

WBC Climate Change Survey 2016

We recently conducted our annual survey on attitudes towards Climate Change within the Oil and Gas industry. As the sector that is at the heart of the fossil fuel debate, the industry's employees will have a profound effect on how the world responds: understanding their views will help business leaders and politicians communicate and implement policies and programmes for energy in the future.

Climate Change action is now government policy around the world. The oil and gas industry has played a crucial role in growing prosperity and raising living standards for the past 100 years but now finds itself at the centre of what could become a highly disrupted energy market, with its reputation, "licence to operate" and even its business model under threat. Disruptive change is nothing new for many in the industry but the current challenge has new implications for management and careers: recruitment and retention of talented staff is likely to become harder and a changing market place adds a further risk to investors and financiers. In the meantime, the world grows ever more hungry for energy and there is little sign that demand for oil and gas will go down over the short to medium term.

It is important to stress that we were not asking about the science behind the Climate Change debate: we recognise that for many it is a controversial topic and we are not trying to establish the merits of one scientific argument over another. Rather, we are trying to understand what people in the industry believe and feel about the issue and what we should do about it, based on what they know and hear.

Executive Summary:

- Survey of over 6,000 oil and gas professionals worldwide, based on 435 responses July/August 2016
- 92% agree Climate Change is happening, up from 84% in 2014; but only 50% say it is mostly due to human activities rather than natural causes
- 70% say it is a serious issue, with just over half saying it should be a high or very high priority for both governments and oil and gas firms
- The reason it should be a high priority for oil and gas firms? 39% say it's because firms have a responsibility to protect the planet
- To mitigate Climate Change, oil and gas professionals prefer to reduce coal emissions and deforestation; increase use of nuclear and solar power; and have government incentives to use renewables
- 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 (in contrast to the general public in the US)

About the survey

We sent our survey to our network of 6,500 oil and gas professionals around the world, as well as promoting it through The Oil & Gas Yearbook, European Gas Hub and Eurasian Business Briefing, with 435 responses gathered in July & August 2016. Half our respondents came from Europe, just over a quarter from North America, and the remainder from the rest of the world. Just over a third were in oil and gas companies, mostly privately owned or publicly listed, rather than state owned; about a quarter work for oil services firms, and the remainder worked for companies providing professional, financial or business services to the industry.

Results are presented here in aggregate form, without weighting for, say, size of company or functional responsibility/specialism, neither of which we asked for in the survey. Please bear this in mind when looking through the results: 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.

Where there are noticeably divergent opinions among respondents, particularly in the US, this may well reflect a difference in opinion between big multinationals and small businesses (for whom worrying about Climate Change may be an indulgence in the day-to-day challenge to survive) or between geologists – with their perspective that stretches back billions of years – and other managers.

For a full breakdown of respondents by region and sector, see chart at the end.

About Warren Business Consulting

We deliver Oil & Gas courses all over the world, helping NOCs, IOCs and service companies develop local talent. We believe success in the international oil markets depends on a thorough understanding of the industry's complexities. Technical expertise is not enough – it is essential to understand the geopolitics, the technology, the finance and the many different stakeholders, as well as knowing how to get the best out of a team.

As well as public courses, we also run in-house programmes, customised to meet clients' needs.

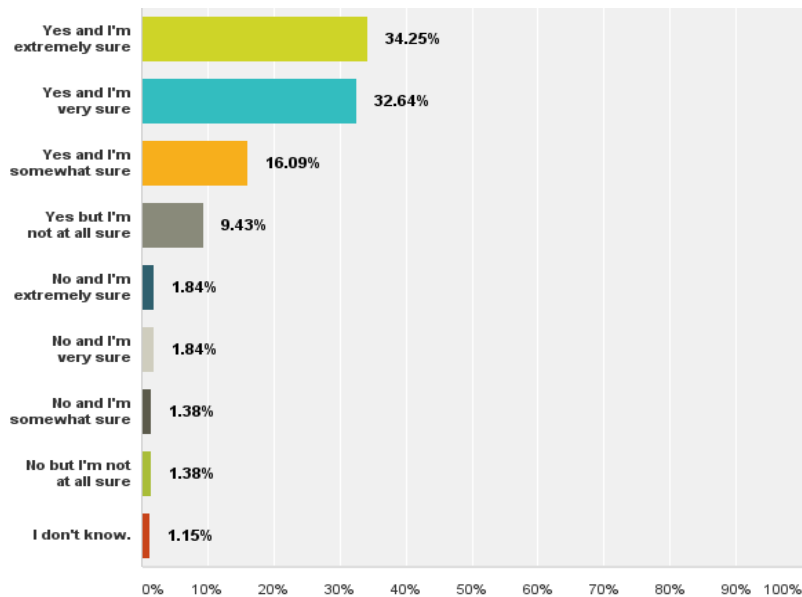
"Hands down, the "3 Day MBA in Oil & Gas" is the quickest, most effective way to understand the E&P business model. I wish I had taken this course at the beginning of my career."

Upcoming Courses

17- 19 October	3 Day MBA in Oil & Gas, Lagos
7 - 9 November	3 Day MBA in Oil & Gas, London
28 - 30 November	3 Day International Oil & Gas Contracts, Lagos
28 - 30 November	3 Day MBA in Oil & Gas, Abu Dhabi
12 - 14 December	3 Day MBA in Oil & Gas, Houston

For our other programmes or to discuss in-house courses, please contact us at training@warrenbusinessconsulting.com or visit our website www.warrenbusinessconsulting.com

Do you think Climate change is happening?



Almost all respondents, 92%, agree that climate change is happening, though a significant minority in the US challenge this.

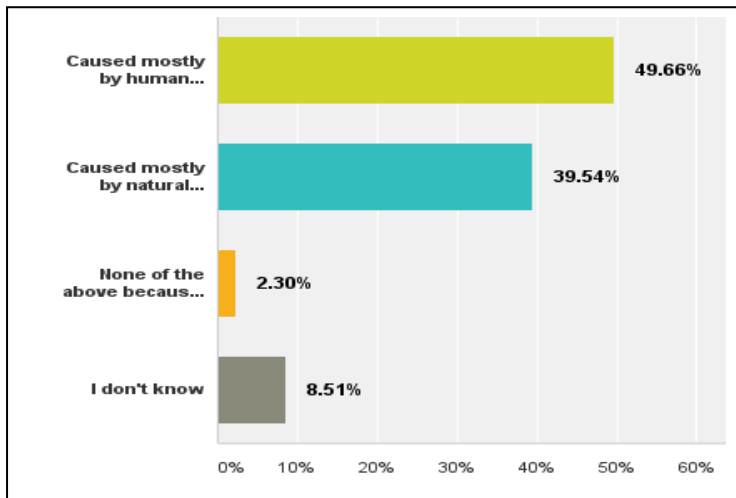
4 Year comparison

This is the fourth year we have run this survey. Since 2013, respondents have become more confident that climate change is happening, though this year we have seen an increase in the number attributing it to natural causes (40% vs 34% in 2013), with a corresponding dip in the number who think it should be a high or very high priority for governments (61% down to 54%).

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

There is a greater debate as to the cause: 50% believe it is caused *mostly by human activities* – “anthropogenic” – while 40% 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.

Assuming climate change is happening, do you think it is



Caused mostly by human activities

Caused mostly by natural changes in the environment

None of the above because it isn't happening

I don't know

Who's right, who's wrong?

At its most simplistic, the worldwide debate on CC seems to be split between four groups, and judging by the verbatim comments we received, each was represented to a greater or lesser degree in our respondents:

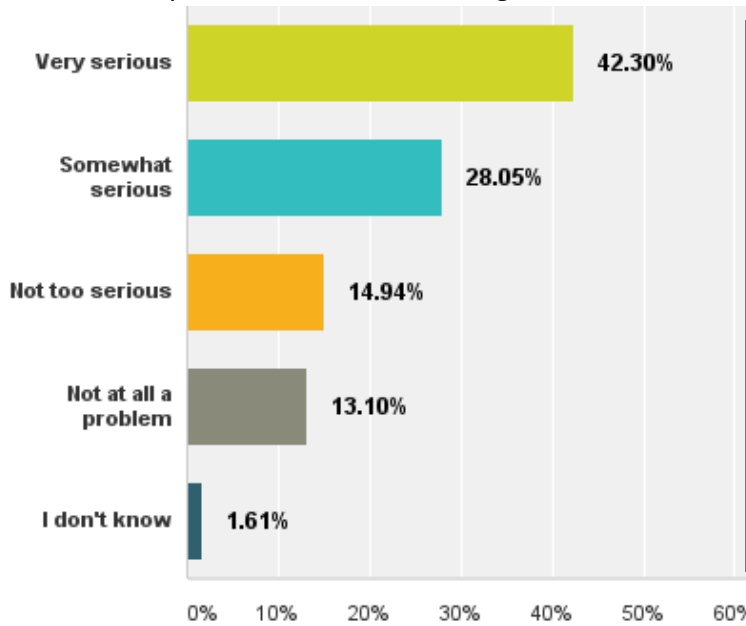
- *Climate change is not happening*
- *CC is or may be happening but is due to natural activities and is nothing to worry about unduly*
- *CC is happening, is due to both natural and anthropogenic causes and we must do something about it*
- *CC is happening at an unprecedented rate which is due entirely to man's activities, and extreme measures must be taken to stop it*

The global consensus is that it is happening, and that man's activities are playing a greater role than before. But beyond that, it is hard for even the well informed layman to judge the claims of one scientific expert over another. Understanding the full complexity of CC requires a level of technical understanding that is beyond most people, so the debate is littered with examples of the "appeal to authority" fallacy; furthermore, there are countless vested interests on both sides. The result is a debate that is increasingly strident and sometimes aggressive.

How serious is it and can the problem be solved?

Across the world, it's regarded as an increasingly serious issue within the industry:

How serious a problem is climate change?



These figures mirror the findings of larger studies among the general population: in a 2016 Gallup poll in the US, 41% said Global Warming was a serious threat, up from 34% in 2013, while a Pew Study in 2015 of 45,000 worldwide had Climate Change as the #1 international challenge, with 46% very concerned about Climate Change.

Another Pew study in 2015 showed 54% globally consider climate change a very serious problem.

Regional Comparisons

For the first time in 2016 we asked respondents for their location. Half came from Europe, just over a quarter from North America, and the remainder from the rest of the world. We have already touched upon the different attitude among North American respondents. Respondents here 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 (59% vs 28%); however, among the general population, the Gallup 2016 poll of US adults found 65% saying it was due to human causes (up from 57% in 2013)

In contrast, our respondents in Asia, Middle East and Africa tended to be more convinced that climate change was due to human behaviour (68%), felt more responsibility for protecting the planet and were keener for government intervention. They also preferred solar power to nuclear power as the alternative. These respondents were more likely to be working in state-owned firms than respondents from Europe or North America, though private sector firms still dominated.

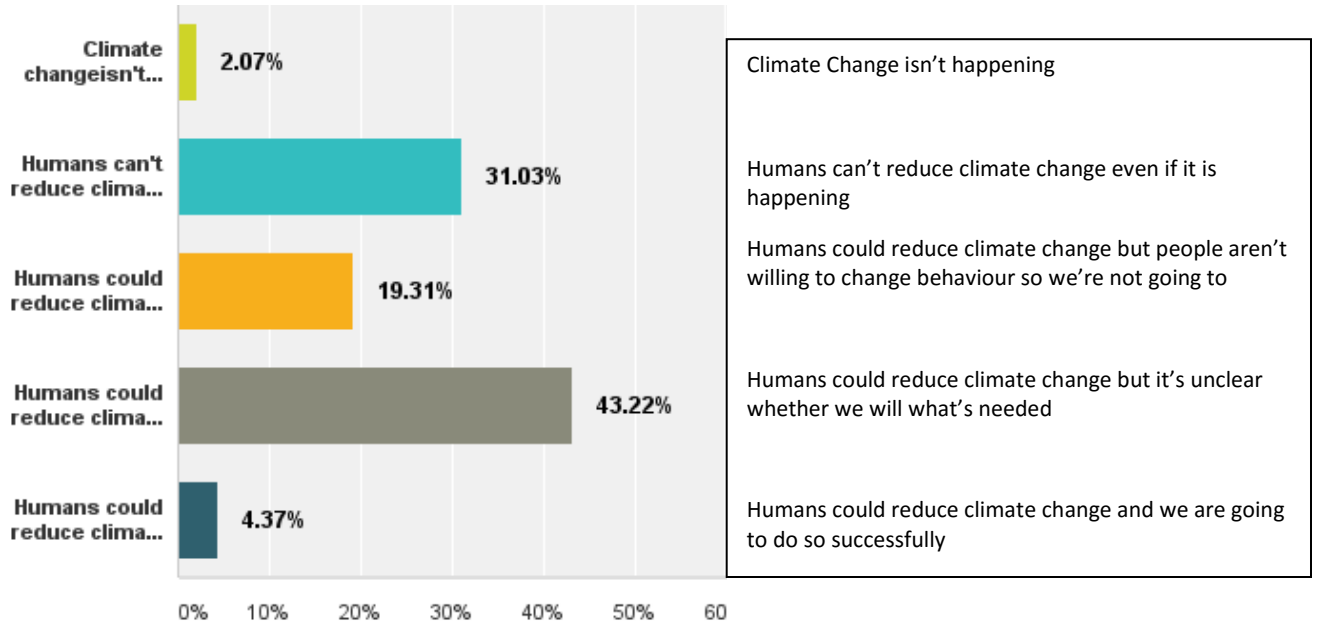
Do you think that climate change is happening?	North America	Europe	ROW
Yes and I'm extremely or very sure	56%	74%	70%
Yes and I'm somewhat or not at all sure	28%	23%	26%
No and I'm extremely or very sure	11%	1%	1%
No and I'm somewhat or not at all sure	5%	2%	2%
I don't know.	1%	1%	1%

The 2015 Pew study matched our global figure but there were regional differences: Climate Change was ranked as the #1 issue in South America (61%), and Africa (59%) while economic instability and ISIS terrorism topped the lists in the US, Asia and Europe with Climate Change down at 41%-42%.

Will we meet the challenge?

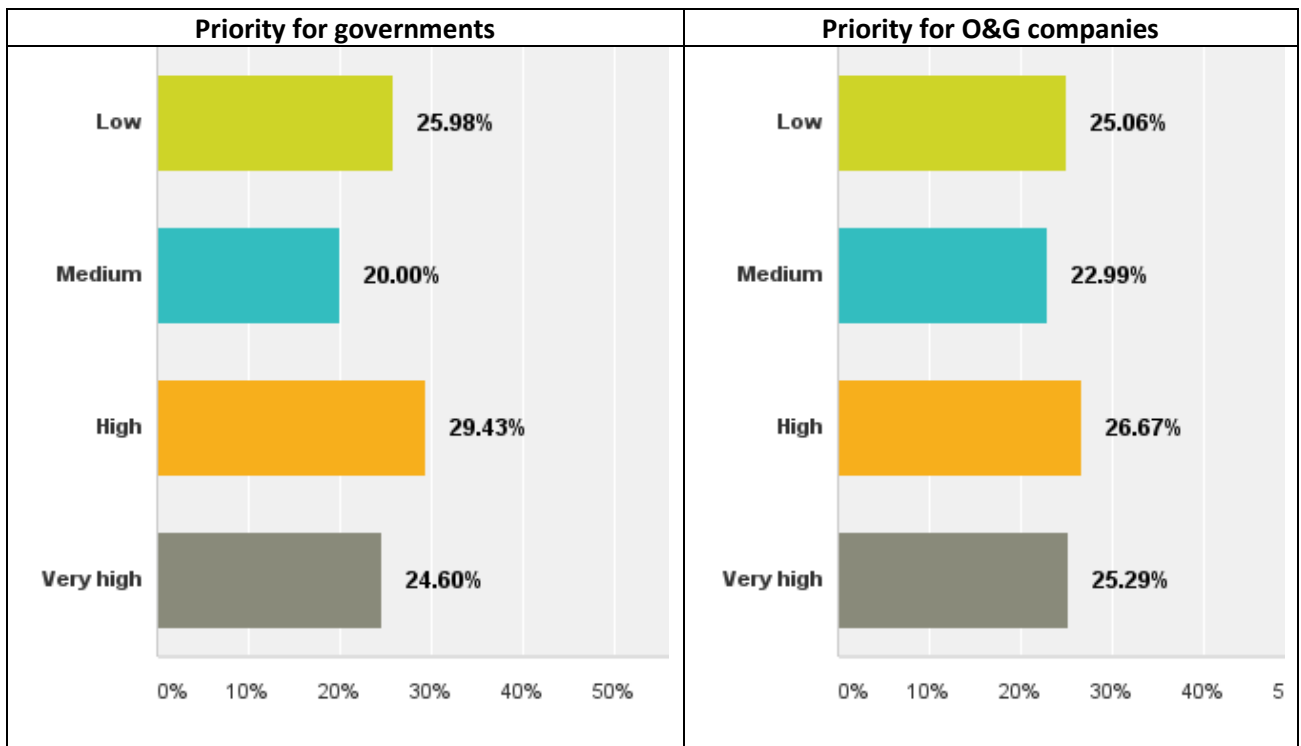
Respondents remain divided on whether we (mankind) will succeed in meeting the challenge – with just over half saying we can't reduce climate change, either because it's out of our control (31%) or because we won't change behaviour (20%), others (43%) uncertain as to whether we will change behaviour, and only 4% confident that we will reduce climate change successfully.

Which statement comes closest to your view?



A priority for whom?

Most respondents believe it should be a high or very high priority for both governments (though less so in North America) and oil and gas companies.



High Priority: how should oil and gas firms respond to Climate Change?

On the question of a company’s strategic response to Climate Change, in a comment on our previous survey in 2014, Peter Franklin of enstra said “Whether you believe in global warming or not, the answer is yes [you should worry] because the threat of global warming has spurred on the development of electricity storage technologies such that their cost is reducing by 10-15% per annum. What does this mean? For energy companies it means further diversification into renewables and energy storage – for E&P companies it becomes a sell, buy, or merge dilemma”.

The counter argument to this is that energy demand is set to soar (especially in India and China), Will renewables really keep up with this (the implied growth rate is very high by historical standards)? Governments will be left with a choice, support the economy or environmental action. Fossil fuel companies need to pick a path between two extremes: a) complete disruption of the energy markets; or b) a world in 2050 (say) where there is not enough energy to go around (no doubt who will get the blame if that happens: clue - it won’t be the renewables companies).

On the subject of blame: fossil fuel companies tend to come in for most of the blame from those claiming Climate Change is due to man’s activities. The role of the agri-business seems to receive less publicity, despite a UN report several years ago claiming that Livestock farming was responsible for more greenhouse gas emissions than the entire (fossil-fuelled) transport industry (“Livestock’s Long Shadow”- UN Food & Agriculture Organisation, 2006). Is this the result of better communication by the agri-business firms or because the “science” of fossil-fuel-driven Climate Change is easier for people to understand, or because the renewables industry is dependent on portraying oil and gas as the bad guys?

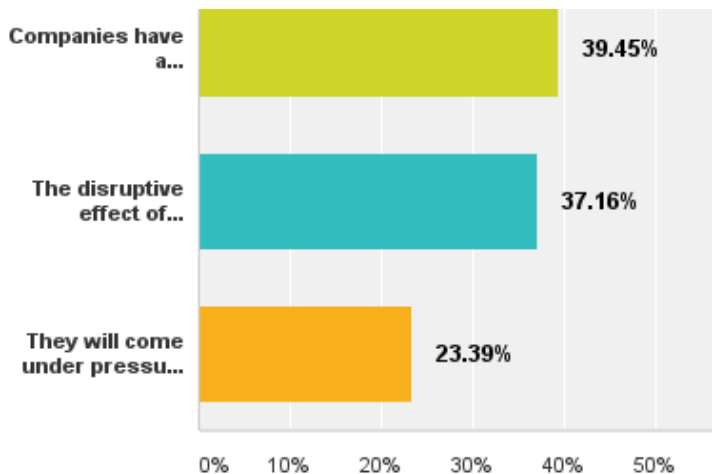
In 2016 we also asked *why* they thought it should be a high priority for oil and gas companies: 39% said companies had a responsibility to protect the planet, while 61% cited more explicit commercial reasons, namely that their business models were threatened by climate change disruption (eg the search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

If it is a high or very high priority for companies, is this primarily because...

- Companies have a responsibility to protect the planet

- The disruptive effect of climate change actions on energy markets is a major threat to their existence

- They will come under pressure from stakeholders and investors to make it a priority



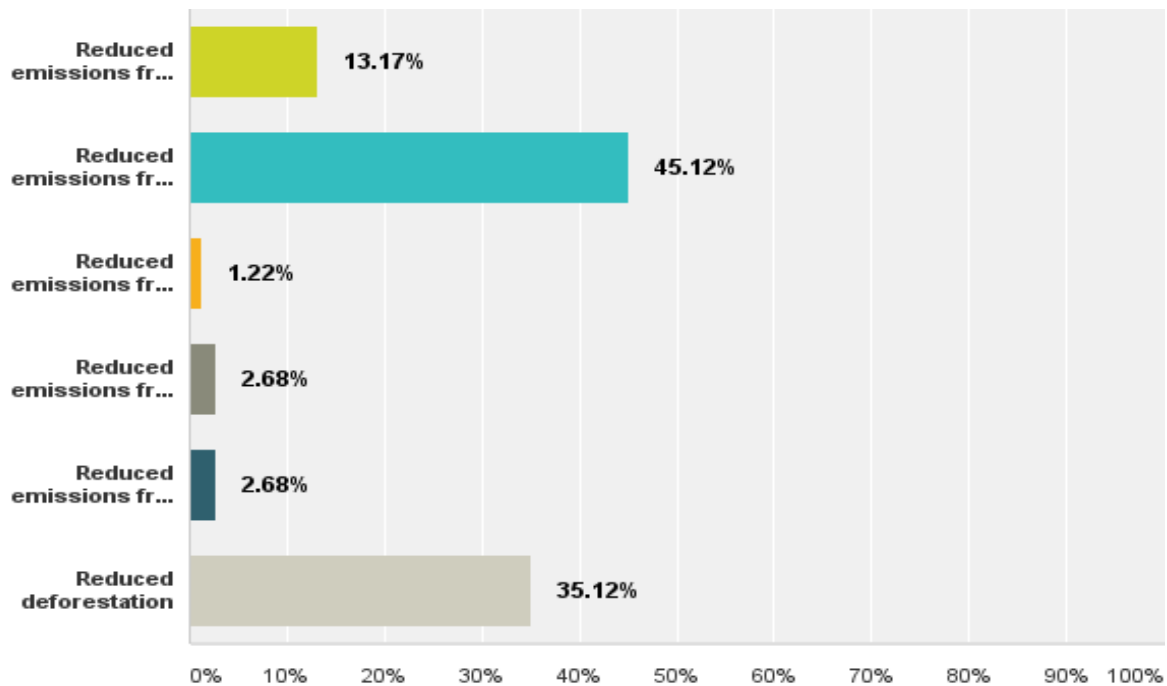
This is an interesting result, with significant regional variations. Respondents in Europe and Asia were more likely to say companies have a responsibility to protect the planet than those in North America, who cited commercial pressures as the reason to make it a high priority. This may simply reflect a cultural bias towards entrepreneurialism and commercial interests in the US – especially if respondents were from smaller businesses.

What can/should we do about it?

Inevitably perhaps, reducing emissions from burning oil came a distant third behind reducing emissions from coal or cutting back on deforestation, as the preferred way to reduce impact on climate change. It's noteworthy that so few considered carbon capture as a suitable mitigation process: in 2005 the IPCC estimated this could play a major role in carbon mitigation, reducing CO2 emissions from a conventional power plant by 80-90%. This raises a question: is the ultimate goal of governments a reduction in CO2 emissions, or an increase in the use of alternatives? The latter, of course, should lead to the former: but for oil companies it may sometimes feel as though the goal is to reduce reliance on oil and gas by focusing on alternatives.

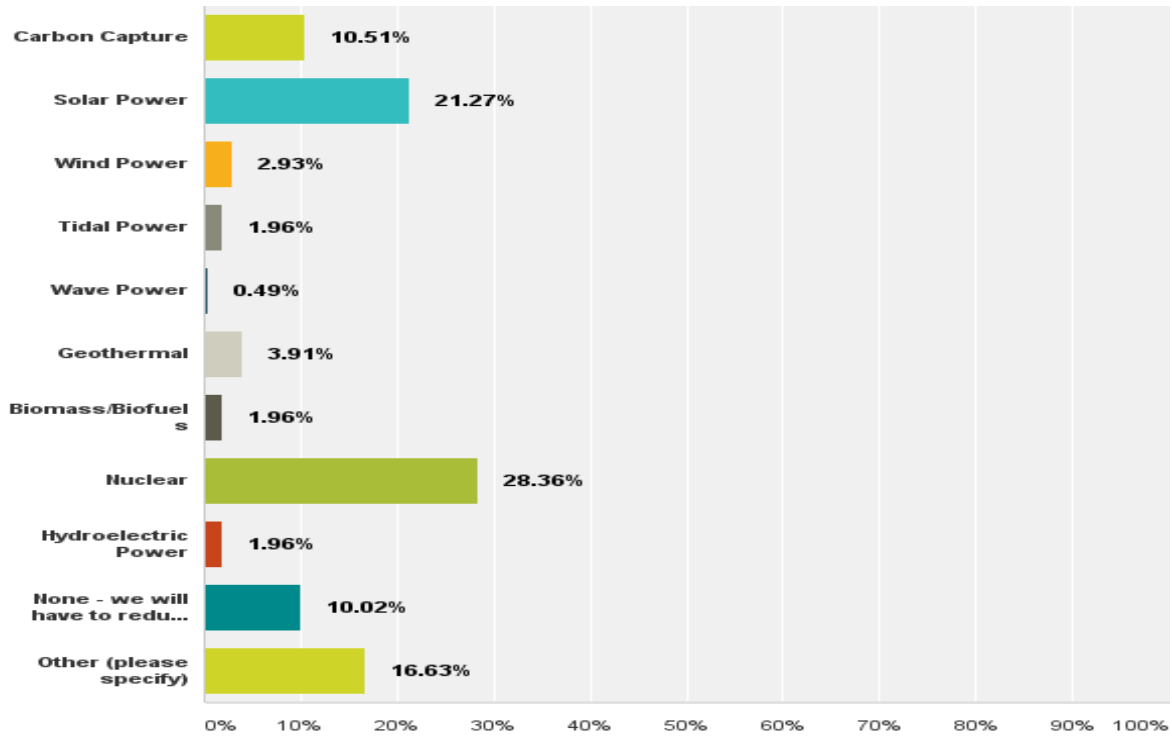
This is an area perhaps where the “tragedy of the commons”, an economic concept we cover in our 5 Day MBA, comes into play, with the conflict between self-interest (whether individual or company) and the collective interest: consumers and oil companies are reluctant to change behaviour if it hurts their own lifestyle or profits even while they recognise the long term negative impact on the broader community. Hence the limited appeal of reducing energy consumption and the focus on coal and deforestation.

Assuming climate change is happening, what is the best way to reduce mankind's impact?



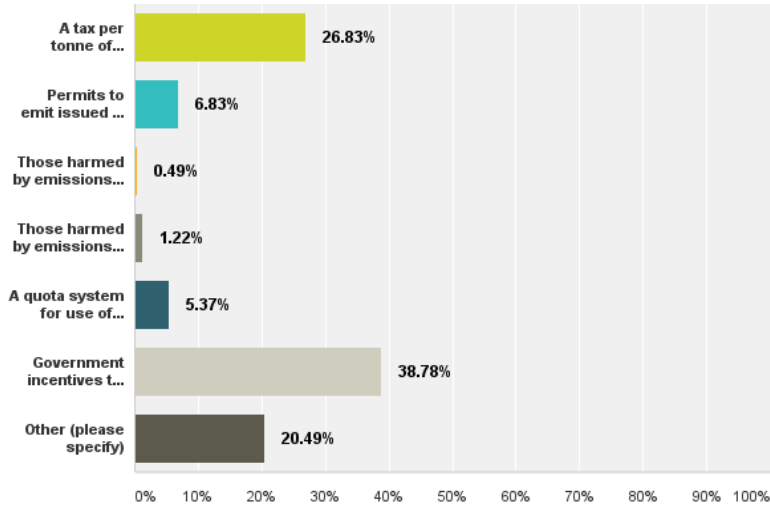
Answer Choices	Responses
Reduced emissions from burning oil (or oil derived products)	13.17%
Reduced emissions from burning coal	45.12%
Reduced emissions from burning natural gas	1.22%
Reduced emissions from burning wood	2.68%
Reduced emissions from farming animals	2.68%
Reduced deforestation	35.12%

Many alternatives are being developed. Which one of the following offers the greatest potential to be an economically viable method of reducing carbon emissions?



As alternatives, oil and gas professionals preferred to rely on nuclear (28%) and solar power (21%) as their main choices, with 10% wanting to reduce energy consumption. Of the 17% who offered other solutions, most called for a combination of all or some of the choices, depending on local conditions – “regional solutions for regional energy needs”. A small minority called – in strong terms - for population control.

What is the best policy tool that governments have to reduce any kind of emission to the economic optimum?



In terms of government policy tools, incentives to use alternatives were preferred over tax per tonne of emissions. This was a new option offered in the survey, and had a dramatic effect compared to previous years, reducing the number voting for emissions taxes from 48% to 27%. A fifth of respondents had other suggestions – mostly that government should stay out of it altogether, though a fair number called for more regulation, including, for a small minority again, population control.

A tax per tonne of emissions	26.83%
Permits to emit issued by the government (such permits would be tradeable)	6.83%
Those harmed by emissions take out court injunctions against emitters thus reducing emissions to zero	0.49%
Those harmed by emissions sue emitters for damages under tort law	1.22%
A quota system for use of natural resources	5.37%
Government incentives to use alternatives that have lower or zero emissions	38.78%
Other (please specify)	20.49%

Conclusion and questions

What does this mean for careers and management in the oil and gas industry? As stated above, we are more concerned with understanding how the industry feels about this issue (and by implication, how it is likely to behave) than delving deep into the rights and wrongs of the arguments.

In our view, government's responses to climate change have several implications for managers and leaders in oil and gas as they consider their career development:

1. It's a boardroom concern now, so they need to understand the issue and be able to conduct a reasoned argument about it.
2. Communications skills – especially the ability to explain complex ideas to a sceptical audience – will be even more important.
3. Managing stakeholders: firms are reviewing how they approach stakeholders; managers need to understand who those stakeholders are and how they are changing.
4. Recruiting and retaining staff: it is well established that Millennials – Gen Y – take Climate Change very seriously, and are often sceptical about oil companies' commitment to social responsibility. Outside the petro-technical disciplines, recruiters face new competition for talented engineers and managers from the likes of Google and Facebook.
5. Competition: it used to be the other fossil fuel companies. Now it could come from any direction. Uber, Google and Apple are all challenging the car manufacturers for the future of transport. Who will be challenging oil companies for the future of energy?
6. Strategic planning: being ready to adapt business models to reflect the changing role of oil and gas in the energy mix and to respond to government policy initiatives. This means understanding more about the whole value chain, rather than just one element or function within it.

Respondent profile

Where do you work?

At an oil and gas company in private ownership or whose shares are publicly traded	29.76%
At an oil and gas company that is state owned or mostly state owned	5.37%
At an oil services company or contractor that serves the oil and gas industry	22.44%
At a professional services firm such as a law firm, consultancy or accountants that serves the oil and gas industry	22.20%
At a financial services firm such as a bank, investment fund, investment bank or hedge fund that invests in or works with the oil and gas industry	1.22%
At another type of firm that is directly involved with or serves oil and gas	13.66%
At a firm that has nothing or very little to do with the oil and gas industry	5.37%

And your location?

North America	27.38%
Europe	50.12%
Middle East & North Africa	7.82%
Sub-Saharan Africa	4.40%
Asia Pacific/Australasia	5.87%
Central & South America	3.42%
Russia and Central Asia	0.98%

<http://www.pewglobal.org/2015/07/14/climate-change-seen-as-top-global-threat/>

<http://www.pewglobal.org/2015/11/05/global-concern-about-climate-change-broad-support-for-limiting-emissions/>

http://www.gallup.com/poll/190010/concern-global-warming-eight-year-high.aspx?g_source=global%20warming&g_medium=search&g_campaign=tiles

PCC, 2005] *IPCC special report on Carbon Dioxide Capture and Storage*. Prepared by working group III of the Intergovernmental Panel on Climate Change. Metz, B., O. Davidson, H. C. de Coninck, M. Loos, and L.A. Meyer (eds.). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 442 pp.