

Public Accounts Committee

Oral evidence: [Public cost of decommissioning oil and gas infrastructure](#), HC 1742

Monday 11 February 2019

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[Watch the meeting](#)

Members present: Meg Hillier (Chair); Sir Geoffrey Clifton-Brown; Chris Evans; Shabana Mahmood; Nigel Mills; Anne Marie Morris; Bridget Phillipson; Lee Rowley; Anne-Marie Trevelyan.

Sir Amyas Morse, Comptroller and Auditor General, Adrian Jenner, Director of Parliamentary Relations, National Audit Office, Simon Bittlestone, Audit Manager, NAO, and Marius Gallaher, Alternate Treasury Officer of Accounts, HM Treasury, were in attendance.

Questions 1-99

Witnesses

[I](#): Alex Chisholm, Permanent Secretary, the Department for Business, Energy and Industrial Strategy, Emily Bourne, Director, Energy Development and Resilience, BEIS, and Andy Samuel, Chief Executive, the Oil and Gas Authority

Report by the Comptroller and Auditor General

Oil and gas in the UK – offshore decommissioning (HC 1870)

Examination of witnesses

Witnesses: Alex Chisholm, Emily Bourne, and Andy Samuel.

Chair: Welcome back to the Public Accounts Committee on Monday 11 February 2019. We are here today for our main session, looking at the public cost of decommissioning oil and gas infrastructure, on the back of a National Audit Office Report on the subject. Possibly a lot of people do not know that taxpayers pick up a substantial proportion of the cost of decommissioning through the tax reliefs given to oil and gas companies. That is forecast to cost around £24 billion, but the NAO Report highlights that there is a lot of uncertainty around that cost estimate. There is also opportunity, because decommissioning could make the UK a world leader in a possible export of skills. There are also opportunities to identify ways of bringing decommissioning costs down, and that is one of the issues that we want to cover today.

I will introduce our witnesses, and then we have a question on another issue for you, Mr Chisholm, which I am sure you can handle, before we kick into the main session. That question is on the price cap. From my left to right, we have, first, Emily Bourne, the director for energy development and resilience at BEIS. These job titles get longer every time someone appears in front of us—a sign of cuts, I suspect. Next, we have Mr Alex Chisholm, the permanent secretary at BEIS—his title remains the same—and Andy Samuel, the chief executive of the Oil and Gas Authority. I think it is the first time that Ms Bourne and Mr Samuel have been in front of this Committee, so welcome to you.

I will ask Bridget Phillipson to pick up on the issue of the energy price cap, first of all.

Q1 Bridget Phillipson: Mr Chisholm, I am sure you will be aware of the recent announcement from Npower that they plan to shed 900 jobs—15% of their workforce—citing the impact of the price cap. I wonder how you would respond to that.

Alex Chisholm: Thank you very much for the question. The price cap, as you know, has recently come into effect. It has had its first review, and that has raised the level of the price cap. Clearly, the design of the price cap is meant to protect consumers and users of energy from excessive pricing. It is also to allow efficient operators to continue to operate, and that is actually a statutory requirement that Parliament has given to Ofgem.

All their calculations about the level of the price cap are designed to achieve that objective. Certainly, you would expect it to be putting pressure on all operators to be more efficient in future, but lots of other

factors also apply, and of course each of those operators have very different cost bases as well.

- Q2 **Bridget Phillipson:** We all want to see that pressure in terms of bills to householders, but Npower are a major employer in my constituency. There is now understandable concern about the impact that this will have on local jobs in an area where good jobs are not in abundance at times. I wonder how you would respond to the criticism that action is not being taken on the unsustainable nature of some of the challenger firms in this area.

Alex Chisholm: Ofgem announced towards the end of last year that they were doing a review of the financial assessments done to operators, which I think is prudent of them. There are a lot of operators in the market—I think more than about 60 now—and there has been some involvement by Ofgem and, I think, by the consumer bodies to make sure that sustainable business models are adopted by companies, and that companies are able to demonstrate to the regulator that they can meet their obligations going forward.

Exits so far—there have been, I think, three in the last quarter—have been managed successfully using the operator of last resort principle in the way that the obligation is transferred to another operator. Ofgem runs a sort of mini auction to do that. That has worked quite seamlessly. No consumers have lost out from that process, and indeed the operators taking on the responsibilities have honoured the credit balances of the consumers, so there has not been any real disruption or effect from it. I agree with you that it is right for Ofgem to look at the impact on the market overall.

Chair: I should just alert people to the fact that we are not on camera. *Hansard* should know that they might have to take very fast shorthand. Attempts are being made to resolve the problem, but your words of wisdom, Mr Chisholm, may or may not be being recorded, you may be pleased—or not—to know.

We will now move on to the main issue at hand, which I have already introduced. I will ask Sir Geoffrey Clifton-Brown to pick up on it.

- Q3 **Sir Geoffrey Clifton-Brown:** Good afternoon. May I ask Mr Samuel about decommissioning costs? Paragraph 2.8 of the NAO Report gives a very wide variation in the accuracy of estimates of the decommissioning costs. For 49% of operators, the estimates are accurate from minus 20% to plus 100%, which is a very big range, and for 40% of them it is from minus 15% to plus 50%. How are you setting about getting a better handle on this?

Andy Samuel: Thank you for the question. I will do my best to answer without bamboozling you all with too many numbers, but the explanation of how we get to this includes quite a few numbers.

First, there are hundreds of installations to be decommissioned over the next 40 years. Some are active projects being decommissioned right now, and others are discoveries that have not even been developed. However,



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in our overall cost, we want to provide for the cost of the whole thing, so back in 2016 we asked operators to give us a lot of data that we never used to get before, including uncertainty ranges for the projects.

If an operator is going to decommission a platform next year, we would expect that they would have what is called, under an engineering standard, a class 1 cost estimate. However, it is perfectly acceptable, for something that has not even been developed yet, to give only a rough estimate of what it may cost in 20 years. That is a class 5.

When we analysed that data, we found that the operators were not doing a good enough job of actually planning for and providing for decommissioning, so we started benchmarking. We also took all of these data and ran a probabilistic model, which is the only way to actually account for all this uncertainty and all these different types of projects and come up with a range.

From that, each year we publish a cost report, and I have copies here for the panel, if they would like. The key thing we are looking at is: year on year, what is the trend? Is the range reducing, and is the mid-case going down? I am very happy to report that both are heading in the right direction. Like for like, the range has reduced 23% from 2016 to 2017, and the headline base case like-for-like number has reduced by 7%.

That is £4 billion of real saving, of which £2.1 billion is due to good work by operators reducing fundamental costs and £1.9 billion is actually a statistical representation of operators getting the message that we expect better planning, and therefore tighter ranges. That in itself has reduced the cost. We now specifically benchmark how they are planning and what ranges they are preparing, as you asked about.

Chair: Apologies. I am having a bit of a confab with my deputy Chair. I fear that we are going to have to suspend for 10 minutes. We have to reboot the audio recording system, to make sure that we can get everything on the record. We are very keen to have your words on the record, as well as hearing them; we think that is quite important. I am sorry to cut you off, Sir Geoffrey.

Sir Geoffrey Clifton-Brown: Perhaps we can recommence somewhere near this point.

Chair: Yes. We will pick up where we left off. I think, with *Hansard's* support, we can probably manage. We may have to get you to summarise the last answer that you gave, so you may have a rare opportunity for a second performance. That was your warm up.

It is up to you whether you stay. You might want to take a comfort break now, because we will be questioning you for another hour and a half or so afterwards. The reboot is in progress now and it takes about 10 minutes. We will reconvene at 16.38.

Sitting suspended.



On resuming—

Q4 Chair: Welcome back to the Public Accounts Committee on Monday 11 February. Apparently we did have sound earlier, but not pictures, so we do not actually have to repeat the question. Our apologies to Dr Samuel—for some reason, we did not have your hard-earned PhD on our radar. We always welcome proper experts to this Committee, so thank you very much indeed. I think you had nearly finished your answer to Sir Geoffrey. Could you just pick up on the last bit of summary, so we have continuity from where we left off? Do you need Sir Geoffrey to tee you up again? Sir Geoffrey, do you want to remind us of what you asked?

Q5 Sir Geoffrey Clifton-Brown: The question was on the wide range of decommissioning costs. Incidentally, I should say that during the break we managed to get hold of your booklet, which you very kindly offered us and which has given me some very useful extra information. On class 5 assets, there is a wide range from -20 to +100. You were responding to that and were in mid-flow. I do not know whether you want to summarise what you have already said and then go on—how do you wish to answer that?

Andy Samuel: Essentially, we have got a large number and variety of different platforms—subsea infrastructure—and we have 40 years of decommissioning ahead of us. Some of it is active now; some of it is on discoveries that have not even been developed. That is the nature of what we are dealing with, and we therefore felt that a statistical methodology was the most robust. In 2016 we set a benchmark and a baseline, from which every year we successfully measure progress. Happily, through a lot of good work that I would be delighted to talk about, progress is moving quite quickly in the right direction. There are £4 billion of savings on a like-for-like basis so far. One of the best tools we use is our dashboard. We meet the operators and basically show them how their work and projections stack up against the best in class that we see across the basin. We are finding that operators are happy to share best practice, and they are working together so that we get real cost savings through campaigns and successive learning. This is a relatively new industry and there is plenty of scope to do things differently going forward.

Q6 Sir Geoffrey Clifton-Brown: Your very helpful booklet confirmed what I was thinking. Page 27, and the bias of -20 to +100, addresses the possibility of estimating optimism from operators. How much in the central figures of between £45 billion and £77 billion is predicated on the basis of optimism of reporting by the operators themselves into their proposed decommissioning costs?

Andy Samuel: This is where we are now using real data. Last year there was £1.45 billion of decommissioning expenditure. We have those data, including from the past three years. We now look at operators' forward estimates, and we compare them with what we are seeing in the real world. Where we see a difference flagged through our dashboard, we will have robust conversations and we will dig into what is going on and whether there is optimism.



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We normally find that improvements are coming quickly. Let me give you an example. The cost of platform plug and abandonment is a large part of the cost of any job—it is about half the total cost of decommissioning at 47%. One operator told us that it thought that each well would cost around £3.6 million. Actually, our data show that two operators are doing it for £1 million a well. We said, “There is a huge gap here”, and they said, “Thank you for letting us know. We want to go and speak to those operators and find out what they are doing.” A couple of months later they came back and said, “Actually, you are absolutely right. We think we can do this for £1 million,” and that in itself saved £126 million. Those are the kinds of things we are doing—joining up operators and best practice—and we are seeing successive reductions in cost.

Q7 Sir Geoffrey Clifton-Brown: We will be coming on to how we can get the cost down. Given that on page 23 of your little booklet you say—

Chair: Can you reference it properly? It is the *UKCS Decommissioning 2018 Cost Estimate Report* from the OGA published in June 2018.

Sir Geoffrey Clifton-Brown: I am sorry, I have probably referenced the wrong page. The page doesn’t matter, but the graph on page 24 of the NAO Report, figure 8, shows that you have very little evidence of decommissioning at the moment because so few people are doing it—it is the wrong part of the cycle. It shows that we about to enter the estimated part of that graph. How can you be sure, going in the future up to 2060, that you have really got a handle on those decommissioning costs?

Andy Samuel: All we can do is strongly encourage early planning. Once a year I get the chief executives from each of the companies—the managing directors for the UK—in a very open session where we show benchmarks of their planning metrics. They were quite surprised by that—for example, they were surprised that 72% of the cost estimates were class 5. They went back to their teams and said, “Come on. We need to do better. The OGA has flagged us and it is frankly a bit embarrassing.” Next year we were pleased that that had gone down to 49%. I fully expect that when we get the data for last year—we will get that at the end of this month—we will see a further reduction.

We are going to go further, though. We have something called stewardship expectations, and we have a couple currently on decommissioning and we are going to add a third. We expect that three years out from starting decommissioning, all jobs should be class 3. That is something that we can use our powers to enforce if required, but I don’t think we will need to. I think the operators are getting the message. They know that early planning and reducing uncertainty is in everyone’s interests.

Alex Chisholm: There is an additional source of cost discipline that comes from the accounting process. Obviously the oil companies have to account every year for their liabilities, and in doing so they have to satisfy their auditors and audit committees of that. I am told that that is an active process, because obviously they have responsibilities there. Shell UK, for



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example, declared in its end of 2017 accounts a liability of some £2 billion for decommissioning in the UK, and I can see how that liability has changed year on year. It is not just a round number; it is a calculated number.

- Q8 **Sir Geoffrey Clifton-Brown:** Thank you for that helpful extra information. I was going to come to you, Mr Chisholm, because of course the real reason why the Committee is interested in the questions that I am asking about the variance in decommissioning costs is to know what the likely cost to the UK taxpayer is going to be. The median of that £45 billion to £77 billion range is £58.3 billion, on which the UK taxpayer liability is estimated to be £24 billion. But what happens if, even with all Dr Samuel's good intentions, that is wrong and we are at the top end of that range? What happens then to the cost to the UK taxpayer?

Alex Chisholm: First, I think it's useful to look at that figure in the context of the £330 billion or so that has come out of the North sea in production tax revenues. Also, although it is an estimate of future costs, as you appreciate, that's going out over quite a long period of time—the next 24 years.

The calculation of the future costs of that comes in two parts, as you will have seen from the NAO Report. Partly it comes from the estimate of taxes that need to be repaid, which I think is some £13 billion; the £11 billion is from future taxes forgone. So of that £58 billion, less than half—£24 billion—would come out of future tax revenues. If you assume that that relationship held, then again it would be 40% or so of the bigger number. In terms of what we regard as our aims and purposes here, first of all we want to try to minimise that cost. Through the good work of the OGA particularly, there has been a 7% reduction so far, and there are some good lines of sight to try to achieve that goal of bringing it down by 35% by 2022. That lowers the cost to everybody, but obviously included in that is the taxpayer. If that is successful, it would get the £58 billion figure down to something more like £40 billion or just below £40 billion, which obviously would greatly reduce the cost to the taxpayer.

Secondly, we are very keen to make sure that the responsibilities for decommissioning do—

- Q9 **Sir Geoffrey Clifton-Brown:** Sorry, but may I stop you? If it goes down to the figure that we all hope it does, by how much does that £24 billion reduce?

Andy Samuel: There is an £8.6 billion saving to the taxpayer. May I make just one clarification? This is on like for like relative to the 2016 inventory. For example, last year we approved 19 new projects. That is obviously going to increase the overall—

Chair: Well, we have to work from a baseline, or we'll all get confused in this session.

Andy Samuel: Yes.

Q10 Sir Geoffrey Clifton-Brown: I think you hadn't quite finished, Mr Chisholm.

Alex Chisholm: Yes, just in terms of making sure that we minimise the exposure of the taxpayer. Obviously, the particular feature of the regime that has been in place right from the beginning of the 1960s, although actually the current regime dates from the 1998 Petroleum Act, is to make sure that the responsibility really sits with the operators who have had the benefit of those revenues over time. It is a well-designed regime, because it is not possible to escape those obligations by passing them on to somebody else. The regime that is operated for us by the Offshore Petroleum Regulator, represented here by Emily and based in Aberdeen—they have very good visibility on the future exposures, both financial and obviously physical, from the platforms. They know that, of the 60 or so operators that are in the North sea, most are very strongly financially resourced. They are very substantial; they are some of the richest companies in the world and so they are, in common parlance, good for the money to be able to make sure that they can meet those obligations.

Chair: I don't want to cut you off, Mr Chisholm, but I have to because we do know the background to that—we have done the preparation—so we can avoid the narrative, if you like, and just cut to the chase. That would be very helpful—and you'll get out of here quicker. I'm sure that, as a highly paid civil servant, you have things to do in Whitehall.

Q11 Sir Geoffrey Clifton-Brown: To continue the theme of risk to the taxpayer, page 31 of the NAO Report says: "To date, OPRED has agreed nine security agreements with operators, and a total of £844 million has been set aside for decommissioning." It then goes on, at the bottom of paragraph 3.13, to refer to "roughly 20% of the UK's oil and gas assets" and says: "These fields tend to be those that have never been owned by a large publicly traded oil and gas operator." The liability, of course, is with the previous operator, or the present operator if they default with previous operators. What is the risk of taxpayer liability from companies that are small and may not be able to afford their decommissioning costs or may even go out of business?

Chair: Is that to Ms Bourne or Mr Chisholm?

Sir Geoffrey Clifton-Brown: Ms Bourne, would you like to have a go at that?

Emily Bourne: Yes; certainly. The 20% that is mentioned in the Report refers to the fact that 80% of the fields have either current or past super-major exposure to the cost. Under our regime, anyone who has been a licensee to a field at any point in time can be called on for the decommissioning costs if necessary.

The 20% is the total of fields that have not had a super-major in at one point in time. For those fields, we would carry out further financial tests on the operators concerned. If necessary, we then have the powers to request financial information from them, to serve a liability notice on their



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parent companies or associated companies, and if necessary to take security from them. That is the procedure that we go through.

Q12 Sir Geoffrey Clifton-Brown: Have you actually had to do any of that?

Emily Bourne: We have taken security from the fields that are listed—nine fields so far—and we have three others where we are in negotiations to take security at the moment. All the security we have taken so far has been on a voluntary basis, but we have powers to require that if necessary.

Q13 Sir Geoffrey Clifton-Brown: So the negotiations have not been particularly difficult. You have not had to use your powers; you have done it entirely on a voluntary basis.

Emily Bourne: That is right. I think the fact that we have the powers is helpful.

Q14 Sir Geoffrey Clifton-Brown: Are there any other factors out there, Mr Chisholm, that are a risk to the taxpayers of the costs increasing?

Alex Chisholm: I suppose the most important one, which is outside our control, is the prevailing oil and gas price. Clearly, the more profitable the activity remains in the North sea, the more future revenues there are. As part of that, those help to cash flow the decommissioning costs that are occurring increasingly from this point in time. If the oil and gas price crashed, which we do not expect, that would be an increase in the overall risk of the decommissioning programme; also if it fell very sharply and remained very low for a period of time, or there was a major change in the overall balance of energy policy to stop the current use of hydrocarbons, which obviously continues at quite a high level at the moment.

Q15 Sir Geoffrey Clifton-Brown: The tax policy has to do a number of things. It has to encourage exploration but, equally, it has to encourage decommissioning, because environmentally that is the right thing to do. The tax policy is quite generous in being able to write off losses for petroleum revenue and in the agreements that tax will not go down. Do you think, in retrospect, that the tax policy is too generous in encouraging firms to use their tax losses to cover those decommissioning costs?

Andy Samuel: I had an international career in industry and worked in various provinces around the world. I can tell you that the tax system is set at about the right level, particularly because we are continuing to attract investment and create value for the UK economy and the Exchequer. We ran a baseline forecast in 2015. Relative to that, we have added 3.7 billion barrels of oil equivalent. We are not the HMRC, but we estimate, with some assumptions, that that is about £32 billion extra to the Exchequer through the additional—

Q16 Sir Geoffrey Clifton-Brown: Can I stop you there? Would that not have happened anyway, without the tax incentives?



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Andy Samuel: No; I do not believe it would have. In fact, the Treasury published a driving investment plan in 2014, which set out the new fiscal regime. In 2014, there was virtually no new investment coming into the basin. We meet investors globally and the simplicity of the regime now is broadly appreciated.

It is worth pointing out that it is still a 40% headline rate of tax, compared with 19% for normal corporation tax. It is still a substantial tax—as it should be because they are national assets—but we believe, and we work closely with the Treasury and BEIS, that it is set at about the right level right now.

Alex Chisholm: I have also seen a comparison done by Wood Mackenzie, which I would be happy to send to the Committee. It compares the Government exposure to decommissioning expenditure across 12 major administrations for oil and gas. The UK is placed fourth in that table. You want to be at the top. The US and Canada are at the top, and we are placed fourth. That compares very favourably with quite a number of other countries, including the Netherlands, Norway and other countries around us where the net exposure of the Government is higher. That means that our tax regime is competitive enough to extract the assets in the first place but does not leave a very strong residual liability for taxpayers.

- Q17 **Sir Geoffrey Clifton-Brown:** Can I just throw you something completely different? On the graph of tax revenues, we know that the total tax revenue over the period has been £334 billion, albeit a lot of it was during the '80s when the flows were high.

Chair: Figure 3.

Sir Geoffrey Clifton-Brown: Yes, it is on page 4. Do you think that successive UK Governments have been wrong in not establishing a legacy fund?

Alex Chisholm: I just regard it as a totally historical question now. It is not the only way to have done it. Some other countries—notably Norway—chose not to do that.

- Q18 **Sir Geoffrey Clifton-Brown:** They have established a sovereign wealth fund, which is a different way.

Alex Chisholm: Yes, a different mechanism for using the cash flows.

Chair: We are talking about oil and gas here, but there are many other energy programmes that we may come on to. If you were setting policy now, Mr Chisholm, would you do this again, or would you do what Sir Geoffrey is suggesting?

- Q19 **Sir Geoffrey Clifton-Brown:** Basically, we have spent the revenues on current expenditure, rather than providing for a rainy day. Was that the right thing to do?

Alex Chisholm: One would have to look at the considerations for the Exchequer then. I am not an economic historian, but at the end of the



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1970s there was a strong sense that the economy was not performing particularly well. In the '80s, as you rightly say, there was a huge boost coming in from North sea oil revenues, accounting for about 10% or 11% of Government income at that time. It would have been tremendously tempting for the Exchequer at that point to use that as a way of trying to create some growth and employment in the economy, which wasn't otherwise performing strongly.

Sir Geoffrey Clifton-Brown: Sounds like short-termism to me.

Chair: These are things that we will get on to, I'm sure.

Q20 **Bridget Phillipson:** Dr Samuel, why does the cost reduction target keep changing?

Andy Samuel: I don't think it does, but I can explain how it was born and where we are right now. Back in 2016, we had just been formed as an Executive agency. We had a sense that decommissioning was a very important part of our objectives, and that was confirmed through the Energy Act. We had not formed the team, but we said to some consultants, "This is quite a large bill for the taxpayer. What is a reasonable target, based on other industries, to reduce that?" We heard consistently about 35%. We said, "We don't know how we are going to do it, but we are committed, with the industry, to driving for that target." At the time, we felt that there was some urgency, so we put a date of 2020.

Roll on a couple of years, and things have changed a bit. What has not changed is the commitment to the 35%, which is ultimately where we are going to get the £8.6 billion saving for the taxpayer. What has changed is that operators have actually extended the life of fields that we thought at the time were very close to cessation of production and were ready for decommissioning, so a bit of the urgency has gone away.

We are very much better informed than we were back in 2016. I now have a really strong team in the OGA working these on a daily basis. We have created these benchmarks and dashboards. We have now got two years worth of really granular data. Because we saw the 7% reduction, we said, "Okay. If we can do 7%, why can't we do that every year?" You roll on, and that takes you five years, so that takes you to 2022. That is still, in my opinion, a real stretch and it worries me—not getting the 35%, but getting there by 2022. But we said, "Look—we're always going to stretch industry. That's our job." We would like to go beyond 35%, by the way, if we can, but I do not want people to think that that is a soft target—quite the opposite. It will not change the 35%. I think it is in figure 9 in the booklets that we are very transparent about the progress year on year. We will show both how the ranges are changing on a like-for-like basis, and how our base estimate is.

Q21 **Bridget Phillipson:** How confident are you that the target and the deadline are now the finished product?

Andy Samuel: The 35% is it. We will see where we get to in 2022, but we will not change that target. In the strategy that we published in 2016,



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we caveated the 2020 by saying that we needed to consult with industry, which we had not done at the time. I have been very pleased that they have bought into the target completely. It is in the vernacular. Everyone talks about the OGA target—"We need to get the 35%."

Alex Chisholm: Page 16.

Andy Samuel: Yes, figure 9 was on page 16 of the booklet.

Q22 **Bridget Phillipson:** Who is accountable if the target and the deadline are not met?

Andy Samuel: We hold industry to account. I hold myself and my team to account for making sure that it happens. I am held to account by my board. There is now a UKCS decommissioning cost overview board as well. Ultimately, Committees like this will hold all of us to account.

Q23 **Chair:** Committees like this. Which other Select Committees have you or the OGA appeared in front of?

Andy Samuel: A couple of years ago I went to the Energy Select Committee, where we also talked about decommissioning.

Chair: I partly asked that because the Energy Select Committee does not exist since it all got subsumed into Mr Chisholm's growing empire. So you have been in front of two Select Committees in two years.

Andy Samuel: I have been in this role since 1 January 2015.

Q24 **Bridget Phillipson:** Connected to that point, Mr Chisholm, how do you know, how does the Department know, and how do we know whether the OGA is doing its job effectively?

Alex Chisholm: Partly by using the mechanism that Dr Samuel just mentioned, which is the cost overview joint board. More broadly, the Oil and Gas Authority, which was only set up in 2015, has been a success by some clear metrics. It had a job of trying to improve the economic recovery from the North sea, and since it started the estimate of recoverable barrels of oil equivalent has gone up by 3.7 billion—worth a great deal to the taxpayer, in employment and so on.

Secondly, it had a job to try to bring down production costs and the cost of decommissioning. Both of those have fallen markedly since the inception of the OGA, and year on year. You have heard about some of the activities that try to explain how they have been able to achieve that.

Q25 **Bridget Phillipson:** How do you know that that is connected to the work of the OGA, and it is not something that simply would have happened anyway?

Alex Chisholm: The NAO Report rightly says that it cannot 100% be allocated to the OGA. Andy probably will not mind my saying that the biggest factor must be the overall economic situation, in terms of the value of the oil and gas extracted. That has certainly played a big part in



the recovery. Plus, there is the fiscal regime—energetic efforts made by the Exchequer to make the environment more attractive for operators.

Within that, the bearing down on costs is really remarkable. We have seen a lot of evidence. We talk to operators in the field. We have seen a lot of interest from international players as well, following very closely the work of the OGA and of OPRED. There is a lot of international interest and recognition. An example would be that both the European and the international offshore regulatory bodies are chaired by the chief executive of OPRED. That is, again, recognition of that.

I do not know whether we will have a chance to talk about the data site that is going live in a couple of—

- Q26 **Bridget Phillipson:** Yes, I was just going to ask Dr Samuel what work you are doing to measure the impact. I appreciate that earlier you talked about the ongoing dialogue that you will have with operators, but what work are you doing to measure the impact in a much broader way?

Andy Samuel: I looked at this question in detail back at the end of 2016. We felt that we were racking up successes, but I wanted to find the best way to record them. Actually, the NAO had a very helpful Report, which I think they published in November 2016, on best practice for regulators, recognising the conundrum that, actually, if we are working well with industry the success is really that of industry. They are the people who are doing the projects.

We took best practice from that. Since then, we have been tracking our successes. For example, of the 3.7 billion, we know that we have been directly involved in 1.9 billion. We are now taking that to decommissioning. Recently, the teams have gone through and recorded successes in which we have had a direct hand, with industry, in reducing costs. We have recorded 22 successes so far, which I think equate to just over £300 million of savings, and we expect that to grow over time. We had the methodology that we applied audited by the Government Internal Audit Agency, which thought it was a very good methodology—the best we can do, given that we are not directly doing the work. We think that is probably about the best we can do. I can happily share specific examples, because they give real colour on how we are working with industry to drive those costs down.

- Q27 **Bridget Phillipson:** Moving on to a different area, can I ask how, between your two respective bodies, you are co-ordinating approaches to developing carbon capture and storage technology connected to the decommissioning process?

Andy Samuel: We have a role as the licensing authority for carbon capture and storage. We understand the infrastructure and we are excited by the future possibilities; we think it is, hopefully, a really important new phase for the North sea. We were very pleased to work with Government last year, and I think there was a very helpful CCUS action plan published in November last year—

Alex Chisholm: Which I wrote to the Committee about when it was published.

Andy Samuel: We will fully support the two actions there that we are involved in. The first is that it is wise to get an agreed consensus on what offshore infrastructure should be preserved, wherever possible, for future CCUS; the other is policy development, which Emily is better placed than I am to talk about.

Emily Bourne: From the point of view of OPRED, the decommissioning regulator, one of the things we require is for operators to consider and discuss with the OGA any opportunities for reuse before they bring their decommissioning programmes to us for approval. We will take account of any comments that come up from stakeholders as part of that, which could include opportunities for reuse, when we consider the decommissioning programme. As far as policy goes, the action plan set out two commitments that are relevant here: first, to identify the existing infrastructure that might be suitable for reuse, and secondly, to develop a policy on the reuse of infrastructure for CCUS. Both of those are to be done in the first half of 2019.

Q28 **Bridget Phillipson:** When do you anticipate being able to report back on the progress being made? You said the first half of 2019.

Emily Bourne: Yes; I assume it will be during the summertime, but I could not give you a more precise date.

Q29 **Chair:** Mr Chisholm, it is all right having the infrastructure beneath the ocean bed, but there is nothing on the surface to capture the carbon at the moment. How are things progressing?

Alex Chisholm: There are some initial projects that have been developed. OGCI Climate Investments has just announced its intention to open the first commercial end-to-end CCUS project in Teesside. There is also Project Acorn in St Fergus, Scotland, which we are investing in, to develop ways of transporting carbon emissions from where they are captured to storage. There are some early demonstrator projects. The overall intention, as you saw from the action plan that we sent you in November, is to try to ensure that we can be in a position to scale up for this in the mid-2020s, but we continue to provide a lot of innovation support—£45 million, I think—to try to find the most economic methods.

Q30 **Chair:** How much have you put into those two projects?

Alex Chisholm: Project Acorn, £170,000; I don't know about the OGCI one.

Q31 **Chair:** That's what I thought; they are quite small operations.

Alex Chisholm: They are relatively small, that's true, but they are testing the principle. Obviously, the principle is tremendously important, because if we can reuse existing oil and gas pipelines—

Q32 **Chair:** We know that. We have been round this two and a half times with



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competitions to try to get this up and running, which I think we would all acknowledge have not been successful. Do you really think that we will get anything by the mid-2020s? Secondly, Dr Samuel, could the infrastructure taking it under the ocean bed actually be in place? Will the timings fit with decommissioning?

Alex Chisholm: As a Department and as a Government we are absolutely committed to it, and share the Committee's enthusiasm for it.

Chair: The Committee is perhaps more sceptical than enthusiastic about it.

Alex Chisholm: As I have said to you before, we think it is essential; we cannot meet our climate change obligations, particularly the 80% reduction by 2050, without achieving CCUS. That is not just the power sector, but right across industrial use. We are very keen. You will have heard from Minister Claire Perry, who has been leading our efforts in this area and is very energetically pursuing that. We remain confident that we will be able to achieve it.

Q33 **Chair:** What lessons have you learnt from past competitions that did not work? What will be different that will make it deliver by the mid-2020s?

Alex Chisholm: I think there were probably different lessons from the two different projects that we had a chance to discuss before. Of the most recent one, all the lessons learnt from that have been captured and are available for industry learnings as well as for our own. The vital thing is to make sure that we have the full commitment of all parties to this. Clearly, one of the concerns that the Committee rightly raised was that there was discontinuation of funding at quite short notice, and that is something that has set back the industry for a period of time.

Q34 **Chair:** It has discouraged people.

Alex Chisholm: As I tried to say in my previous evidence, when we looked across the world there were 19 projects. There are now 23. There are a lot of discontinued projects around the world because it has proven very difficult to make these economic. In order to be really useful for us, it cannot only be demonstrator projects; it has to be rolled out right across the industry.

Q35 **Chair:** The other part of your Department's work is industrial strategy. In so many ways the UK could be leading on energy because of our natural resources, some of which we are discussing today. If carbon capture and storage really got off the ground in the UK, that could be something that could be exported: the technology, the jobs, the skills. How much are you looking at measuring the costs of investment versus the potential gain to our wider industrial strategy? Is that part of your calculation?

Alex Chisholm: It is, absolutely, and we do see it as a very valuable market going forward. It is already the case that some of the expertise developed on those projects has been available to projects in other parts of the world: some of the professional services that were engaged and learnings from those projects. What we would really like is to be able to—



in the same way that we have led the world in decarbonising the power sector—apply CCUS effectively in the UK in the power sector and also in industry. We are working together with industry on that. Despite the setbacks of the earlier projects, we have been able to reset the commitment of the industry and Government over the last year through the action plan, and we will take that forward.

Chair: You sound so optimistic. I feel terribly cynical sitting here, but that is perhaps because I chair the Public Accounts Committee and we get like that after a few years. We will hang on. We will all be here in the mid-2020s even if you are not, Mr Chisholm, and we shall weigh these words against your successor.

Q36 **Bridget Phillipson:** Dr Samuel, you talked about the lessons to be learnt within the sector around oil and gas decommissioning. Is any work ongoing around any potential parallels with the nuclear industry and decommissioning?

Andy Samuel: We ran three workshops last year with the Nuclear Decommissioning Authority. One was in Aberdeen, one in Sellafield and the other was at their office in Cumbria. That was really good and there were some strong parallels. Obviously, the risk envelope with nuclear is different. Essentially with oil and gas, once you are hydrocarbon-free, the major accident hazard element has gone. Notwithstanding that, the nuclear industry was very interested in some of the cost reductions that we are already seeing through simplification and standardisation of methodologies. They are looking at that. The oil and gas industry was really interested in some of the robotics and other techniques that have been developed in nuclear that could be applied to some of the subsea work.

I met David Peattie, the chief executive of the NDA in London in January. In that meeting I shared with him the benchmarking that we are doing. That is probably the most powerful thing we have done to drive costs down. He is now looking at that for the nuclear sector and thinks that will also work very well there. We are going to carry on with these interactions throughout the next few years for sure.

Q37 **Bridget Phillipson:** Mr Chisholm, has there been any assessment made of the possible benefits to the UK of exporting skills and resources around oil and gas decommissioning? Much of that is also for Dr Samuel.

Alex Chisholm: Yes. I also just wanted to add something about nuclear because I particularly sponsored those linkages between the Oil and Gas Authority and the Nuclear Decommissioning Authority. There is a huge area of expenditure, particularly in Sellafield, which is moving now to a different model: rather than having a single operator, it has broken up into a number of different lots, which makes the value of benchmarking much higher and means that we move away from a sense in which you have intense competition for the market, and then when you have the contract you make the most value out of it from a commercial perspective, to one in which we continue to get cost savings over the course of the project,



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particularly through this benchmarking discipline. We are really trying to cross-fertilise between different bits of the BEIS family of organisations that we sponsor.

To come back to your question on the value of exports, the UK Government and the Scottish Government, including Social Enterprise Scotland and the Highlands and Islands Enterprise group, have also been supporting the Oil and Gas Technology Centre based in Aberdeen. As part of that, a new national decommissioning centre launched just last month. We see a lot of potential for exports, partly because we were the first to do this in the North sea, starting in the 1960s. A lot of the other major exploration sites around the world are younger. It is quite a difficult environment. If you can make it work in the North sea, that would be fantastic know-how to be able to sell to other parts of the world. Most of our businesses' sales—not just the oil majors, but a lot of the supply businesses such as Wood Group and AMEC Foster Wheeler—are around the rest of the world, even though they were originally headquartered in the UK. We strongly support that.

- Q38 Bridget Phillipson:** How can we do more to ensure that the opportunities for skills—we heard about potential for subsea—are spread across the UK, so that we encourage companies to be involved in this work, wherever they happen to be located?

Alex Chisholm: The distribution of jobs is more even than one might think. When thinking of the North sea, the tendency, is to assume that nearly all of sector is based in and around Aberdeen. Of the 200,000 or so jobs that are associated with oil and gas, about 39% are in Scotland and the rest are in other parts of the UK. There has been considerable offshore work—not only in oil and gas but more recently in wind, and that goes the whole way down that coast.

Working with the Oil and Gas Authority, a particular focus of the Department has been to try to promote apprenticeships and improve diversity, because the experience of the industry has not been as you would wish in creating equal opportunities for both sexes. We have been strongly supporting the work of a group called POWERful Women who have been promoting that, and it is something that the oil and gas association, Oil and Gas UK—has taken up as a big cause. A number of companies have really made this something that they want to major on. Changing the employment record of the industry is something we want to encourage.

- Q39 Bridget Phillipson:** Returning to exports, do you think the uncertainty around Brexit will have any impact on our ability to support export opportunities for decommissioning?

Alex Chisholm: Brexit is a source of uncertainty that affects a number of different sectors, but comparatively speaking, oil and gas is one of the least affected. It is a very global, international market, which has a strong pull towards North America, the Gulf and other parts of the world. The extent to which it depends on very integrated supply chains with Europe is



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quite low by comparison with some other sectors. There are a couple of areas where issues have been raised. They are concerned about ensuring that there is continuing free movement of people, which is obviously an important point, and that the regulatory framework is in place. In November we laid before Parliament a statutory instrument with the catchy title of the Pipe-lines, Petroleum, Electricity Works and Oil Stocking (Miscellaneous Amendments) (EU Exit) Regulations 2018.

Chair: You didn't know that off by heart?

Alex Chisholm: That is the Brexit-proof version of ensuring that the regulations that need to be in place will be in place in time, should we need them.

Q40 **Chair:** How many other bits of Brexit legislation do you have to get through the House in the next six weeks?

Alex Chisholm: We have tabled 63; we have one outstanding.

Q41 **Chair:** Only one outstanding? So 62 have already been agreed? Sorry, I blinked and missed that.

Alex Chisholm: They have already been laid, but not all have been approved yet by Parliament.

Chair: I think we might be busy next week, from the sounds of it. Now we are so well-informed, we can keep your Ministers busy for half an hour on the detailed issues of some of these things.

Q42 **Sir Geoffrey Clifton-Brown:** Mr Chisholm, you have quite rightly praised the efforts of OPRED and the work they are doing to bring down the costs of decommissioning and on the benefits of possibly being able to export some of this technology around the world, but the British taxpayer, in addition to benefiting from getting the cost of decommissioning down and keeping tax down, would perhaps rightly expect to share some of that income from around the world. What thought have you given to Ms Bourne's organisation and intellectual property protection from the technology that it has gained through its taxpayer injections?

Alex Chisholm: I have not looked so much at the intellectual property aspects. I do think that having the UK as the base for companies such as BP and Wood is a source of earnings to us. They pay a lot of taxes in the UK, their dividends are disproportionately applied to UK-based shareholders, they pay huge amounts of tax in relation to pensions and so on, and they are major, major employers here, so there are a lot of economic benefits to being one of the recognised global bases. From an intellectual property perspective, I do not have any particular knowledge, actually.

Chair: Ms Bourne?

Emily Bourne: All I can say is that we have said we will put out a call for evidence in the first quarter of this year, which is specifically asking how we can make Scotland and the UK as strong a base as possible for exports



regarding oil and gas decommissioning. If we were to get responses to that call of evidence with thoughts along these lines, we would definitely want to consider them. That is the opportunity for people to come in and raise these sorts of questions.

- Q43 Sir Geoffrey Clifton-Brown:** Thank you. Dr Samuel, I want to return to something that you have rightly praised your organisation for having achieved, which is adding an additional 3.7 billion barrels of oil to the forecast. Can I take you to figure 5 on page 17, where the NAO says there is the potential to recover 10 to 20 billion barrels still in the North sea oil basin? That is a very big figure, and it is quite a big range too. How reliable do you think that estimate is?

Andy Samuel: It is the best we can do, and every year, we feel we are getting better at it. In our reserves and resources report last year, we published a number for plays for the first time. This is beyond mapped prospects, because there are parts of the UK that we think could be highly prospective—for gas, interestingly, which might be very important going forward—that have not really been surveyed at all. We have now surveyed them, and we are providing numbers for new plays. We have taken prospects to a very granular level and we have a fantastic database now, so that is a risked number, but there are huge ranges. It is just the nature of the geological uncertainty. It is a bit like the decommissioning: if things are actively producing, there is far less uncertainty, whereas for a play, there genuinely is massive uncertainty.

In most scenarios, we see that there is a lot to play for, and I think that is why we have seen more investors coming in the last few years than we've seen for a long time. What we are doing is a revolution in data. Later this month, we are launching the UK's first national data repository, and that is going to make more and more of these data available, not just to licensees, but to anyone—academia, new entrants and so on. It really levels the playing field and allows people who have not had years of data scientists working on this to come in and work the data themselves. I think it is really going to move this forward in a very exciting way.

Alex Chisholm: There are also these annual seismic surveys that the Government have been funding—about £20 million a year—and when I was in Aberdeen, Dr Samuels explained to me how those surveys are designed. They go around and ask all the companies "Where do you think the most profitable areas might be?" according to all the geological information available to them, and then that is where they focus the next year's seismic survey. Partly as a consequence, the last one has actually been incredibly rich in terms of the amount of discoveries that it has, so that is one of the factors that is working to extend the life and improve the recovery of oil in the North sea.

- Q44 Sir Geoffrey Clifton-Brown:** Can I take both of your answers, and ask you specifically about the Glengorm field discovery announced in the last few weeks? This was through an exploration by the Chinese after Total had twice failed to find it. I know it is only 250 million barrels, but it is nevertheless a big find in terms of the total. What category of that graph



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on figure 5 did that come into? Was it in the “known reserve requiring construction” category, or was it in the “estimate of remaining reserves” category?

Andy Samuel: It has effectively moved. At the time when this work was done for our publication last year, it would have been in the estimate. Next time round, it will be moved into the known, because it is now a known resource, almost certainly economic, and almost certainly will get developed in due course, subject to appraisal.

Q45 **Sir Geoffrey Clifton-Brown:** You talk about seismic surveys; is this something over and above what you were doing on your seismic surveys?

Andy Samuel: We are actually going to work with the operator on that one, to capture the positive lessons learned about what led to it finally being drilled, and to share that quite widely. I think it was licensed in our 29th licensing round. One of the things that helped was relinquishment reports. We now have a geographical database and I think the operator used things such as existing data and put together the story. There was a different view on the size; they had a more optimistic view than the operator that relinquished it, which made it an economic proposition to drill. That is in the heart of what we call the high-pressure, high-temperature play in the central North sea. We may see a mini resurgence in that play, which will be very interesting. It is close to existing infrastructure and it is largely gas with associated liquids, so just the kind of thing that is good news for the UK economy right now.

Alex Chisholm: It is a great illustration of how this very strong strategy of publishing a huge amount of data about the fields is opening up this economy. The amount of data would compare with any other country in the world.

Q46 **Sir Geoffrey Clifton-Brown:** Is this new technique likely to yield more Glengorms?

Andy Samuel: We hope so, yes. We were very pleased to get some regulations through Parliament last year, which have allowed us to be far more transparent and quick to make available these kind of data as we get them. There still are time-limited confidentiality periods, but they are much shorter. The more data we can get out from everything from expiration through to decommissioning, the more the market can make good sense of that and maximise value for the UK economy.

Q47 **Sir Geoffrey Clifton-Brown:** To come back to my earlier questions, how much tax stimulus do you need to produce these explorations? Presumably, as the explorations go on, they get more expensive to extract. Do you think the UK tax stimulus will need to become more generous to get out the final 10 billion to 20 billion?

Andy Samuel: Yes. The Treasury and its driving investment plan put out three key principles, one of which was that they suggested over time that the tax burden would fall. It would still be higher than the normal corporation tax but it recognised, for the reasons you outlined, that as things get smaller and arguably harder, with higher pressures and



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whatever, it will probably fall. It also recognised the second principle: it is very important to be competitive. I do not know how aware the Committee is of what has happened in the United States with the Permian basin on the shore of the US, which has become a global hotspot for investment. That is what we are competing for investment for. If we want continued activity in the UK, we need to understand the relative economics.

The third principle it recognised, very interestingly, was that there is an awful lot of value, as the Permanent Secretary also explained, through the broader supply chain. That has been underlooked in the past. In 2016 we created something called Vision 2035, which put it all together and showed that about £920 billion of value was still to come from this industry. I think that surprised people. It is certainly very substantial.

Q48 Chair: Has the Treasury looked at that potential £920 billion to work out whether it is getting the tax regime right?

Alex Chisholm: Yes, we work very closely with the Treasury, and they are represented on this cost overview board. I know they are not in front of you today, but they are very much involved in this activity.

Q49 Chair: Do you have an estimate of what the tax take from that would be if it were fully realised?

Alex Chisholm: I haven't seen that, no, but I have seen that they have reported some additional tax figures, which they said they would do by the end of January.

Chair: Maybe we will challenge them when they come back on whether they are banking that money.

Q50 Sir Geoffrey Clifton-Brown: Dr Samuel, we have spent a lot of time examining the cost of decommissioning. To what extent do the costs that you have outlined, and that the NAO outlined in its report, take into account—God forbid—any sort of catastrophe, such as an oil spill, explosion or anything of that nature?

Andy Samuel: We have a risk register where we look at all those things, but primarily, as with all these risks, the key thing is to mitigate it. I am sure Emily will do a very good job of working with industry to minimise those risks.

Emily Bourne: All operators are required to have insurance to cover any oil spill that might occur. They are also required to have an oil pollution emergency plan, which is agreed for each installation. That must be exercised by the operator annually. Once every three years, there is a full exercise involving Government for each of those plans, to ensure that they are ready for any kind of issue that might come about. The primary requirement is for them to have the insurance in place, which we would check as part of the OPRED regulatory role.

Q51 Sir Geoffrey Clifton-Brown: I suppose the acid test of whether modern technology is getting better at avoiding this sort of thing is whether the

insurance rates for that sort of insurance are coming down.

Emily Bourne: I could not answer that specific question.

- Q52 **Sir Geoffrey Clifton-Brown:** Without that particular twist at the end of the question, is modern technology, in your view, making those risks less and less?

Emily Bourne: We have inspectors who go out and inspect all the installations to see if there are any environmental breaches, and to ensure that people are following all the procedures. We do those either on our own or jointly with the Health and Safety Executive, which also has an approach to inspections. As part of that, we are seeing the number of things that the inspectors are spotting coming down, which is a good sign, but we would not want ourselves or the industry to become complacent.

- Q53 **Sir Geoffrey Clifton-Brown:** Finally, Mr Chisholm, I have a question on the environment. There is a potential tension between continuous support for oil and gas, and the achievement of carbon reduction targets. How are the Government dealing with that conundrum?

Alex Chisholm: We would look at it as follows. It is necessary, from the perspective of the climate, to reduce the overall use of hydrocarbons, and we are strongly committed to doing that and, as I mentioned before, leading the world in that respect. However, for the next generation, we know with a very high level of confidence that we will need a lot more oil and gas. In terms of the UK's primary energy needs at the moment, about 70% of that energy comes from fossil fuels: first and foremost gas, followed by oil and a small amount of coal. We are phasing out coal, in terms of energy production, by 2025. Between now and 2035, we expect to reduce the use of gas in power production by about 65%. Oil depends very heavily on both the reduced use in heating, which will be a major challenge over that time period, and in the transport system, which is so heavily dependent on oil and oil products at the moment. That is the overall context, which plans to show reducing use of hydrocarbons; we are strongly committed to that.

The question then becomes, where do those hydrocarbons come from? At the moment, about 65% of our oil use comes from within the UK, as does about 50% of our gas use. We would expect, in that diminishing use of hydrocarbons, to use a higher proportion, if we can, of UK-sourced oil and gas, on the grounds that if we need it, why would we not use our own, rather than bring it in from the US, Qatar, Norway, Russia or wherever else? That is how we reconcile those objectives.

- Q54 **Sir Geoffrey Clifton-Brown:** So you do not think that our climate change policy will outstrip the natural life of North sea oil, which is estimated to be roughly until 2035?

Alex Chisholm: No. Obviously, there are a number of different factors in the climate change policy. We have made terrific inroads into trying to decarbonise the power sector, but we are only at the very early stages in the heating sector. Then there is housing, waste and transport, which all have different profiles of take-up, so there are many uncertainties within



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that. Further, as we know, the climate science continues to advance. We have asked the Climate Change Committee for advice on how to deal with the new challenge of 1.5° within the UNFCCC, as it is called, which is usually referred to as the Paris agreement. There are new challenges coming out of that, even from the meeting we just had in Poland, so-called COP 24, from which a new set of commitments have flowed. The science, the regulatory and international agreements, and the consumer reaction all move. There are lots of uncertainties within that. Overall, do we expect to continue to draw on the North sea for oil and gas for the next 25 years? Yes, I would.

- Q55 Chair:** This question is mainly to Dr Samuel, but also to Emily Bourne. The Scottish Affairs Committee did a report on decommissioning, and raised the question about the best of way of decommissioning to minimise harm to the environment. Do you think that that question is now resolved, Dr Samuel? In all the work that you are doing—benchmarking and so on—can you give us an example of best practice? How widespread is it becoming across the sector?

Andy Samuel: From memory, there was quite a lot of conversation in those Committees on topics such as rigs to reef and the like, which are much more in Emily's policy area.

Emily Bourne: This was a question that the Scottish Affairs Committee was interested in. Rigs to reef is not something that we currently have a policy on, and the reason for that is that we haven't had any demands from any operators within the UK to bring forward a rigs to reef proposal. We have, as you know, derogations that allow certain parts of an installation to be decommissioned in situ and left in the sea. That is for safety and technical reasons. But we have not had any requirement from someone to leave an installation in place for the purpose of becoming a reef. We would be open to discussing that if people came to us with proposals, but no one has come forward as yet. As you know, we have international requirements that we must meet through the OSPAR treaty.

- Q56 Chair:** Do you know of any other countries that are doing rigs to reef decommissioning?

Emily Bourne: Yes. The OPRED team have been out to the Gulf of Mexico, where there is a rigs to reef programme. There, the installation is removed from its position and relocated somewhere else as a reef. It is used by divers and sports fisherman, which, as you can imagine, there is slightly less demand for in the North sea.

- Q57 Chair:** So actually, this is about the cost of moving it instead of the cost to the provider. Presumably that is one of the brakes on doing it.

Emily Bourne: That's right. There are a number of complexities about this sort of proposal.

- Q58 Chair:** I realise that that is quite a complicated area to get into at the end of our hearing. I just want to go back to the issue of our industrial strategy, which I mentioned to Mr Chisolm earlier. Can you give us some



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examples of progress from the best practice centre in Aberdeen, which is working to pick up best practice and work out how to export it around the world? Crucially, Mr Chisolm, how are you trying to capture some of that so that we actually get income into the UK Exchequer? We can spawn a lot of businesses that go off and employ people in other parts of the world, but unless those businesses have a footprint in the UK or use workers from the UK, it is difficult to see what the benefit to the UK will be other than that you can polish your halo a bit and say, "It's great—British businesses are out conquering the world." What is going to be the benefit of that to the Exchequer, and how are you trying to capture it?

Alex Chisholm: As Emily Bourne mentioned a little bit earlier, we are doing a call for evidence in the next few weeks to look at how to maximise opportunities. The technology centre has, for example, the biggest industrial laser in the UK. It is for underwater cutting.

Emily Bourne: That is at the national decommissioning centre, yes.

Q59 **Chair:** It is all very well having that, but if that company then takes that laser overseas to do work, how are we going to ensure that any benefit accrues to the UK economy, or to the Exchequer?

Emily Bourne: The national decommissioning centre has been set up in the University of Aberdeen, so the facilities are available at that university. Similarly, the oil and gas technology centre is based Aberdeen and has a model of trying to bring together academics and others who might have solutions in the UK, and operators who might have a problem. The centre tries to link those people up and uses the operators to test the solution and make it commercial. All that is happening in Aberdeen.

Andy Samuel: I sit on the board of the oil and gas technology centre. Its progress is genuinely exciting. We currently have 24 projects in decommissioning and the plug and abandonment of wells. There is always a question about IP, and we deal with that project by project.

The important thing is then to anchor those businesses in the UK. I was down in Newcastle last week and saw a fantastic example of subsea there, where Baker Hughes GE—one of the largest service companies in the industry—and Technip have their global centre of excellence. They are producing huge amounts of high-value flow lines bundles, which are being exported all around the world.

On decommissioning, I think we need to look quite carefully through this call for evidence, because it should obviously be transient and as low a cost as possible to the North sea. However, as the Permanent Secretary has explained, these other basins will follow. We are already establishing a good reputation.

We are also strongly supporting new business models. A lot of the cost is actually in subsea wells P&A, which we are only just starting now, but there are companies like Well-Safe Solutions, which has set up in Aberdeen, that are looking at purchasing semi-sub rigs and transforming them into bespoke decommissioning models that can go round and do this

work really effectively. That will become of global interest. Indeed, that company has already been approached by a number of companies—the Australians, the Malaysians, the Brazilians. It's happening quite fast.

- Q60 Chair:** Again, how do we accrue the benefit? Is there going to be support from your Department, for instance, Mr Chisholm—an investment, so that we support centres like the one in Newcastle and actually get the manufacturing done? Is there a plan to get jobs and money accruing to the UK as a result of the expertise in decommissioning?

Alex Chisholm: We certainly have been funding those projects—not just the UK Government, but the Scottish Government—to the tune of about £90 million. They have had some good support to get under way.

Like other businesses, we hope that they will move out of the early stage of being small-company projects, working with universities, to become future international businesses that are substantial and pay good taxes and employ many people. That is our hope and aspiration.

- Q61 Chair:** Is it just a hope at this point? How are you actually going to get some tangible—

Alex Chisholm: No. We have provided the initial funding, but there's also support from the Department for International Trade and from our overseas posts. If they get big enough and they need some support from UK Export Finance, that, too, is available; there is a complete package to try and do this. Next month, all the ambassadors from around the UK are coming for a presentation and a seminar on the industrial strategy, to try to market it to different parts of the world. One of the themes for that will be the opportunities in the big oil and gas extraction parts of the world to use British expertise.

- Q62 Chair:** Does Brexit have an impact on this, if we crash out without trade deals, for example?

Alex Chisholm: As I mentioned in my previous answer, I don't think that the oil and gas industry depends very much on those types of trade deals. They are more important in other sectors than in this one.

Chair: We could go into that at length, but I will leave it there for now. Sir Geoffrey.

- Q63 Sir Geoffrey Clifton-Brown:** Can I ask you a few questions about our nuclear policy, please?

Chair: As if you have a choice, Mr Chisholm. Sir Geoffrey is always so polite.

Sir Geoffrey Clifton-Brown: Previously, your Department estimated that 75% of the total generation, compared with 46% in 2015, would be from renewables, including nuclear. Given what has happened at Wylfa and Moorside—cancellations or suspensions by the Japanese companies involved—is that estimate still reliable?



Alex Chisholm: The estimate of the amount that we expect to come from renewables and nuclear together stands, because that's an important part of our overall commitment to achieving our climate change goals out to 2050. If we weren't achieving that in the power sector, we would have to overachieve it in the other sectors, which I think would be less affordable, so that part of it, we absolutely stand by.

The precise mix within that of nuclear versus alternative low-carbon technologies, particularly renewables, is something that will be looked at again in the energy White Paper that we will publish this summer, which will include nuclear. Clearly, in doing that, we want to take account of the changing cost profiles of renewable technologies versus nuclear.

We obviously want to look at test investor and corporate appetite, which has been a feature in both those two decisions that you mentioned. We are looking at alternative financial models, with encouragement from the PAC, from a previous NAO Report, to look at the option of doing it ourselves—public funding—and alternative mixed models, such as those that we developed for the Wylfa project with Hitachi, and also regulated asset base models as well. We are looking at this in the context of the overall economics of nuclear versus renewables, but also optimum financing and construction models. That will all be in this energy White Paper this summer.

Q64 Sir Geoffrey Clifton-Brown: Meanwhile, though, we hear from the press that you are busy negotiating the Bradwell and possibly Sizewell C nuclear power stations. Is that the case? And how well progressed are those two projects?

Alex Chisholm: They are not very far developed as yet. They are certainly part of our pipeline. So too is Wylfa, which, as you rightly said, is a paused project rather than having been cancelled by Hitachi. Bradwell is going through what is called generic design approval, which is a multi-year complex project of assessment done by the Office for Nuclear Regulation, an independent regulatory body. In the case of Sizewell C, they propose to use an existing technology in the UK market—namely the European pressurised reactor, which is being used at Hinkley C—but it would be a different site, so a whole new assessment is required for that.

There is an open question as to what financial model will be used beneath that. You will remember from Hinkley that there is often a whole process before you get to the final investment decision, so we are some way off that. If we were to go down the route of using the RAB model in the nuclear industry, that would require a new regulatory framework, new legislation before Parliament and so on. Even though the media might be talking about discussions, I would not encourage the thought that this is going to be coming to maturity any time soon. This is a long-term process—both the necessary safe approvals through the GDA and the negotiations over financial and economic models.

Q65 Sir Geoffrey Clifton-Brown: Going back to your previous answer about the mix between other renewables and nuclear, if the strike price of



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Hinkley C is 90p-plus per terawatt-hour compared with the current market price for renewables of 50p or 55p, that is quite a big difference, yet you still seem at least to be pursuing the idea of more nuclear power stations.

Alex Chisholm: Forgive me, but I do not think we are quite comparing like with like there. For us, the great value of nuclear is in providing baseline capacity; it is low-carbon and runs away there all the time. Offshore wind is excellent in the sense that it has very low incremental costs and is obviously very low-carbon and renewable—wind is a plentiful resource, especially in the North sea—but it does not always blow when you need it. On cold, still winter evenings, there is not sufficient wind. Although there have been days when half the power system has been powered by wind, there have also been days when you have got hardly any wind at all.

Until we have built in—as may or may not be the case—solutions to that intermittency through vastly improved and extended battery storage and other technologies, we are going to need a substantial base-load. At the moment, we take a lot from gas—a bit more from gas, about 40% or more from gas compared with about 20% from nuclear—but as we know from our previous discussion, unless we have a substantial breakthrough in carbon capture and storage, the carbon emissions of gas are not going to be affordable within the overall carbon budget going out to 2050.

Q66 **Sir Geoffrey Clifton-Brown:** Is Hinkley C on time and on budget at the moment?

Alex Chisholm: It is, yes. We obviously monitor that very closely. In fact, they have been rather pleased with their progress, particularly over the last year. It was very dry for about three months, and that is very important when you are pouring a lot of concrete.

Q67 **Sir Geoffrey Clifton-Brown:** Finally, in negotiating what are very big contracts for these nuclear power stations, to what extent are we following up British workforce shares? It is reported in the press that Rolls-Royce is being invited in to look at the control mechanisms to offset fears about Chinese control mechanisms at Bradwell. To what extent are you looking at the British workforce share?

Alex Chisholm: The commitment we had in relation to Hinkley was that over, I think, 64% of the overall economic value should be earned by UK-based businesses. They have been fulfilling that, and they report to us on that. We get the chance to assess that. That has been much appreciated and has brought a terrific boost to the south-west and indeed the whole of the UK—some of the businesses produce goods throughout the UK. In the event that the Bradwell project goes ahead, that the Hualong reactor goes through GDA approval and that the economic and financial case is put in place with all the necessary planning commissions and so on, of course we would try to make sure that there were good opportunities for UK firms, but we are some way away from that at this point.

Q68 **Chair:** Thank you very much for your letter of last September, which we



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asked you for in our Report on the renewable heat incentive last May—I think it is a year since you were here in front of the Committee to discuss that. We were worried about gaming; obviously there has been quite a lot of media coverage, which we will not go into now, about how that worked. You wrote to us explaining how you would deal with the two categories of gaming. How much impact do you think gaming is currently having on the renewable heat incentive?

Alex Chisholm: We would say that it is having pretty little impact in the GB scheme, and that the activities that we have put in place with the help of Ofgem have further narrowed that.

Q69 **Chair:** Do you think that you can measure it robustly? You wrote to us explaining how you would break it down, but are you and Ofgem able to measure it robustly?

Alex Chisholm: Not 100%, but as robustly as possible. We were grateful for the advice of the NAO and the PAC on how better to go about that, and we have tried to sharpen that up through the steps that we described to you in our correspondence.

Q70 **Chair:** Can you quantify what you have clamped down on since you introduced the two-pronged approach? Is that possible?

Alex Chisholm: I would not be able to produce a figure off the top of my head, but I could certainly write to you.

Q71 **Chair:** Could you either send us one or tell us whether you think that there was gaming that you have now clamped down on as a result of the changes that you have made?

Alex Chisholm: I think that there was potential for gaming, which was not great, but we have further narrowed it. We tried to quantify it before as best we could—as you will remember, that was one of the things we looked at through the process when we had the NAO Report on it. I would not care to produce a new figure off the top of my head to describe that.

Q72 **Chair:** It seems that energy policy is bedevilled with this—I am thinking about the feed-in tariffs on solar and some of the other things we have looked at. There is always the potential that an activity will be, as you describe it in great Whitehall language, “misaligned with the policy intent”. Are you convinced that the activity is now aligned with the policy intent?

Alex Chisholm: The lesson that we take from the whole episode with the renewable heat incentive, particularly in Great Britain, is that once you have introduced a scheme, you have to look at how it is actually being used, do some very careful monitoring and make the necessary changes. We have made over a dozen changes to it—with the help of Parliament, because it has often required changes to regulations. It is about continuing to look at it, saying “Well, this is what you would think would happen, but what is actually happening?”, and then making adjustments along the way.



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Chair: If I could sum up in a sentence the challenges of your predecessor department, DECC, it would be that it did not always understand human behaviour in these complicated areas of policy. I am glad to know that you are doing this—if not always before the horse has bolted, at least afterwards.

Sir Geoffrey Clifton-Brown: Stopping any more bolting.

Chair: Yes. Thank you very much—this has been a bit of a canter through the issues. *[Interruption.]* Forgive me; I almost forgot Mr Rowley.

Q73 **Lee Rowley:** You almost got away there, but I would like to talk about fracking for a few moments. When can we expect one of these booklets on fracking?

Alex Chisholm: Do you mean a guide to decommissioning of fracking? I think there have only been two exploratory hydraulic fracturing wells in the UK. Unless that changes substantially, I don't think we would ever produce a booklet to describe those two activities.

Q74 **Lee Rowley:** But the Government's policy is that fracking should be pursued and promoted. Depending on the estimates you use, that could mean thousands of wells across the country, including in my constituency, so you would assume that the Government would be doing work like this, right?

Alex Chisholm: Again, this particular booklet is about trying to estimate the costs of decommissioning, but that comes after 50 years of activity. We are just in the very early stages of trying to assess whether fracking can be done in this country in a way that has local support, is environmentally responsible and is economic. I would not look forward 50 years to see what any future publication would be about decommissioning industry, if it happens. We do not yet know whether there will be a substantial fracking industry in the UK.

Q75 **Lee Rowley:** Why would you not do that, given that Dr Samuel said that the encouragement should be for early planning?

Alex Chisholm: Sorry?

Lee Rowley: In earlier answers to questions like this, about offshore, your colleagues talked about encouraging early planning. Why would you not encourage early planning for shale gas?

Alex Chisholm: Planning is certainly in place. If your question was whether we would put appropriate planning in place—

Q76 **Lee Rowley:** No, my question is "Why haven't we got one of these?" I am using your words to justify why you need to put one in place. Why haven't you got one?

Emily Bourne: I think the reference to early planning was about making sure, when an operator is thinking about decommissioning, that we are talking to them very early about that and making sure that they have got their plans in place.

Q77 **Lee Rowley:** When will I see one of these?

Emily Bourne: At the moment it is very small scale. We have got two sites so far, one of which has already been plugged and abandoned.

Q78 **Lee Rowley:** I understand well fracking. When will I see one of these?

Chair: Mr Rowley is rather expert on that subject.

Emily Bourne: We can certainly consider, but—

Lee Rowley: No, I don't want a consideration. I would like you to tell me when I will see one, please. I was very happy to ask you these questions a couple of months ago in the all-party parliamentary group, but you did not want to attend, so I would like to ask them now. When will I see one of these, please?

Q79 **Chair:** How big does the industry have to be before you are going to start planning the decommissioning?

Emily Bourne: It is one of the things that we take very seriously, and you will have seen that with the Secretary of State's announcement that before giving hydraulic fracturing consent to any site, he would require the finances of the company concerned to be looked into, and that specifically includes their ability to meet their decommissioning cost. It is a very important part of the consideration and something that we take very seriously.

Q80 **Lee Rowley:** Given that we know that fracking has challenges—it may be that some of the early fracking sites are not successful—it would seem logical to suggest that fracking activities may cease shorter than 50 years out, which goes to Mr Chisholm's point. You very helpfully told me about the stewardship expectations. They say—I have just looked while you were talking—that you should be talking with operators six years before decommissioning. It is entirely possible that Preston New Road could be decommissioned in the next six years. What are you talking to them about?

Emily Bourne: BEIS does not have the same role onshore as we do offshore. The remit of OPRED is offshore rather than onshore. That said, the regulators concerned definitely want to be talking to the companies about that, and that is part of the consideration. Part of the planning conditions will be, "Will the site be restored to its former state once operation is finish?"

Q81 **Lee Rowley:** You know that planning and decommissioning regulations are different. Who is doing that?

Alex Chisholm: The Health and Safety Executive and the Environment Agency are the two lead regulators.

Q82 **Chair:** It is worrying that with more than one agency involved, things get a bit more disparate. So there are no plans for an Oil and Gas Authority-equivalent for fracking or to expand Dr Samuel's empire?



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Andy Samuel: We have a narrow role onshore.

Q83 **Chair:** Most of your fracking responsibility is offshore.

Andy Samuel: Most of our effort is offshore, yes.

Q84 **Chair:** Mr Chisholm, it sounds like you have lots of different people with their finger in this pie. With oil and gas, from the beginning the tax relief element was built in on decommissioning. What is the policy proposal to ensure that the situation that Mr Rowley has highlighted—as he says, it could happen quite quickly for some of the early sites—has built-in decommissioning provisos? It is not just about the health of the company, because companies can go bust. Are there any plans?

Emily Bourne: The requirement that the Secretary of State introduced, which was to have an independent assessment of the financial resilience of the company, including their ability to meet decommissioning, allows the Secretary of State either to refuse consent for hydraulic fracturing or to place conditions on that consent. That could include something like taking security if that was felt to be needed in any case.

Q85 **Chair:** “Taking security”—what are the legal grounds for taking security? What would the trigger be?

Emily Bourne: The Secretary of State has to give hydraulic fracturing consent before that can go ahead. There is an opportunity there for him to add on any conditions that he wants.

Q86 **Chair:** Is it his personal decision? Would it be a ministerial decision?

Emily Bourne: It is a Secretary of State decision, yes.

Q87 **Lee Rowley:** In the event that fracking goes ahead, which I hope it does not, who picks up the long-tail liabilities for fracking? That goes to Mr Chisholm’s point that some of these things could be 50 years out.

Emily Bourne: As with offshore, there is a liability on the operator going forward. The Environment Agency is the regulator for environment issues onshore. They will consider the issues as part of their permit and regulatory regime.

Q88 **Lee Rowley:** But it is a policy question, which I would expect the Department to have a view on. Some of these operators are unlikely to be around in 50 years’ time. Some of them are unlikely to be around in five months’ time. What happens if they drill, as has occurred, and they are not here? Who picks the liability up?

Emily Bourne: The Environment Agency has the ability to require any person who bears responsibility for any issues that come about—

Q89 **Lee Rowley:** That is not quite my question. My question is: when a company disappears, which is highly likely to occur over the 50-year timeframe Mr Chisolm outlined, who picks up the liability?

Emily Bourne: The liability would sit, first, with whoever was on the licence. If there was—



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Q90 **Lee Rowley:** The licence has been handed back.

Emily Bourne: If there was any party to that licence—sorry, I will have to get more information.

Q91 **Lee Rowley:** The reason I ask is because this has not been adequately answered anywhere, and I want an answer to it. Please provide me with one now, or I am happy for you to write to us.

Alex Chisholm: On your question about the licence being handed back, the Environment Agency will not allow a shell operator to relinquish their environmental permit until it is satisfied that the terms of the permit have been met.

Q92 **Lee Rowley:** And if the company goes bust?

Alex Chisholm: As Ms Bourne was saying, it is a particular concern of our Secretary of State to make sure that there is good financial standing, which is why these additional tests were added. I think there are now 13 specific legislative conditions that have to be met before any planning permission can be given.

Q93 **Lee Rowley:** If the company goes bust, what will happen?

Alex Chisholm: If the company is no longer responsible or is no longer in existence, anybody else responsible associated with that—so, the Environment Agency, which is not one of our agencies, enforces a “polluter pays” principle.

Chair: That sounds a little vague.

Alex Chisholm: Ultimately I think the landowner has responsibility.

Q94 **Lee Rowley:** But the landowners are potentially being forced to allow fracking to happen on their land, contrary to their wishes. Ineos has threatened to take the National Trust to court on that, for example, under the Mines (Working Facilities and Support) Act 1966. How can landowners be responsible for something occurring on their land that they did not want to happen?

Emily Bourne: The landowner has to give permission for the site to be established on their land. That is one of the permissions—

Q95 **Lee Rowley:** You and I both know that that is down to the interpretation of the 1966 Act. There are enough landowners out there saying that they do not want it to happen, but people like Ineos suggest that it has to happen on their land, so that would not apply.

Emily Bourne: As far as we are aware, permission from the landowner is required.

Chair: I think Mr Rowley is giving some helpful hints on the Department’s position. It sounds like there could be a good legal argument about that.

Q96 **Anne-Marie Trevelyan:** On that point, there was that continuing question when a huge onslaught of wind farms went up in



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Northumberland of the challenge of what happens if developers decide to go bust just before the end of the 25-year payment period—in fact, some have already—the council did not take a bond, and there was no requirement under the legislation to force it to actually do that up front and to make sure that somebody was holding liability and a pot of money to fix the problems. The landowner will end up being responsible for clearing what may be vast amounts of concrete and some rare earth metals in these industrial sites. There has never been any clarity, which leaves a real overhang. That you still don't have clarity for this whole new industry is very concerning.

Alex Chisholm: I think in the example you mentioned there, of the wind industry, 10 years out from their projects they have to submit a decommissioning plan to deal with the very issue that you describe.

Q97 **Anne-Marie Trevelyan:** And a bond?

Alex Chisholm: Including a bond if necessary, yes. I think that small, new operators have to put the bond in place right up front at the beginning of their project.

Anne-Marie Trevelyan: It would be very helpful to have that clarified and in writing if possible, because there are some real concerns on that in Northumberland County Council.

Alex Chisholm: Yes.

Q98 **Lee Rowley:** On the traffic light system that has been in the news a significant number of times in the last few days, do you agree with Ineos that the current fracking regulations around traffic lights are unworkable?

Alex Chisholm: The Minister made a statement to that effect in the last few days, saying that the traffic light system, which I think was developed in 2012, remains the system in operation. It was also the one in place when the operators started these exploratory wells, so there is no change to that situation. I am sure the OGA will monitor the data from each of those initial fracks; doing that is part of its responsibility.

You have clearly also seen correspondence not only from the industry but from geological experts and other people entering the fray. From the Government's perspective, the Minister has been absolutely clear in public statements that there is no proposal to review the traffic light system.

Q99 **Lee Rowley:** I welcome that very much. When you say that there are no proposals to review the traffic light system, can I take it as read that that means that the traffic light system will not be changed?

Alex Chisholm: I am not really the best person to make forward projections of policy, because that should be for Ministers. However, they were very clear in the statement that I have just described to you.

Lee Rowley: Thank you very much.

Chair: I think you have committed to write to us, so we will follow that up. Thank you very much indeed for your time and for your patience and



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forbearance while we had to restart. Our transcript will be up on the website in the next couple of days, and our report will probably be out in March, given where we are. Thank you.