

Personalised for:
rachel parkes

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Contents

Gas Strategies Interview: Ben Caldecott, stranded assets programme director,
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Gas Strategies Interview: Ben Caldecott, stranded assets programme director, University of Oxford

The energy landscape has never been more uncertain. Producers of all stripes are looking to secure their position in the future energy mix and convince investors that they are indispensable to both meeting energy demand and tackling climate change. Gas Strategies spoke to Ben Caldecott, director of the stranded assets programme at the University of Oxford's Smith School of Enterprise, to discuss the challenges facing the oil and gas industry in a carbon-constrained world, and whether the environmental lobby should face facts on the role of natural gas as a transition fuel [1].



[2]

Has the oil and gas industry underestimated the environment-related risks of ‘business as usual’?

Very much so. These factors are new, complex, the data is sparse, and the risks are non-linear. You can see this in some of the scenarios that are published by the oil and gas industry; like many other organisations, they have underestimated the pace at which renewables and related technologies have been able to realise cost reductions and be deployed at scale. I think they are severely underestimating the potential of electric vehicles to change markets and destroy oil and gas demand in the future.

Even at the best of times, relatively simple risks can be mispriced and known risks can be left ignored. This is often because of biases, misaligned incentives, and endemic short-termism.

These problems are exacerbated when the risks in question are novel and where the data, analytical tools, and methodologies are missing. Add to the mix a lack of viable options to hedge risk, and there is plenty of scope for markets to be getting risk management wrong. This is exactly what is happening with respect to environment-related risk.

Investor activism on climate risk has become a common feature of many company AGMs now. Do you think that the IOCs are out of step with their investors?

I think they misunderstand and underestimate the extent to which investors are going to be engaging with them and piling on the pressure. Active ownership is becoming more sophisticated and it's becoming more mainstream. This is particularly the case in Europe, which is now catching up with the US. They're going to have to respond in much more sophisticated ways than they have so far.

I think there's a question about the business model, not necessarily because of climate change, but because of structural issues in the upstream oil and gas business. If reserve replacement ratios are a key measure, how on earth are IOCs going to keep succeeding in the context of massive national oil company (NOC) competition? They're being squeezed into very high cost, difficult places and clearly low oil prices make that uneconomic. And if you consider demand destruction and structural changes in the oil market as a result of energy efficiency and electric vehicles (EVs) and so on, there's not a huge opportunity for growth.

I would argue that the IOCs are in a position where there aren't very many, if any, attractive investment opportunities. There's a tendency to invest to get your reserve replacement ratio to a better place, even though it's not going to be a very good investment opportunity because it's expensive.

What kind of environment-related risks are the IOCs exposed to?

These risks manifest themselves in different ways, in different markets and in different parts of the value chain. There's tightening environmental regulation, whether carbon pricing, emissions trading or pollution standards. Generally, once such regulations are introduced they are strengthened, and once they're introduced in one place they tend to get adopted elsewhere. So what we're seeing is an expansion and deepening of the stringency of environmental regulation.

In addition, sustained policy support for renewables has been bearing fruit in terms of massive cost reductions. The power system is in a state of transformation and energy storage will accelerate that. EVs are part of that story [3]. I don't think any of the IOCs are yet in a good position

to grasp those opportunities.

One of the areas we look at is social norms and the divestment campaign is an example of that. People's views are changing. When I talk to senior oil company executives, they say that divestment doesn't matter, but now they're having difficulty recruiting good people. They're beleaguered by the fact that they're in a stigmatised industry – that would have been different five or ten years ago.

Another is litigation and liability – could these companies be sued for damages? For causing climate change? For not disclosing material information to markets? For not appropriately managing climate risk and getting taken to court for that? These are all areas that the Bank of England has highlighted as potential issues. They might feel a bit far removed, but given the subpoenas of ExxonMobil and Peabody in New York last year regarding climate change disclosures, these could significantly affect companies in the medium to long term.

Should the global financial markets factor in environment-related risks for IOCs?

Some of them do, mainly in a very superficial way. This will all change though. Currently investors don't have information to properly evaluate company exposure to environment-related risks. Carbon footprinting, which is the approach that most investors use, is a deeply flawed tool. Investors need to become much more sophisticated, and very quickly. That's one of the things that we're working on at Oxford: how do you get the information and the data to properly evaluate a company's exposure to environment-related risk and opportunity, so you can do a good comparison between Company A and Company B?

There's been a massive increase in appetite and interest on the part of investors, but the tools are just not there yet. But this will change quickly, not least because of our research.

Has the Paris Agreement made any difference to the severity of these risks?

A lot of the risks that are material have got little to do with COP21 or the Paris Agreement. Take technological change – yes, it's connected to policy, but it's not just happening because of a climate change agreement at an international level. It's happening because of concerns about air pollution, in the case of EVs in China or indeed Europe. So the vast majority of the drivers will happen regardless of whether there's a climate agreement in place or not.

Obviously, having a robust international framework is still important and useful. It helps to ensure consistency and can help provide important high-level engagement and a sense of direction globally. But oil companies do have a tendency to use the climate change agreement as a straw man. They say that the Paris agreement has no bite, or that it's insufficient or it's never going to be applied properly internationally in a coherent way – therefore it's not going to affect their business. But we're not claiming that the international climate process is suddenly going to result in a massive loss of value. That's a very unsophisticated view. It's the sort of view that some of the NGOs use. What we're seeing is that there are a whole bunch of factors, and climate policy at an international level is one of many.

You can't hide behind your scepticism about the global climate change agreement. It's not all about 2 degrees and cap and trade, which you may or may not think is material.

Speaking of cap and trade, is the EU Emissions Trading Scheme (ETS) now redundant as a carbon-reduction tool?

The EU ETS can do some things very well. But the problem is that people keep overlaying

objectives onto what the EU ETS can deliver. It's really very simple: it allows for emitters to measure and account for their emissions and if they do that they might go on to manage them better. If the price is high enough it encourages incremental improvements in efficiency and switching and conversion.

In the past it was inducing a little bit of switching to biomass. It can induce coal-to-gas switching. But it's not the instrument that you'd use to bring forward capex-intensive investment in renewables. So let's put it in context: it's never going to be the driver of low-carbon transition. In any case, because the price is so low, it has become totally irrelevant.

The IOCs have put a lot of emphasis on the role of natural gas as a low-carbon transition fuel. Does the environmental lobby need to face facts about the need for gas?

If we're going to achieve 2 degrees, we need a net-zero carbon emission power system by around mid-century. Now, gas is still very carbon intensive, even more so depending on your view of fugitive emissions from methane. Coal with carbon capture and storage (CCS) and gas with CCS generate positive emissions. So you'd be constructing and expanding infrastructure that is incompatible with the need to be net zero.

If you're concerned about climate change, you've got to understand that cumulative emissions are the issue and you've got to manage that. That means that the flow needs to get to zero and gas does not help with that. If it's a bridge then it's a very short bridge. Using a lot of gas for a long time is not compatible with net-zero emissions – but there's a question about whether we're going to do net zero, whether we're going to deal with climate change in a timely fashion.

Unfortunately, there's a strong chance that we won't. So a more honest answer from the oil and gas majors would be that they don't actually think that the governments of the world are going to deal with climate change and they don't think that the energy system is going to go to net zero, so they think that there's still a big role for oil and gas. To be fair, that is now what Shell and others have started to say.

Can you see the IOCs returning to low-carbon technologies such as renewables or CCS?

The IOCs have got some big choices to make and it's not just to do with climate change. It's to do with NOC competition and the price of oil, rather than anything to do with carbon budgets.

They've basically got three options. The first choice is that they do a run-off strategy. They don't chase dividends, they don't try and replace reserves, they're very capital-constrained and they just try to get money back to shareholders over a 20-year period. But you wonder whether IOCs are prepared to appoint people to spend their careers winding down their industry. That seems unlikely.

The other option is diversification. But the idea that because they're in the energy industry they're well placed to do renewables is wishful thinking. They're just as well placed to do anything else. The question is how do they diversify and do they get investor permission to do that? How will that affect the yield profile for example? Will they do a Nokia, and evolve into something completely different? That also seems quite unlikely.

The third option is not doing anything. In which case, these companies, which are already borrowing a lot of money to sustain dividend payments, are going to be in deep trouble. But that happens in the constant process of creative destruction that drives our economic system forward.

Big companies fall away and other big companies take their place.

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