HOUSE OF LORDS

# Industry and Regulators Committee

## Corrected oral evidence: Ofgem and net zero

Tuesday 2 November 2021

11.30 am

Watch the meeting

Members present: Lord Hollick (The Chair); Lord Allen of Kensington; Lord Blackwell; 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. 13 Heard in Public Questions 130 - 140

## Witnesses

I: Claire Dykta, UK Head of Strategy, National Grid; Jake Rigg, Director of Corporate Affairs, National Grid ESO.

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# Examination of witnesses

Claire Dykta and Jake Rigg.

**The Chair:** Welcome to the second panel of today's hearing; in particular I welcome our two witnesses: Claire Dykta and Jake Rigg.

**Lord Blackwell:** For the record, I should note that I am a shareholder in the National Grid, although below the level at which it needs to be recorded in the register of interests.

Q130 We have heard from several witnesses that the move towards net zero will need a move to a more decentralised energy network. One of our witnesses described it as moving from a situation where you forecast demand and regulate supply to one where you are forecasting supply and regulating demand. That obviously has implications for the way that the network operates, and the way to regulate it. Could you describe to us how you see those changes in the way the network needs to operate, and what that might mean for the nature of regulation?

***Claire Dykta:*** I completely agree with your previous witnesses about the changes that we are already seeing, and are going to continue to see, in the way that the network is operated. We are shifting away from a power grid that is based largely around a few big centrally located fossil fuel power stations to one that is much more decentralised and dispersed, and much more flexible. We should also consider how the role of the consumers in the home is going to change. As we move towards net zero, the consumer who is consuming energy in their household will have more choice about how and when they use their energy than they tend to do today.

In order to facilitate all of that, the regulatory framework needs to change. The regulatory framework, the governance institutions and the market framework are set and designed around the system as it looked historically, because they have grown with the historical system of the past. That is not going to be suitable going forward because the pace of change that we are seeing means that the regulatory framework needs to be agile and responsive. It needs to facilitate that change and enable the markets to operate effectively, and enable technology and innovation to develop by themselves without being hamstrung by regulation.

***Jake Rigg:*** I completely agree with previous witnesses to the committee. I was reading through some transcripts of your evidence session yesterday and completely agree with that. The ESO—Electricity System Operator—has two principal targets around net zero. One target is that by 2025, we need to be able to operate the grid and the energy system in such a way that we can operate it with zero-carbon power for a short period of time. As the Government announced two weeks ago, by 2035 we want to be able to do that all of the time.

Those are really stretching targets and necessitate a huge amount of change. My colleagues in the ESO in Woking and Warwick are beavering

away working very hard on that. Somebody yesterday talked about the need to automate that to use artificial intelligence more. We are doing a lot of that—and I can get into more detail—but that is absolutely right. So there is a really burning ambition on net zero while at the same time keeping costs down, and necessitating that need to generate energy differently and move it around differently.

I would like to pick up on the point that Claire made around the way consumers will use energy. It is very clear that that plays a central role in any of our scenarios. In our *Future Energy Scenarios*—or FES, as they are commonly known—which you may have read and come across, all of the net-zero scenarios get us to the 2035 net-zero point, which is significant. There are varying degrees of consumer response within that. It is significant, around 6 gigawatts, in some of the more ambitious scenarios within that. It is really key that we keep pushing on that.

Q131 **Lord Blackwell:** What are the implications of this for the regulation of pricing? If you have very variable supply then optimally you may want to vary the price a lot to encourage people to take energy when it is available at low cost?

One of our witnesses criticised the National Grid for being overcentralised and blocking routes to the market for renewable generation. What he was talking about was that if you have marginal-cost electricity being generated at the time when there is a lot of wind around, ideally you would want to be able to sell that surplus energy at low cost and allow consumers to buy it. You would then have very variable prices. I am unsure how that is compatible with having energy suppliers who are trying to provide stable average prices.

How do you see that regulation developing to allow better use of marginal pricing; is it feasible?

***Claire Dykta:*** It is important to repeat your point and acknowledge that affordability of energy is crucial. We cannot let the net-zero transition be designed by some very clever and capable engineers, who are sat in rooms divorced from the people who consume energy in their homes.

Energy as a whole is going to become even more interconnected in our daily lives, so it has to be affordable and the transition to the net-zero end state has to be fair. We need to ensure that no one is left behind, and that no one is disproportionately impacted in the prices that they pay.

There is a whole host of complex factors that play into market design and pricing signals. At a high level it all derives from having institutional governance organisations, regulatory frameworks and market frameworks that are designed around how the power grid used to run, and how it has developed. As you rightly say, as we move forward, prices are likely to become more volatile and in a low-carbon system, I completely agree that some volatility of pricing is important for that system to work well. However, it needs to be predictable and managed to ensure that it is not disproportionately impacted. At present—and I am

sure we will come on to talk about this some more—there is not really any one organisation or body that has responsibility for looking across that whole-sector piece, considering all of those different components and thinking about a whole-system approach and design, to ensure that you do not get unintended consequences appearing.

**Lord Blackwell:** Do you recognise the description of barriers to flexible pricing in the way that the grid operates? Is there a way you can take advantage of more marginal pricing while allowing the grid to recover its fixed costs?

***Jake Rigg:*** As Claire said, the current framework very much reflects the previous system design and that has to change. Having talked about the demand side, one example would be time-of-use type tariffs, which have been mentioned by a number of previous witnesses.

We have just been saying how critical consumers of energy are going to be in this transition over the next decade. One way to increase flexibility but to mitigate some of the problems that you have described, for example, is in adjusting the pricing signals around time-of-use significantly, while at the same time, being able to have the technology in the home, amongst other things, that enables that. This is a really important part of making that transition.

We look at markets a lot and are looking to do a lot more in that. It is a bit of a journey, and a journey we need to increase the pace on.

**Lord Blackwell:** Is this part of Ofgem's agenda at the moment; are you working with it on this?

***Jake Rigg:*** Yes, very much so. I am sure Claire and the committee will come on to things such as a future system operator, but we are working on that in the meantime anyway.

**Lord Sharkey:** Before I get on to my questions I would like to briefly follow Lord Blackwell by asking a simple yes/no question. Do you think we can achieve our net-zero targets without a very large-scale take-up of smart meters?

***Claire Dykta:*** We already have a very large take-up. No, we need smart meters.

***Jake Rigg:*** I would agree: no.

Q132 **Lord Sharkey:** Now we can drill down into some detail. Do you believe that there is now a clear policy framework in place to support the objective of a net-zero system, and do energy companies have enough clarity to make the investments needed for the transition? If not, what areas are particularly sensitive and important for energy companies where policy decisions to be made?

***Claire Dykta:*** To some extent, yes, there has been an immense amount of progress in the last 12 months in terms of setting strategic direction

and clear policy from government, with the recent net zero strategy pulling together and starting to build on some of the individual strategies and policies released prior to that. That is a great step forward, but it is not the whole piece and we need to continue to move forward. We need to fill in the detail and start to specify how some of that is going to be delivered. We need to give clarity on business models for new emerging markets and technology. This is things such as carbon capture and storage, where there is investment ready and keen to enter the UK and the energy market. It needs the certainty of strategic direction and a stable, predictable regulatory regime for that to take off and let the market develop.

The most pressing of the strategic priorities is the government target of delivering 40 gigawatts of offshore wind by 2030. I am sure Chris Stark from the CCC will have said in his evidence that this decade is the critical decade to deliver the infrastructure that underpins net zero. Those offshore wind targets are absolutely essential to that. That is a huge infrastructure challenge: putting aside the actual wind turbines, connecting that into the power system requires 15 major projects (transmission system reinforcements) to be delivered both onshore and offshore. Generally, those take around nine years to deliver and we are already in 2021. We have certainty on around £400 million of the £10 billion that is needed to deliver that infrastructure.

**Lord Sharkey:** Did I hear you correctly, £400 million out of—

***Claire Dykta:*** £10 billion. I think that we will come on to talk some more about the detail of the regulatory regime. Putting that to one side, it is really important that we have clarity in the planning regime, and in national policy statements, so there is a very clear commitment to that infrastructure being delivered that then allows the network companies to deliver it so that it is an enabler to net zero and does not become a blocker.

**Lord Sharkey:** Who do you look to to provide this clarity?

***Claire Dykta:*** The government department BEIS has a role, as does Ofgem. Jake has mentioned the potential establishment of a future system operator as well. Many organisations have a role in that. The division roles and responsibilities between them is somewhat unclear and could benefit from being clarified, but that is where the responsibility sits to give that direction.

***Jake Rigg:*** I agree with a lot of what Claire has said. One of the things that ESO is heavily focused on is delivering at least 40 gigwatts of wind offshore, and the associated networks—and being able to do that in as cost-efficient manner as possible. There are different trade-offs and balances that need to be done within that between full-blown competition, some pre-planning, and what falls within the competition regime and what does not, particularly in the next five years. Everybody in the energy industry, including government and the regulator, needs to be really clear and open-eyed about the need to deliver that big step

change in the amount of offshore wind in particular we have, and be able to do it quickly.

If we are going to get anywhere near net zero and achieve the targets we think we can, we have to be really open-eyed about that and make sure we are tracking through as we go over the coming few years. It is not a generational problem that we have a lot of time to sort out and solve.

**Baroness Donaghy:** I was taken somewhat by surprise by your answer on the take-up of so-called smart meters. My understanding is that the implementation of this has been nothing short of a disaster, particularly with the first-generation ones, which have a habit of turning unsmart, especially when there is switching. Can you give us an idea of the scale of the take-up that makes you sound so optimistic?

***Claire Dykta:*** Yes, off the top of my head I cannot remember the figures but I am sure we could provide those afterwards. You are quite right that at the start the smart metering rollout did have a number of technical difficulties, which are largely resolved now. The first-generation smart meters have been through a programme where the majority do stay smart when they are switched from supplier. For sure, there are still some technical difficulties that need to be ironed out that are unique to particular properties, but I think after the understandable lull that we had in installations during Covid, the installations are picking up again and there is more confidence in the rollout now that the initial teething problems with the technology have been resolved.

**Baroness Donaghy:** But you do not have a figure or an estimate percentage of the number of households that have installed and those that need to be installed?

***Claire Dykta:*** I cannot remember and I do not want to give you the wrong figure, but I can follow that up.

Q133 **Lord Sharkey:** I want to move on now to the issue of security of supply to ask you what your view is of how a more renewable energy system might affect the security of the UK's energy supply, and how a more flexible distributed energy system will impact on your ability to balance the system. For example, how is the priority to secure supply, which is emphasised in the 2020 White Paper, reconcilable with such a very rapid shift to renewables?

***Jake Rigg:*** Security of supply is, in effect, our job at the ESO and there are a number of different dimensions to it, both short-term and long-term.

In essence, we need to be able to deliver. We are focusing a lot here on offshore wind but it is one of the many things. We need a diverse supply system in terms of generation mix, and obviously while we decarbonise, that changes the profile of that generation mix. We also need more storage to come on. I think the FES talks about—and I might get this wrong so I might have to correct this, forgive me—how we need 2 terawatt-hours by 2035 of hydrogen storage, for example, which is a

relatively new technology, in the net-zero scenarios to hit that 2035 target.

So we do need more storage within that mix, alongside offshore wind, alongside a diversity of mix. We are already seeing that and that is already true. I think if we were here 10 years ago, certainly 15 or 20 years ago, people would not have dreamed that we could be generating anywhere near as low carbon as we can be in a reliable way, and that is a really key driver.

There is new technology that needs to be built and needs to be rolled out quite significantly to deliver that security of supply. But in a straight answer to your question, I do not see the two as incompatible goals; they are certainly challenges and challenges that my engineering colleagues—particularly in our control room—are dealing with day to day, and minute by minute, so not easy challenges to overcome. Certainly, the focus that we have talked about that needs to be there on making sure that the relevant infrastructure gets delivered is really, really key.

**Lord Sharkey:** Did you want to add anything to that?

***Claire Dykta:*** The only thing I would add, in addition to Jake's points around actually operating the system, is that the infrastructure is really key. We need to ensure that the infrastructure for the new technologies, such as hydrogen, storage, the connection of batteries and renewable generation, is delivered. There is a role to play in making the existing infrastructure smart, so being able to operate the actual assets that underpin the grids in a smarter way through use of AI and greater use of data.

**Lord Sharkey:** The CEO of SSE, for example, has told the committee that it is not beyond the realms of possibility that it will need more gas power stations during the transition period. Is that a view you share?

***Jake Rigg:*** More gas power stations as in new gas power stations? I have not read his evidence so I do not want to comment specifically on that. But, for example, SSE, is bringing on new gas power stations this winter, according to publicly available information. That is already in the plan so I would not decry that, but it is clearly part of the shift to net zero to be moving away from gas and the Government have made that very clear as a policy objective. We will work with that and I think that is doable in the context that is set out, particularly in our *Future Energy Scenarios*. That is an achievable goal but it does need to be delivered, which comes back to the regulatory framework that needs to be shaped and appropriate and developed to be able to do that—coming back to Claire's point about the consumer side—by demand side response and frequency management and the kinds of things that the ESO is rightly obsessive about, and being able to use renewables in demand side response but also producing demand to, in effect, reduce peak load on the system, which is hugely expensive to the electricity system. Where things such as smart metering need to able to deliver is in helping create the infrastructure in home to be able to have things such as time-of-use

tariffs that are accurate and allow market participants to deliver those pieces.

**Lord Sharkey:** Do you see an increased role for nuclear in all this?

***Jake Rigg:*** I think I am right in saying, if memory serves, that all the scenarios in the future, in our FES documents, which I keep referring back to, have an increased role for nuclear from today. Nuclear generates different things so I think in some of the scenarios, for example, the nuclear could be used for hydrogen production, different aspects of it, but, yes, there is a role for nuclear in that mix.

Q134 **Lord Sharkey:** Finally, what role does Ofgem play when it comes to security of supply issues? Does Ofgem closely scrutinise the energy companies and the system operator about the issue of supply?

***Jake Rigg:*** I can speak to personal experience, having been in the role for all of five weeks—intensely, I think it is fair to say. I think I am getting a reputation for spending far too much time either on the phone or in the building with Ofgem talking to it about these issues. So, yes, absolutely and rightly so in an appropriate way, I would say. I do not know, Claire, if you have a view on any of that.

***Claire Dykta:*** I think Ofgem has two very important roles. One is to ensure that it sets the framework correctly up front. So while its primary role is to protect consumers—and it must absolutely look at the costs that consumers are exposed to—that also means that it should be aware of who is operating in the market, how consumers are being protected in terms of use of data and so on. That all adds to security of supply, so it needs to set the framework in the first place and then, as Jake says, it has a role in ensuring that the regulated companies deliver the obligations in their operating licences.

**Lord Sharkey:** We have been told that there is a lack of clarity in decision-making relating to the security of supply and systemic risk between the ESO, Ofgem and the Government. Would you agree with that?

***Jake Rigg:*** I am not sure exactly what the witnesses were commenting on. In the short term I would not say there is. In the long term I think—and we are straying into the realm of FSO here—there are increasingly different roles within the energy system, and within the future energy system, that will need to be thought through and explored and at pace, very quickly, in short order.

In any regulated entity or system you always have problems around the edges of the system and how wide you cast your net if you are looking at a whole system. Do you look at electricity alone, do you look at energy as a whole do you start looking at transport, et cetera? We have already touched on a few of those things. I think that is something that clearly the Government are grappling with through their FSO consultation; and obviously we, as different parts of National Grid group, have been looking at that in the round although perhaps with slightly different perspectives.

I think that this will happen during the energy transition and it is really important we start locking that down quite quickly.

***Claire Dykta:*** I completely agree. You can split your question—in real time, who is thinking about today's security of supply and whether the lights will come on? The roles and responsibilities in that are absolutely crystal clear and it works incredibly well. With a longer-term timeframe, there are some gaps that would definitely benefit from greater clarity in roles and responsibilities.

Q135 **Lord Grade of Yarmouth:** We have heard so many different opinions from different constituents involved, those who think about it, and we will be talking to the regulators. If there is anything that unites them it is a call for clarity on the way forward. I am not sure we have got that yet, but I would love to get your opinions on how you think clarity can be achieved and implemented eventually, because policy is one thing and implementation is clearly a separate issue.

If you had a blank sheet of paper and all the power in the world, do you see how this could be organised so that we could get to net zero efficiently—bearing in mind all the competing interests of the suppliers, the consumers, et cetera? Can you see a way, Claire, because we have a legacy structure, which you referred to earlier, have we not? What do you want to see happen that will get us there in the end with the minimum of headlines?

***Claire Dykta:*** Unfortunately, I do not think there is any one silver bullet; if there was, I am sure someone would have identified that by now.

There are a number of things. As you have pointed out, continuing on the path that we have had with policy—as I said, we have made great progress but there is more to be done in terms of some of the detail and some of the newer emerging technology areas. So the Government still have more to do in that area.

The big gap at the moment is: how do we deliver that? How do we implement some of those policies? I do think that there is an organisation missing that would take responsibility for converting those overarching objectives into deliverable plans and having the obligation to think across different sectors and different impacts to put the pieces of those problems together. You have probably heard many of your witnesses refer to whole-system thinking; it is bandied around a lot at the minute. But that is precisely what is needed: a body that sits and takes the direction and comes up with the plan that then allows industry and innovators and new entrants to the market to come in and deliver it.

**Lord Grade of Yarmouth:** Do you see any of that in the FSO proposal?

***Claire Dykta:*** Yes, I do. We are largely supportive of the FSO proposals and the power sector is a good place to start. The power sector underpins the wider decarbonisation of the economy. Establishing an FSO there, in line with the Government's consultation, I think is a very positive step forward.

**Lord Grade of Yarmouth:** That is good. Do you agree with that?

***Jake Rigg:*** Yes, I completely agree with that. I think it is an absolutely critical step on the path. It might not be the silver bullet but maybe it is a magazine of silver bullets.

Q136 **Lord Grade of Yarmouth:** It is interesting to get your support for the FSO notion but in that new world, as we try to move to net zero in 2050, Ofgem is a legacy regulator that was born out of the privatisation of the sector, and there to protect the consumer interest, which is clearly paramount. Do you think Ofgem's role should be confined simply to protecting the consumers and making sure that consumers get a fair deal out of all this, rather than trying to load it up with huge responsibilities for delivering net zero? Would it be simpler and clearer if it had just that role—the economic regulator really, more than anything else?

***Jake Rigg:*** I am happy to fire in on that one and Claire can jump in. Yes, we are strongly of the view that Ofgem should have a net-zero mandate and it should be in its licence condition, in its statutory duties. We think that for a number of different reasons. For starters, we think it quite odd that it does not, when, for example, other financial regulators do have that duty. I will not go into too much detail because I am sure we will come to it, but we think specifically that it holds back the system in certain ways because it does not have that mandate, particularly when it comes back to offshore networks and offshore network investment.

We think it is very important that it does have that mandate and that it does not revert to being a pure play economic regulator. Equally, I have spent most of my working life in economic regulated entities and there is a lot of discussion about that in different sectors, so there is a counterview, but the ESO would certainly be of the view that it should have a formal net zero mandate.

**Lord Grade of Yarmouth:** So far as I know—I certainly have not been following this sector for as many years as others around this table and yourselves—I have seen nothing from Ofgem that suggests that it has a road map that would help us get clarity, fewer conflicts between the competing interests and a route map and a regulatory framework. It surprises me that it does not have that view, or has not published it, anyway.

***Jake Rigg:*** I think that speaks to another part of that question about the regulatory framework. The committee has asked what is missing. One of the things that we would like to see is really clear strategic policy statement from the Government, and strategic direction statements from the regulator, on these aspects, so that people have that overarching framework of clarity.

I think a large part of that clarity will come from the FSO, if and when it comes about, and that will be very much within the FSO's remit. The problems created by not having a net-zero mandate are particularly around investment and uncertainty for market participants, including—

and I will not speak for National Grid Transmission by any stretch of the imagination—but participants such as that.

**Lord Grade of Yarmouth:** Before I come to Claire for her response, how do you think the FSO's role can help achieve the clarity that is needed to attract a lot of the private sector investment that is going to be needed to get us there?

***Jake Rigg:*** Yes, a lot of that is around clarity. We will come back to offshore wind. The ESO already has a role within network planning, around future network planning, for offshore wind transmission, and the way that intercepts with the holistic network design of the electricity network. That is something that is there and I think will get stronger as a result of the FSO proposals.

Equally, however, you need the economic regulatory framework to ensure that market participants can finance that investment to build networks, wind farms and so on, and build the actual assets. There are specific examples of where that is not in place and that is partly—I know a lot of witnesses have talked about anticipatory investment—because in certain cases that has not been able to happen, partly because, in our view, Ofgem's role has been limited in that regard, and we have seen that that has driven up overall capital costs for transmission. I cannot produce the exact numbers today but I am sure we can share some more on that. So that would be one example.

**Lord Grade of Yarmouth:** Thank you. Claire, do you want to add anything?

***Claire Dykta:*** There were two parts to your original question. I do not see Ofgem's current duties and potentially adding in net zero as necessarily different things. Ofgem's duty to protect consumers must be twinned with a duty to consider the achievement of net zero because while it is just a duty to protect consumers, without the explicit reference to net zero, there is a danger that decisions are very short-term in nature, focus on costs and do not take into account some of the elements that HMT has referenced in its recent net zero review around the long-term costs of not achieving net zero. I would say, therefore, that Ofgem's duties do need to be expanded.

If we think about if a future world an FSO were to exist and how the relationship would work between them, the FSO should be there to set what we refer to as the "needs case", so identifying what is needed, coming up with a strategic plan of what is needed to enable that 40 gigawatts of wind to operate on the system. Ofgem's role, as Jake says, is to make sure that the regulatory framework is set up in such a way so that whoever is delivering that infrastructure is remunerated appropriately, so providing stable investment signals to bring investment into the UK and into the energy sector but balancing that with protecting consumers.

It is not the FSO's role to police the regulatory framework, and it is not Ofgem's role in that future world to rehash the decisions that the FSO will have made.

**Lord Grade of Yarmouth:** This is a left-field question so do not feel you have to ad lib an answer now, you may want to take it away and think about it.

Do you have sense from your perspectives of what a timetable looks like for what decisions; in other words, what needs to be decided within the next two or three years or whatever? It would be very helpful to get your perspective on what that timetable looks like now. After all, 2050 sounds a long way away; it is not. I shall not be here but I wish you all luck with it. There is no sense of a timetable of what are the crucial decisions that have to be made in what timeframe. Your perspective would be very helpful. Do not feel you have to ad lib an answer.

***Claire Dykta:*** No, not at all. I mentioned it before, I am completely with Chris Stark on this. The foundational infrastructure needs to be in place this decade, so that means, if you work back from that, that there needs to be real clarity on the national policy statement and, soon, clarity on roles and responsibilities in organisations for institutional governance.

There are problems with the regulatory framework that also need to be sorted out soon—when I say "soon", I am saying two years—because all that is foundational. Without those immediate problems being sorted out, you are in danger of missing the delivery of the foundational infrastructure this decade, and once you have missed that you are always in catch-up mode.

There is a host of enabling things that need to happen within the next two to three years as well, which look a bit further ahead: business models for the new technologies such as hydrogen, carbon capture and storage, and the market frameworks that sit around them. That is all enabling a need to keep progressing at pace.

**Lord Sharkey:** Following up briefly on that, can you give us a sense of the scale of the difficulties involved in attaching 40 megawatts of wind to the network? Is this a truly difficult problem?

***Claire Dykta:*** Yes and I am sure my colleagues who are working on it could add much more colour to it than I can. There are 10 gigawatts of wind connected at the minute, we need to connect another 30 gigawatts. For large-scale infrastructure projects such as that, with new overhead lines running some distance, generally take around nine years from inception to delivery by the time they have gone through the planning regime and the funding requirements with Ofgem; you have ordered cables and let contracts out; and then there is the actual build phase. We are already into the nine-year time period, so it is already a significant delivery challenge in thinking how, as an energy industry, we come up with innovative ways to deliver so that we are not already behind. "Significant" is my one-word answer.

Q137 **Lord Reay:** I want to explore the issue of creating the appropriate incentives for investment. With the RIIO-T2 price controls coming into effect this past April, what impact do you believe the changes that have been introduced, including uncertainty mechanisms, will have on investments made by the network companies? Should Ofgem give greater consideration in its regulatory framework to the risk of underinvesting in the transition to net zero and the issue of stranded assets? Perhaps, Claire, you could start on that.

***Claire Dykta:*** My headline response would be that the impact of the regulatory framework, and specifically the RIIO-T2 framework that is currently operating at the transmission level and is under discussion for distribution—so the lower-voltage levels going forwards—is that it undermines the regulatory framework.

The regulatory framework in the UK has generally been held up worldwide as being very effective at delivering investment at an efficient cost to consumers. Since privatisation we have driven significant cost out of the industry but where we have got to with the current regulatory framework, and specifically the RIIO-T2 proposals, is that the risk that the industry is managing on behalf of consumers is significant. The delivery challenge we were just talking about with offshore wind is just one example of fundamental differences in the way we need to work and the amount of infrastructure that needs to be delivered.

The way the price control has been set differently in different sectors, which is due to vagaries in the legal system, means that the risk that is considered to be inherent in the energy sector is deemed to be less than the risk in the water sector, which just does not feel right.

I alluded briefly earlier to uncertainty mechanisms specifically. They are supposed to protect consumers, and the design of them is not fundamentally flawed, in that they are designed to be a way that you can access funding for infrastructure where the requirement for that infrastructure may not have been absolutely certain at the time the price control was set.

What that does mean, though, is that we do not have access to the funding for the scale of infrastructure that we have to deliver. I mentioned earlier that we have certainty of £400 million of the £10 billion we need for the infrastructure for offshore wind. Not having certainty of that funding means that we cannot place orders for cables and we cannot work with our supply chain to create efficiencies. It is really difficult to come up with those innovative delivery methods because we do not have certainty that we will be able to fund that infrastructure going forward. All that places greater risk and greater cost on consumers, through the delays that that inevitably causes in infrastructure delivery but also in starting to undermine the UK's regulatory framework and putting off investors from bringing their money into the UK.

**Lord Reay:** If the RIIO-T2 incentives are not sufficient in your view, how long do you think it will be before we realise that it is not working the

way it should?

***Claire Dykta:*** Our first application for funding for the first infrastructure project to connect the offshore wind has already been submitted. If that does not progress at the speed that it needs to for timely decision-making, that will be a signal, very soon, of the direction of travel.

***Jake Rigg:*** The position is pretty different for the ESO, so I probably have less of a direct comment on the RIIO-T2 side of the price control element. The one thing that I would add, just to follow up on Claire's final point there, would be that it is really key that we have very clear signals and thresholds by which we know when something is taking too long. To work through that example, when does the alarm bell start ringing that this is not working according to the needs case that would be set up by a future system operator? That is key and really clear to me, with all of my month's experience in this particular role; that is imperative. We cannot let things such as uncertainty mechanisms, which I have experienced in other sectors and which can be useful, allow us as a system to prevaricate about those things. It is important to be clear about that.

Q138 **Lord Reay:** Is there scope, in your view, for introducing more competition into the energy market, including the networks, to generate efficiencies and support innovation? What role could Ofgem play in a more competitive system?

***Jake Rigg:*** The simple answer is yes, definitely, there is a role for more competition and more different types of competition. For example, we have been doing a huge amount of work on a suite of offerings and products around distributed response—this is all around frequency response because if the frequency were to drop in the system, obviously, that is very serious indeed—using distributed energy to be able to bid in to a market, in effect, that we have designed to be able to give us, as the ESO, that service. That is an example of where more competition can allow us to innovate and allow the system as a whole to innovate, and treat that differently. It is one of suite of products that we will be rolling out over the next few years. It is the first one off the conveyor belt and has been quite different and innovative. Going back to offshore wind—I seem to be talking a lot about offshore wind—and the networks, there is a role for competition there, for example.

The role for Ofgem is one of allowing that market framework to keep evolving and creating the flexibility within that. It is also particularly true when you look at the demand side as well. It is very clear that there are participants in the market that are champing at the bit to not just do what they are already doing but to accelerate and make sure that is possible around things such as time-of-use tariffs, which I have mentioned before. Claire, do you want to talk about that from a National Grid group perspective?

***Claire Dykta:*** Yes, I have two points. First, and to answer your question, I would say yes there is a role for greater competition. Competition can deliver significant benefits for consumers when it brings innovation into

the solutions and gets people thinking differently about how we deliver this network and this system of the future, but it has to be in the interests of consumers and that means taking a wider view than just the high-level cost of delivery. We already competitively tender a large proportion of our works and a centrally controlled process of competition would just add time into the process.

We also need to think about the other areas that impact consumers, the first one being time of delivery. You need to factor that into your assessment of the costs and benefits to consumers.

Another factor is operational risk, for want of a better description. Introducing lots of new parties into the delivery of infrastructure needs to be managed and controlled so that you are not systematically increasing the risk across the system, which is ultimately borne by consumers.

My second point was just to disagree slightly with what Jake said. I do not think there is a role over and above what already exists for competition in the delivery of the 2030 wind target. I mentioned that we already competitively tender a large proportion of our works and we are already talking to the supply chain, as are the Scottish TOs that you have spoken to already about the delivery of those targets. Introducing additional formal competition processes into that process would serve to add delays and almost certainly miss the achievement of those targets.

Q139 **Lord Blackwell:** I would like to come back to the earlier discussion about the role of the industry regulator and the Government in setting the overall framework. I am conscious that a lot of what we have been talking about today relates specifically to issues and investment within the electricity sector and the electricity grid, but some of the issues relate to the potential synergy between gas and electricity. There is at least one scenario out there, which may or may not be cost effective or realistic but which nonetheless says maybe surplus green electricity generation could be used to hydrolyse seawater and create green hydrogen, which could then be fed into existing gas electricity generators when needed and/or potentially piped out to consumers, all of which would feed back into what investment is needed in the electricity network and in the generation of electricity. I wonder where that kind of discussion happens and where decisions are made and about the extent to which that should be reflected in strategy, incentives and investment.

***Claire Dykta:*** There are probably three parts to that. One is that Government departments need to continue to work together, and probably increase the amount they do so, to knit together some of the elements you talk about.

**Lord Blackwell:** Which implies they are not doing enough at the moment.

***Claire Dykta:*** No. It is big, it is complex and it is understandable but the energy sector and the way it is designed is very siloed. As was mentioned earlier, the way it is set up is a result of the legacy of the system. So,

yes, it is siloed at the minute and that is one of the things that needs to change.

The second thing is that Ofgem's duties specifically refer to today's and the future's electricity and gas customers. That probably needs widening because it is a bit too simplistic in terms of what it should be looking at.

The third element is that if a future system operator were to be established, that would absolutely be the place that should be bringing together those thoughts—thinking about market design, incentives, weighing up decisions on the types of things that you talk about. I think that would be an emerging picture—hydrogen markets are in their infancy—so it will be a growing capability in a new organisation.

The one thing that I would say should not be in that organisation is what we would call real-time operation of the gas network, so effectively the control room that does the day-to-day balancing. There are inherent differences between the electricity network and the gas network, and for safety reasons, the operation of the assets needs to be with the ownership of the assets. That is the one caveat that I would introduce.

***Jake Rigg:*** I agree entirely. We are entirely aligned on that. I can see it on a day-to-day basis, particularly on the last point about gas operation, on that strategic side—a different question that speaks more to the point that you have raised.

Q140 **The Chair:** Many of our witnesses have raised quite serious concerns about affordability and the way that a lot of the burden of cost, the burden of funding, has fallen upon the most vulnerable in society. You probably heard what the chief executive of Centrica said when he came to see us. What is your view on that? Although you are not directly in touch with customers, you made a point about being concerned about vulnerable people. You said in your remarks today and in your written evidence that you are looking for an investible proposition with, unsurprisingly, a better return. In order to do that, however, there has to be some funding by the state through taxation or through a levy, applied to all users. What is your view? What is Ofgem's view, on how that circle should be squared—how the vulnerable should be looked after in this very important debate?

***Claire Dykta:*** I agree wholeheartedly that it is important that no one is disproportionately impacted or disadvantaged or left behind. I think the current frameworks—and I am sure that Greg Jackson said this yesterday because he and I think very similarly on this point—in terms of charging and the way that they are designed have a risk of disproportionately impacting the disadvantaged. It is a sweeping generalisation, but they tend to be in the group that is last to transition and so pick up a disproportionate amount of cost. I do not think that there is an answer yet. I and most other people would say there are lots of things that need to be done. We need to be more progressive in the way that we charge. We need to identify those groups of people and how they are impacted

and think about it. More work needs to be done in that area, specifically with that objective of ensuring that it is a just transition.

The other part of your question was about investing. We do need to invest. We need to invest to achieve net zero within the energy sector and more widely across the economy. Specifically in relation to the network infrastructure, it is only part of the energy bill and a well-functioning regulatory regime can both provide an attractive investment climate and protect consumers because when it is set well, and it works effectively, it encourages the regulated entity to innovate and to be more efficient. When that happens, a large proportion of the savings that are derived are delivered back to consumers so consumers get the benefit, in the short term, in the money being passed back to them, but in the longer term in the delivery of the investment and the longer-term benefits.

**The Chair:** Thank you very much indeed, both of you. It has been a very interesting discussion. We have Ofgem coming to see us in a few weeks' time and I think you have given us a few pointers to the sorts of questions that we might like to ask.

One that did come up in the previous session was about how in Denmark the regulator is completely independent from the Government—by law. Is that something that you feel we should consider here?

***Claire Dykta:*** BEIS is currently grappling with the question of ownership models of an FSO. There are numerous different ownership models that could be in place. An FSO, if it is established, must be independent from both political interference—apologies—and over-onerous oversight from Ofgem. It needs to have a very clear role, it needs to be independent and it needs to be recognised that that will have to be a highly technical and expert organisation and be able to operate and, frankly, provide an attractive proposition to potential employees to get the talent in there because it will be the hub of the energy system.

**The Chair:** Claire and Jake, thank you very much for joining us today. That concludes our meeting. Thank you very much.