



# Climate Change & the Energy Business – Opportunities for Oil & Gas

## WBC Climate Change Survey 2020

In 2019, Climate Change dominated the headlines: Australian and Californian bush fires, Extinction Rebellion, Greta Thunberg – there were plenty of news items to keep it in the forefront of people’s minds. Fast forward to Q1 2020 and the world has changed. From the long-term sustainability of the planet we have moved to focusing on the short-term survival of individuals and the economy. The Coronavirus pandemic is a global tragedy that has affected millions and will continue to do so throughout 2020.

But the expectation – and everyone’s hope – is that it will be short-lived, the virus will be conquered, and 2021 will see a recovery – gradual or sudden – in the world economy. What then for Climate Change and the energy industry?

Our 2020 survey of energy industry professionals suggests that even as demand falls – and with it the price of oil – the challenge of dealing with climate change will remain a high priority for oil and gas firms. This will not surprise many – our survey results, for the most part, simply confirm earlier surveys and other commentary. In this report, therefore, we focus on the new realities of the energy market, how companies can address the issues, and what that means for careers.

### Executive Summary:

- 91% agree that Climate Change is happening: just over half, 53%, believe it is due to human activities, versus 40% who attribute it to natural changes in the environment
- Climate Change ranked 4<sup>th</sup> as a government priority, after Safety & Security, Economic Development and Health & Wellbeing
- There were significant regional variations: respondents in Asia, Middle East & Africa were more likely to attribute climate change to human activities, and call for greater government intervention: US respondents were more likely to attribute it to natural causes, and called for less government intervention
- To combat climate change, the top priority for oil and gas firms should be investing in new technologies to radically change energy production and usage, followed by diversifying into renewable sources
- Taken together, these provide great opportunities for oil and gas firms, and the people that work in them, to capitalise on existing skills and develop new ones – to be part of the solution, not the problem
- Expectations of corporate responsibility will change: business leaders will need to demonstrate & communicate how their actions benefit the wider community

Whatever the rights and wrongs of the “human vs natural causes” arguments, almost all agree that climate change is an issue that cannot be ignored by the industry. The drive for reduced emissions and decarbonisation is likely to accelerate. It’s a threat to many traditional ways of doing business in the oil industry – but also an opportunity for those who prepare for, and lead the transition to, a greener energy industry.



## Is Climate Change Happening, and What’s the Cause?

Almost all respondents, 91%, agree that climate change is happening, though a minority, especially in the US, challenge this.

### 7 Year comparison

*This is the fifth time we have run this survey. Since 2013, respondents have become more confident that climate change is happening, though this year we have also seen a small increase in the number very confident that it is not happening.*

1. Do you think that climate change is happening?	2013	2014	2015	2016	2020
Yes and I'm extremely or very sure	60.6%	58.6%	61.9%	66.9%	69.5%
Yes and I'm somewhat or not at all sure	28.2%	27.0%	25.5%	25.5%	21.8%
No and I'm extremely or very sure	3.9%	5.5%	6.7%	3.6%	5.4%
No and I'm somewhat or not at all sure	5.4%	6.5%	3.5%	2.8%	2.1%
I don't know.	1.8%	2%	2%	1%	1.2%

On the following pages we look at what our respondents say about the causes of Climate Change, and what we - and in particular oil and gas companies - can do about it.

### About the Survey

We sent our survey to our network of nearly 6,000 oil and gas professionals around the world, as well as promoting it through The Oil & Gas Yearbook, with 240 responses. Half our respondents came from Europe, just under a quarter from North America, and the remainder from the rest of the world. Nearly half worked in oil and gas companies, or for oil services firms; the remainder worked for companies providing professional, financial or business services to the industry. Results are presented in aggregate form, without weighting for, say, size of company or functional responsibility/specialism. The results are not based on a random sample of the oil and gas industry population and we do not claim this to be a statistically accurate representation of the industry as a whole.

### Contents:

- Survey Results – Is it happening & why?
  - Regional Comparisons
- Who’s Responsible: the Role of Government
- The Corporate Response: Opportunities, not Threats
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For more information, please contact Angus Warren, on [angus@wbctraining.com](mailto:angus@wbctraining.com)

[www.wbctraining.com](http://www.wbctraining.com)



## What's causing Climate Change?

There is a greater debate as to the cause: 53% (up from 50% in 2016) believe it is caused *mostly by human activities* – “anthropogenic” – while 40% (same as 2016) attribute it to *natural changes in the environment*, and a small minority say *neither because it's not happening*. Again, North American respondents were more inclined to believe it is due to natural causes than human activity, while Europeans and those in Asia and the Middle East and Africa tended to blame human activity.

### **Most see it as a serious problem, and only a minority are optimistic we will resolve it successfully**

Across the world, it's regarded as a serious issue within the industry, but to different degrees: slightly below 2016 findings, 38% see it as a very serious issue, potentially leading to economic social and political disaster; a further 27% say it's somewhat serious, threatening economic development and living standards. But 25% feel it's not too serious – up from 15% in 2016 – while the remainder believe it's not a problem at all.

Respondents remain divided on whether we (mankind) will succeed in meeting the challenge: just under half say we can't reduce climate change, either because it's out of our control (28%) or because we won't change behaviour (17%); while others (44%) are uncertain as to whether we will change behaviour enough.

### **Regional Comparisons**

*We have already touched upon the different attitude among North American respondents, who were mostly working at privately owned or publicly listed oil companies, and tended to be more sceptical of government involvement. They were also more inclined to attribute climate change to natural causes than human activity (69% vs 31%): however, among the general population, the Pew 2019 Study of US adults found only 35% saying it was due to natural causes, while 67% of US adults thought the government was doing too little to combat climate change.*

*In contrast, our respondents in Asia, Middle East and Africa tended to be more convinced that climate change was due to human behaviour (67%), felt companies had more responsibility for protecting the planet (33% vs 17% in the US) and were keener for government intervention. They also preferred solar power to nuclear power as the alternative.*

<b>Do you think that climate change is happening?</b>	<b>North America</b>	<b>Europe</b>	<b>ROW</b>
Yes and I'm extremely or very sure	58%	69%	73%
Yes and I'm somewhat or not at all sure	25%	26%	20%
No and I'm extremely or very sure	4%	4%	8%
No and I'm somewhat or not at all sure	6%	2%	0%
I don't know.	6%	0%	0%

*A [2019 YouGov poll](#) across 30,000 people in 28 countries told a similar overall story – the vast majority think climate change is happening and is at least partly caused by human behaviour. This study also showed respondents in the US as more likely to attribute change to natural causes, and within Europe, respondents in Scandinavia also tended more towards a mix of natural and human causes. Respondents in Asia and the Middle East expect Climate Change to have a disruptive effect on their lives more than those in the West.*



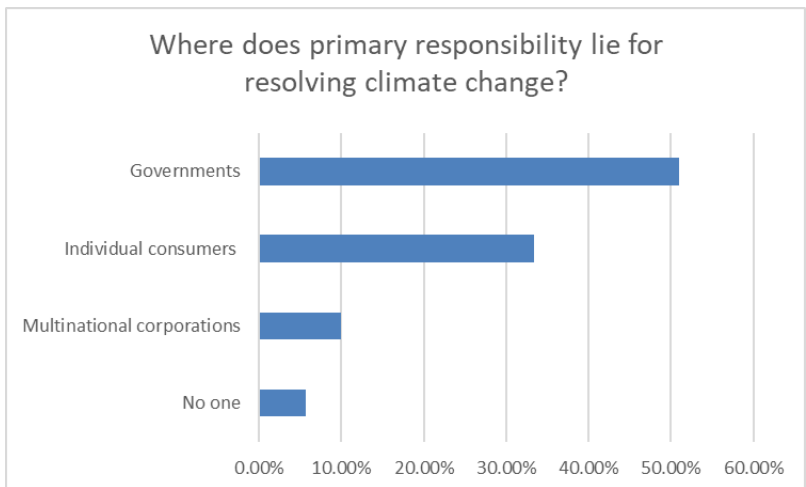
Only 8% are confident that we will reduce climate change successfully. However, in another sign of optimism, this last figure is up from 4% in 2016.

These results vary by region but reflect a continuing trend not only in the industry but also amongst the wider population.

So far, so predictable. But if everyone agrees on the problem, do they agree on who's responsible for solving it?

## Where does power and responsibility lie? The Role of Government

Half respondents say primary responsibility lies with governments, and a third with individual consumers



In a new question, we asked respondents where they thought primary responsibility lies for resolving climate change. Just over half put the burden on governments, with their regulatory and coordinating powers, with a third allocating responsibility to individuals, whose behaviour and lifestyles drive demand. It was interesting to note that only 10% thought it lay with corporations – the organisations that are generally perceived to cause the greatest amount of emissions, whether in their production operations or the transport and consumption of their goods. Within this though, there were significant regional variations: respondents in the US were far more likely to allocate responsibility to individuals (50%), than to governments (33%), with corporates down at 4%; in Asia, by contrast, 38% placed the responsibility on corporates.

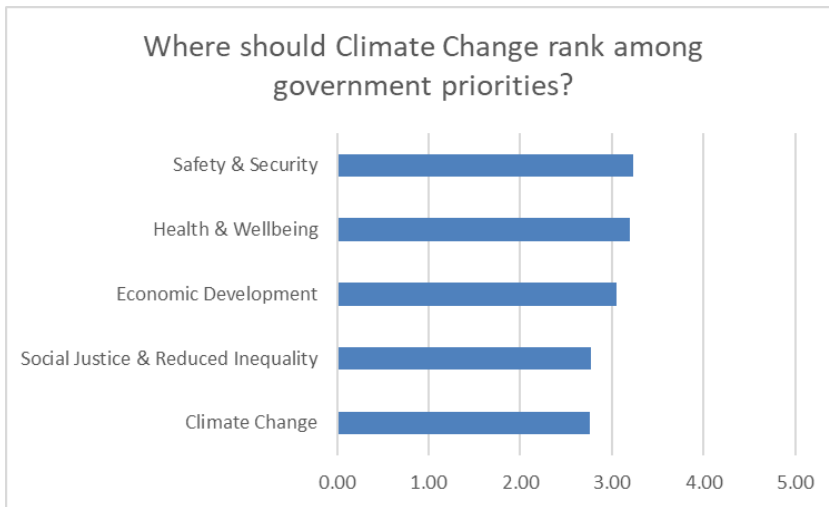
The 2019 YouGov poll across 28 countries asked a slightly different question: how much power do various groups have to combat climate change? The 6 groups were: supranational bodies, national governments of wealthy or of developing nations, business and industry or individuals.

- With exception of the US, just over half said national governments of wealthy nations had great deal of power;
- In Europe, around half said business and industry also had a great deal of power, but this figure was much lower in Asia and the US.
- Respondents in Asia and the Middle East were also more inclined to rely on supranational bodies having the power to act, while in Europe and the US only around a quarter thought such bodies had a great deal of power.
- With one or two exceptions (India, Vietnam), fewer respondents (below 1/3) in any country thought that developing nation governments had a great deal of power.



## But Climate Change is competing with other priorities for governments, and ranks below Safety & Security

If responsibility lies primarily with governments, where should it rank in their list of priorities? This was a new question, and timing – just as Covid-19 took off - may have skewed results; but it also highlights how they are all interlinked. Few would deny that keeping citizens safe and secure includes keeping them safe from the effects of climate change and pandemics; economic development may enable better health & wellbeing outcomes. Again, there were regional differences: in the US, Economic Development topped even Safety and Security, while in Asia, Health & Wellbeing topped the list.



When it comes to the tools that governments have to combat climate change, our respondents continued the trend we saw in 2016 – less reliance on taxes per emission, and more on incentives to use alternative forms of energy, using such incentives to change behaviour by individuals and companies. But as we explain later in the report, companies should not devolve responsibility entirely on to governments; their “licence to operate” depends on them behaving responsibly and in the current situation, that is likely to take on a new meaning.

### ***Climate Change and the Pandemic***

*The McKinsey Quarterly* recently carried an excellent piece on the Pandemic and Climate Change, asking what lessons we can draw from Coronavirus for the way we deal with Climate Change. The report calls for investments in climate change resilience to be part of the Pandemic recovery process. It looks at the similarities between the Pandemic and Climate Change, and at the differences. Both, as McKinsey says, are physical shocks with systemic impact - and the current Pandemic gives us a taste of what a climate crisis might involve in terms of impact on global trade. One is a contagion risk and the other an accumulation risk – a difference of timing or as Mark Carney, former governor of the Bank of England put it, the “tragedy of the horizon”. McKinsey predicts an acceleration of trends towards decarbonization plus greater investment in resilient systems by governments and companies as a result of the Pandemic experience.

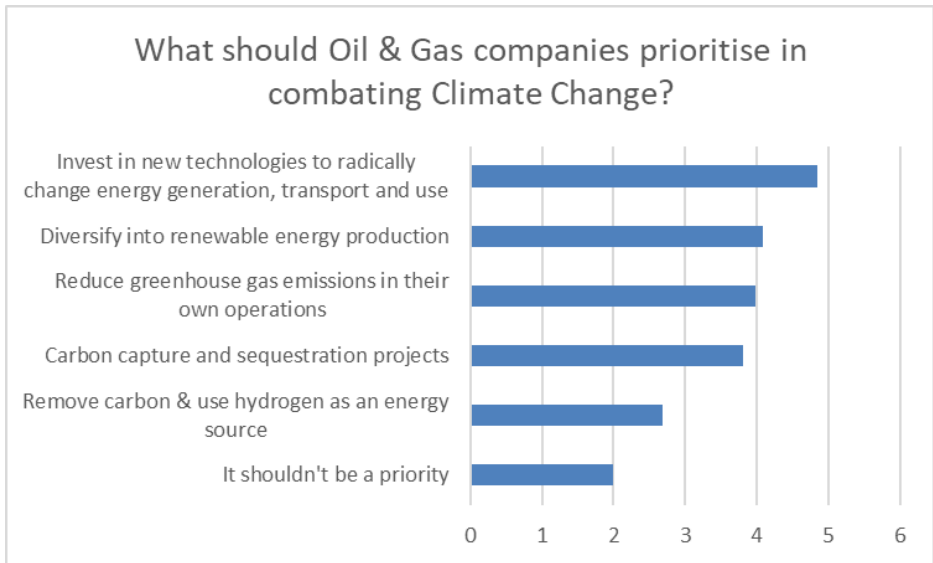


## The Corporate Response: Opportunities, not Threats

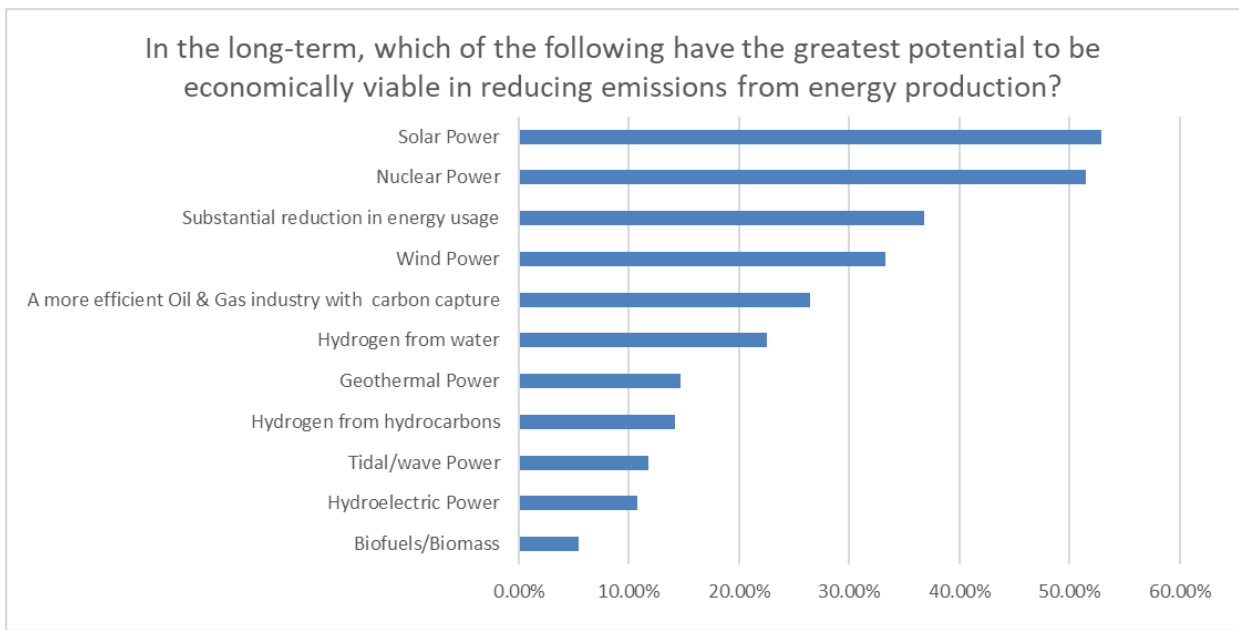
Invest in technology, diversify, and develop carbon capture

When asked what activities the world should cut back on, respondents once again selected the burning of coal, followed by deforestation; interestingly in the Middle East and Africa reducing the burning of oil or oil derived products came second to coal.

More importantly perhaps, we wanted to look at what positive steps oil and gas companies could take to combat climate change, with a new question. Predictably, diversifying into renewables came high on the list, but most respondents saw the real opportunity in using new technologies to make the whole industry greener and cleaner.



Looking to the future, we asked respondents to list their top 3 viable alternatives for the long term; solar, nuclear and wind power topped the list alongside a substantial reduction in energy usage. And as stated above, hydrogen and carbon capture also featured strongly.



In the section below, we look at some of these ideas.



## Measure, Maintain & Monitor

Huge opportunities with technology and digital transformation

Taking digital technology first, a recent study by WEF/Accenture suggested that digitalisation could reduce the industry’s carbon emissions by 1.3bn tonnes. A leading European International Oil Company expects a fifth of their CO<sub>2</sub> reductions to come through their digital initiatives. As we noted in our recent paper on Digital Transformation (DX), a dilemma for many companies is how to develop their DX capabilities, but there are clear benefits

*Use technology to measure, maintain and monitor – creating a more efficient and greener industry*

to enabling oil and gas professionals to learn digital skills and apply them to creating a more efficient and greener industry. [The Oil & Gas Climate Initiative \(OGCI\)](#), a consortium of some of the world’s leading energy companies, has a number of projects in this area, including Artificial Intelligence programmes that take data from sensors such as accelerometers and methane detecting cameras across a field, apply them to a digital twin and create an optimization model for preventative maintenance.

But it’s not just digital technology; other OGCI projects have delivered more efficient valves, and satellite imaging that detects fugitive methane, as well as technology that can be applied in midstream and downstream too, improving oil and gas transport, with rotor sails fitted to tankers and electrification of vehicle fleets.

*“this is the most exciting time in his 30-year*

With so much opportunity in this area, it’s little wonder that industry-changing technology was our respondents’ most popular choice. As Phillip Hemmens of Eni said at IP Week 2020, quoted in Offshore April 2020, “*The pathway to low carbon will*

*also have many technological twists, turns and uncertainties and we will have to try many things to get there. But someone told me that for the same reason, this is the most exciting time in his 30-year career”*

A [recent UN piece](#) made the same point, recognising that the world will still need fossil fuels “*but it does require a significant change in direction; business as usual is not consistent with decreasing emissions in global energy systems.* The industry has the opportunity to “*become “part of the solution”, rather than remain “part of the problem”. All technologies have a role to play in an energy system guided by rational economics.”*

### **Crude to Chemical**

*Oil and gas companies can also reduce emissions by moving away from carbon intensive fuel production into a growing petrochemicals sector. Currently around 20% of all oil production goes via a refinery as a feedstock to petrochemicals plants. This has become one of the biggest sources of oil demand growth. Indeed, new refineries in the Middle East and Asia have been designed such that 30-40% of their output goes to petrochemicals. With a growing world population demanding higher living standards and a huge range of products, from fertilizer to flooring, insecticides to perfume, and pharmaceuticals, the “Crude to Chemicals” phenomenon is likely to be a key characteristic of the hydrocarbon value chain for decades to come. Even as the world transitions towards other sources of energy, there will still be a demand for oil-derived products – not least in the health sector, for medicines and equipment and personal protection clothing.*



## Hydrogen, Carbon Capture & Renewables

In the pieces below, **John Massey**, course director for our new 3-Day MBA for Energy in Transition programme, highlights how oil and gas companies are perfectly positioned to lead the way in three of the other trends our respondents identified.

*Oil and Gas companies are perfectly positioned to lead the way in these routes to low carbon energy*

Hydrogen and carbon capture are set to grow in the future, backed by policy support and using existing skills in the industry. The two can go together, to 'clean up' the predominant production of hydrogen from natural gas. Even if hydrogen is produced in other ways though, it still needs storing and transporting; while carbon capture will become ever more demanded in a variety of settings, from industrial facilities to power plants.

Both involve gas-handling processes and technologies where oil & gas companies can draw on substantial advantages of existing expertise. Most carbon capture is already associated with 'EOR', enhanced oil recovery, with active projects worldwide including those by Petrobras, Saudi Aramco and Equinor. Both in Europe and elsewhere, companies including BP and Shell are active at various levels within clean hydrogen projects, from its upstream production to its downstream usage to reduce emissions within their own refineries.

*Sequestration requires traditional geoscience and reservoir engineering skills that exist within oil and gas*

Re-injecting the CO<sub>2</sub> into depleted gas or oil fields uses space in a reservoir created by the extracted hydrocarbons to store the CO<sub>2</sub>. Marrying oil and gas infrastructure and depleted fields with evolving carbon capture and storage technology may be costly now, but will become less expensive in the future as critical mass and economies of scale emerge. Such

"sequestration" will call upon the traditional geoscience and reservoir engineering skills that exist within oil and gas firms, providing obvious opportunities for both individuals and companies. There are many other initiatives for the use of CO<sub>2</sub> outside the oil and gas industry. For example, a major source of emissions of GHG (about 7%) is the cement industry. Technologies are being developed to permanently trap CO<sub>2</sub> in cement and to use CO<sub>2</sub> as a curing agent in cement manufacture – which has the added benefit of reducing water consumption.

## Diversifying into new value-creation opportunities

The most rapid progress in decarbonising energy supply is happening in electricity generation. The UK, as one example, generated more than 50% of its electricity from low-carbon sources in 2019, compared to less than 25% just ten years ago. The costs of new renewable electricity projects have plunged over this same period. No surprise then that the 'electrification' of other energy sectors, particularly transport and heat, is a decarbonisation route favoured by many.

*Forward-thinking oil and gas companies are already exploring new value chain opportunities*

Forward-thinking oil & gas companies are already exploring new value chain opportunities in the electricity sector. The examples are wide-ranging, but include BP's acquisition of Chargemaster (electric vehicle charging), and investment in Lightsource (solar power), Shell's acquisitions of both First Utility (electricity retail) and Sonnen (battery storage) and Total's ownership





of SunPower (solar technologies and projects). Expect to see this business diversification trend continue as oil & gas companies position themselves strategically for the blurring of industry sector boundaries.

## Leveraging expertise in offshore renewables

Offshore wind projects are rapidly increasing in scale. They are now multi-billion dollar investments, operating in harsh marine environments which bring huge construction, project management and operational challenges. These are just the kind of challenges and risks that the oil & gas sector has been used to managing for years – and are impossible competitive territory for smaller power project developers more comfortable with solar power or wind onshore.

*These are just the kind of challenges and risks that the oil & gas sector has been used to managing for years*

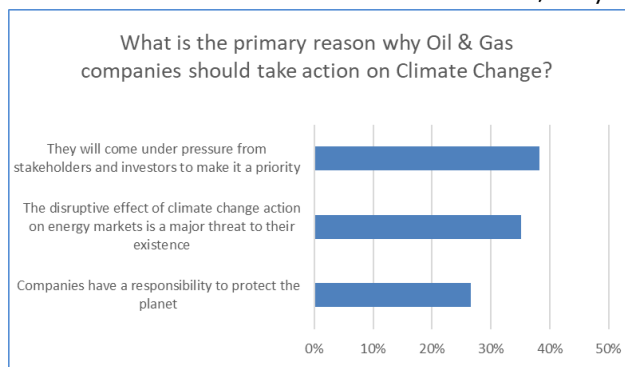
It's perhaps no surprise then that Ørsted, formerly DONG Energy, chose to pivot into becoming a global offshore wind leader when exiting the fossil fuels business. Similarly Equinor (formerly Statoil) is already a major offshore wind player, with Shell and others more recently joining the fray. The industry has been concentrated in northern Europe until now, but markets as diverse as the US, Taiwan and India are all now coming into play; so there's plenty of untapped growth potential.

Some oil companies are switching the energy source to power their facilities from hydrocarbons to renewable energy. Equinor has taken a lead in this area with projects to power its North Sea facilities with electricity generated by offshore wind farms. There is a nice synergy here as O&G facilities offer wind farms a conveniently located market for their product and in turn gas production can be used to generate power for internal consumption and exported to power stations when the wind is not blowing. Within the context of the O&G industry, LNG, oil sands and heavy oil are all energy intensive and offer similar opportunities for synergies with renewable energy.

## Corporate Social Responsibility

In 2016 we asked *why* they thought Climate Change should be a high priority for oil and gas companies: back then, 39% said companies had a responsibility to protect the planet, while 61% cited more explicit commercial reasons, namely that their business models were threatened by climate change disruption (eg the search for renewables) or they would come under pressure from stakeholders and investors. In 2020, only 26% stated that companies had a responsibility

to protect the planet. 73% cited the more commercial pressures of market disruption and stakeholder pressure.



Some might argue that as long as corporates take the right action, it doesn't matter so much what their motivation is. All the big companies make claims about their values and commitment to the environment but these results suggest a cynical view that it's



only outside pressure that will make them accept they are part of society and can both contribute to and benefit from the wider community.

But this is certainly not the view at the top. As Bernard Looney, BP CEO, put it recently “ *Purpose is not a ‘nice to have’ for businesses. We are part of society, and never more so than in a crisis....And in the same way, I believe that how we all respond to the challenge of climate change matters too. If we can’t find ways to help our societies meet this challenge, then what are we here for? This crisis [Covid 19] has helped make clear that the world in which the sole objective of a company’s purpose is to maximise profit is no longer acceptable. Taxpayers and governments have stepped up to support many businesses and their employees through this difficult time - and they will understandably expect business to be shoulder to shoulder with them. That is not in any way to suggest that business doesn’t work to deliver value for shareholders – just that there need not be a trade-off – and the ‘how’ really matters.*”

On the ground in our markets – such as Kurdistan and Nigeria – we have seen increased interest in our CSR courses as companies seek to engage with local communities. As course director **Chris Goodwin Hudson** put it, “*Across the board companies notice the impact their operations have on the poorest sections of the developing world. This carries specific relevance to energy, mining and large-scale infrastructure projects that affect local groups. Against this backdrop we see a growing emphasis in western corporates on stewardship codes and social governance, which needs to translate into really effective CSR at a local level.*”

Business leaders and academics will always argue about the precise purpose and priorities of a company: but a company that believes, or behaves as if it has no responsibility to wider society will quickly lose its licence to operate.

*For individuals looking at their careers in the energy industry, identify and develop transferable skills that will be relevant across the new energy mix and enable them to be part of a vibrant, exciting industry that powers the world back to healthy prosperity*

## Conclusions & Recommendations

1. Accelerate digital initiatives: they may be challenging to implement but the potential benefits are enormous, delivering reduced emissions, efficiency and better decision-making
2. Embrace renewables as an opportunity, not a threat. Even for those oil companies that do not invest in renewable production, there is an opportunity to use renewables to power their own operations and reduce their carbon footprint
3. Improve communications skills – especially the ability to explain complex ideas to a sceptical audience. Externally, this means listening to local communities and other stakeholders and recognising their concerns and interests. Internally, it means prioritising climate change as a driver of initiatives and being positive about the opportunities.
4. Competition: it used to be the other fossil fuel companies. In the world of digital technologies and renewables, there are many other competitors. It’s not just competition for investments or revenues, but also for people. By being proactive on climate change issues, oil firms will be better placed to attract finance, talent and business opportunities. In many areas oil and gas companies have strong competitive advantages which they can build on.

If you’d like to discuss any of these ideas further, in particular in relation to any training and career development needs you or your company have, please get in touch –

[angus@wbctraining.com](mailto:angus@wbctraining.com)