

Environmental Audit Committee

Oral evidence: Enabling sustainable electrification of the UK economy, HC 278

Tuesday 12 March 2024

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[Watch the meeting](#)

Members present: Philip Dunne (Chair); Barry Gardiner; Chris Grayling; Caroline Lucas; Cherilyn Mackrory; Jerome Mayhew; Dr Matthew Offord; Cat Smith; Claudia Webbe.

Questions 267 - 332

Witnesses

I: Rt Hon Graham Stuart MP, Minister of State (Minister for Energy Security and Net Zero), Department for Energy Security and Net Zero; Emily Bourne, Director for Energy Systems and Networks, Department for Energy Security and Net Zero; and Eleanor Warburton, Director, Energy Systems Management and Security, Ofgem.

Written evidence from witnesses:

[Department for Energy Security and Net Zero](#)

[Ofgem](#)

Examination of witnesses

Witnesses: Graham Stuart MP, Emily Bourne and Eleanor Warburton.

Q267 **Chair:** Welcome to the Environmental Audit Committee for our final session on decarbonising the economy. We are very pleased to welcome back to the Committee the right honourable Graham Stuart, the Minister for Energy, accompanied by two officials from Ofgem, Emily Bourne and Eleanor Warburton. The Minister might want to say one or two opening remarks and then we will introduce the other members of the panel, who can explain what they do for Ofgem.

Graham Stuart: The first thing to say is that Emily does not work for Ofgem.

Chair: I am so sorry. What is the Department?

Emily Bourne: I am Director for Energy Systems and Networks in the Department.

Eleanor Warburton: I do work for Ofgem. I am a director there and cover energy markets and system operation.

Q268 **Chair:** Thank you very much. Minister, this morning the Secretary of State made a speech in Chatham House and issued a written ministerial statement that is directly relevant to our inquiry. Could you start by giving us the topline messages that she was getting across and what that will do to help secure the energy supply and security for the grid?

Graham Stuart: Thank you, Chair, and thank you to the Committee for your continuing interest. As you know, we have an ambition to decarbonise the electricity system by 2035, even as the economy becomes more reliant on that electricity system. To do that, we have been very successful to date. We have gone from the dire inheritance in 2010, with less than 7% of our electricity coming from renewables, to a point where we are pushing towards 50% and upwards.

The tools that we have used to get there, like the contracts for difference, which has now been copied by Administrations around the world, have helped drive that and we believe have a vital part to play going forward. However, we need to make tweaks because as we move from 40% of renewables to higher amounts, we have to make sure that we have a system that is fit for purpose and better aligns the incentives of generators with the system overall.

That is why we are looking at maintaining CFDs but improving them and why we are looking at locational pricing. We have ruled out, in the second consultation, having the hyper-local nodal system, but we believe that there could be a role for zonal. Rather than having hundreds or thousands of points with different prices, you might have a single-figure number, as is the case in a number of other European countries, so that



you incentivise generation closer to where demand sits, thus reducing the network requirements to deliver it.

As part of moving to more and more renewables, we still have to balance the grid. Therefore, one of the messages in today's consultation is that we think that we will need to extend existing gas power stations and have new gas power come on, able to be converted to carbon capture, usage and storage or hydrogen in future. However, although gas may be used less and less often, it is still there as an insurance back-up and we make no apology for ensuring that the lights stay on.

We have transformed our system so far and going forward it will be a fascinating task. The REMA work in a great deal of detail is looking at how precisely we should create the framework of incentives within the system to drive the change to allow us to continue to be where we are currently, which is the country that has cut its emissions more than any other major economy on earth.

Q269 Chair: What is the profile of the life expiry of the exiting gas generating stations and how many do you anticipate either life-extending or building new ones?

Graham Stuart: We will learn more about that as part of the second consultation. However, more than half of existing gas generation is expected to reach end of life before 2035. At the same time, we are expecting a 50% to 60% increase in electricity usage between now and 2035 and it is in that context that we are sending out this signal to the market today.

Q270 Chair: Are you saying that it is the intent of any new gas-fired power stations, if I have understood you correctly, that they will be obliged to be capable of being converted into an alternative fuel system?

Graham Stuart: Correct, and we will come forward with regulations to help to support that. New gas generation may be necessary. That sounds counterintuitive on our road to net zero, but it is about ensuring that we have the balance in place and that it is complementary to and supportive of our continuing to decarbonise the power system by 2035, which is our aim.

Q271 Chair: I know that you do not have direct responsibility for nuclear, because that falls under another Minister, but we heard the director of GB Nuclear on the radio earlier this week saying that there will be no possibility of small modular reactors achieving generating capacity before 2035. Therefore, at the same time as we will lose half the gas generation, the nuclear fleet is also being withdrawn, reaching the end of its life. Does the model allow for both of those things to happen—a declining nuclear capacity and a declining gas capacity? How can you ensure that we will keep the lights on during that critical period?

Graham Stuart: At the heart of everything we are doing is the growth in renewables. We saw a couple of weeks ago the largest ever budget for



the contracts for difference. We will continue to ramp up our renewables and we are also doing long-duration energy storage technologies, whether it is pumped hydro, grid-scale lithium ion or other technologies. We support those to bring them forward. We are confident, without over-specifying into the 2030s exactly which technologies are most competitive, that we will be able to continue this remarkable transformation that has happened since 2010, while keeping the lights on. As the rest of the world follows us on the net zero pathway, the aim is that we come out of this with competitive electricity prices, decarbonised, so that we not only support jobs and investment in this country but that we attract far more to this country because we are a world leader.

Q272 Chair: Is there any credibility in supposed plans from others to decarbonise the electricity system by 2030?

Graham Stuart: I am not sure that the people who suggest that are serious because it does not seem to be even technically possible unless you start to have blackouts. Perhaps that is the plan. If you say that you are going to do it and then you withdraw your commitment to the money that you say you would need to do it but still stick to saying that you will do it, you have got yourself into a bit of a hole. That is an irresponsible approach. It was irresponsible before, whether £28 billion was added to everyone's taxes every year or not. It is even more irresponsible now when the means are not available.

Q273 Chair: Others might want to come in on that later. You have introduced some recent reforms last autumn to the connection regime to accelerate connectivity of new renewable projects. We have had evidence in our inquiry suggesting that in particular the milestones will not be enough to achieve the transformation to connection times that the industry that is keen to invest is looking for. Do you agree with that?

Graham Stuart: As I said, we are expecting annual electricity demand to go up significantly. As of the end of January this year, the equivalent capacity of all accepted offers in the GB electricity connections queue was 675 GW, over double the amount required to be on the system in 2035. The current total includes 204 GW of energy storage, 179 GW of solar, 120 GW of offshore wind, 44 GW of demand, 32 GW of onshore wind, 25 GW of interconnectors and 11 GW of nuclear. We have seen significant movement already since November. The actions set out in the connections action plan have led to more than 40 GW of energy projects being offered earlier connection times than they previously had, so we are making a significant move. However, the queue is still growing at an alarming rate. That is why the Chancellor laid out further action points in his Budget and why we are committed to working across the system to bring further improvements and deter projects that have no realistic chance of seeing the light of day.

Q274 Chair: Have any projects been withdrawn as a result of those changes?



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Graham Stuart: Yes, they have. I will turn to Emily.

Emily Bourne: The process that is happening at the moment is that the ESO is inserting milestones into all the existing contracts. There then needs to be time for those milestones to play out. Therefore, we would expect potentially projects to start being removed later this year as they fail to hit those milestones.

Q275 **Chair:** Can you characterise those milestones?

Emily Bourne: Project development milestones—planning consents and so on—to show that the project is making progress and is ready to connect when the date comes up.

Q276 **Chair:** Do they include securing land rights?

Emily Bourne: Yes, I think that they do. I will have to check exactly, but another action that is being looked at by Ofgem at the moment is a letter of authority from the landowner being required before you can even join the queue. That is something that Ofgem is currently looking at including.

Graham Stuart: Ofgem is reviewing the regulatory framework for connections and will make recommendations by the end of June this year to ensure that strong incentives are in place for network companies to deliver timely connections and excellent customer service as well.

Q277 **Chair:** Is the primary government tool to provide support to these projects success in the contracts for difference auction, or are there other government supports for any of these different energy mixes? If it is primarily CFDs that are being used, you have now moved to an annual cycle for CFDs, having had a failure in the last cycle. Can you explain what gives you confidence that the next one will work?

Graham Stuart: I would not accept the characterisation of a failure. The last annualised CFD round was the largest we have ever had. It happened not to have offshore wind where the economics had moved. There is always a window that we set each year. One of the reasons for moving to the annual basis was precisely the fact that we do not want to overpay and yet we want to get the generation. What has been remarkable about the CFD system that we introduced is that it has helped to reveal those prices. The £120-plus per megawatt hour for offshore wind in 2015, just two auctions later had come down to £39.50. No one, not even the greatest enthusiast for offshore wind, predicted that you would see that kind of transformation. That is the system and we have stuck with it.

We did not get any through in that particular window but we have listened, crunched the numbers and maintained the same basic methodology. We are confident and the industry tells us that it feels that it has been listened to and that the window that we have created this time is not only more generous than ever before but also appropriately aligned with the real costs in the real world.



Q278 **Chair:** Does the annual cycle help or give everybody confidence that there is a timetable to which they work, or does it hinder development of projects? Sir John Armitt has pointed out that he thinks that there are delays of over two years for long-term energy storage-type projects, hydrogen projects. He thinks that there is some delay in decision making within government that is leading to these delays, which adds costs and uncertainties to projects.

Graham Stuart: I do not know precisely to what Sir John was alluding, but clearly in the early days the development of carbon capture and storage, which is vital, and the development of hydrogen, requires us to seed and bilaterally develop the industry to get to the point where we can move to auction, just as we did with offshore wind. That is an expensive project. We saw £20 billion announced from CCUS last year and we have seen the first hydrogen allocation round. Clearly everyone, not least within my Department, and I would always like us to go faster, but we have to live within the financial resources that are available. However, we are moving quickly and comparatively we are leading Europe and arguably the world.

Chair: We had some evidence when we visited the National Grid control centre of a way to accelerate that, and Chris has a question on it.

Q279 **Chris Grayling:** At the moment the rules permit a developer to connect themselves to a substation over a relatively short distance. Beyond that the work has to be done either by National Grid or by the regional distributor. The suggestion from within the industry, put to us informally, was that if we allowed competition in that, for example allowing major construction firms to do the work on behalf of the developer in the way that they are allowed to over a short distance, it would dramatically speed up the issue of the queue. Is that something that you have looked at, is that something that could be done and is there a reason why it can or cannot be done? I direct this to you and to Eleanor from Ofgem.

Graham Stuart: I will let Emily answer it first.

Emily Bourne: I am aware of the suggestion that you put, but I will have to come back on whether it is something that we are actively looking at. We are definitely happy to actively look at it, especially if it is being proactively suggested by the industry.

Eleanor Warburton: I can add a little bit more. There are some options for self-build now and different models. As you say, up to a point the developers can build themselves. You then have things called independent networks—IDNOs, ITOs—where a third party can take over the build in some circumstances. There are models on the table and we do see some of that happening now. We are looking, with a number of individual cases where developers are keen to go further and companies are keen to go further, at how far we can push that.



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The two key factors that we keep in mind on the other side of the table are, first, that it is important that it forms part of a coherent and reliable network. We have to make sure that it can connect in the right way at the right standards and so forth. There also has to be a clear, long-term owner for that network. You do not want to end up in a situation where somebody is connected down a wire and at some point in the future the reliable ownership and maintenance of that wire comes into question. However, there are a number of models and interesting and innovative approaches coming out of industry on how they can be used.

Q280 Chris Grayling: Is there any reason why you could not have a trusted trader approach? If you think back to the history of telecoms in this country, we started with a monopoly that was slow, ponderous and did not deliver anything very fast. We are not far away from that situation now. You could have a trusted trader approach where you had a list of 20 or 30 companies that were deemed to be sufficiently reliable to do this.

Eleanor Warburton: I fully agree. The fundamental question is the long-term ownership of the wire. Essentially you can get a licence as an IDNO, as an ITO, to show that you are the company responsible for the permanent maintenance and ownership of that wire. Finding people able to build it is perfectly credible. A lot of this work is outsourced even by the major network companies. It is just making sure that 50 years down the line, when that line is still in use, it is fit for purpose and it is very clear where responsibility lies for it.

Q281 Chris Grayling: If it is a dedicated line, for example for a single solar farm, to connect that solar farm to the local substation, from the point of view of the network, if the solar farm goes bust all you have to do is flick the switch and turn it off.

Eleanor Warburton: Exactly.

Chris Grayling: If it is a dedicated line connecting a single facility to a substation, what you describe should not be a problem as long as the solar farm is willing to take responsibility for that link.

Eleanor Warburton: In essence, yes. As ever, a lot of it comes down to case by case. In principle it can happen, in principle we are very open to it happening and there are a lot of cases where it does happen.

Q282 Chris Grayling: Is it something that can be accelerated? If we are going to sort out the queue, it seems to be a way in which the queue could be sorted out.

Eleanor Warburton: It is certainly one part of it, yes.

Q283 Jerome Mayhew: Minister, I am going to kick off on planning and have a discussion as to the development of our planning policies and whether they have gone far enough. We all know as elected politicians that there is a balance here. On the one hand we want to have an infrastructure that is constructed very quickly, efficiently and cost-effectively to help us



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with our net zero transition. On the other hand, the last thing that we want is to have pylons going through our constituency, because residents hate it.

I have skin in the game, as the Minister knows, with OffSET, which is a group of Norfolk, Suffolk and Essex Members of Parliament who are campaigning around the proposed pylon route from Norwich south through Suffolk and then Essex. This is real-world stuff. You have recently updated the National Planning Policy Framework and you have updated the national policy statement on energy infrastructure. Can you collectively tell me whether you think that those have gone far enough, whether it is a step in the process of the development of policy frameworks? How would you characterise it?

Graham Stuart: Thank you for your excellent question. We have not built out networks and systems on this scale since the 1950s. We are, as you know particularly well, Mr Mayhew, in a sense playing catch-up, partly out of the OffSET MPs' concerns. We came forward with bespoke proposals on that and on the holistic network design process. We are looking to move to a strategic spatial energy plan. Another change is to take the electricity system operator currently within National Grid, as we made provision in the Energy Act 2023. That will come out of that.

It will become the National Energy—rather than “electricity”—System Operator, combining gas and electricity. We are looking to commission initially the ESO, which will become the NESO, to produce that strategic spatial energy plan. That will help to provide the more strategic, joined-up guidance alongside the factors that you have mentioned.

We have fully revised the energy national policy statements following consultation. In addition, we have made a very active programme of reform, set out in the British energy security strategy, the nationally significant infrastructure projects action plan and the consultation on operational changes to the NSIP system. Therefore, we are, right across the piece, making changes and reforming and seeking for the regulator and other players in the whole system to look to change what they do to deliver in the most coherent and joined-up way with the least imposition on communities that we can manage.

However, at the heart of all of this is that we are creating new points of generation in a completely rewired system. Just as we did originally to create the wealthy society that we are today, we are doing it again in the green transition. Inevitably, notwithstanding the best efforts in the world, you will have to build network infrastructure. It cannot all be offshore and it cannot all be underground. Therefore, we will have to have pylons running through virgin countryside, which will not be popular with those who live there. That is a necessity as part of what we are doing.

We are seeking to listen to those communities. We have come forward with consultations on community benefits precisely to recognise the imposition that we are making. We are seeking across the board to



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improve the system so that we can look those communities in the eye and say that we have done everything possible to minimise and find alternatives that are cost-effective and reasonable to balance the various pressures, while listening to the voices of local communities and seeking to ensure that their voices are heard.

We can see the democratic process in action because Members of Parliament, like you and others in the east of England and elsewhere, are standing up to make sure that those voices are heard and are challenging me and other players in the system to make sure that their communities can be assured that everything is being done to minimise negative impacts and recognise their concerns.

Q284 Jerome Mayhew: Consultation has been given a bit of a bad name in the past, because the consultation has too often been characterised as, "You're going to get it; do you want it left a bit or right a bit?" Where people do not have confidence that the design and planning process has fully taken account of their views and also the development of technology and the development of this new and fast-evolving requirement and system, and they do not have confidence that the experts have done their job properly, local consent, albeit grudging, is absent.

The risk that we all have there is that it gums up the whole system in delay, going over the same areas twice and then having judicial reviews. Given the risk of that and to some extent the history of that, are you confident that the new structure of planning policy frameworks and all the other wonderful acronyms that you spouted at me have got you to the right place, or do you foresee that there will be further development in the months and years to come?

Graham Stuart: It is an evolving landscape, but we need to build this infrastructure. We cannot wait for new technologies that magic it away. However, as I hope has been your experience as one of those concerned representatives, we are engaging, listening, working and bringing players into the system to make sure that people feel that their voices are heard. The system as a whole will get better. As a constituency MP myself, outwith this area, I have had engineers going into a hall with 300 anxious people and turned them into 300 apoplectically furious people.

Organisations need to learn and must learn how to talk to people, how to share and be honest and open. If they spin something too much one way and it turns out not to be exactly the case, they lose trust. Somehow we must get the balance right where you are sufficiently confident in what you are talking about and authoritative, yet do not overstate, because you only have to make one mistake and people start to question everything. I recognise the fact that that thread can be pulled and undone.

Q285 Jerome Mayhew: Emily, we have been talking about the nationally significant infrastructure project fast-track work. How will that link in with the critical national priority infrastructure? Will they work well together?



How is that?

Emily Bourne: It is a good question. DLUHC has been piloting the fast-track process. One of the characteristics of it is that more complex projects are not necessarily well suited to that process. For electricity networks in particular, one of the things that we have been looking at, following the Network Commissioner's recommendations, is how we can make networks projects comparatively simpler than they are at the moment, remove some of the complexity and bespoke nature of different projects and make it a bit clearer to communities what areas are up for grabs and are not so that we can have more meaningful conversations.

Q286 **Jerome Mayhew:** Could renewables projects and grid infrastructure projects fit within that system?

Emily Bourne: Potentially. That is one of the questions that we are working through.

Q287 **Jerome Mayhew:** How do you make simpler something that is inherently complex?

Emily Bourne: On the network side, one of the actions that came out of the package that we published in November was to work with industry to develop design principles for electricity networks to make it more standardised across the piece, rather than have different approaches being taken in different circumstances, and hopefully make it a smaller set of choices.

Q288 **Jerome Mayhew:** The Committee has received feedback in the written evidence that has come from district council planning authorities. They say that at the moment they have an upper limit of 50 MW for onshore generation that they are able to put through their planning process before it has to go off into a nationally significant infrastructure project. That has been described as using a hammer to crack a nut. Is there any thought being given to increasing the 50 MW to something higher and might that be a successful or quick way of speeding up their projects?

Graham Stuart: There are issues with the capacities within councils, if we were to see a great number more projects going to councils. Across the whole system, one of the issues has been about capacity and trying to understand, on the critical path, that every bit has to have that capability. That is something that we have looked at and continue to look at, but the arguments cut both ways.

Q289 **Jerome Mayhew:** If the national body representing those planning authorities has made this suggestion, it is surprising that they would do that if they felt a lack of confidence in their ability to supply that expertise. Is that the evidence that you have received in the Department, Emily, that they are not capable of dealing with bigger projects?

Emily Bourne: There is definitely a concern about capacity across the whole of the planning system with the amount that is coming forwards, particularly in the energy sector, but I suspect in other sectors as well—I



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am less sighted on that. It definitely is a concern that councils can struggle if they get a number of these different projects.

Q290 Jerome Mayhew: You may not feel that you want to answer this. Is it your concern that they do not have the capacity to deal with, let's say, a 75 MW project or is it your concern that with too much local democracy, not seeing the bigger picture, they might say no to something that you want to say yes to or even, dare I say it, a bit of central government thinking that local government is not up to it? Is there some of that in there?

Graham Stuart: I would not say so. It is appropriate to draw the line somewhere and there are arguments both ways as to whether that should be increased. I have certainly seen submissions coming to me capturing information from various places and looking at the numbers and the impacts and trying to model that through. I hope that there is no "central government knows best". It is about trying to find the most appropriate system. In my Department we are focused on making sure that we can have the planning system move quickly so that we can get this infrastructure built. Therefore, I can assure you that if we thought that there was a great deal of capability to do that locally, we are certainly open to looking again at those numbers.

Q291 Barry Gardiner: I want to focus, Ms Warburton, on governance and the relationship that you and the Government will have with the National Energy System Operator. Before I do, can I give one thought to the Minister on what he was discussing with my colleague Jerome Mayhew, and the capacity that is there to make these pylon routes much more acceptable to the public, by landscaping, by creating biodiversity corridors that would enable greening of the pylons from local communities and the creation of a local nature resource in conjunction with local nature partnerships?

The cost differential is huge. We know that. On overground to underground it is between four and 10 times as costly if you want to underground those cables. What consideration has the Department given to working to ensure that we can do this in a way that local communities are much more accepting of it? Also, it meets our biodiversity commitments, it reduces carbon in other ways through the planting process and it would be a lot cheaper than being forced to underground.

Graham Stuart: That is why for network infrastructure, as well as up to £1,000 a year for those close to new transmission infrastructure over the first 10 years, we are also looking at £200,000 per kilometre if it is above ground and £40,000 if it is underground to be used by the local community precisely to do that sort of thing. That is providing some of the resource. I entirely agree with you, Mr Gardiner, that because people think in very large numbers, you have to go and listen and hear the specific and the local. If you show that you genuinely listen and you come up with more flexible approaches, people are much more accepting because they feel genuinely heard rather than just talked at.



Q292 Barry Gardiner: All right, we have that one out there. Ms Warburton, I want to ask you about the NESO, the National Energy System Operator. It will be up and running this summer and will be responsible for a huge number of things. It will be advising you and the Government. There are a number of questions here. Who is actually in charge, and how is the new approach to governance going to help deliver enough electricity to consumers in a net zero future, which is the basic intent of all of this? How will it do that? Given that it will be responsible for not just the strategic planning of networks that the Minister was talking about earlier but assessing the security of supply, the resilience of the system as well as the existing obligations on balancing the grid and moving electricity around the UK, does it have too many responsibilities to be able to cope with all this in the time that we need it to be able to deliver?

Eleanor Warburton: There are a few questions there and I will try to pick them up. I will start with the last. I am certainly very mindful, and I know that my colleagues in the Department are very mindful, of the burden placed on the NESO, particularly in the first few years. Frankly, there is an enormous temptation to treat it as the solve-all for everything and to give it every job going. We have to be very careful about that.

The role that it is taking on on day one comes very inherently from its role as systems operators. Right at its heart is, as you say, the real-time operation of the system sitting there managing the flows. Its advisory functions in systems spatial planning and network planning, which are ultimately advisory, come directly from the knowledge that it brings from those. They are a very logical and sensible buildout to it. There is an overwhelming rationale to put them in that organisation and it is that rationale that leads you to the creation of it as an independent system operator.

To pick up who is in charge, it will be a public sector corporation. The Government will be the shareholder and it will not be profit distributing. I will not speak for Government on this, but my understanding is that their intention is that it should be arm's length in day-to-day matters.

It will be regulated by Ofgem for a couple of key purposes. The first is that at the moment its funding flows through a price control, it goes on consumer bills. That model works very well and brings some industry accountability and we saw no reason to change that, so we will regulate it for its core funding purposes. We had a good look at international models and this is common across most if not all of them. There remains a need for regulation for accountability, a licence setting out clear obligations with routes if those are not met. That will continue to sit with the regulator as it does now. I am trying to remember your last question.

Barry Gardiner: You answered the last question first.

Eleanor Warburton: Your third question was essentially about the benefit and impact of it.



Barry Gardiner: Will it deliver in time?

Eleanor Warburton: Its critical roles will be around delivering the spatial plan and from that the strategic network plan. It is critical that it becomes an ESO for those. I do not think that you could ask a commercial company owned by a network company to do that to the same degree. Bringing both of those forward will complete a profound shift in how the energy system is developing. As the Minister said, if you want to transform at real pace, you need a coherent, single set of plans that everyone is acting against. Then you can be quicker and more co-ordinated, and you can minimise impact on the ground by making the smartest choices.

I think that it will absolutely deliver those products. For the network, I as regulator, and for the other products, the Department have to accept that it is then our decisions on what we do with them that will also impact whether it brings the benefits.

Q293 **Barry Gardiner:** In those advisory roles that it has—and you say that they flow naturally from its more executive roles—what happens when you or the Government disagree with the advice, which you are perfectly entitled to do?

Eleanor Warburton: I will talk to the network plans and ask the Department to speak for themselves on the other. We have had the first network plan from the system operator, the holistic network plan. We will see another stage in that process, the next stage of network planning, coming later this month. There will be another more comprehensive one in a couple of years' time. Therefore, this will be an iterative purpose. However, the first one sets the model for the future. We receive the plan, we assess the projects under it and then take a decision on whether we are content to approve network funding for those projects.

What we did for the first one and will continue to do is make sure that we are closely sighted with how the plan is being developed as it goes along so that we can take those decisions very quickly. One of the key things that we need to do is to make sure that we are approving network planning at pace so that it can be built at pace. We will be extremely transparent. All of these documents will be published, our decisions and reactions on them will be published, but most importantly—and I know that this is incredibly boring and technical—all of the data inputs, the methodologies, the approaches and all of those things will be clearly defined at the start so that it will be very clear how that process will unfold and what will drive each decision that is taken.

Q294 **Barry Gardiner:** I welcome transparency and that is grand, but this is not something that the public will even be aware of, never mind go and fish out the documents and find them for themselves. I am still not clear what the oversight arrangements are here and who is in charge of whom. That is what I am trying to get to the bottom of. The Minister is indicating that he wants to come in but is there anything else that you want to say



before he fills that gap?

Eleanor Warburton: Fundamentally the Department's role is to set energy policy—targets, standards, the overall direction for the country. Ours is to regulate the sector and in this context, crucially, unlock the funding for network build and make sure that that is spent properly and if networks do not deliver against it, they are held accountable. The NESO's role in this is to take the technical insight that it is getting from the system and give us a very transparent, credibly worked-up plan or plans on which we can then make those choices.

Q295 **Barry Gardiner:** You said to me that you want to be involved in that as it proceeds.

Eleanor Warburton: We want transparency in how it is proceeding.

Barry Gardiner: Yes, and you want to be closely monitoring what is happening so that you are not presented with a final flourish, but you have understood the process of getting there. What happens if it goes wrong? Ofgem has been involved in the process of getting there, has seen it all the way through. Say it has got it wrong and you have gone along with it, yet you have this role in regulating it and ultimately, I think I am right in what you say, in it being accountable to you. It is going to turn around to you and say, "We showed you all the workings out, we told you what we were doing. Don't start complaining now." Does it not undermine your role as the regulator? Are you not disempowered and impoverished by this new body?

Eleanor Warburton: I certainly do not think that we are impoverished by it. You are exactly right in the risk that you point out. The situation already exists with the HND and the current ESO. It does come back ultimately to very clear, up-front transparency. You are absolutely right that we cannot turn around at the end and say, "We have watched this all the way along but now we have changed our mind, we don't like it and we are saying that you have underperformed".

We must set out up front very clear expectations of this product, this point in time, these methodologies and these processes for engagement with industry, communities and so forth to validate it. Providing that it has met those ex-ante terms, it must be deemed to have done a good job. If we do not like the conclusions that it has reached, if they are based on strong evidence and they are the correct conclusions, that is not a failing under regulation. We just have to accept that some of the conclusions in this sector are challenging ones.

Q296 **Barry Gardiner:** Therefore, the separating out of this new body is mythical to a certain extent. These responsibilities are the responsibilities that you and the Government currently have. ESO does one thing and everybody else does their bits and so on. However, the structure is there and it has obviously been deemed not to be able to perform in time to deliver what we want, which is why we have come up with a new



structure. What I am trying to get at is what really is new in this new structure and in the governance relations that all of you have with each other.

Eleanor Warburton: One of the fundamental changes is that at the moment, with all due respect to National Grid, this is a commercial body owned by National Grid, which is also our single biggest network provider. For me, one of the key fundamental drivers when I look back across the project is simply that the scale and value of the functions that it is now being asked to deliver feel like public interest functions, they do not feel like commercial company functions in the same way. They feel so pertinent to the interests of a network company that it feels very challenging for the rest of the sector to look at the ESO in that world and say, "Yes, of course we are all happy for you to draw up the network plan".

Q297 **Barry Gardiner:** Can I ask you to turn the telescope around in the answer that you have just given and tell me what that says about Ofgem's observations about the way that National Grid operates at the moment? It sounds like it is not in the best interests of achieving the delivery that we want.

Eleanor Warburton: I do not think that that is an inference that I meant to be taken from what I said.

Q298 **Barry Gardiner:** You said that National Grid is a private company and the current arrangements are not satisfactory. You used words like it feels more suitable that it should be a public body delivering this. Therefore, there was an implied criticism in what you said.

Eleanor Warburton: It was a recognition that asking National Grid, as an electricity network owner, to offer whole-system plans—this body will look across electricity and gas—for the future of the entire country's network and expect it to do that for the country entirely based on the overall optimal outcome for the country is asking it to do something that it would be the first to say it is not set up to do. That is not its purpose.

Q299 **Barry Gardiner:** My purpose is not to denigrate National Grid, so I will leave that there. How do you expect the centralised strategic network plan to be developed, when will it be finalised and what is the timescale for delivery to come up with the necessary network capacity?

Eleanor Warburton: What is going to happen over the next few years? We have had the first tranche of planning and project approvals. Those are now moving rapidly into build. That is what you will hear referred to as ASTI. This month we will get a second updated version of that plan. That essentially covers the network that we need for 2035. My understanding—and my apologies, I will absolutely hand over to the Minister now—is that the Government will shortly be commissioning the strategic spatial plan. I believe that that is due to deliver in the financial year 2025-26. The year after that, using the strategic spatial plan as a basis, the full comprehensive network plan will come. That is in 2026-27.



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Network build is already happening for the 2030 outcomes and the plan for the 2035 generation outcomes will come imminently. The plans that we are now talking about take us beyond that and pull the full picture of the network together.

Q300 Barry Gardiner: Thank you very much, that has been very comprehensive. Minister, you wanted to come in and perhaps talk about how the Government will exercise their oversight over the NESO.

Graham Stuart: Eleanor has done a very good job. We set the strategic policy framework. That is our role. The NESO will be operationally running the system. That is very much looking for Ministers to make a decision on doing that. It gets on with that and then, as you rightly say, Mr Gardiner, it provides advice to us. We will shortly be commissioning it to produce the strategic spatial energy plan. That will be to the commission that we give it. That is what it will do and we are ultimately responsible for that. It will use its expertise to come up with it and Ofgem will be involved in making sure of its business planning, the financing and the rest of it, the regulatory role there. That is the supervisory role that it plays there.

This is huge. It is an extraordinary thing and it has been carved predominantly out of National Grid to create this overall energy system operator operating everything, looking across hydrogen. We all know how important that is going to be. It is right to highlight what a big job it will be and right to give us a good grilling on it. It will change over time but the fundamentals are—

Q301 Barry Gardiner: Sorry to interrupt you, but if it does not work and if we do not get to the targets and the deadlines that the Government have set, what are the possible sanctions and levers that you as Government will have on this? Is it just to abolish it and try again?

Graham Stuart: There are a number of things that you can do. I am not an expert on all the various ways that we structure government, but things like NICE, for instance, is set up in the health space to make sure that whoever has the most tee-shirts outside your window does not win the battle for medical spend. We create these expert safe spaces, if you like, so that the experts, freed from those political pressures, can come to those arm's-length decisions. Ultimately, who carries the can for whether that drug is available to treat children?

Barry Gardiner: You do, Minister.

Graham Stuart: Precisely. We can agree on that. These are systems that we are putting in place that we own and ultimately it will be Ministers sitting in front of Parliament and in front of Committees like this who are responsible. That is how it should be. However, and I hope that the Committee agrees with me and I will be interested if you do not, this kind of set-up is probably the right one to allow that expertise to be deployed while we none the less assume ultimate responsibility.

Barry Gardiner: Thank you very much and my apologies to all of our



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witnesses, Chair. I have to leave to go to the EFRA Select Committee now.

Q302 Cherilyn Mackrory: Minister, one of the main challenges to the whole build and the change and the upgrade to the grid that you have been talking about today is the skillset. Renewables UK has estimated that we will need an additional 70,000 people by 2030 to meet the requirements. What analysis has your Department done, perhaps in relation to other Departments or not, on where the gaps are in skills but potentially geographically as well.

Graham Stuart: Across the whole piece?

Cherilyn Mackrory: Across the whole piece.

Graham Stuart: I seem to have had various roles within the energy system since my appointment in September 2022. I did for a while chair the Green Jobs Delivery Group, which itself emerged, from memory, from another taskforce, precisely to look at these things. There were 400,000 jobs in the low carbon sector. Today the expectation is that that will grow by 80,000 or 100,000. It depends on who you talk to. If you talk to the offshore wind industry, it thinks that it will go from around 30,000-odd today to over 100,000 or 110,000 by 2030. That is not very far away and it is a huge challenge. That is what the Green Jobs Delivery Group did, working with industry across multiple sectors to try to get an understanding and create heatmaps, which you will see when the green jobs plan is produced. We have committed to publish that in the first half of this year. It is very much in partnership with industry looking at these things.

I was at the Phillips 66 refinery on the south bank of the Humber the other day. It not only processes our North Sea oil and gas to turn it into products for cars and vehicles here, but it makes coke for EVs and that sort of thing. It is looking at working with the CCUS cluster, the Viking one nearby. It is looking at investing, and the private sector investing, in a local area to move from 100 apprentices per year to 1,000 apprentices per year. That is the scale of things that is going on across the country.

While we not only need to do all of this, we want more of it, to have its supply chain here in the UK. That is from an energy security point of view, a delivery security point of view and the economic benefit point of view. That is why in the autumn statement 2023 the Government committed £960 million for the green industry's growth accelerator, GIGA, to help expand UK manufacturing capacity and strengthen clean energy supply chains across offshore wind, electricity networks, carbon capture, utilisation and storage, hydrogen and nuclear. At the spring Budget the other day the Chancellor announced an additional £120 million for GIGA, bringing that total to more than £1.1 billion. In January the Government published their critical imports and supply chain strategy, which sets out priorities for building supply chain strategies and



resilience while signalling an intention for increased collaboration with international partners to enhance global resilience.

There is a lot going in and going on. There is the critical minerals strategy and there are various other bodies that I have previously chaired, like the Solar Taskforce, which is looking at bringing the 70 GW ambition to life by 2035. That requires an increasing number of installers in the supply chain to deliver that. It is a big opportunity as well as a big challenge and I would rather focus on the opportunity than the challenge. Clearly it is one that we need to do and we need to do it at pace because these opportunities will not be delivered if you do not have the welders, the project managers and all the rest of it to deliver them.

Q303 Cherilyn Mackrory: I do not disagree with you about the opportunity. That is absolutely the right way to look at it. I will come to the wider supply chain in a moment. Going back to skills specifically, the green jobs plan that you mentioned will be out in the first half of this year. Does that include the strategies that we will use to get people into work? They will come from different industries, some will have no skillset at all and some of them may still be 12-year-olds at secondary school at the moment to get them into the workforce by 2030. Will that document include all of the answers to those questions and what analysis are you doing around that?

Graham Stuart: The aim is to identify across the piece where the hotspots are. The early work that I saw on heatmaps shows the particular trades that are expected to be going from green down here to the flashing red up the top and the different trades that are expected to be in shortage. Anybody with the word “electric” in their job title will find that there is plenty of work going forward. Electricians of every variety will be required, from the electrification of industry to the delivery of so much of this space, hydrogen, carbon capture, the lot. Everything will require electrification.

Q304 Cherilyn Mackrory: Going back to the wider supply chain, RWE, for example has suggested that without direct government intervention everything becomes a lot more expensive and that cost is something that it has to push on to the consumer. You mentioned the interventions that the Chancellor has made over the last half year to one year, the £1.1 billion in total now. How will that work? How will companies see that embedded into making sure that they will get the results that you want from that funding?

Graham Stuart: One of the things that we did with the Green Jobs Delivery Group was to engage across Whitehall. Robert Halfon, the skills Minister, has been a member of that, as have Ministers from other Departments. Government support for green skills include skills boot camps, free courses for jobs, higher technical qualifications and apprenticeships. For instance, skills boot camps can be used to train workers in high-demand skills such as electric vehicle charger installation, retrofit and arboriculture. There are already more than 10 T-Levels and



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200-plus apprenticeship standards relevant to net zero in place, with more construction and digital standards coming online in 2025.

To inform the green jobs plan, the Green Jobs Delivery Group undertook workforce assessments, forecasting labour demands for specific sectors for the delivery of net zero and nature targets. We have also announced a two-year, £50 million apprenticeship pilot across three growth sectors, one of which is green. That will cover 13 key in-demand standards, including nuclear technician, pipe welder and electrical power networks engineer, which will all be critical occupations to the UK's green transition in sectors such as nuclear, CCUS and offshore wind.

In 2021 the DFE, with whom we work closely, launched free courses for jobs, which gives adults the chance to access free level 3 qualifications in priority sectors like engineering, construction and manufacturing. Free courses for jobs has proved popular, with data suggesting more than 49,000 enrolments being reported between April 2021 and July 2023. We are working across the piece and one of the reasons for pulling it all together into this green jobs plan is that it will hopefully be socialised—a ghastly expression—with the FE colleges and others around the country, and schools. I know from having previously chaired the Education Committee that young people don't know what they don't know, so we are getting that information out there. It is important to make sure that the careers advisers in schools can share the opportunity and bring it alive so people know the kinds of courses they can go on to access these jobs.

It is a big opportunity and I think the concentrations of opportunity will be in the areas of the country that we seek to level up. One of the great things, if we do unlock this in the right way, is making sure that levelling up is not an aspiration but something genuinely delivered in areas that previously felt left behind as they move from high carbon to low carbon.

Q305 Cherilyn Mackrory: Can I ask for a bit more about the wider resilience of supply chains? How important do you feel the Government's intervention is in making sure that supply chains are resilient? Are you in favour of intervention? If so, to what extent? If not, why not and how else would supply chains reach the required resilience?

Graham Stuart: Of course, a lot of resilience in our system has been supported by Government action. There has been a wide range of schemes, notably the contracts for difference, of course. When you have to build everything up front and rely on a long return over time, the cost of capital is critical. That is why giving guarantees of certain levels of income has helped to support our supply chain. We are looking for contracts for difference to have something that we are now going to call industrial rewards, another way of encouraging reliable support for the supply chain.

The offshore wind manufacturing investment scheme OMIS and the Net Zero Hydrogen Fund are some of the projects alongside GIGA that we are



using to encourage more of the supply chain to be resilient and, ideally, based in the UK.

On networks, the Department recently commissioned the trade body BEAMA to convene a supply chain council, as we committed to in the transmission acceleration action plan. It started at the beginning of this year and will be an ongoing forum.

We are seeking to make sure that Government across Whitehall and industry talk together, share data and that we have no surprises. Then everybody can plan and invest. Companies such as Phillips 66, which I have talked about, along with other local partners can likewise maximise numbers of apprenticeships and turn these supply chains into opportunities for local people.

Q306 Cherilyn Mackrory: Given the interventions that you have just mentioned, are the Government confident that the trajectory is on track to meet targets with a robust supply chain, or do you feel the Government might have to make further interventions over the next six years or so?

Graham Stuart: We will keep talking to industry and keep it under review. So far, as you know, we have made a quite remarkable transformation. Who knew that when we did our first auction for offshore wind that we were going to be able not only to lead the world in the development of that technology, but to massively drive down the price while we were at it? Yes, we have cut our emissions more than any other major economy on the planet and that has primarily been driven since 2010 by the removal of coal from our system and replacing it with renewables and we have seen a lot of jobs being created while we were at it. The economy has grown, emissions are down and the world is changing and committing to net zero. The carbon border adjustment mechanism legislation in Europe and the Chancellor's commitment to do the same sends signals across the world. If we keep on leading, keep greening our operations, we can not only do the right thing, but be more economically prosperous as a result.

Q307 Cherilyn Mackrory: One final question—a bit of a chicken and egg. Do you foresee any challenges that we have not covered in that set of questions for the Government or the industry to get to where we are?

Graham Stuart: We rightly focus on the grid. If you do not have the facilitating infrastructure, this cool generation will not come at the right price. That is why we had the transmission action plan and the connections action plan and we are keeping on working at it. We have all the partners coming forward with yet more ideas to sort that out.

When I was at a recent meeting I was pleased to hear, amid all the noise around the queue—and the chairman started with that. I said, "Despite all that and the fact that the queue is growing faster than we are managing to make the changes, and the milestones point, can we, all



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other things being equal, decarbonise our system and get our targets fulfilled for 2035?", to which the answer I was given was, "Yes".

Q308 Cherilyn Mackrory: Are you confident that in comparison with other European countries and other like-minded countries, we are on track, ahead, behind, about level?

Graham Stuart: We have cut our emissions more than any other country. We are ahead. The aim is to stay ahead but the biggest challenge on climate change is not the race by ourselves. We have the whole world to think about. Our biggest challenge is not the UK. Our biggest challenge is getting the rest of the world to make sure they follow. That is why COP26 was so important. We went from 30% of global GDP covered by net zero pledges to more than 90%. That is why COP28 was important, when everyone focused on the tripling and doubling numbers of their pledges. The world committed to 1.5 aligned, all greenhouse gas, economy-wide, nationally determined contributions for 2035. We are expecting that from countries in less than a year from now, in February next year, ahead of the Belém COP in Brazil. Yes, I think we are in a good place.

Q309 Cherilyn Mackrory: I was not explaining myself well. Are we on track or behind or in front when it comes to a resilient supply chain and upskilling the population, those sorts of targets? Do you feel confident that we are about right?

Graham Stuart: It is challenging. The whole world is doing this at once. We are trying to do four or five times more than we have done in the last 30 years in the next six years on networks alone. Other countries are doing it at the same time, from HVDC cables to transformers to all the other bits of kit, and there is real pressure in the system. However, our system is pretty good. When you talk to our three transmission operators or the local connections companies, they are in a good place. Following the work we have put in over the recent years—for instance, the ASTI process that we work on closely with the regulator has changed its approach and that has allowed multibillion-pound contracts to be signed and agreed.

It is challenging but I think we are probably in a reasonable place and I expect that to continue as with our Transitional Centralised Strategic Network Plan as well as the SSEP. All these plans, all these acronyms—but it is a co-ordinated set of work across the piece and I think that we are probably in a good place.

Chair: Thank you, Cherilyn. We have two sets of questions, 10 minutes each. I know Chris Grayling wants to come in on that but can you add that to your set of questions and we will go to Caroline Lucas first?

Q310 Caroline Lucas: This is a question for the Minister. Given the Government's target for zero carbon power by 2035, to what extent have they been investing in the batteries, the flexible technologies, storage



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and electrification to offset the need for new gas power? What further plans do you have for the development of those technologies so that we can squeeze gas out of the system?

Graham Stuart: Electricity storage can enable us to use energy more flexibly and decarbonise our energy system cost-effectively, for instance by balancing the system at lower cost, maximising the usable output from intermittent low-carbon generation such as solar and wind and deferring or avoiding the need for costly network upgrades and new generation capacity.

We recognise that we will need a variety of storage technologies to achieve net zero, including technologies that can deploy at different scales and provide output for different durations, such as lithium ion battery storage and pumped hydropower storage, as well as emerging technologies, including liquid air energy storage and flow batteries. We are facilitating the deployment of electricity storage at all scales through the joint Government and Ofgem Smart Systems and Flexibility Plan. This includes the Longer Duration Energy Storage Demonstration, the LODES competition, which aims to accelerate the commercialisation of innovative first-of-a-kind, longer-duration energy storage technologies that provide flexibility.

Q311 **Caroline Lucas:** Are there any timetables or any figures that would indicate what kind of acceleration there will be behind that? I appreciate that there is a range of technologies out there that you are pursuing to a greater or lesser extent. However, to the extent that we need a step change in investment and so on, do you have anything that would capture some of the speed and acceleration in the level of change in those things?

Graham Stuart: Today more than 31 GWh of electricity storage is operational in Great Britain, made up of 27 GWh of pumped hydro storage and just under 5 GWh of new grid-scale lithium ion battery storage. There is a strong and growing electricity storage planning pipeline representing nearly 51 GW of storage; that is 48 GW of battery storage and 3 GW of pumped hydro storage. Those things are coming through. We are aware of approximately 20 LDES projects under development consideration in GB. Together, these are estimated to provide more than 200 GWh of storage and 10 GW of power capacity.

Q312 **Caroline Lucas:** Do you have targets for the different elements of that plan? That is what I am trying to get at. You have explained the status quo and you have given a big figure for how we would like to be. What I do not see is a trajectory for the different technologies that would potentially at least help us to squeeze gas off the system.

Emily Bourne: Could I come in, Minister?

Graham Stuart: Yes, of course.



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Emily Bourne: We recently closed a consultation on a potential cap and floor support scheme for long duration electricity storage.

Q313 **Caroline Lucas:** It was not terribly long though, was it? It was only about 35 hours.

Emily Bourne: Six hours plus. We are looking at mostly pumped hydro but also some newer technologies. On the hydrogen side, we have also been consulting on the hydrogen storage scheme. Apologies, let me find it here.

Graham Stuart: The basic answer, Ms Lucas, is the technologies do not exist at commercial scale yet to provide the balance. That is why, as part of the stage 2 consultation for the Review of Electricity Market Arrangements, which we announced today, we are looking at having new gas-fired generation. It will be used less and less often but it will provide insurance and back-up. However, we see hydrogen providing a vector for holding energy to be converted to electricity when we need it. The development of hydrogen storage infrastructure represents the critical next step in the growth of the hydrogen economy. We will need to overcome the chicken-and-egg problem of needing to develop new production and use cases in tandem with balancing supply and demand. That is why, in our business model approach, we are looking to incentivise hydrogen production without having to worry about whether there is demand for it.

The second piece is the transport infrastructure and the third piece is storage. We are looking to do those three pieces and bring them together. Germany and other countries are in the same position, have made the same analysis and come to the same conclusion, that hydrogen is the missing piece. We are seeking to drive that forward and develop it.

Q314 **Caroline Lucas:** I was given 10 minutes. I probably only have seven minutes now, but thank you for that.

I suppose what I am still not particularly hearing from you is a robust plan with amounts, dates and so on. What I also have not heard at all this afternoon is anything about demand reduction. It surprises me that we are not pursuing more on that front because the obvious way of not requiring more and more supply is to do more on the demand side. We still do not have something as basic as the comprehensive street-by-street home insulation programme that could help us to drive down demand.

I want to ask you about the fact that the CCC is clear that no new unabated gas plants should be built after 2030. What is the timeline for the development of the new gas power stations that you have announced today? Could you say any more about the plans to abate them? I don't think it was in the Secretary of State's speech. How confident are you in the plans to abate them, given that we know that at the minute the technology to do it at scale and speed does not exist? What is plan B if that technology continues not to be deployable at scale?



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Graham Stuart: We have already passed laws requiring new gas plants to be built carbon capture-ready, and running hours for gas plants will continue to reduce as we roll out more renewables.

Q315 **Caroline Lucas:** Just being ready does not help that much. There is a lovely analogy. My driveway could be Porsche-ready, but that does not mean that a Porsche will just arrive on my driveway any time soon. I want to get at what is plan B if we do not have CCUS at speed and scale.

Graham Stuart: We are seeking to develop CCUS at speed and scale. As with hydrogen, the closer you get to net zero, the more challenging it becomes but the Climate Change Committee's pathway requires carbon capture. You can talk to the IEA or anyone else. We need carbon capture and we need hydrogen and we are seeking to develop both. We need to make them both work and we will.

Q316 **Caroline Lucas:** I admire your confidence. The CCC's 2023 progress report to Parliament made clear that, "Given short lead-times, rapid deployment of onshore wind and solar could have helped to mitigate dependence on imported gas during the fossil fuel crisis". Yet despite the Government's policy changes, no new proposals for public wind farms were submitted for planning permission in England last year. What are you doing to address that failure? It is not only that, but we know as well that only seven applications were submitted for onshore wind turbines for the whole of last year in England and all of them were either replacements for existing turbines or for private sites for individual industries. That number was even lower in 2022 with 10 applications, I think. It does not feel like transformational change is happening there.

Graham Stuart: In September 2023, the Government announced changes to planning policy for onshore wind in England to ensure that local authorities can respond flexibly to suitable opportunities for onshore wind energy. The changes broaden how local authorities can identify suitable locations for onshore wind and ensure that local authorities can take a more balanced approach when considering the views of communities.

The changes we have made will take some time to filter through the system. It takes typically between one and two years to develop and submit a planning application. We want to keep the recently updated national planning policy specific to onshore wind under review. That is why we have committed to publishing our report on progress in the next 12 months, drawing on the data collected through the renewable energy planning database.

Q317 **Caroline Lucas:** Last week a record budget was announced for the sixth contracts for difference allocation round, including £800 million, I think, for offshore wind. However, industry is warning, as I am sure you know, that this may not be enough to meet the Government's renewables target. RenewableUK has calculated that AR6 may only manage to procure between 3 GW and 6 GW of offshore wind capacity when around



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10 GW would likely be needed to plug the shortfall created by last year's auction failure. How are you planning to close that gap identified by RenewableUK?

Graham Stuart: It is worth noting that £800 million is the highest ever budget for offshore wind, four times the budget available to offshore wind in our previous auction. Budgets are set based on a range of factors, including an assessment of the pipeline of projects that could participate in the auction. This includes consideration of which projects may have been eligible when the decision was made. However, once all applications have been reviewed and the volume of eligible applications is more certain, the Secretary of State has the option to revise the budget upwards. The opportunity to do that will happen sometime between May and early August.

Q318 **Caroline Lucas:** That will be seriously considered if necessary?

Graham Stuart: Yes. It always is. We seek to ensure competitive tension because if everybody just knows that their project is going to get through, effectively the administrative strike price, the top price that we will pay, is what everyone will get. You look at the pipeline and then come up with a budget. Projects, as well as joining the queue, can also drop out. Various elements can happen. We have to make that judgment and we have done that year by year. The team has had a pretty consistent methodology and approach.

I know that we did not get any offshore wind in that last window, but one of the reasons for going to an annual window was the recognition that given volatility in prices, you will not always hit the sweet spot. However, we will look at the pipeline in that window when it comes to setting the final budget and we can, therefore, build it most appropriately.

Q319 **Chris Grayling:** Minister, taking you back a moment to what you said about supply chain, we will need a vast amount of stuff to deliver it. You rightly said that there will be huge competition around the world because everybody is trying to do the same thing. Most of what we are talking about is not manufactured in the UK at the moment. If you are to look across this sector and identify priorities to try to secure inward investment into the UK to manufacture some of this stuff here, what do you and your team think are the highest priorities, the bits of kit that we can realistically get and from where?

Graham Stuart: I don't think I have a list in front of me right now. It is about where we have competitive advantage and that is the number one thing. We can see rising protectionism around the world and green protectionism is just as bad as any other kind. We are seeking to green our system at the lowest possible cost. If we were not so open to international investment, we would not have done it. One of the terrifying things, if there were to be a Labour Government, is that Keir Starmer wants to make Ed Miliband, not the market, do this—effectively trying to abolish the contracts for difference, which have helped us to lead the



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world, and have Ed Miliband run some state-run quango to do it. It is not going to have even £28 billion to do it—it will or it won't, I don't know. That is very scary.

We must stay open to trade. GIGA is not about trying to match the cash credits of the United States with IRA, which they cannot regulate properly because of their governmental challenges. We can regulate and we can make suitable interventions. That is what GIGA is about.

Sorry, that was a very long-winded non-answer to your question. However, we work closely with industry precisely to do that. We worked closely with industry on offshore wind precisely to identify the specific areas where we are most likely to be competitive. We are doing similar work with the Solar Taskforce. Industry is the best one, when we bring together the supply chain, the developers and the other players and then make sure that we quietly work at it. We work closely. We use outside consultants to help us understand the market and prices. We also have built up trust with many developers to share some of their data with us so that we can understand what the market really looks like. There is no point in our trying to produce something here that is not competitive globally.

Q320 Chris Grayling: Given what you said about the critical supply chain, the critical components, you must surely have a programme, together with the trade Department, saying which things you really need to get into the UK—things manufactured in Asia or wherever. There must be such a programme to identify the key things that we want to get into the UK, the key bits of inward investment that we want, and a sales pitch to try to get them.

Graham Stuart: That is what we work very closely with DBT on and with industry bodies, precisely to understand any vulnerabilities. We then look to ensure that we can develop industries in this country that will have the chance to be competitive in the long term. We are an open trading power. We do not look to source everything here. We are not looking for energy autarchy.

Q321 Chris Grayling: I would be very disappointed if you and trade Ministers were not saying we need these crucial bits of kit that are currently manufactured in Thailand or wherever and, therefore, will have a serious engagement operation with the businesses that do these things to try to sell them the benefits of investing in the UK. Can you reassure the Committee that you are doing those things?

Graham Stuart: Yes. It is the pipeline, isn't it? That is what industry wants. They want to know that they are going to get the orders. If they are going to invest in a new factory, they have to have confidence that they will be able to have an ideally domestic, reliable market 12 or 14 years from now. That is what the ASTI programme was about for networks. That is what the Centralised Strategic Network Plan is all about, the SSEP, sending these signals and having long-term



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commitments so that we can see more investment coming into the country.

Q322 Chris Grayling: Can I take you back to the issue of the gas-fired power stations? Is there a strategy? You talked about them being ready to migrate to other fuels. Is there a strategy in place against today's announcement to achieve that?

Graham Stuart: Sorry?

Chris Grayling: Is there a strategy? You are saying that any new gas-fired power stations must be able to migrate to any other form of fuel. Do the Government have a strategy to move away from fossil gas to hydrogen or whatever in these power stations?

Graham Stuart: We are looking to develop carbon capture and hydrogen. We are pushing forward with both as quickly as we can. I remember that in 2003 the then Labour Government said there was an urgent need for carbon capture and storage. This Government is now delivering it and has come up with £20 billion to get us going and get these tracks developed.

It is expensive and it is challenging but we see no route, as I said to Ms Lucas, to net zero without carbon capture and hydrogen, so we must make them work. We are also supporting such things as direct air capture and other approaches but fundamentally, right now, we and our partners see these technologies as being critical. If we can get carbon capture right, for instance, not only may we be able to take the emissions from these power stations and store them long term, but we may be able to offer the service to our European neighbours because we have 78 gigatonnes of storage in the North Sea, potentially, more than we have emitted since the beginning of the industrial revolution. That is quite exciting, commercially as well as environmentally.

Q323 Chris Grayling: What the Committee is trying to establish is whether we have reached the point where there is an actual transition plan in development. Companies looking to invest in non-fossil fuel generating plants will be taking their own investment decisions based on a number of factors, including what Government policy is. Clearly, you have the right aspiration in migrating away from using fossil fuels when it is possible to do so, but are we at the point of having a strategy plan with milestones to achieve the aspiration?

Graham Stuart: Last year's Powering up Britain plan set out the most comprehensive and detailed plans of any economy on earth. Many of these pieces are moving together and what the pathway to 2035 and beyond will look like is not definitive. However, that is exactly what my Department does daily in its updates, putting the plans together and sending signals to industry so that we can see these developments. Once we get track 1 of carbon capture and storage properly up and running, we will have the hydrogen allocation round 1, once we have that developed as well. These steps will make it easier and easier to come up



with more definitive and rather better answers than the ones I am providing to your entirely appropriate questions today.

- Q324 **Chris Grayling:** Can I take you back to the question of storage? There are clearly two sets of needs around storage, the day-to-day, hour-to-hour stuff and also, if we are heavily dependent on wind, for example, the question of when there are long periods without wind so we will also need long-term storage. Who will be responsible for deciding the balance between long and short-term storage?

Graham Stuart: Ultimately Government will set policy and, as we discussed earlier, we are ultimately responsible for making sure that the lights stay on.

- Q325 **Chris Grayling:** That is long-term policy, but what about practical decisions? Who will be deciding that we need to put more hydrogen into a storage bank in case there is no wind in the next three months or that if we need to be burning hydrogen instead of gas now that we can do so?

Graham Stuart: That takes us back to NESO. NESO will have responsibilities for electricity, gas and hydrogen. We do not want to overburden NESO, but NESO will help to advise us on how to deliver the policy outcomes that we will set precisely in line with what you are suggesting, Mr Grayling.

- Q326 **Chris Grayling:** You are leaving long-term storage to the market. Is that sensible? Do the Government have any role in planning adequate long-term storage?

Graham Stuart: We are hardly leaving it to the market. Carbon capture will still involve fossil fuels but will allow—

Chris Grayling: But the long-term storage—

Graham Stuart: We are looking at that and seeking to develop the three parts of the hydrogen production system, all of which are getting Government support, looking at what kind of storage capacity we will need as hydrogen develops. That again will be a matter for the Government ultimately to decide, albeit advised by NESO and others.

- Q327 **Chris Grayling:** The business realities of short and long term for hydrogen, for example, are very different, so I assume that there will need to be some kind of mechanism in place to incentivise the long term.

Graham Stuart: Yes. It depends on the business quite a lot of the time and that is precisely what we are looking at, the three components—production, transport and storage—all of which, to get them going, need some Government guarantees and that is what we are working on. We are working on the business models precisely to engender and provide investor confidence to develop appropriately.

- Q328 **Chris Grayling:** Lastly, why is it taking so long to deliver half-hourly settlement for domestic customers?



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Graham Stuart: That is a very good question. Emily Bourne will answer it.

Emily Bourne: Thank you. It is a very important project. Ofgem leads on it. Eleanor may want to comment.

Eleanor Warburton: In all honesty, I will have to give a fairly high-level answer. I understand that first it is intricately connected to the roll-out of smart meters. You will have seen several actions by Ofgem around supplier delivery of smart meter roll-out. It is an area that is very much in front of us as the regulator. The other side of it is essentially around putting in place all the necessary technical underpinnings but you need a sufficient market saturation for smart meters to get meaningful benefits.

Q329 **Chair:** Picking up on that, Eleanor, could you write to us and tell us how the roll-out of smart meters is going and give us a profile of the roll-out across domestic and business customers?

Eleanor Warburton: Yes, of course. Essentially you are looking for how smart meters have rolled out up until now and the targets and expectations for the future.

Chair: Yes. Thank you.

Eleanor Warburton: Yes, of course.

Q330 **Chair:** Minister, I have a final question for you. As usual, you have demonstrated your confidence in the system for which you are responsible, but the scale of the challenge facing the country to achieve decarbonisation by 2035 is very significant. We must triple generation capacity over the next 10 years. Over the next seven years, we have to install four times as much transmission network as we have installed since 1990. We have already established in our conversation today that skills shortages are acknowledged, that there are supply chain issues and connection issues with the grid, which you are working on accelerating but much of that is down to changing the planning system, which we know takes a long time. In the face of all those challenges and without a detailed delivery plan—we have aspirational targets but no itemised delivery plan for all these components—how can you be so confident that the electricity network will be decarbonised in 10 years and eight months, or whatever it is, until the end of 2035?

Graham Stuart: Our record on generation is pretty strong. From talking to investors, I believe the appetite is there. The UK is seen as a particularly attractive destination for investment and the CfD, notwithstanding the need for further improvements, has provided a very important way of generating that. There is then the big issue of the grid. I am referring to the work that Nick Winser did and I know that he has appeared before you more than once. We have the transmission action plan and the connections action plan, the continuing work that is going on. I am confident that we can get the green generation. A couple of



elements are still a bit nascent—CCUS and hydrogen—and we need those as part and parcel of what we do, but I don't see why we should not do it.

We have said that it is an ambition to decarbonise the system by 2035, subject to security of supply and affordability—a couple of old get-outs there—but I think we can do this. In meetings I have with other players in the system they say that they, too, think that we can do it and our record to date is second to none. To think that nearly 40% of our electricity came from coal in 2012 and to have moved by October this year to zero is quite remarkable. Also, the former 7% share from renewables has grown to over 40% today and is growing fast. Why should we not have a can-do attitude?

I hope I am not being glib or complacent. My officials and I spend every day working flat out on these challenges, some of which are stark, but I believe we can do it and we should approach it in a spirit of optimism.

With the likes of CBAMs coming on and the rest of the world following our pathway, the really exciting thing is that a decarbonised, largely electrified system in the mid-2030s could be the platform for an industrial renaissance in this country. People talk about us having offshored certain manufacturing in the past, the distant past. There is a genuine opportunity now for a lot of production to come back to the UK. I see this as not only being the right thing to do, but potentially restoring the UK to its position as the pre-eminent industrial and economic power in Europe. If we can do that, there is no better example that we can set for the world than to do the right thing, decarbonise our systems, lower our emissions and prove that we can get richer while doing it because that will make others want to follow in our path.

Q331 Chair: Thank you. That is a very good peroration. I am just going to puncture it in a tiny way by asking—perhaps I will ask Eleanor and Emily to give a view—whether you think there is clarity as to the responsibility for monitoring and pursuing progress along the journey the Minister has so eloquently described as between the Department, Ofgem and NESO? Does everybody know what their role is and who is monitoring whom?

Eleanor Warburton: I think there is good clarity on the role of the regulator. Our role in this is very much the network delivery, making sure that the regulatory frameworks are there and the accountability by the network companies is there. Yes, I think there is clear accountability there. As for the market and supplier oversight, I think NESO's role in providing advisory technical expertise is reasonably clear and is becoming clearer as goes towards day one. Possibly the one other organisation I will mention in addition to that triumvirate is the CCC, which I think also has an important role.

Q332 Chair: Thank you. Emily, from a departmental point of view, are you clear about where responsibility lies for delivering this programme?



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Emily Bourne: Yes. I agree with Eleanor. From a departmental point of view, we see both NESO and Ofgem as important partners in what we are trying to do to deliver energy ambitions. We have set out in the strategy and policy statement that was recently published in Parliament that it applies to both NESO and Ofgem in carrying out their tasks. A further, more detailed framework document, which will be more about roles and responsibilities, will be published once we have formally set up NESO later this year. I think that we are confident that the roles should be clear.

Chair: That concludes our session. I would like to thank you, Minister Graham Stuart, for your confident appearance, as usual, here again today, as well as Emily Bourne from the Department and Eleanor Warburton from Ofgem.