

Transcript of interview with Lynn Calder

This interview was carried out by Ruth Hayhurst for DrillorDrop.com with Lynn Calder is Commercial Director of INEOS Shale, an operating division of INEOS Upstream Limited, on 8 May 2017. This was before the publication of party election manifestos. Lynn Calder began by explaining her responsibilities as Commercial Director.

Commercial director

LC: I joined on 23rd January so relatively new and I came in to look after all the commercial aspects of the business, which would include looking after, for example our non-operated positions – these are positions where we have licences where we may not be operator. It would include any mergers or acquisitions or acquisitive work we do to acquire new licences. It will ultimately include how we look at the future of the business in a success case so we actually pull this together to a commercial business if we find what we hope to find from a technical perspective.

In addition to that, I also look after our land team – this is direct liaison between INEOS and landowners to gain access for seismic surveys or for well sites. We have a team of people who are out doing that who I look after. If I didn't have enough to do, I have responsibility for planning as well. So I will be working with our planning team to navigate the planning process. It's all at the front end. You've got subsurface at the front end – are the rocks good? – then you've got me who is above ground: Can we get access, whether it be landowners or permissions, both planning and environmental? Then we'll move on to Tom Pickering who'll be responsible for drilling the wells and getting the data that we require.

RH: What's your background? How do you become a commercial director?

LC: My trade is pure oil and gas. It's all I've done from university days but I'm not an engineer. I am a commercial person. I started out 16 years ago – I did a business and economics degree and I went straight into oil and gas. The reason for that is that I'm from Aberdeen. It's a very prevalent industry there. It really colours how I view the energy sector and what it brings to communities. I grew up in a town that massively benefitted from that.

I joined a company called Talisman Energy, which was an offshore operator and global listed – it was a Canadian headquartered business – and they had assets in the UK, Far East and North America. I joined as an economist so I was doing a lot of financial analysis and working out whether projects would be considered commercially-economic or not. That was my growing up in the oil and gas industry: understanding how to evaluate oil and gas propositions.

I moved into commercial there. Commercial in an offshore context was much more about negotiating access for things, in exactly the same way as I'm now looking at land access. For offshore access, if you want to use someone else's infrastructure, whether it's a pipeline or processing kit or you're going over a platform that already exists, then that's not going to be openly available to you unless you have some sort of legislative and legal basis for it and you've agreed a price and where the liability sits. So I spent a lot of time doing those sorts of agreements.

I moved to Norway for a while, dealing with the same sorts of things. I did quite a lot of M and A [Mergers and Acquisitions], buying and selling assets and sometimes divestitures – selling things that were non-core to the company strategy but were still valuable so you would be despatched off to sell that. Latterly, I was what they call a non-operated interests manager – so this was a

responsibility for anything you have an ownership in but don't operate. You're not the principal company that is discharging obligations or duties but you have an interest in how the operator is doing that. You have a role in whether their strategic objectives align with yours and an interest in whether they're doing it properly, whether they're being reasonable. It's what we'd call it, from a legal basis, are you a good operator? Are you making the right commercial decisions?

You have a seat at board table where you try to influence and make sure that those assets are being managed properly – in the same way that when you are operator you have partners who are doing the same to you.

I did that for a couple of years. We had quite a large non-operated portfolio and this was across Europe, predominantly UK, Norway and the Netherlands. I looked after that for a while.

Then I decided to leave Talisman – I was there about eight years –because I had an approach from a business that was very different from what I'd been doing. It was a private equity fund but they were pure play oil and gas investments.

What they did was invest in businesses that were quite early stage, not typically venture, complete start-ups but very early stage businesses that had the opportunity to grow. So that particular fund made its money through growing companies, not through stripping out costs.

So I spent the last eight and a bit years investing in very small companies, some of them oil and gas producing companies, some service companies, some technology companies, and trying really hard to grow those businesses, both onshore and offshore.

I was based in London but the fund itself was a US fund so, given the period that I was employed from 2008 onwards, it was a front-row seat to watch what happened in the US. When I first joined, US shale was talked about but it still just opening up. Certainly no one had any conception that it was going to become the resource that it has in terms of its size and how quickly that the technology grew to accelerate the production of that resource.

If I look at what it was like in 2008 and look at what it was like when I left on 31 December last year it was a huge progression. And seeing how it not only transformed communities and transformed the small hubs and states in which they operated, actually it transformed the US economy.

In the last couple of years working in that fund [there was] a significant reduction in oil price. It went from \$100 plus down to sub \$30 at one point. It has never fully recovered – it is now in the middle of the range in the \$50s – which had a huge impact on our industry. That actually is as a result of significantly more volumes being available in the market. Very simple-supply demand. You find a huge new resources that flooded onto the market in a way that no-one really expected and that caused a big shift in dynamics for the whole energy industry.

So it was all fascinating and I think the opportunity to join INEOS and have the opportunity to do something in our country, which is still very early stage and nascent but potentially could have the same impact on our country, to our communities, to our energy picture is really exciting. So that was the reason that I joined INEOS.

INEOS Shale's licence area and operations

RH: INEOS has 1.2m acres of licence. How does that compare with other UK operators?

LC I think the next rung of operators have about half as much acreage as we do. So we're sitting at a significantly higher position than most of our peers.

RH: Jim Ratcliffe, owner of INEOS Shale, said he had invested £600m for developing shale gas and would invest "many millions more". Are you looking anywhere else in the UK for licences?

LC: Firstly the £600m is not just buying acreage but it's for developing as well.

Yes we are still looking but we have a very high bar. We're not just going to snap up every licence in the UK. We think it's important that there are other competitors, other people who are looking at other ways to develop this. We can all benefit from each other's expertise and understanding of the resource. I think it's important that we work together towards that goal. But what we are looking for is the areas which we do think are going to be prospective, areas that we would class as core for our business, and we do want to have the best blocks in those areas. We feel that we have got most of those already, but where we don't or where we see different opportunities come and go, then we will absolutely evaluate them. I wouldn't say that we are necessarily finished but we're not on a buying spree, to buy up the whole of the UK.

RH: What's the benefit from having a range of companies in this industry?

LC: They all have slightly different approaches and whether that's above or below ground, and I think that we obviously feel very confident in our approach, in the way we're doing things but we're also very open to how other people do things and that is the benefit sometimes of the non-operated piece. When you go along to talk to other operators or we have other partners coming in to licences in which we operate, you get a different complexion on things, different ideas, different ways of doing things perhaps, and there'll be lots of times in those situations that INEOS will say 'Well actually we think we're on the right path here'. But there'll be other times that you might just think 'Well actually that's a good idea'.

When we look at everything we're all trying to do in the various pockets of the country at the moment, instead of being incredibly competitive with each other, I think we're all really working towards the same goal that we want to see if there's a resource that is commercially useful. We just don't know at this point and I think all of the data we can amass and share and work together with that accelerates that end game for us and so I think there are lots of benefits for us working together.

RH: Where are the core areas that you haven't got licence at the moment?

LC: I don't think there are any core areas that we don't believe we have licences in at the moment. There are areas south of London that are prospective but it's not our strategy both in terms of what the hydrocarbons are – we're very firmly on a gas strategy – but also in terms of given some of other difficulties and above ground things as well.

RH: If a licence came up, in part of the country, what area would make you think 'We have to have that'?

LC: I think it would be if it were very adjacent to something we already had and we thought that that was a really good block. I don't have a specific example. I think we're very happy generally with what we've got. I think the other point is just being a bit reactive, if other operators want to sell

something, rather than us skirting around looking. I think we feel we've quite enough on our plate. There's an element of any future purchases potentially being more reactive.

The costs of developing a pad

RC: So your boss has allocated £600m for developing shale gas. How much does one well pad cost to develop?

LC I don't think we know the answer to that right now. We were talking about it at a management meeting this morning in respect of our core areas: Do we really fully understand what a success case looks like? Do we understand how much it will cost to drill the wells? What does a well pad cost?

I say things like that and I think people who have any commercial nous must be thinking why would they be investing all this money when they don't know the answers to these questions? That's a valid point of view but you need to understand what the exploration business looks like. Until you know what resources you've got, both in terms of quantity and in terms of composition it's very difficult to design for what a success case looks like.

So the context we were talking about this morning was a bit more "what-if" brainstorming around 'What if this region produces this, what might that look like?' We're probably several months off being able to answer that question unfortunately.

We're a small team, we've been amassing acreage at a rate of knots and we've been amassing land access. We only have two well sites but we also have a big seismic operation which took up a huge amount of time in getting landowner access. We're now going through a planning process on at least one of those well sites. There's been a lot of front-end activity and I think it's important now that we take a bit of breath and plan for the future.

We have no idea whether it's going to be a success case but for the moment we're very focussed on the science steps. Let's understand what's below ground – that's the seismic – let's understand what the properties are – that's our vertical coring wells - and then and only then will we start to have a picture of what a development might look like.

RH: But presumably you have an idea of how much it would cost to drill a well?

LC: We do. I could give you a range – anything from £4m-£12m - because that's the piece of work we're doing at the moment for our well at Bramblemoor and that's taking into account what some of the other operators are saying.

The reason for that huge range is because we're at the front end of contracting a rig and all the other services. We're going out for lots of requests for quotes and it's not really until we get that back that we're going to have a sense of where we end up on that range. There's a very firm end of that range that we want to be in but we also appreciate it's a very immature supply chain in the UK and we don't have a great deal of services to choose from at the moment.

It's firmly going to be in the operator's interest to attempt to get wells drilled that can be compared to the types of wells that are drilled in the US because they are the same wells. But we also understand that there is a difference in terms of the security requirements and the supply chain and its maturity and we're going to have to factor that in.

Staff and operating sites

RH: There are 24 people on the team at INEOS Shale. How many contractors does the company use?

LC We have a quite a few more than that [24]. In my organisation we have a couple of land agents and a couple of planning and environmental consultants. With lawyers, we could just about come up with the same number again, so to take it to 40-50 people.

RH: If you get planning permission and environmental permits, will INEOS Shale sub-contract the work to drill the wells?

LC: Yes, I think that's right, for the first well, for sure. I think that we wouldn't rule out owning our own rigs. So in the future it may well be INEOS undertaking a piece of work in a vertical services business. Cuadrilla did that. We have started that a bit in terms of the seismic kit that we're operating at the moment as INEOS.

Marsh Lane

RH: You announced in January that you were going to put a planning application in for Marsh Lane and you got the Environmental Impact Assessment opinion. What is the purpose of this well?

LC I would describe it as a coring well. The whole purpose of the well at Marsh Lane is to drill down to 2,400m, take more than one core sample from different horizons of the well and that is literally it. We're not doing any pressure testing or anything. This is just a very straightforward well.

We're not developing this as a listening well – this is purely an option. If we're given planning permission, we have a five year period and our view is what else could we use that well for? We can't use it for anything other than what we put in the planning application.

We're not looking to convert this into any other type of well. But if we were to be hydraulically fracturing at some point in the future in a location nearby, you can stick down some wire line with some geophones on it and actually listen to the activity from a well further away. At this point in time we've absolutely no candidates for that well and we can say that quite unequivocally because we genuinely don't. We don't have any land booked, we don't have plans to do that, but all we're really doing is a bit of optionality. It's a very basic operation to stick down some listening capability into the well, which would be very useful from a data perspective. It's not anything particularly controversial just to say that if we wanted to do that we wouldn't want to go down a planning route again when the well is already there.

RH: At this stage you've got no plans to convert Marsh Lane into anything else?

LC: No

RH: But in that PEDL you have to drill a vertical well and frack a horizontal well

LC: Yes

RH: So you would be looking to another location for that horizontal well?

LC: Potentially, but the location for that well is going to be completely driven by two things. The first thing is going to be seismic data. We can't hydraulically fracture anything without seismic data anyway. Nor would we want to choose a well site without that. Secondly, it's the core. And I think those two pieces of science will tell us where we want to be.

Now this particular PEDL and this particular well are right on the edge of where we think the play is so it's going to help delineate it.

Will we be back to that location or any other? We genuinely don't know and it's a conversation that I have at length with a lot of the residents because people think that you're there so you're always going to be there. For sure, if we find something interesting we will be back. But at the moment we genuinely don't know. Yes, we have work commitments and we intend to adhere to those work commitments, that's what we've signed up to with the government with our licences. But what we need to do before we start picking locations is understand what we're working with here. That's our fairly rigorous, stepped approach to understanding what the science looks like.

Environmental Impact Assessment ruling

RH: You've asked the Secretary of State for a ruling on Derbyshire County Council's opinion on the EIA. Why did you do that?

LC: We understand that there are a lot of people who oppose what we are trying to do, and I understand the reasons why. Tom Pickering has been spending a lot of time on the road talking to people. I intend to be out on the road talking to people who are concerned about this, because I do genuinely understand why people are concerned.

But I also have the backing of 16 years working in the industry, so I don't see it as the big scary monster that some people do. But because of that general level of understanding I'm more than happy to go out and try and help people a bit. So understanding the level of opposition and understanding what the tactics look like for that – we understand it's delay, delay, delay – that's what we see with some of the other operators. I understand it as a tactic but I don't really want to pay any quarter to it.

I think it's in almost everyone's interest, including the people who are most anxious about this, to let us find out if there is something to develop or not. Because everyone could be getting very, very worked up about absolutely nothing.

If the sub-surface is too structurally complex, i.e. they can't find non-faulted areas to drill in, this industry won't fly. If we take our core samples and, when the time is right for us, try and drill a horizontal well and fracture it and we find that there is no overpressure in the shale, then this industry is not going to fly. So people are very, very concerned at the moment and the tactics are to delay, delay, delay: judicial review and screening opinions that are challenged by others, and not just ourselves. These things all seek to delay the point at which we can say yes or no there's something to be done here. I think it's to everyone's benefit to get that point. That's the main part of this, to obviate some of the delay tactics because I think it's important that we all get answers.

It's probably important to say that the delaying tactics that are being employed – and many of which are going to be out-with our control – we're going to obviate them where we can. Where we can't, our message is 'We're not going anywhere'. A lot of the delaying tactics are around people having speculation around specific operators which they think don't have the cash, or they want to sell out because they're private equity owned, or they've got to give a return to their shareholders. We don't have any of those things. We're here for the long-term and we're not going anywhere. You can delay us and it will annoy us a bit but at the end of the day we'll still be here doing the obligations that we've undertaken to the government, in the most responsible way that we possibly can. That's a key point for us and the reason why we do so much community engagement. We're really concerned with doing this in a way that people can feel comfortable with but we're not going anywhere.

RH: So if the Secretary of State says ‘Yes I agree with Derbyshire County Council, its EIA opinion was the right one’, where does that leave you? That’s an opinion on just this well – or do you think that will apply to all the vertical wells?

LC: No, it absolutely won’t. The screening opinion applies to one well in one location. We could have just left it. We knew people were going to challenge it. What we didn’t want to do was to get to the day before determination of the planning permission, the day before a planning committee, for someone to launch in. So we’re trying to say ‘OK we know that people are opposing the opinion and I understand why people have done it’. We just want to get on with our job to be honest and that’s all we’re trying to do; to avoid it being a tactic to push the determination back.

RH: Why didn’t you do an environmental impact assessment anyway? What does that cost you in time and money that you avoid if you don’t do an EIA?

LC: The cost is entirely on time. There is a monetary cost but that’s not a driver for us at all. It’s not that we don’t think that there needs to be an environmental undertaking. The issue is that this is a very, very benign operation. I know that for the people living in Marsh Lane that is very hard to stomach, and I understand that. And I understand the level of disturbance. But compared to every other well that has been drilled onshore in the UK in the last 100 years, this is nothing different. Many of those wells were drilled under general permitting rules that you didn’t have to go through planning. All we are saying is that this is as benign a well as it gets in terms of it’s vertical, it’s coring, it’s pure exploration, there’s no test flow, there’s no pressure testing, there’s no fracking, there’s no step out, it will be completely vertical, in and out, take a core, done. So from our perspective, from a temporary basis, and from an effect on the environment, there is really, genuinely no need to do an environmental impact assessment and that’s why we believe that Derbyshire County Council agreed with us. It is just a very simple operation.

However, within that simple operation, what we have done, as part of our planning application and what we would absolutely do and have to do for every planning application, no matter how benign the operation, we have to undertake a number of very detailed and very important environmental studies, whether it’s traffic, noise, visual impact, ecology, water, hydrogeology, archaeology, we have done all these studies, and we have a very lengthy environmental report which we have submitted as part of our planning application.

RH: If you were doing these detailed studies, why not just take the next step, satisfy local people on this first well and do the EIA voluntarily?

LC: We genuinely believe that we are satisfying – they may not believe us yet - the people who live in Marsh Lane because we’re doing everything that we need to do for this operation. The problem is that when you start doing lots of things voluntarily that you don’t need to do and shouldn’t need to do – and not for reasons of lack of responsibility – then you start creating a bit of rod for your own back. I would rather spend the time with local residents to say ‘we’ve spent the time doing the environmental studies and you’ll get to read them and they will be picked apart by the council and their experts and statutory consultees’. I would rather actually spend the time with the local residents to say ‘what is really worrying you and is that something we can do something about?’

RH: So how much longer would it have taken to do an EIA?

LC: Doing an EIA, it’s at least a year. There is a significant cost in time.

RH: So even if the Secretary of State doesn't rule on your opinion until after the election, which is what DCLG has said, you're still not going to lose the amount of time that you would need for an EIA?

LC: No, I don't think we are. It's very difficult when you have lots of statutory planning periods that are not adhered to, to say of course. We could have any number of well sites that we get to the end of those and say we could have done an EIA because of the amount of time it's taken but at the outset we're not looking at that because we're hoping that people stick to the statutory time periods. I would keep coming back to the fact that we're not being irresponsible in any way here. We're doing what we think is valid for a well of this nature which has very temporary effects and is very generally benign. Nor are we doing just what we have to do. People will see the rigour that we've gone into when they see the planning application.

Timeline

RH: If the 13 week determination period were adhered to and you got permission and all the other consents, at what point would you start to look at site construction work?

LC: Ball park as you say 13 weeks, and no EIA decision we've then got, based on a decision at that point, which would be a bit optimistic, we've got 12 weeks of discharge of planning conditions that we would have to adhere to in order to actually start the works. So that's at least 25 weeks with a strong tail wind behind us. I think it would be very late Q3, into Q4 before we would be looking at site clearance, even if everything were to go well.

RH: And then drilling next year?

LC: Yes.

RH: This proposal has attracted considerable opposition

LC: You were there at the first public exhibition. That was my second week with INEOS. That was a real baptism of fire. We obviously got a real sense that day of the level of feeling and concern, which I think is really important for us to hear. But what we saw in Marsh Lane over the time period – and I know there's still a huge amount of opposition don't get me wrong – but the conversations are much more constructive.

At that meeting, because the level of passion was so high it was actually very difficult to have the type of conversations where you could talk to people and tell them what it was you were trying to do and why and what it's going to mean for them.

I think the last exhibition when we went up (6 April 2017), we had a lot more constructive conversations and people got to the crux of one or two things that really upset them. And you can then start to deal with that. Obviously, you're not dealing with those to their absolute satisfaction but you're giving them a lot more information. You're giving them a lot more, in some cases, comfort that there is a lot of rigour going in to what we're doing.

But also in some case we are listening. We changed the access point from the first public consultation to the second. So the access point moved from east to north. I think that that gave people a lot of comfort that (a) we're trying to do the right things even though we're there and they'd rather we're not and (b) that we are there to listen, we're not just there to steam roller. If there are things, particularly very early on, that we don't know from our local knowledge or things that maybe we haven't thought through, we are listening.

RH You've got a public exhibition this week and then a public meeting the following week at your other proposed site at Harthill in Rotherham borough. What consultation have you done in Harthill up to now?

LC It's been a bit less formal in some respects than others. We've been out and talked to all the parish councils, we've talked to some councillors at least, we've talked to the planning officers and told them what our plans are for the area. That's the more formal piece. On the less formal side, Peter Reilly and Gordon Grant have been spending a lot of time on the ground, talking to people who have had the most concerns and want to speak to us. We've gone and had quite a lot of cups of tea and spoken to people and tried to explain a bit about what we're doing. The next week is really important for us to get there in a more formal context. It's just not a formality it's with all the right experts and on Thursday we'll have all the experts who can actually talk in detail from the team to specific concerns or specific parts of the operation.

RH: How many people will you be taking?

LC: We'll probably be taking 15 people

RH: That's quite an investment

LC: It's a huge investment in time. We really notice it, particularly when you have multiple planning applications. We're starting to get quite stretched in the team quite frankly. I don't want to sound glib but this part of our business is really important to us. We know that it's not going to be easy to get the social licence that we always talk about. We understand that very acutely. It's always been our ethos that we actually want to be out there talking to people.

Social licence

RH: Does social licence still matter to you?

LC: It always has and yes it always will. We're very clear that we're not going anywhere. We have a job to do and we believe in it and we believe that we're doing it for all the right reasons. But on the flip side of that we know that it causes anxiety so it's very much our job to try and decrease that anxiety. But we're not going anywhere. We intend to discharge our obligations. There will be lots of people who will never believe us. There'll be lots of people who will never trust us. But we want to be trusted in a way because we're decent normal human beings who are doing something that we believe in.

We understand that it causes disturbance but we don't believe it's going to be the big monster that people think it is. We just want to spend that time. It is a really big investment taking 15 members of the team and by the time that we have lots of planning applications in that's going to get quite onerous. But we think it's important to have the people in the room that can answer the questions, the people in the room who are ultimately accountable and responsible not a front line of people who don't really have that level of investment in the job.

RH: So is the plan to take this exhibition and the public meetings to each of your locations when you develop a planning application? I'm thinking about the costs of this, particularly when you have four or five applications, and you will need to have a lot of planning applications in to discharge your minimum commitments.

LC: Yes. That's always been the plan to have that "planning hopper", as we call it. We have a lot of obligations to discharge and we know that we will come a cropper in the planning process – or certainly delays, not necessarily non-approvals. So what we want to do is have the ability if we're not

going to be able to drill at a site right now let's be sure we have somewhere we can go. All again talking to the fact that we have five year licences and [need] to get moving.

RH: Actually it's four now.

LC: Yes, absolutely, the first year has evaporated. So that gives us a lot of pause for thought as well. So yes it won't be a sort of roadshow on the basis that a lot of it is very, very site specific. We will try to substitute people so that they're not going to be at all of them so it's not a huge drain on the resource but to have the experts in the room and the people who are ultimately accountable for delivery is really important.

Harthill response

RH: What's the response been like at Harthill?

LC: We've only got Marsh Lane to compare it to, but so far it's been generally quieter but we are going on Thursday and we will find out then. I think that the general reaction from Peter [Reilly] and Gordon [Grant] being on the ground is that there's not the same level of anxiety in the Harthill village itself. We've had the difficult emails that we sometimes get through to Peter and the shale information line but we've also had quite a few positive ones.

RH: Is this application the same as Marsh Lane, in terms of being a coring well?

LC: It's all the same but the one slight difference that you'll see in the screening report and when the planning application goes in is that we're doing pressure tests. Marsh Lane is a three month period for drilling so we'll be there a bit longer to prepare the site but Harthill will be three to five months to include the pressure test. We may be there for slightly longer. We may not be there for the full five months because the pressure test takes a couple of weeks but if we were to be testing different zones and we don't know that until we know what we want to test.

RH: So why do a pressure test at Harthill? What does that give you?

LC: Our general idea is that we will probably do this on most of them. But on Marsh Lane it was on the edge of the play so we weren't quite so bothered about that one. What it is going to tell us, if shale is over-pressured then it is a very good indicator that it is something that can be produced. If it is under-pressured it is a pretty good indicator – it's not the death knell – but it is a pretty good indicator that it will be very difficult to produce. So it's a relatively simple test that will give us a fairly binary answer in terms of how over pressured it is or not.

Other sites

RH: A couple of other names of sites have come up through Friends of the Earth's freedom of information requests: Thieves Lane and the Lings in Nottinghamshire

LC: All I'd say is that it will always be INEOS's policy not to talk about specific well sites until they are signed up. The first time that we would expect well sites to become public is when the screening direction is formalised and it becomes public. The reasons for that are very obviously to do with security. It's very easy for landowners to be a little bit bullied in these situations. We are very upfront with them about what that means and how we can help but they have to make their own decisions to get to that point. And they have to be happy that they can withstand that. The idea for me of having landowners named and shamed just before they've even decided is not a fair position for them to be in.

Licence obligations

RH: From my calculations on the 14th round commitments you've got to drill 28 vertical wells and 11 horizontal fracked wells. How are you going about finding potential sites? What's the process?

LC: It's really quite a challenge at the moment. And really the only reason that we've managed to get a couple of limited areas for potential well sites is because it is a well-known oil and gas and coal region. So there has been some seismic work done, although typically not to the depth that we're looking at. We still don't have anything like enough information. But it can give us some general areas of interest and we can marry that with the above surface. We can say ok there are limited number of places that we can drill vertical wells here. So we've managed to come up with some East Midlands sites and those are discussions we are pursuing with landowners to try and get as much planning applications into the hopper.

It becomes more difficult in some of our other basins in Cheshire and Yorkshire where there is less seismic data available so we're not going to choose sites where we don't know what the sub-surface looks like, obviously. At the moment it's very difficult for us to pinpoint well sites, certainly in Cheshire, and we've got some potential [sites] in Yorkshire. But it's very patchy.

When you don't have a really good image of the sub-surface, you have very limited above ground potential to drill, particularly when you're looking to drill a vertical well and you need to be right on top of where you want to look. At the moment, I'd say we feel quite limited in our ability to get wellsites. But we have a really decent number in the hopper that we're working through but it's not enough to satisfy our obligations. And I don't think that's any surprise. In fact, we're quite fortunate in the East Midlands having some data but it does highlight the need for seismic [data] and our hope is that once we can start processing the seismic we'll be able to have much better view of potential wellsites.

RH: So you've got four years to drill all these wells. Is this realistic?

LC: It doesn't seem very realistic to be quite frank, particularly as it's a year and we've got one planning application in and we know that the planning process is going to be challenging. Part of that is disappointing because I understand that local authorities should be taking decisions. I completely agree with that. They should be taking the decisions for their locale but you get lost in a lot of politics of a national government who says this is our policy, and mineral planning authorities or local governments who, if nothing else, are just very cautious and worried because of the impact on the local area.

RH Elections?

LC Local and general elections have injected themselves into the timeline which was a bit of a surprise. All of that seeks to elongate the timelines and the frustration there is that there is a functioning planning system that has a statutory period and we're not, as an industry, asking for anything out of the ordinary or any special treatment. But when you see planning applications taking in excess of three years including judicial reviews, then absolutely it seems like a complete pipe dream to think that we can discharge these obligations in a four year period. Which is why we're not taking much truck with time-wasting because we really want to say 'there is a framework in place, there's a planning system that people can use to air their concerns and we would just really like those to be adhered to'.

Now I know that that's going to fall on many deaf ears but we're going to do what we can to try to make that happen. In answer to your question it's incredibly optimistic that we'll be able to get through all of those obligations but we will certainly be running as fast as we can.

Seismic surveying

RH: You have some seismic surveying planned in the Mansfield, Worksop, Chesterfield area?

LC: Yes, the outline is public now because we have submitted our GPDO, the general permitted development order, to the local authorities in which we'll be operating. There are three different authorities: Nottinghamshire, Derbyshire and Rotherham. We've spoken to all of them now and made it very clear what we'll be doing.

We've got to have these scientific steps and seismic is at the beginning of that so we're very eager to get going with it and to actually getting data. So that process has kicked off and although the GPDO period has not started yet we were given leave to do some pegging and surveying work in advance of that. All of that is walking the land, working out where we might place the sources and receivers for the seismic, working out what the appropriate access routes are, liaising with landowners to make sure that everything we're doing is ok with them and that we're not disturbing things that we should not be disturbing and ultimately saying source points will go here, receiver points will go here. So you will see us out and about putting pegs into fields, red pegs and blue pegs, it's just really saying this is where the equipment will go when we're ready to start.

RH: So when can people expect to hear bangs?

LC: They won't hear bangs.

RH: I heard bangs when I went to watch seismic surveying.

LC: Yes but what we found so far is, and bear in mind we haven't done a huge amount of surveying yet, lots of the areas are accessible by the vibroseis machines. That's just the vibrator plate going down on to the ground and giving it a bit of a wiggle. There will, undoubtedly, be areas that we will need to drill and let off some charges because the vibes [vibroseis machines] can't get in. Our hope is that most of it will be accessible by them and it will be very, very unintrusive for people. There will be areas where it will be more difficult for them to access so we will have to let off charges and that's all covered in the GPDO submission.

To give you a time frame: it's 28 days [for the] opinion to come back from that. So, assuming all is well we will be able to go at the beginning of June.

RH: And that's in your East Midlands/South Yorkshire PEDLs. Is it across all of them?

Just East Midlands. We will be undertaking seismic in all of our basins. Now that we've started the seismic operation the idea is that we'll be pretty constant. It's a fairly large swathe, about 250sq km within our licence area.

RH: What are you going to do to give information to people locally?

LC: We started the pegging a couple of weeks ago and from then it's going to be about seven months. We're moving towards Worksop at the moment. All of the Harthill residents, for example, are dealing with our survey, walking through the fields and things at the moment, so we think our exhibition is timely in that we can talk to them about what's going on in the region. The idea is that we've written to all the parish councils that our seismic outline covers. So they're all aware of what's

going on. And the idea is to have some exhibitions and possibly to have a rolling exhibition just going through the towns that we're visiting to give people the most up-to-date information possible.

RH: Presumably the seismic survey work is a contract that's been let to a company?

LC This is not actually. INEOS has its own seismic equipment so this is not a contracted piece of work. This is work INEOS is undertaking itself. I mentioned in the context of a potential rig purchase earlier, there is a bit of vertical integration going on and it really is to protect the supply chain. We're going to be doing a huge amount of seismic surveying and to discharge all of the obligations across three different basins, we are pretty much going to be in constant seismic activity and we wouldn't rule out actually contracting a second crew, so that we can actually start to accelerate the work programme. It is INEOS people that you will see out on the ground undertaking the seismic surveys.

RH So is this job advert for INEOS seismic surveys?

LC Arturius are our drivers. It is our [INEOS] crew that are doing all the technical work. We also have under the INEOS auspices agricultural liaison officers around so there is one per crew who will make sure that the landowners are satisfied with everything and we're not doing anything to upset them. Because that's very important to us. We also have an environmental clerk of works with the crew. We're very concerned throughout the summer about nesting birds and badger sets and anything like that. So we've got an ecologist going round just to make sure that we are doing everything that. We'll get some things wrong, I'm sure we will, but our intent is to do this in the most responsible way possible.

Arturius is supplying drivers and they are hiring some labour as you can see here. We didn't see the advert before it went and we have not had any say, for example in how they seek to employ these people. We've actually been contacted by the *Derbyshire Times* today to ask us about the ex-service personnel – about why do you need ex military people. We all read this completely differently although we hadn't seen the advert until afterwards. We've since spoken to Arturius. It didn't help with the picture that they had on the website.

RH: The comment on social media is that they're basically mercenaries?

LC: That's not representative of the situation at all and we're not going into the seismic survey at all thinking we need a bunch of ex-mercenaries. It's ex-servicemen, it's people who you want to have jobs and who are reliable and disciplined and well-trained. Had we known about this advert going out, we would have worded it slightly differently, but we have since spoken to Arturius, and it was just a sort of misunderstanding more than anything else.

RH: What proportion of the landowners that you've contacted have allowed access?

LC: It's in excess of 90%.

RH: Any prominent refusals, apart from the National Trust at Clumber Park?

LC: We took out the National Trust off the seismic site outline anyway because their refusal was very public and very early on and it's not something we need to do right now but we will be back.

So, prominent refusals – no, not really. It's all kind of individual landowners who just have individual concerns. Our refusal rate is 9%. 91% signed up but we are chasing a couple of late signatures so we expect this number to improve before the end of the survey. We can work round the small landowners that have said no. We haven't got anything that's so big that we going to have big sort of hole in our survey.

RH: So what happens about Clumber Park. Will you go to court?

LC: Potentially. I'm not going to sit and say anything specifically about National Trust. But where there are landowners that are in areas where we need to access, for whatever reason, whether it be seismic or drilling, then I think it is important to note that we do have some powers and at some point if we feel that there are areas which we are just not accessing then we will seek to use those powers. We won't seek to use them lightly because we're not about steam-rolling over the countryside.

We're trying to do this in the right way. We're trying to have open conversations with landowners and because INEOS has pledged 6% in revenue sharing we see that there is a real kind of basis for discussion with people. But, at the end of the day, if we can't talk to people or we can't gain any traction somewhere we need to be as the result of a licence we have been afforded by Her Majesty then we really need to be able to discharge our obligations. So it's not something we'll do lightly at Clumber Park or anywhere. But we will send a clear message that if people are not willing to talk to us then we will potentially be looking to use the powers that are available to us.

RH: And that's for drilling as well as seismic?

LC: Yes.

RH: When are you looking to do seismic in your other basins

LC: At the moment we've been very focussed on the East Midlands. But to get through this programme of work we're going to have to expand into other basins. At the moment we haven't permitted them, we don't have access to land, so that will be the first stage for us.

We'll be starting to get much more visible in the areas and we'll be starting to go and hold more community events. We'll be going back and speaking to a lot of the parish councils and telling them what our programme of work is there but it will be seismic to start with in both areas and we'll be spending a fair amount of time permitting, telling people what we're going to do.

Given that we're going to be very focussed on this operation right now, [we're] probably not going to be anywhere else before around the end of the year. We're not going to be pitching up with our vibroseis machines next month or anything, but we will be starting to warm people up.

Who knows what's best for local areas?

RH: Would you say that local people know what's best for their area?

LC: Yes and no. I understand that they absolutely do know what's best for the local area in some respects. But in other respects there's a general misconception around the use of the gas, I think, and a lot of our time is spent talking to people about energy policy.

When I was a little girl we didn't have natural gas heating, we had coal, and we had one room in the house that was warm and that was the room that you spent your time in. I remember the coal man coming every week with a bag of coal and if he didn't come you didn't have a warm house.

I think there is something about the physical connection to our energy that has been lost since then, in that we are all very, very fortunate in our ability to flick a switch or turn on a stove. I'm not saying that we can't get better at energy efficiency and we can't get better at finding other fuel sources – I absolutely think that will happen and I'm very proud of our generation if you like for coming up with the best ways to secure our future. But I just think it's very naïve to think we can change tomorrow.

That's the only thing, and that's why I feel comfortable to do what I do because I think there is a fundamental misunderstanding.

People think of renewables and they think of wind and solar and they think that that can somehow satisfy all of our requirement and that's just not the case. So for local people what's best for their local area is not to have INEOS turn up with a drilling rig, I understand that. But if you want to use the gas for your everyday life, whether it's to have your electricity, heating or to manufacturing all the products we've become accustomed to, you have to draw on those resources. It's unfortunate for some people if they live in those local areas but the geology is where the geology is, and there isn't really anything we can do to change that. Yes, I understand why people have the ability to opine what's best for their local area, but there's a huge energy supply issue that can't be ignored in that decision.

Level of support and opposition

RH: So, if we look at Marsh Lane, what would you estimate the sort of level of support there is now? You're five months in, having announced your plans for the site

LC: This is tricky. I've said already that the response has demonstrably improved [since the first exhibition] but I don't know if that really translates into there being more people for it. I just think there are more people willing to be constructive around, OK, this is possibly going to happen if it gets through planning, so what can we do to make sure that it impacts us as little as possible, or what can we get out of INEOS by way of comfort that they are going to do this properly, which is exactly how I would look at it by the way if it were on my doorstep. But then the other reason it's tricky is that we really do come across this silent sort of swathe of people who are not quite so vocal about whether or not they're for or against and we come across a lot of people actually who will quietly tell you that they're maybe open, sitting on the fence, willing to weigh up the arguments. Those are the people that generally in the reporting of our industry are quite quiet.

RH: Do you do any polling?

LC: We do. We do polling by means of questionnaires at our public events.

RH: Have you done valid opinion polls?

LC No, so we obviously avidly read the ones that are done, and they change from time to time, very fully. Because we're doing questionnaires at public events, it's a lot of the people who are very angrily opposed who actually turn up. But having said that, you do read some of those at the end of an event and think gosh, there are people that come here that are prepared to stick their head above the parapet and write that you have actually changed their opinions today, by actually listening to technical people, instead of listening to Google. Aome people are willing to entertain a balanced discussion on it.

RH: So, based on the polling you've done, is it more against or more in favour?

LC: Again, I think it's quite tricky, I think it's difficult to say there are more in favour to be quite honest, because that's not how it looks from the landscape perspective at all, so I think I'd be stretching the truth somewhat, but again I'd just say that I think there are a lot more people in favour than would be reflected.

RH: The people that do oppose it, what are their reasons for opposing it at Marsh Lane?

LC: At Marsh Lane it comes down to a crux of issues that are really around the disturbance level. We do still have some of the climate change arguments but I've articulated some of my thoughts on that

in terms of if you use gas you have to have some responsibility for where it comes from. But I think people are most concerned about incremental traffic, noise, the impact on the visual aspect, emissions and about all of the things surrounding the actual operation itself. That probably has moved from concern about a very wide-ranging absolutely everything you have ever heard about fracking to zeroing in on the key disturbance factors.

RH: It's quite close isn't it, you can see the tops of rooves of houses from Bramley Moor Lane

LC: There are a couple of unfortunate residents who are even closer than that and I guess the only thing that I would say to them is that we totally understand. Nobody wants that on their doorstep. But we've explained the reasons why we're here, we've explained why we're doing it and for this particular planning application it is a temporary activity.

It can sound a bit glib to say this is a temporary activity when you've got that on your doorstep everyday but it also does pass very quickly and what we're really focussed on is making sure that the traffic route is right, making sure we don't have traffic on the road at school bus periods, making sure that we're adhering to the World Health Organisation noise limits. I think people think that it's going to be so much noisier than it actually is. I think people think it's going to be like a hammer drill when it's going to be like a kettle boiling, so there's going to be a bit of hum but it's not going to be nearly as disturbing as they think it is. So really it's about those levels of disturbance, trying to explain what we're doing to mitigate them. And so noise, for example, we've got bunds going up round the site, we've got double-stacked containers, these are all things that are noise attenuating, they're not there for the sake of it. And keeping as much of the equipment at low level as possible so it's actually shielded by that.

But we can't get away from the fact that there's a drilling rig there and again we do understand that it is close but I've also explained why it's difficult for us to obtain well sites right now where we can actually explore the basin because there are very few areas that from a subsurface and above-surface point of view work.

Fracking locations

RH: You're not applying for fracking now but you're prepared to invest, you've said between four and twelve million pounds in drilling a well, and you're seriously saying that after three months you're going to walk away?

LC: Firstly, no-one's saying we're not going to go back and frack this site. We're not going back to frack this site under this planning application, so we would have to go through a completely different review process and that's when people's anxiety will come to the fore because that's very very different. But what we're asking right now is purely for exploration purposes.

People really struggle to understand, understandably so, that we would spend all this money when there might be nothing there. It is just the nature of exploration. Our Technical Director at our last public event came up with a great analogy which is that it's not actually at all any different to pharmaceuticals, where you might plough your money into fifty different potential cures for something and only one of them will ever actually hit the shelves. It's exploration in exactly the same way in that you're looking for something. Jim [Ratcliffe] has ring-fenced an amount of money which he is prepared to lose to see if there's something there or not and it will only be through the steps of science that we can actually understand if there is going to be a business there. So, yes, that is something we spend a lot of time talking about.

INEOS competence

RH: Lisa Shires did an interview on Peak FM when she said she was opposed to INEOS because 'they don't know what they're doing, they've got all the gear, they've got no idea'. What's your reaction to that?

LC: I vociferously disagree with that. I think that INEOS has a very, very rich history in terms of running some of the most complex petrochemical plants, so that's kind of INEOS's heritage, and that doesn't come without a huge amount of rigour and focus on health and safety and regulation. Then you've got the INEOS Shale side of the business and what she might be alluding to there is that this would be INEOS' first well and I understand that concern too. But we have amassed a team of people for whom it is very much not their first well. This is not a bunch of renegades who've never done this before, or a petrochemical company saying 'Oh, we going to drill wells now'. They're not doing it without getting the right expertise on board, both on the UK side and the US side. I've met Lisa several times and I like her very much but I disagree with her there.

RH: What impact does other parts of the INEOS business have on you and the way people treat you – I'm particularly thinking about Grangemouth

LC: It absolutely has an impact because INEOS is INEOS. We are a brand name. We have a very diversified business and all those things are going to play into our brand name, so I assume you're alluding to the incident last week

RH: There's a piece in the Herald Scotland about SEPA [Scottish Environment Protection Agency] giving Grangemouth a poor rating on pollution and environmental controls.

LC: If you take the gas leak, when you've got major industrial activity incidents are going to happen. I know that's not what people want to hear because people want us to say there is 100% chance that nothing is going to go wrong. Unfortunately, that's just not possible to say, in the same way that it's not possible to get in your car and say there's a 100% chance that you are going to come home. That's just an unfortunate fact of life.

Obviously a huge amount of time, effort and process goes into preventing things from happening. But on the odd occasion where it does, I think the measure of an operator has to come from how you deal with it and whether safety protocols come into play, whether or not we manage to fully protect life, environment, communities and whether or not you deal with that quickly enough in terms of mobilising everything that you need to mobilise. So bearing in mind that Grangemouth is a huge site with a huge amount of people, I think we're actually very proud of the way that that was handled.

Again, when it comes to our planning application, when people have the chance to read it I think they will get a sense of the rigour we have gone into in preparing, for example our site preparations. Everybody thinks about the drilling process as being the really scary part. The site preparation from an environmental perspective, since you raised the SEPA point, there's going to be such a huge amount of impermeability that's laid on that site to avoid spillages so that we can contain things – there's a huge amount of design going into that so when I talk about preventative, everything is being designed for preventative measures. However, if the worst does happen, then there is no pathway from whatever spill that is to a receptor that is sensitive because we will have built the site in such a way.

Now a lot of the issues that have happened in the US debilitates us from starting an industry here. They didn't have any of that rigour, whether it be because of less regulation or whether it be

because it was a very very early stage industry which grew very quickly and people were running to catch up with it. I think that we've had the benefit of that in a way because we can see how not to do things. But we're also just a country that is generally very much more safety and environmentally aware.

I think that the US is very very strong on regulation but it's also a series of states, it's a federation and the responsibility is pushed down with the federalisation. In the UK, our industry is governed by four different regulators and we feel very confident with that, and the preventative measures that I've talked about and the design and rigour that's going into our processes, as well as our ability to deal with things if they go wrong, which unfortunately they do from time to time. We feel very confident that we're the right operator for this.

Regulation

RH: The people that have spoken against the industry in Australia and the United States often say 'We were told that we've got the best regulation in the world and we were told by the operators that there would be no impact on our landscape' But there were impacts and communities were quite badly damaged as a result. What's your reaction to that?

LC I think some of them absolutely were. In the US there have been occasions where the groundwater or soil has been impacted by spills or indeed storage of waste, or storage of water including drill cuttings and muds and drilling fluids from the wells just being stored in pools that have no impermeable layer. So there was a pathway because there was no layer or barrier put in place. I just think there are different states with different regulations, there are different ways of doing things, and I think that the US has done a really great job to catch up over the last ten years and to start saying 'OK this can't happen'.

We were already there. We've had a heavily focussed industry offshore for forty years and it's been not completely without incident. But given the complexity of what they do, how long it's been going on for and the amount of facilities that are out there, the level of incidents is actually very low. It's a huge testament to the operators working in this country and to the regulators who regulate them.

RH: Is the UK regulatory regime up to this?

LC: We're out and about talking to lots of people and we know that this is one of the biggest concerns. If you could actually satisfy people that the regulators are up to it and get to drill a well and show that we can do it, this might start to sway people. Because once they can see that it's not that bad and that it's been properly regulated, then I think there will be a big shift. Tom [Pickering's] view is that the government can help by having a crack squad of independent experts that crawl all over us and give people that sort of comfort that something's been done. I don't dispute that at all and we're certainly very open to that because we believe that we're doing everything right – we can be open to that scrutiny and survive it.

But that doesn't detract from the existing regulators that are in place, and do I think that they are up to the job. I've worked for 16 years in the industry and to drill a well you're regulated by four different regulators. I've seen them as being very, very on top of the detail, very rigorous, and you don't really get to do very much in our industry without that level of rigour, people crawling all over you, being already there.

Now I understand that people have concerns about austerity and budgets being compressed, and a new, maybe quite intensive industry if things go well. Perhaps the government could help, with funding for that and actually helping us help communities understand. We're open to being heavily

regulated, we think it should be heavily regulated as the industry always has been, but I don't see our regulators as not being fit for purpose. I suppose my question to government would be if budgets are to be compressed and this industry becomes very large then is it fit for purpose then? I think that's a question you'd have to answer, but for drilling these wells that we doing, Marsh Lane and hopefully Harthill, I have no qualms at all with the regulators that are in place.

Opponents

RH: How do you characterise people who oppose what you're trying to do at Marsh Lane?

LC: At Marsh Lane, I characterise them as people with local interest. I can't stress enough how much I understand that INEOS turning up with a drilling rig is not going to be the most welcome sight. I completely understand the concerns about disturbance.

But then I think there is another brand of opposition which is much more national, much more organised, much more professional in certain ways and actually it concerns local communities that we talk to as much as anyone else. They have the same views on not wanting this on their doorstep but in actual fact for these kind of nationally-organised protestors, it isn't their doorstep and they're not really always that welcome in local communities themselves. It is actually part of the disturbance concerns that 'We're going to have traffic noise, a drilling rig plus a protest camp down the road'. I've got a lot of sympathy with that. I've got a lot of time for anyone who wants to oppose things because we live in a democracy and we should be absolutely allowed to do that, but there's a very different approach within those two groups I've mentioned.

In Marsh Lane, certainly, at the moment I would characterise it completely as local interest and people who are genuinely concerned about what's turning up on their doorstep which as I say I understand. I have less sympathy with the other group, just from the point of view that obviously over time, and this is a broad brush, I'm not talking about everyone, many of them, you can see them move from cause to cause to cause, whereas for the people whose communities we're entering this is a real cause for them, because this is their lives.

RH: Are you saying that people with a general opposition to the industry are ill-informed or naïve?

LC Not always, no. Not always ill-informed at all. Naïve to the extent we've discussed. We can move to a decarbonised society, we just can't do it tomorrow. And what do you do in the meantime? If you don't have gas, you have to use coal, or you have to stop using. My view – so not INEOS' view - would I rather have coal? No, because it's dirtier. And do I want to switch everything off tomorrow? Well, no. I absolutely should have the rigour to use less, and to be responsible, and to do things like all responsible people should do for their daily personal use. But I haven't got the money to convert my house from domestic gas heating tomorrow and I don't want to be cold.

So I think that's the naivety, and again I think that's a piece that the government can help with in terms of educating people, because people just think that we can move to wind. We can't. Not tomorrow.

RH: Perhaps we could come onto what more you want the government to do in just a moment, but I wanted to ask you about direct action. Policing protests at Cuadrilla's site is costing Lancashire Constabulary £450,000 a month, it estimates. What are your thoughts on direct action generally, and what plans have you got for the potential for direct action, should your planning application be approved?

LC: My thoughts are probably linked to the last answer which is that we are talking about a lot of people who are not living in the local community, who shouldn't have the same concerns in terms of

the daily impact to their lives, but who are inclined towards finding a cause in life. My sense is that those causes can change quite frequently. I certainly have no problem with people making their thoughts known, I deal with that on a daily basis. I have no problem with peaceful protest – the more open the dialog is between ourselves and people who are genuinely concerned the better, whether they are protesting about daily disturbance of peace or whether it is more of a climate change /renewables discussion. I think that's perfectly valid as well. I'm happy to continue having those open conversations.

But for the people who are progressing or pursuing down a direct action route, there's not really very much we can say to them because they're not people who are going to listen, they're not people who are going to rationalise and they're not people we are going to have any form of constructive conversation with, and I categorise them as a very, very, very small percentage of the people we come across as opposition.

Obviously we keep a very strong eye on everything that's going on in Lancashire, and in Yorkshire as well and we are very concerned about what that means for us as part of the point I was making earlier about operators working together because that is one piece where I think we can all sort of.

RH: How can you all work together on that?

LC: I think it's about being consistent, sharing information

RH: What sort of information might you share?

LC: What works? What doesn't? What are your biggest concerns? What's had the biggest impact? Because it really helps us prepare for what we can do. I think we're absolutely going to be looking at protecting several key things: landowners, our sites and our people. That's what occupying our thoughts right now.

RH: How do you think you might do that?

LC: I think that we're still at the very early stages of thinking about how we might do that, but we

Government support

RH The previous governments did quite a lot for the shale gas industry already.

LC They have and they haven't –

RH What haven't they done? And what would you like the next government to do?

LC David Cameron stood up and really pinned his colours to the mast with respect to shale gas so I assume that's what you mean by being very helpful to the industry but –

RH I was thinking of some of the legislative changes as well

LC Yes, which he oversaw, but the problem is, I go to a lot of communities where David Cameron is not the most popular politician, and successors and predecessors alike, so actually that very vociferous support for can really, really work against in some respects. But that being said, we want a government obviously that support us because if they're going to give the licences out and ask for a significant commitment in terms of time and money, then they absolutely have to be supportive. Otherwise it doesn't work.

I don't think we need any media grandstanding on it, to be honest. I think the government needs to be a little bit more educational than that. I really think that this loss of physical connection to our energy and how we use it is a real problem to understanding why we are here in these regions. That

doesn't get us across the line of people not wanting us in their back garden, I completely understand that, but at the moment it's very, very difficult for people to understand why we're progressing this at all and I think there needs to be a bit more overriding understanding of energy policy.

The government is vocal about energy policy sometimes and not others, and that's problematic sometimes in an industry that can appear from the outside very, very unpopular, but an industry which we all rely so heavily on, and I'm talking more broadly on the energy industry now.

I think that they can help with respect to time-wasting and statutory planning periods. I think it would be really helpful if the government could somehow adhere to the statutory periods as far as they can. There will always be extenuating circumstances. But in the case, for example, of the very easy wells that we are trying to drill, which are no different from any wells which have ever been drilled before, I think it would be really helpful if people could just adhere to the statutory planning periods.

We're obviously hopeful that when we go through the process that we are providing the information the mineral planning authority wants to see. But instead of something missing being an opportunity or an excuse to push things back by several months, actually work with us. Less gaming of the system would be really helpful.

RH: What about the suggestion that shale gas wells should be Nationally Significant Infrastructure Projects, so they don't go through local authorities at all. Would that help you?

LC: I don't think it would, actually. Maybe we'll take a different view when we're in a success case planning process for developing entire swathes of the country. I don't think that anyone has really thought through what that looks like from a planning perspective, because if it's going to take three years, or even if it's down to one by that point, to get through a well pad, then this is probably not an industry that's going to work commercially. So I think there does need to be a lot of thought going into what a success case looks like.

As of today, or even several years down the line, when we're drilling more frequently, hopefully, and maybe starting to think about drilling horizontal wells, I think ideally, from our perspective, I would like to see this to remain within local MPAs [Mineral Planning Authorities] and the reason for that is one that you have raised today already. These are local decisions, people have the right to opine, and they have the right to be consulted, they have the right to have their voice heard, whether it be through that process or directly to me and Tom and Peter and anyone else when we're out talking to them. Whatever the planning process looks like, we'll continue to do that, but I don't really particularly want to see this taken out of the regions, because I don't think that's a fair outcome for the regions. However, the only proviso is that the planning system works, because if it doesn't work, then something does need to change,

RH: But by the 2020s, when you may be looking at production, your view might change?

LC: I think I would reserve the right for my view to change, just because I don't really know how it's going to pan out in a success case, from a planning perspective. But if each well pad is going to take that long to go through the system then it's going to be very difficult to see this industry getting off the ground. There are lots of reasons why I believe we should be doing it in our own country if the resource exists. And if the resource exists, then we do need to come up with a system which means that development can happen. Even in that time I would like to still see it sitting in the regions, so people can consult and opine. But the planning process as it exists today would need to be adhered to for that to happen and at the moment I don't believe it is.

RH: Sometimes it's down to the companies, sometimes it's down to the planning authorities

LC: I agree with that and again we're going through a bit of a test case with our first, and it will be interesting to see. Obviously our very strong hope is that we have provided just about everything that we need to be provided. But I agree that there's faults on both sides. We're all in a bit of a learning process. There's a difference between those situations which are technical issues that need to be resolved versus the excuse of kicking the can down the road because we don't want to make decisions. I understand why people don't want to make decisions. There's a lot of posturing in this, but that's what we need to get away from.

Shale gas in protected areas

RH: I'd like to finish by looking at controls on fracking and shale gas development. Would you frack in Areas of Outstanding Natural Beauty (AONB), Sites of Special Scientific Interest (SSSI) or National Parks?

LC: No. What we're not going to do is have well sites located in those regions, but if you were sitting with a well site here –

RH: You might frack underneath?

LC: I'm not saying that we would never do that. Again it would all be subject to the planning process, it would all be subject to an Environmental Impact Assessment. When I think of all the consultees to a planning application, including Natural England and all the heritage and ecology consultees to that process, there's nothing going to happen in any of those regions, whether we want it to or not, that isn't ratified as safe and protective of the habitat.

RH: Would you apply to drill exploratory wells in SSSIs or AONBs or National Parks?

LC: That's not our plan, no

RH: Why not? If - as you say - there is no problem with fracking, what's wrong with drilling in a National Park?

LC: I don't personally think there's anything wrong with drilling because I understand the impacts of it. But each particular well site would have to be taken on a case-by-case basis so I could only answer that question when we had done all the studies we would need to do to satisfy ourselves that we wouldn't be impacting on, for example, a species that would be very close to the well.

RH: But if you're not going to drill in an AONB or National Park that's excluding potentially large parts of some of your PEDLs?

LC: It's certainly excluding large parts of Yorkshire, and we have yet to really strategize around land acquisition in Yorkshire so I think I need to reserve my opinion on that.

But my idea is that we're not going to go after the well sites that are going to make our lives the most difficult. We're not going to be going after well sites where we believe it's just morally wrong to drill there – and I know there's a level of subjectivity to that.

I know we had a lot of discussion around this with respect to Sherwood Forest. We've got no intention of drilling in Sherwood Forest, so I think there's a lot of concern around specific well sites in areas of specific interest and I understand that. What I'm saying is that we're not going to go into areas that either (a) we're not comfortable with or (b) it's not going to be comfortable from a Natural England/all the other consultees perspective who are there to protect these areas, and if they opine that it's safe to do so then I will take a completely different view.

We're going to look at all our potential well sites on a case-by-case basis and do all the appropriate studies. If it's something we can do safely and without impacting the natural habitat, then we will, but we're not seeking to find all the most awkward spots and drill them.

RH: INEOS was part of the consultation on the North York Moors draft minerals plan which has provisions on not drilling or fracking in National Parks and AONBs. Is INEOS going to fight these provisions when the plan goes before the Inspector

LC: We are still finalising our plans for this and don't yet have a response.

RH: You said you are not going to drill or frack in Sherwood Forest. By that I think you mean the National Nature Reserve and the Country Park?

LC: Yes.

RH: Would you drill or explore or frack in the proposed Sherwood Forest Regional Park?

LC: We've talked about this quite a lot. There seem to be quite a lot of varying definitions of Sherwood Forest. Some of the potential well sites that were outed at that time that we're looking at were either in conifer plantations or indeed not in any forest at all. Just because someone draws a ring round the whole of Nottinghamshire plus Sheffield and says it can be classified as Sherwood Forest – we're not going to have much agreement or common ground there. With respect to the actual Sherwood Forest as it's defined today, then we have said that we're not going to drill or frack there. I think there are a lot of different views as to the boundaries of Sherwood Forest and we don't believe that it takes in the extent of the entire region, which I think is how some people would view it.

Buffer zones, set-back distances and density limits

RH: What do you think about buffer zones between well sites and AONBs, National Parks, SSSIs? North Yorkshire is proposing a three and a half kilometre buffer.

LC: You just have to look at it on a case-by-case basis. If it's safe to do so from all of the kind of tests that a planning application will go through, including all of the ecological/national heritage points of view, then three and a half kilometres may be more than it needs to be. I think you have to look at the specific locations, and what it's close to, and what you're potentially impacting against and do all the studies around that and the studies may tell you that you need a three and a half kilometre buffer, in which case that's what we would do.

RH: What about putting it into a local minerals plan?

LC: It seems like a distance that is going to be, in many cases, unwarranted from health and safety of the environment and the ecological heritage/nature piece.

RH: What about set-back distances from homes? North Yorkshire was proposing 500 metres.

LC: I'm going to dig a hole for myself here, because INEOS has a self-imposed offset of 400 metres, but I know that we're not entirely meeting that with Marsh Lane in the case of at least two homes. From a noise perspective, we're trying to be as imperceptible as possible, and our view is that to do that it probably takes 400 metres. But having said that, the noise studies we've done for Marsh Lane show we are not out of kilter in terms of the daytime and night-time noise levels we need to achieve for those houses that are in the 400 metre boundary.

I think we would be reluctant to accept statutory standard offsets for either of those things, whether it's for homes, SSSIs, AONBs because I think that there's always going to be a case-by-case basis to

be answered from the planning process that already exists. So that makes it sound like INEOS thinks that it's OK to frack next to someone's house 10 metres away – that would not get through a planning process and therefore we wouldn't even bother.

We are trying, with limited sub-surface data at the moment and limited surface capability, to place drilling rigs, to do the best we can, to stay away from everything that's sensitive, whether that be homes or species or areas of specific interest, which is why Marsh Lane and Harthill are both reasonable distances from things like that, and we believe we can stay within the noise limits so as to be as imperceptible as possible. I just think the planning process as it exists today is sufficient to deal with that.

RH: North Yorkshire's draft Minerals Plan limited well pad density to a maximum of 10 well pads in 10km by 10km square. Do you have a view on well pad density, on what's acceptable?

LC: To be perfectly honest, that's not too dissimilar from our own thoughts, but again whether we want to have it imposed on us so that you're then exceptionally restricted from a grids perspective on where you can actually have a well pad...

I think that a huge part of the process of a planning application being determined is cumulative effects. If you have two well sites too close together then the people within that radius are going to suffer more than they should and therefore that would be precluded. I think that the planning process as it sits today and how planning applications are determined, are appropriate from that perspective. And I think that the cumulative effects aspect of how planning applications are determined would actually already account for that. We're thinking, we're not thinking of being any more concentrated than that.

Definitions of fracking

RH: And the definition of associated hydraulic fracturing, based on volume of liquid, has that helped INEOS?

LC: I haven't given it a huge amount of thought, because, unlike some of our competitors and peers, we're not there yet. We're just trying to languish at the back of the science piece. Let's understand what the seismic tells us, let's understand what the cores tell us and we'll worry about fracking when the time comes. We're not putting a great deal of thought into fracking at the moment because we may never frack a well if we get down there and decide there's nothing worth looking for.

RH: North Yorkshire plans to use the definition: "Fracturing the rock under hydraulic pressure, regardless of the volume of fracked fluid used".

LC: So the concern here is that we frack by the back door because we use less water. It's not something we've really given a great deal of thought to, because we're not at all ready to say how much volume we think we would need for a frack, because we haven't designed any such thing yet. My only thoughts on that would be that there's nobody in this building that is trying to frack by the back door. We know we are going to have to go through some painful planning processes. We're preparing ourselves for that by the rigour technically, but also by trying to get our planning applications in very good order so that timelines can be adhered to. We'll be planning to take fracking applications through that planning process.

I don't see how – I don't know why the definition is particularly helpful –

RH: This one, or the government's one?

LC: I think quite possibly neither, because you've got one definition that says you can potentially be deemed to frack by the back door and you've got another one that would preclude a well test, which is not and should not be the intent either. You've got one party that's trying to open things up and another that's trying to shut things down. We would rather, obviously, that there is something in the middle which says that we can do what we can do within the safe controls and under the auspices of a planning system that works for everyone, so neither of those definitions are particularly helpful.

RH: In the local elections, largely Conservatives were returned in the areas you're going to be working in. Do you see that as a help to the future of your company and what you are trying to do?

LC We have no real sense, to be honest with you. Just because something is national policy doesn't mean that it filters down to local councillors. Which is fine because they have their own views, so I don't think we know one way or the other whether it's going to be helpful or not.

Interview ends