does it come from?

**Jonathan Brearley:** The existing suppliers are really important in this, and you are already seeing a changing landscape of companies that are trying to develop new offers for their customers. There is a lot we have to do as a regulator to make sure that those new offers make sense. When you see agile tariffs, there is probably more we need to do to change the system so that those agile tariffs are really good value for money. Those suppliers will have to evolve.

Equally, there is a trust issue. There has always been a trust issue in the sector, but, equally, suppliers have a strong relationship with many customers, which can be used to drive some of the changes we are seeing. This also underpins the importance of allowing new people to come into this sector and offer new things over the next five or 10 years. You really want people who will offer to do things differently. Tesla, for example, is now offering energy services as well as cars. Those things need to be able to happen if we are to have a different kind of transition and a different relationship with customers.

Alongside that, coming back to the conversation we were having about vulnerable customers, you probably need more public information. You need to help people to understand the choices and trade-offs they might need to make. Having a lot of experience of refurbishing my own home, I know how complex these things can be for someone who is steeped in the energy sector. We need to do more for people for whom, quite frankly, this is a passing interest, something they want to do but are not going to struggle to do, to make sure that that happens.

Looking at the schemes we have, when you attach funding to the implementation of some of these changes, people find very different ways to implement them. That has been quite successful in some ways.

**Baroness Noakes:** I think your own consumer survey found that very few consumers were comfortable with the idea that other people could control when they had access to energy. How can you get a shift in that? That is quite a deep, philosophical position: that you do not have other people telling you what to do with your life. I cannot see how a regulator

can change that.

**Jonathan Brearley:** No, and to be candid I do not think the regulator, on our own, can change that. You need a conversation between the suppliers of those functions and those of us who use them—I will pick the example of electric vehicles, just because it is simple and clear—to say, “You’ll be able to drive your electric vehicle in any way you want. You’ll be able to make sure that, if you come home at night time, it’s charged by the time you set that you want to go out in the morning”.

If people get an understanding that the service they get will be consistent, it is easier to argue that you can then change those services and have more flexibility. It is part of a big conversation that we need to have nationally about how the energy system is changing. The point is that it is fundamental, because if we do not do that, everyone, like me, will get home at 7 pm and plug their car charger in, right at the same time as we are all using electricity for other things. The infrastructure we need will be much bigger than it ought to be, and that will cost us all a lot more money.

Q202 **Baroness Noakes:** As I understand it, in that case the Government are legislating to make it a requirement for new charging points for electric vehicles to be on a smart basis; ie they will be controlled by other people. Does that mean we would need legislation to have all aspects of energy supply being capable of being controlled by somebody other than the consumer?

**Jonathan Brearley:** Again, this is an area that, ultimately, Ministers need to decide on. I am straying well beyond Ofgem’s brief here, but we have been very successful in product standards in driving the efficiency of appliances already. We have already been able to make that happen.

You may need a set of interventions about consumers, but my contention is that even if you legislate for a smart charger to be put in someone’s house, you have to make sure that it is used in the right way. You have to make sure that people want the smart service. If they choose not to, I am afraid all of us find many ways to work about these things.

My point is simply that we need to have a big conversation nationally. Ofgem is part of that, but I do not think it will be limited to us. Ultimately, many of the interventions are for government.

**Neil Kenward:** You rightly quote consumer survey data that we have. That also shows that EV owners are far more willing to have those sorts of smart-charging arrangements in place, particularly EV owners who have had experience of that. There is a shift here, as consumers take on these new assets. As I said earlier, it is things like electric vehicles that need to be flexible; it is not everything in people’s homes. If we can get flexibility out of a sufficient number of electric vehicles, that gives us a huge amount of the cost reduction that we are hoping to see in the future.

There is this mix of roles here. The Government, as you rightly say, are legislating for smart chargers to be the default now for new electric vehicles and for them to offer a sort of smart default to the consumer when they first plug in. Of course, the consumer has the right to override that and pick their own setting, so they still have ultimate control, but they can choose to charge their car in a different way. There are defaults and nudges that encourage them to do that.

Part of Ofgem's role is to provide the incentives, so the price signals also incentivise that smart-charging behaviour. It becomes a win-win-win: a win for the EV owner, a win for overall energy costs, and of course a win for the environment.

**Q203 Lord Curry of Kirkharle:** Can I explore this issue between billpayers and taxpayers, particularly in decarbonising homes? The Treasury, in its net-zero review, has estimated that from 2026 the cost will be £50 billion a year, probably for 10 years. Given that we might have lots of innovation, new models and contracts, and all those things, £50 billion a year is a huge sum of money. As the regulator with net-zero obligation, will the Government have to step in and help to fund some of that? Is it unreasonable to assume the market, or indeed the billpayer, will pick up all that cost?

**Jonathan Brearley:** Ultimately, the decision on taxation versus costs being applied to bills is one for Ministers. It is something you should ask Minister Hands in the next session.

**Lord Curry of Kirkharle:** You have the net-zero obligation.

**Jonathan Brearley:** We do, but that trade-off—whether taxpayers should step in or whether this should be done through regulatory means, or, indeed, through some of the schemes that we do not design but we administer—is a decision for Ministers.

I would just point out one thing. Income and energy are not massively well correlated. You have people who have low incomes and high energy bills for a number of reasons. If it goes on the bill, you have to accept that, as a consequence, that transference to a relationship with income, for example, is not as strong as it could be with other means. That is probably as far as I ought to go as the regulator.

**Neil Kenward:** The massive increase we have seen in gas prices may change the Treasury's calculations. If we can move to electrifying heat or other low-carbon sources rather than using gas, that will hopefully start to be cheaper—if these high gas prices are sustained, and obviously they may not be. It is worth revisiting those and looking for innovation to bring down costs. That might be the cost using current technologies, but, as I said earlier, we have seen in lots of areas that once the scaling up and the investment start and the private sector really gets hold of the issue, it can bring down costs considerably.

**Lord Curry of Kirkharle:** An area that we have clearly been exploring with witnesses who have come along is the responsibility of the



Government and of you, as Ofgem. Where does this divide and how does it fall? Is it fair to say that there are times when it must be uncomfortable, because you are subject to government decisions sometimes that you cannot influence, and you simply have to adapt and change to accommodate whatever their whim might be?

**Jonathan Brearley:** Actually, you are describing what is usually a sensible delineation of roles. To give you a really pragmatic example, we talked about that ambition for offshore wind of 40 gigawatts by 2030. We need to understand that as a regulator, because when we then have the conversation with the network companies about how to make this happen and how to build the infrastructure that we need, it is helpful to have a clear understanding of where government policy is heading.

Equally, as I have said, we will have to make some major economic, social and environmental trade-offs over the next 30 years to get to our goals. It is right that politicians make them. I see Ofgem's role as making sure that we have the underpinning infrastructure that allows that to happen. We are a critical friend to the Government, so we give them our views on how things are evolving. Ultimately, we want to understand the ambition, with government and the industry, and make sure we have a system that supports that.

In a sense, when we take government decisions—as in, we have government decisions that we have to work with—I feel reasonably comfortable that we have a framework in which we can do that. We all have to work more on getting more clarity about that rather than less. That does not mean that the regulator does not have some difficult trade-offs. For example, we have been debating for a long time how we charge for network costs. That has a whole combination of regional, social and economic impacts on industry that need to be considered, so we make big trade-offs within the regulator, but the macro-environment needs to be set by government.

**Lord Curry of Kirkharle:** Could we perhaps explore that a bit more? Before you were given the net-zero responsibility, or before it became as important as it is now, your relationship was largely with BEIS. As you said earlier, this is now a cross-government responsibility—housing and everything else. It is hugely spread now across all government departments. Has that made your life more difficult, or is it likely to?

**Jonathan Brearley:** It means that we need to engage more proactively across government. I give the example of the Department for Transport and making sure that we understand the evolution of the transport system, which is pretty critical to some of the decisions that we make.

I would contend, though, that for a long time now there has been a need for cross-Whitehall co-ordination. Housing has been an important issue for at least the last 15 years, when I have been involved in energy and climate. We need to engage more. We want Whitehall to continue to co-ordinate, but that will be part of a very big economic challenge that

this country is facing. We need to play our part in that, but I do not feel uncomfortable about that relationship.

Q204 **Lord Curry of Kirkharle:** If I might ask about a separate issue, I left a north-east of England yesterday in devastation. Thousands and thousands of homes were without electricity. You can call this a one-in-200-year event and irrelevant to the long-term strategy for energy sourcing. But with climate change and the likelihood of more frequent extreme weather events, which we have largely assumed to be floods or droughts but could be storms, and a reliance on largely a single energy source, electricity, the 90-year-old woman who still has an open fire or a gas fire is the only person who is warm in the north-east of England. There is a community of retirement houses that were converted to heat pumps just recently. They are all cold.

I would like to explore whether your vision for more battery storage is likely to be on a localised level or a regional level. Is battery storage with more localised support likely to be a potential solution to this?

**Jonathan Brearley:** Storm Arwen has caused huge problems for households and there are households that have been off for a number of days. We are in constant contact with the network companies trying to put them back on, and they are facing real challenges in doing so. They are providing as much support as they can. Of course, we will look at this particular incident to make sure that collectively we have done everything we can to look after those customers. Those customers are going through a very difficult situation.

Coming back to the question about how we heat our homes—

**Lord Curry of Kirkharle:** It is about local resilience.

**Jonathan Brearley:** We will come back to the question of resilience, but there are two parts to that. You mentioned heating your home, and we need to be clear. We are open-minded about whether that will be low-carbon gas or electricity. That is ultimately a decision that government needs to make.

In building resilience at a local level, we see a role for batteries, but they discharge quite quickly, so they will not solve this kind of sustained outage problem. Every company, particularly in the context of the other part of climate change, how things will change for us, needs to build more resilient systems. We will have to do what we have been doing for a number of years now. We are trying not only to mitigate climate change but to adapt to its impacts and make sure that we are ready for more events like this that may occur in the future.

Coming back to the point about heat, you are right: if you have electric heating and a large part of your economy on electricity, that is one of the questions we will need to grapple with when we think about what the right technology might be.

Q205 **Lord Allen of Kensington:** Building on Lord Curry's question—you have

partially answered my question—how does Ofgem think about security of supply issues? Specifically, what do you see as your role in developing the strategy and policy there?

**Jonathan Brearley:** We oversee the system operator within National Grid, and the system operator is responsible primarily for security of supply assessments. Government sets the parameters with us and the targets for making sure that we have the right capacity levels in our electricity system. Our job is primarily to regulate the system operator and make sure that it is carrying out its function effectively. In reality, the three organisations all work very closely together to make sure that we understand emerging security of supply risks and that they are responded to.

As we move to this more complex world, some of those challenges might change. One thing we have all been focused on, for example, is making sure that your system can cope when you have fewer large-scale generators that can increase stability of the system as a whole. There is an active conversation between us, but our principal role is regulating the system operator.

**Lord Allen of Kensington:** What level of failure rate has there been over the past 12 months? What do you think the changes, as you rightly said, will be in the future? If you were measuring and monitoring it, what would the failure rate, as I call it, be—in other words, they have not achieved their targets?

**Jonathan Brearley:** In the way we think about it, we start off with a judgment that says that we have a loss of load expectation of, I think, about three hours. We build our systems on the back of that. You then calculate how much generation you need. You then design your system—the capacity market, for example—to be able to make sure that you get that generation in place. On the back of that, the system operator, given short-term local conditions, produces an assessment called the winter outlook, which helps us to understand how secure our supplies are.

It is fair to say that a number of things have happened this year. An interconnector had a fire right at the start of winter, which affects those calculations. We have one of the most resilient systems in the world and it continues to be so.

Q206 **Baroness Bowles of Berkhamsted:** In my last question, we moved a bit into the RII0-2 scenario. The changes that were made then, including reducing returns and introducing an uncertainty mechanism, made investing in energy infrastructure less attractive, just at the moment when more investment is needed. We have had evidence from significant people, including Lord Adair Turner, who are very concerned at the lack of investment. Given recent events and other things, have we got to a point where you need to rethink that very quickly?

**Jonathan Brearley:** No, I genuinely do not think so. I came into Ofgem in the middle of the previous price control. We were offering 7% real returns baseline. Companies were getting up to 10% real returns baseline

and were underspending quite significantly on the revenues they were given to put into infrastructure. We have had to have a conversation with investors about how we can do all this cost effectively.

We have reached a point where I am very confident that the rates of return we are being offered will still secure the level of investment we need. We do a whole set of analyses about what happens to company values and some of the assessment that investors make. I am very confident that the rates of return we have will get the investment we need.

The issue is the second thing that we feel we need to do, which is to make this regulatory framework much more adaptable. If you go back in time, there would have been a big lump of cash and a set of targets, and then we would see you in five years' time. We would check whether you had done it, close the price control and do the next one.

You cannot have that in this world. You need to have a system where people can bring projects forward throughout the course of that price control. I accept that that is a challenge for the regulator and for the investor, because it means that you do not have full certainty on day one. It is incumbent on us, Ofgem, to make sure that we respond on time to the applications that are received. It is incumbent on those companies to make sure that those applications are comprehensive and answer all the questions a genuine regulator might ask. If we do not demonstrate to the public that we are doing this cost effectively, because we know we need more investment, I worry about the sustainability of the transition as a whole.

We were very open about this. At the end of the last price control, we had many people explaining to us that although they thought that the settlement last time had delivered really well on the targets, it had been overly generous. We need to have a conversation with the industry about that and correct it.

**Baroness Bowles of Berkhamsted:** In a sense, you are saying that you are setting a baseline by the regulation, but if it is clear that there has to be more spending, that can happen when the proper analysis on it is done, including changes in circumstances.

**Jonathan Brearley:** Absolutely, yes.

**Baroness Bowles of Berkhamsted:** That analysis would take into account the risk of underinvestment that has been spoken about by some. You are monitoring, if you like, that risk of underinvestment.

**Jonathan Brearley:** Yes. Many people say to us that in a world where you are supporting a major transition, you may need to take more risk about investing up front. It is called anticipatory investment. We buy that argument, so we accept it, but that does not mean that we do not put a robust economic framework around it and make sure that projects

ultimately deliver value for money for net zero in the long run. Our job is to do that efficiently and turn it round effectively.

Frankly, I understand why investors are nervous, because they do not have all the money in their pockets right now. We think this is a more effective way of making sure that we get the system we need and that would allow the companies greater opportunity to bring products in price control, rather than having to wait to make the case for the next one.

**Baroness Bowles of Berkhamsted:** How much are you becoming a risk regulator? You have different types of risk. You have economic risks and supply risks. You want to be more resilient, so there is a cost to that. Would that also extend onwards when you are looking at the suppliers? If you had been a risk regulator more than a cost regulator, maybe some of the companies that were not hedging would have been told, "You can't be licensed until you've done your hedging risk".

**Jonathan Brearley:** If you look at the transition as a whole, we will need to be very focused on the risks for the system as a whole. That is partly about the supply market, and we will have a tighter regime to manage those risks in the future. It is not limited to that. We have talked about the emerging security of supply issues that we might face. We are also the cyber competent authority, so we are the competent authority for making sure that cyber risks are managed. All those things will require us to take a much deeper and more thoughtful approach to risk.

Q207 **Lord Burns:** Could I turn briefly to the issue of the north-east and the storm? I noticed that, apart from being very cold, people are very upset at the lack of communication about what is going on, their inability to get through to the company to know the source of the problem, et cetera. Is the issue of the communication with the suppliers also part of the regulatory framework? What demands do you put on the companies to be able to keep in touch with their customers when something like this happens?

**Jonathan Brearley:** It is a different part of the energy system. It is the local network companies that deal with this. We have very strict criteria about how they communicate to different groups of customers, particularly the most vulnerable. We have something called a Priority Services Register, which means that if you meet a set of criteria, those companies are much more proactive about making sure that you understand what is happening and you get access to help and support.

We have seen a very large-scale event. After this event, we will reflect with the companies on their performance. We will make sure that we understand how they have done, but they should be communicating with their customers. Every single time we have an incident in energy, and I include the 2019 power cuts, the companies always need to focus on communication. It makes a much bigger difference than a more engineering-based organisation understands from the outset. We will absolutely look at that.

**Lord Burns:** In this day and age, much communication takes place by the internet, Twitter or whatever. It is not a question necessarily of having to go to individual groups. It is a question of the general information about what is happening.

**Jonathan Brearley:** There is the use of text message and all the different ways in which you can communicate out to people. We will be looking at that as part of understanding what has happened with Storm Arwen.

Q208 **The Chair:** In the course of our discussion today, you have shown a considerable appetite to take on more responsibility. You acknowledge that there is a greater engagement necessary on the retail side, as the model changes. We have just been talking about the challenges of communication and of getting the right message across. You have a very unpleasant message to deliver next April, when a new baseline is set for the cost of energy. That is one very large responsibility.

The second is the responsibility, which you want to embrace, for the transition to net zero, which is a systemwide change. It is a huge piece of process engineering, progress chasing and the like. Finally, there is the question of prudential regulation.

It seems to me that two or three points arise from this. First, do you have the resources to do this? Secondly, are you able to reconcile the different interests of these various groups? You have been very focused on the energy suppliers and the energy providers. You are now talking about a much broader thing. Is it really sensible to try, if I can put it this way, to do a land grab, or to accept what might be being pushed towards you, whichever way you want to look at it, when there are so many distinct and different responsibilities that may be better executed by other additional bodies?

It seems to me that you have one more role, as a policy-making and policy-advising organisation. There, a degree of independence and a dispassionate approach that, frankly, calls government to account are also necessary. You seem to be a glutton for punishment.

**Jonathan Brearley:** I will not comment on that. I think you will see a big shift. We need to see a big shift in the way Ofgem regulates the retail market. We have talked about the parameters of that. Ultimately, whether it comes through another part of our organisation or through more resources into the organisation, that will be more resource intensive. We will focus on that.

When you describe some of the other roles, it is hard to see how you delineate and separate net zero out of them, including, frankly, the prudential regime that we will be bringing into place. Ultimately, the sector is evolving and these trade-offs are in many of the decisions that we make.

As I mentioned, when you look at Ofgem at a macro level, we have a role in delivering schemes for government. As I say, that has lots of synergies

with what we do, but it is a slightly different role. Overall, you need to have something that is coherent across the piece. The role of regulating nuclear power—to take one of the new things that is either being foisted on us or we are making a land grab for—is fundamental to the generation sector, to the evolution of networks, et cetera.

If you separate these things out into too many bodies, you will, quite frankly, find some of the challenges that we have between regulators. The perennial question I get asked, and it is a legitimate question, is how Ofgem, Ofwat and Ofcom calculate their returns. They are all done slightly differently. To be really frank, we are open to institutional change and to thinking about this differently.

You have to begin by asking, “What is the coherent body of things that sit together? What makes most sense to make sure that the decisions in each area are coherent with the trade-offs that are being made?” When you look at the evolution of the sector, you see that there are other things that Ofgem may need to do.

**Q209 The Chair:** I have one final question. The Government’s policy is, they hope, to crowd in £90 billion of investment. From your conversations with existing players and potential new investors from the UK and abroad, what is your level of confidence that that will be achievable?

**Jonathan Brearley:** You have different parts of the energy market, and the challenges and trade-offs are different. I genuinely believe that in the network sector we are creating a framework that is attractive to investors. As I say, we do lots of tests about that. We are in close contact with investors and there will always be a public debate, with one side wanting to bid up that price, for understandable reasons.

In the generation sector, we see a lot of dynamism. We see a lot of people wanting to come into renewables. The offshore wind story in the last five or six years has been incredible. To go from when I was a government official trying to set a price at £150 a megawatt hour to where we are now is an incredible achievement. It has been driven precisely by crowding in investment within a framework that makes sure that is done efficiently.

As I say, in the retail sector, there is a change in our approach. We need to make sure that that is attractive, because we will need the retailers in the next 10 years. They will be a big part of net zero, because we are moving to this more fragmented world where the way customers behave will be more fundamental to doing things in a way that we can all afford.

**The Chair:** Jonathan and Neil, thank you for spending such a long and valuable time with us and giving such detailed answers.