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Special report

# Responsible Investment in Oil & Gas

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# Responsible Investing in Oil and Gas

"Responsible investing" and "ESG" (Environmental, Social, Governance) are terms we are hearing more and more – with $12tn of funds orientated towards ESG in the US alone.

But not much of these funds are finding their way to oil and gas companies, even ones which do much more than the minimum about ESG, including involvement in carbon capture and storage schemes, and which can provide good returns to investors. Our event explored better ways that "ESG investors" might get confidence that their portfolio companies are developing suitable ESG activities.

There are opportunities for investors here. The oil and gas industry is already suffering from poor liquidity and share price volatility and a high cost of capital, and its share prices undervalued compared to its peers, perhaps a result of climate concerns.

Perhaps better communications would help. This was a theme of an opening talk by event chairman Greg Coleman, chairman of oil and gas consultancy Petromall and a former head of investor relations with BP.

In his former employment, "NGOs were much more active in persuading us to do something than any of our investors were. I would have a continuous stream of phone calls asking what we were doing about climate change, biodiversity, safety, you name it," he said.

One example was a conversation he had with Greenpeace. "Greenpeace do understand these issues. We learned to respect them since they do have something to bring to the table. If you treat them 'sue them so they stop interfering' – as one company is doing right now –you're going to get an antagonistic outcome.

"We had several really constructive meetings with Greenpeace. I'm not a supporter of the extreme actions that Greenpeace undertake but I think they bring something to society."

Mr Coleman said that the current market valuations for oil and gas companies, large or small, is "way below what internally they would consider to be their value." Even Saudi Aramco struggled to get the interest in the company's shares which the owners were looking for.

There is not much buying and selling of shares going on in the market, which means that any disappointing news means there are many more sellers than buyers, and the opposite also happens. "It causes extreme volatility in the share price," he said.

The industry is less attractive to private equity investors, who today are typically looking for 3-5 times their initial investment within 3-5 years, which usually equates to a 20-25 per cent return. This is quite difficult for the oil and gas industry to achieve.

Whether investment companies undertake a serious screening of their target companies is a different question. "They all say they do. My assertion would be, they go through a checklist, they don't really know whether a checklist is

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**Note:**

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meaningful or not," he said.

Data from Morgan Stanley showed that over 2004 to 2018 there was no obvious different in returns between "ESG investors" and traditional investors – neither better or worse. "So many investors say, it doesn't matter, we'll just invest in the best company we can see and let the market determine if we're right or wrong."

Mr. Coleman presented some ESG related statements from an announcement by Oil and Gas UK, the UK oil and gas industry association. "Tell me if you think this is persuasive to their audience – stakeholders – that they are doing a good job of managing their Environmental and social impact," he asked conference delegates.

They say they are reducing CO2 emissions from operations by 3 per cent. "Frankly, that's not going to meet society's expectations," he said.

They say they only contribute a very small amount to emissions of CO2 in the UK. But this is ignoring the impact of their product use on CO2 emissions – they are just talking about their operational emissions.

They say they only dump 21,000 tonnes of cuttings into the sea. "It sounds like a big number to me," he said. "Some people would have said years ago, it's a big sea and a small amount of cuttings."

Only 120,000 tonnes of waste are generated. Only 73 per cent of chemicals are low hazard chemicals when disposed.

This is not the way to persuade people that they should follow us and support us in our industry," he said. "If this is the way the Oil and gas association is trying to promote themselves, they might want to consider how this is perceived by their stakeholders."

Mr. Coleman noted that many rating agencies have developed scorecards to rate companies on environmental and social governance.

"I don't think they are all that meaningful, as soon as you take a second level into some of these scorecards, you realise that it is done by someone sitting in an office in Canary Wharf or New York looking at a company who's got operations all over the world. So, tell me how they actually know these things are meaningful."

## Myths and problems

The event exposed two part-myths which appear to be widely believed by E&P institutional investors.

The first part-myth is that ESG performance is aligned with shareholder returns. This is not seen in data of past financial performance of "ESG funds" compared to others. And achieving ESG performance in many cases can be very expensive - such as investing in carbon capture and storage schemes and environmental mitigation. It is also a myth that oil company valuations should be downgraded since they are based on the value of reservoirs they own and may never be able to produce, since oil and gas consumption is expected to be an important component of the energy future for several more decades. Expecting ESG performance to be aligned with shareholder returns sounds like wishful thinking.

This does not mean that investors should not seek out "high ESG" funds. Behind investment funds and pension funds are individuals, often grandparents, who, quite reasonably, do not wish their money to be invested harming the world their grandchildren will live in. But this leads to a problem - how do investors discriminate between choices? There is a wide range of audit schemes, but, as we heard in the conference, reasons to be sceptical about their quality and 'on the ground reality'. The data is not consistent or gathered together in a way which makes it easy to compare. Investment funds have also laid off many of their in-house industry experts.

The second part-myth which many "ESG" investors appear to believe is that everything about the oil and gas industry is bad when it comes to climate. There is much about fossil fuel companies which needs focus, and it is directly and indirectly responsible for 42 per cent of CO2 emissions. But the oil and gas industry has the capacity to do much from operational improvements to product improvements to carbon capture and storage to mitigate this, if regulators and investors would support it. And the industry can do good in many other ways, such as when it operates responsibly in developing countries. But again, investors have difficulty discriminating between choices.

# ShareAction – defining responsible investing

UK charity ShareAction defines and promotes responsible investing, and shares data about how institutional investors compare. CEO Catherine Howarth told the story

ShareAction, based in London, is a charity which promotes responsible investing and publishes data about which investment groups are most responsible, a "watchdog in the global investment sector". It also highlights whether investment groups can make a credible claim to understand what their investees are doing.

"There's a lot of hype, blather and nonsense in the field of responsible investment. It is part of our role at ShareAction to try to cast a little bit of useful light on that, help people know what's for real," she said.

"Responsible investment has been defined as "an approach to investment that explicitly acknowledges the financial relevance to the investor of ESG factors and of the long-term health and stability of the market as a whole."

This definition addresses the fact that companies may be less valuable in a future world which places much higher restrictions on CO2 emissions, amongst other things.

In practice "responsible investment" is largely about engagement with companies, and involves investors having a more active dialogue with the boards of companies in their portfolios, and making more active use of shareholder rights," she said.

Responsible investors are also expected to be collaborative. Large investment portfolios are highly diversified, so companies limit their exposure to any one company, but that also means they limit their influence – and need to collaborate with other investors to drive any change.

An illustration of the drive to responsible investing is a story that the Japanese government pension fund moved assets from

*ShareAction CEO, Catherine Howarth*

Blackrock to other global fund managers, including Legal and General Investment Management, who had – they thought - a more credible responsible investment pro-

cess. "The basis is that they were unimpressed by Blackrock's voting, stewardship and overall engagement with ESG risks and issues in the companies in those portfolios," she said.

There is often a gap between what investment groups promise their stakeholders about what they do, and what happens in practice, she said.

For example, 2250 investors, representing $85tn of assets, more than half the global total in capital markets, have signed up to the Principles for Responsible Investment (PRI), she said.

ShareAction is doing a review of the 75 largest fund managers in the world, all signatories to PRI, and found that their performance in responsible investment is actually "highly variable. Standards and seriousness about this is a seriously mixed bag," she said.

## Different factors

Not all industry sectors are put under the microscope by responsible investors. The apparel sector has a huge environmental impact, yet this has been neglected whilst concerns about human rights and labour have dominated. Environmentally, the oil and gas sector "has been in the headlights". "It is not always entirely logical what issues come up," she said.

ESG factors can drive opportunities as well as risks. In the food sector, for example, companies producing fake meat, which is seen as a "big trend" today, become hot shares. There are electric vehicle manufacturers also seen as being on the right side of ESG.

"The investment sector has always been a frothy place where fads and fashions came in and out - and responsible investment is no exception to that."

## Climate

The climate issue is "an absolutely dominant question within the field of responsible investment," she said.

The investment community has got much more focused on environmental risk following the Paris Climate Agreement (2015). Another driving force was Mark Carney, governor of the Bank of England, who in his role of chair of the Global Financial Stability Board, initiated a Taskforce on Climate related Financial Disclosures (TCFD), developing a framework for companies, investors and asset owners to report in a structured way how they are managing and considering climate risks.

"Not many pension funds have signed up to do disclosures using this framework, but it is a globally recognized standard," she said. "There is a big debate about whether legislation should come in that mandates disclosures based on this framework. So far it is just voluntary, but I don't think that will last for long."

Another factor is people's awareness of how the climate is actually changing, with floods, droughts and hurricanes. Another factor investors are aware of is changing consumer patterns, such as increase in vegetarianism.

There is also legislation being brought in both in the UK and the EU requiring investors to assess climate related financial risks. Since October 2019, UK pension trustees are obliged "to produce statements of investment principles and stewardship reports that explain how they assess and manage ESG risks," she said. "From October 2020 they have to report publicly on how they are doing this. That's an interesting trend. The same is coming in at EU level."

Another factor driving market interest is the falling cost of renewables and environmental regulations.

## How fund managers compare

ShareAction analyses how well the world's largest fund managers, insurers and pension funds are performing on climate, with a methodology aligned with the TCFD framework. This looks at issues such as whether there are board members with a special mandate to focus on climate related risks and understand them, and how are board members' competences assessed.

It recently published studies of the 80 largest insurance companies and 100 largest public pension funds globally, including best practice guides.

"These institutions, that make critically important capital allocation decisions, are really important players if we're going to achieve a low carbon transition that isn't a real mess," she said.

A recent report published by ShareAction, "Voting Matters", looked at 57 of the world's largest asset managers and how they voted on 65 different shareholder resolutions linked to companies' climate performance.

Following the publication, "we had pension funds ringing us up from all over the world, very interested in knowing more about how they can quiz their fund managers on these climate resolutions," she said.

The research exposed a large gulf between European / Japanese fund managers and US fund managers. Top score went to UBS, which is "voting for virtually all of the 65 climate related resolutions", with Aviva, Allianz and Nikko (Japan) also at the top. Bottom is Capital Group in the US, which "didn't really support any of them".

Although there have been some US fund managers doing "quite a lot of voting in support of various shareholder resolutions."

To get more US managers taking the climate issue seriously in respect of voting behaviour, we would probably need to see investors and pension funds making decisions to allocate their assets to fund managers which are more active on climate issues, encouraging all funds to behave similarly.

Although some of the resolutions are "more aggressive", she acknowledged, giving climate friendly funds reasons not to support them. For example, resolutions which "ask for boards to transition their business models and show shareholders how they are doing it – in a way which aligns with the goals of the Paris agreement."

2020 could be quite a significant year in terms of voting and investor behaviour, she said.

"Bearing in mind half the world's assets are signed up at least in principle to something called 'responsible investment', investors will escalate their dialogue with the world's high carbon emitters, and also – with companies that finance and insure them," she said.

"That means the insurance sector talking to itself in some cases because they are very large investors."

In 2020 we may see more shareholders of oil and gas companies voting against their auditors, for failing to incorporate climate risks and environmental regulations in their audit reports. There could be votes against the annual report, the accounts, the directors and the directors' renumeration.

"There will be dialogue going on about how investors want executives to be appropriately incentivized in line with their interests," she said.

We have seen the European Investment Bank, the largest public bank in the world, financed by all European governments, making a decision in November 2019 to entirely phase out financing of fossil fuels, including gas.

We are seeing more sell-side financial analysts talking about climate risks, for example a recent note on SASOL by JP Morgan said the company did not have a credible story for investors around its

management of climate risks.

The International Accounting Standards Board put out a note in November 2019 saying that exposure to climate risks should be included in core financial reporting, as it can be a "material risk" for firms in a number of sectors.

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## Questions

One audience member asked Ms Howarth if non climate issues should be taken into account when weighing up the impact oil and gas companies have on the world.

Ms Howarth replied that she "sees the need for a very aggressive plan to provide energy for people around the world who don't have it. But I'm more positive about the potential of renewables to provide a lot of the answer to that. Climate change is enormously dangerous for those people too.

"It is an enormous question – and not one the investment community can be given full responsibility for."

Another audience member said that there were financial risks in investing in renewable energy too, having spent the past 10 years investing in clean energy and sitting on company boards, and seeing "many billions crash and burn in the clean tech area".

Ms Howarth acknowledged that "clean green investments have been a real mixed bag in terms of returns, plenty of pension funds have been spooked by that. But all investment involves risk, and skill, and there are people who have made a lot of money out of low carbon investing as well," she said.

"We are not saying people should jump into high risk small companies in the Greentech sector. We are calling this a much more systemic challenge in which we need to achieve low carbon transition across all of the corporate community. Purposeful dialogue by supportive investors with company boards in all sector is critical to making this happen. "

Climate issues affect energy users as well as energy producers, because they also "need to go on a decarbonization journey," she said.

One audience member asked whether it is government's responsibility to set regulations around climate, which would then force the industry to change, and drive market change.

"Government is engaged in providing new regulations – which do have an impact on business," she replied. But "government moves slowly sometimes, and a lot of where government goes, is where leading companies have already moved."

ESG is designed not just for changing the world, but for investors to manage the "material financial risks relating to ESG Factors," she said. "It is part of what being prudent and effective as an investor now looks like."

We often see that "companies which manage ESG issues cleverly are more robust," she said. Although, "there remain plenty of companies which do terrible things which are profitable as well."

In terms of audit, some of the "more climate focused institutional investors" are writing to audit firms and asking them to improve the focus and capabilities they have on climate issues.

Shareholders get to vote on the auditor at every annual general meeting. "It's a non-event – there's never any scrutiny really of whether the audit process is throwing up helpful insights. Auditors get voted through 100 per cent, 99 per cent," she said. "I do think that's an area you will see development."

"There's a lot of expertise in audit companies on ESG, on the consulting side, but not enough knowledge sharing within those audit companies to help with a high-quality climate risk management audit focus for the future."

# McKinsey – how oil and gas operators are responding

Chantal Beck, partner in McKinsey's London office, specializing in oil and gas energy transition and decarbonization, talked about how oil and gas operators are responding to climate concerns on a strategic and operational level.

"We've seen increasing interest and societal pressure around energy transition," said Chantal Beck, partner in McKinsey's London office, specializing in oil and gas energy transition and decarbonization.

"We think that's making a big impact of how capital is flowing in the oil and gas sector," she said.

The potential impact on the oil and gas industry can be assessed by considering a number of different possible pathways. For example, if society is to get on a 1.5-degree scenario, it means a need to reduce CO2 by 60 to 80 per cent, which will have implications on oil demand.

McKinsey estimates that would mean electric vehicles comprised 81 per cent of all new car sales in 2050, a big jump from about 1 per cent now. There would be a big corresponding change in liquids demand.

It estimates that plastics recycling would need to increase from 4 per cent now to 23 per cent in 2035 and increasing further to 2050.

Hydrogen could comprise 18 per cent of the "energy mix" by 2050.

The marine sector will have choices for future fuels – will tankers run on LNG or synthetic fuels or hydrogen. What are the required infrastructure investments and what is the timing?

Many people talk about planning for a 1.5-degree scenario, but many companies also doubt if it is feasible. There are questions about whether or not the build out will "happen or materialize at the pace that's required."

*Chantal Beck, partner in McKinsey's London office*

Ms Beck highlighted a number of factors that are "really catalysing the commitment around the energy transition".

There has been a 60-70 percent cost reduction in solar and wind over the last 4 years, "which has dramatic implications in terms of thinking through the transition." The declining cost of renewables is supporting decarbonizing some oil and gas operations.

There are discussions about the relative costs of grey (normal), blue (gas derived, carbon sequestered) and green (renewables derived) hydrogen.

"We see the economics of green hydrogen are still further out. But in very local markets where you have very cheap access to renewable energy, companies are starting to pilot hydrogen production."

"We're starting to see oil and gas companies becoming increasingly transparent around their commitments, making commitments either as individual companies or as a collective," she said.

For example, OGCI is a group of oil companies making a commitment to reach its methane intensity target of 0.25% y 2025.

The oil and gas sector is coming under increasing societal pressure. In 2009 it ranked 14th more popular employer for graduates, but has now dropped to 35th. "One of the most provocative discussions at one of our executive round tables was a debate on is there a talent crisis in oil and gas and how to address it," she said.

Investment dollars are increasingly moving from fossil fuels to other energy investments, she said.

The oil and gas industry's operations represent about 8 per cent of total CO2 emissions (around 50 gigatonnes CO2 in 2015), she said. But if you add together scope 1 (operations) with scope 2 (purchased products) and scope 3 (sold products), it results in 42 per cent of all emissions, she said.

Publicly, Shell has been inviting its customers to work together to work out ways to decarbonize their businesses – an example of an oil and gas company exploring ways to drive energy transition in its customer industries.

Oil companies are starting to make commitments as individual companies, an example being Repsol announcing in December 2019 a commitment to being "net zero" by 2050.

Oil companies are thinking about things they can do today, and abatement opportunities "that are further out and may require some kind of unlock," such as carbon capture and storage in cement and steel.

Methane emissions represent 47 per cent of emissions from oil and gas operations. "That is an area where we think there's still potentially more measurement, tracking [needed]," she said.

Oil companies are looking for ways to optimise operations, such as improving the power system, and finding ways to reduce its capital costs.

An example of Norway's Johan Sverdrup field, which is using electricity generated onshore with hydroelectricity, rather than generating it offshore with diesel generators, and in doing so has CO2 per barrel of 0.67kg, compared to an industry average of 18kg.

Some oil companies are actively pursuing CO2 EOR, including Occidental Petroleum, which has project in the Permian Basin of West Texas and Southeast New Mexico. Regions like the Middle East have opportunities for innovative cluster developments to utilise co2 from sour gas fields for CO2 EOR in surrounding fields.

Companies are thinking of their overall portfolio and its emissions, for example moving away from high emitting resources. The costs of these operations looks different depending on the future carbon price scenario you use.

Companies have been asking where they sit relative to others in "emissions per barrel". McKinsey has been providing benchmarking services around this.

It makes adjustments to consider the field properties, so it is looking at the efforts being made rather than just the field properties. So, operators can really understand what fields "should emit" to be a top quartile performer.

"Many players are starting to think about this in a much more granular way," she

said. "We see that it is critically important to really understand the carbon abatement cost curve for each field to inform decisions on abatement priorities"

Companies are aware that a balance is needed. They need to find ways to continue to provide energy but constrain within a 1.5-degree scenario.

There are some interesting ways to fund climate investment. For example, entities committed to net zero projects have offered to buy CO2 offsets for $40 per tonne CO2. So, a low carbon oil and gas project can find investment through a bilateral arrangement.

Although many oil & gas players, speak publicly about the commitment to the energy transition, the current investment in clean technologies is still "a very small piece of the total clean investment required," and a "small proportion of existing oil and gas capital allocations," she said.

McKinsey analyses what companies are doing. Some oil companies are involved in everything – biofuels, electric cars, carbon capture. Other companies, while others are "being much more targeted about where they are choosing to play," she said.

There are other strategic questions, such as if you get involved in biofuels, how do you source the feedstock. "You get into a very different game."

Companies getting into new business segments need to find ways to competitively differentiate themselves. The skills which work in the oil and gas sector, such as ability to take the right sort of risks, build scale, and deliver large scale projects, "are no longer critical elements or sufficient to win in other parts of the value chain."

Ms Beck was asked what carbon price most oil and gas companies are using in their modelling.

She said that McKinsey usually models scenarios including $30, as well as and $100. Some oil companies are modelling at carbon prices as high as $60 for evaluating the economics of new projects, she said.

# OGCI – providing oil industry leadership on climate

## The Oil and Gas Climate Initiative sees its role as providing leadership for the oil and gas industry on climate

The Oil and Gas Climate Initiative, a group of 13 oil majors, has a mission to "bring leadership into the space of oil and gas and climate change," said Charlotte Wolff-Bye, Equinor ExCom Representative and Low Emission Opportunities Workstream Lead with OGCI.

The group represents around 32 per cent of oil and gas production, equivalent to some 20 per cent of the world's energy needs. It was formed out of the World Economic Forum Oil and Gas group in 2014.

2015 was a year of big change for climate change, both because of the Paris Climate Agreement and because of the agreement on the United Nations Sustainable Development Goals. It also gave business, government and NGOs a "vehicle" to work together under the UN system.

"It was recognized that private sector and industry has an important role in shaping the future that we all want," she said.

Part of the work for the first five years has been establishing what the industry's role in this "space" should be, and where it can make a material impact, she said.

A major emphasis is reducing CO2 emissions from oil and gas operations, which currently account for 8-10 per cent of all the man-made CO2 emissions in the world.

Another emphasis is "accelerating low carbon solutions", and "inspiring and driving change in the energy transition."

After a formal launch in 2015, OGCI launched OGCI Climate Investments in 2016, a $1bn project fund, to support its ambitions.

The work is organized into a number of workstreams.

The biggest is carbon capture, utilisation and storage. It has earmarked roughly half of its funds to go into CCUS. It announced a "CCUS Kickstarter" project this year, to bring an CCS ecosystem together and develop value chains, with regulators, decision makers, industry and financiers.

*Charlotte Wolff-Bye, Equinor ExCom Representative and Low Emission Opportunities Workstream Lead with OGCI.*

OGCI is directly involved with Norway's Northern Lights project, via Equinor, which is involved in the project and in OGCI (and is Ms Wolff-Bye's employer). It also has a project in the UK, and developing new opportunities in China, Saudi Arabia, The Netherlands and the Gulf of Mexico.

Another workstream is focused on energy efficiency, where "there's an enormous amount of effort that could still be done to remove emissions from the oil and gas industry's upstream operations," she said. Although maybe the OGCI members themselves have already done most of what is possible. OGCI wants to provide leadership for the whole industry, and invest in "near to market" technology, so the whole industry can benefit from it.

Another stream is "low emission opportunities", with a small group, mainly economists, which "gaze into the future and assess and create appetite for new areas for OGCI to engage in," she said.

Another focus area is "nature-based solutions / natural sinks".

Probably the most active group is on gas – including reducing methane emissions, work on flaring reduction, and the role of gas in the future.

A further workstream is transport, looking at "which industries could we engage with most productively to help those scope 3 emissions."

In 2019, activities have also included looking at issues related to climate change but not to emissions, such as poverty and sustainable development. "Companies represented in OGCI have a big role in helping developing countries to get on the right trajectory," she said.

This group engaged stakeholders in dialogue through dedicated sessions in Brussels, China and Latin America, to get different answers to the question of what it means. "We won't be able to succeed in driving down emissions unless we also address other society woes," she said.

The oil and gas industry has seen its role in the past as mainly energy provision, and not engaging in how energy is used. "We need to

forge a new leadership style," she said.

Ms Wolff-Bye was asked what OGCI could do to influence oil companies which are not members. She said that it can provide leadership – something which others can follow. An example of leadership could be Tesla Motors – before the company was formed, automotive companies thought they wouldn't need to make electric cars until about 2025. But because of the success of Tesla high performance electric vehicles the European automotive industry had to fast-track their plans.

Ms Wolff-Bye was asked if OGCI could help improve the reporting systems or make it more standardised.

OGCI has not signed up behind any specific reporting protocol, but it is actively observing the development of many of the protocols at a practitioner level, she said.

Some ESG analysts have quite a "shallow knowledge of the industry" and energy systems. For example, when people ask why we can't switch to renewables overnight. But other parts of the investor community get involved in much deeper discussions, such as how to make an investment work in projects like the Teesside Clean Gas project.

# Chris Wheaton – an investor's perspective on E&P ESG

Chris Wheaton, investment manager with Stifel, an investment bank, and an oil and gas industry specialist, gave some perspectives as an investor on how to judge ESG in the E&P industry

"For me, ESG is as big an issue as the oil price," said Chris Wheaton, investment manager with investment bank Stifel, and an oil and gas industry specialist.

Mr Wheaton studied chemical engineering and worked for 21 years as a financial analyst and fund manager in the energy sector, at one point running an investment fund with Eur 500m under management. It is becoming comparatively rare to find people at investment firms with specialist energy expertise, he said, which is a problem when companies need to make decisions about allocating capital.

The oil and gas industry needs a constant supply of capital, and if it doesn't, "bad things can happen as we saw in 2000s with severe supply crunch in oil, due to lack of investment we'd seen after OP crash of 1998," he said.

On a graph of change to % dividend yield (dividend / share price) comparing Shell and BP with the FTSE 100, we can see the curves were similar from 1999 to 2008, but since then have steadily got further apart. This implies that Shell and BP see the need to pay a higher dividend than the FTSE average – which implies that their cost of capital is also higher than the average. This could be attributed to ESG concerns. "ESG matters in a way it hasn't happened before," he said.

The oil and gas industry has not been great for investors over recent years. When the oil price went from $25 to $150, it barely made much impact at all to returns, because the money was spent on tax hikes, rising capital costs, and there were accelerated decline rates and inefficiency in industry, Mr Wheaton said.

Since the crash, the industry has made big improvements in the returns it gives investors. "This is a much better industry than it was when the oil price was much higher than today. The industry has fundamentally fixed itself. It now needs to address ESG."

*Chris Wheaton, investment manager with Stifel*

There are many stories of big oil companies selling assets to smaller ones, and then seeing higher uptime and better recovery factors, using existing resources more effectively, and being more responsive to changes. "Smaller oil companies could be better positioned during the energy transition."

But the cost of capital can be worse for smaller companies, which have a smaller pool of investors.

Many investors just think the industry is "too difficult to understand" and focus on something else. "There's this gap between specialists and generalist how are they approaching the problem," he said. "You need both in terms of investors to get the change."

The fund management industry itself has been through big changes in the past 2-3 years, coming under financial pressure, with fee income reduced, and so cutting its costs, and employing fewer specialists.

"The deep industry knowledge is disappearing," he said. "Fewer people just looking at one sector. Many people looking at 2, 3, 4 sectors."

The specialist industry knowledge will be required for some of the changes people are calling for, such as changes in reporting standards, and different levels of interrogation of company accounts.

Fund management companies have a wide range of ESG conditions of companies they invest in. Some try to assess companies with internal staff, on the basis that having in-house experts will give them better leverage with companies.

And there is a lot of social and environmental work that oil and gas companies do that "barely gets reported on".

"Companies have built transport links, health centres, roads, other infrastructure that enables economic development, improves people's lives, gives them healthcare. They don't talk about it – it is just something they have to do."

There is very little consistency in the reporting methods. "You need specialist industry expertise to understand what matters," he said.

"There is a risk, I think, that investors track what's easy to track rather than what's meaningful," he said. "Just because it is easy to measure doesn't mean it is the right thing to measure."

Some investors prefer smaller companies because they tend to work on shorter time horizon – with fields which will cease production in the late 2020s or early 2030s, rather than the 30 year horizon of the majors – climate risks are seen as more predictable over a shorter time period.

## Own analysis

Mr Wheaton wanted to make his own analysis of CO2 from the industry's products. "I was surprised how hard it was to find all the data that I wanted in one place, to put together in way I thought was meaningful," he said.

Some data was in annual reports, some data was in a separate 'sustainability report'. "If sustainability is so important – why not put it in the main thing?"

Calculating the CO2 emitted from use of the industry's products is relatively simple, based on the production volumes.

Although the emissions from operations "are very much estimates," he said. For many companies, there are no reliable estimates for its operational emissions.

It is interesting to look at the carbon content in different oil company portfolios, based on whether they produce oil or gas.

All of the majors have a mix of 40 to 50 per cent oil and gas. BP's proportion of production which is gas is increasing. Shell's is decreasing, following the BG acquisition. Although that included BG's Brazil deepwater project which "generates 20 per cent return on capital employed, twice the average for Shell as a whole," he said.

For the US majors Exxon and Chevron, the increase in carbon content is due to increased liquids production from the Permian basin in Texas.

The mix of products is the biggest factor affecting total emissions. Operational emissions are less than 20 per cent of the total.

Some oil companies also produce biofuels, solar and wind. This is not included in figures of CO2 per energy produced, because the industry only reports CO2 on a per barrel of oil equivalent basis. Shell is "one of the world's largest producers of biofuels, nearly 1GW in solar and wind," he said.

Mr Wheaton showed an interesting comparison between oil and gas companies on total CO2 including from their products. One of the highest turned out to be AkerBP, which is a "fantastically well managed business, aggressively going after operational emissions and asset uptime." But its portfolio is also 80 per cent oil.

One of the lowest turns out to be Serica Energy, which has a portfolio which is nearly all gas. Premier Oil has a similar "tonne CO2/boe produced" to the majors, because it has a similar oil / gas mix.

In Shell's investor day in June 2019, the company gave a number of carbon content per unit of energy production, of 80kg CO2 per megajoule. "That's the first time Shell have put a number on that," he said. "Historically they only talked about operational emissions – not the whole of production."

The company has a target of 60 kg CO2 per MJ by 2040, and 40kg by 2050, "which they say is in line with Paris guidelines".

Although it is 168-page annual report, Shell only mentions wind power in 2 paragraphs, and only quotes the MW of capacity, not the amount of energy produced.

"If you're going to start talking about this differently you need to display this differently to investors," he said.

## Carbon capture

When people talk about achieving the 1.5 degrees carbon budget, they talk about a "pretty aggressive decline in hydrocarbon usage that has to start now". But no-one assumes that any mitigation method, CO2 sequestration, will happen, he said.

"CCS to me is really important. It bridges the gap between where we are now and where we need to be, and does so in shortest time frame. We know CCS works and can produce oil and gas."

In the US we see CO2 injected into an oilfield, helping produce more oil.

"How about we use CCS EOR as a way of mitigating climate change and also using lower carbon intensity fuels, given that we are on a pathway that is already saying we are really going to struggle to hit 1.5 degrees?"

"Oil and gas companies already own the infrastructure – they can become part of the solution."

Norway's Northern Lights project "is a great idea," he said. But Mr Wheaton estimates that it would need a $60 to $70 tonne carbon price to work, equivalent to a $25 a barrel extra cost of oil.

"I'm absolutely sure the oil industry can be part of the solution. If we're not we'll have solution imposed on us," he said.

## Good at reporting?

Mr Wheaton was asked if ESG reporting could actually be a positive for the oil and gas industry, because it could demonstrate that the industry is well managed compared to industries like manufacturing, retail, agriculture and fashion.

He replied that the industry does have a good record of being well managed, if defined as being able to deliver on promises made to shareholders.

"You've got to make the right promises. You've got to demonstrate you've got clear and simple numbers you can give people. This is what we promised you, and this is what we're going to deliver."

One audience member said his company works in both oil and gas and mining, and sees that "mining companies by comparison are far worse at understanding and managing risks". Although mining companies can say they are on the right side of ESG, because they are mining materials to make batteries for electric vehicles.

# ESG issues with operations in Africa

Greg Coleman, chairman of oil and gas consultancy Petromall (and a former head of investor relations with BP), shared some perspectives on ESG in Africa, and what a complex issue it is, based on his work with Virtual University of Uganda

Greg Coleman, chairman of oil and gas consultancy Petromall, has been involved in Uganda oil and gas industry since 2017, following his company's acquisition of the Virtual University of Uganda, in Kampala. This has given him a good insight into the good and the bad, and the deeper challenges.

The thinking at the time was that the oil and gas industry was about to develop in East Africa, so "a good time to start transferring our experience," he said. "It has proven to be even slower than I thought."

Oil was discovered in Uganda in 2009, and it has potential to produce 250,000 to 300,000 bopd. But nothing has been produced so far. There have been long delays building a pipeline from the oilfields to a port on the coast of Tanzania. The project has also been held up due to a dispute between operators and the government over payment of corporation tax for a share in a project to change hands between Tullow Oil and Total / CNOOC.

So far, $4bn has been spent by government on infrastructure, and $4b have been spent by international companies to explore, appraise and develop. If the project doesn't proceed this will all be written off.

"I often have a conversation with students, why would we ever want oil and gas to be developed in our country," he said. And perhaps the answer is, "maybe you shouldn't, if you have it developed the way we did it 20-30 years ago."

For Mr Coleman, there is still a personal dilemma of whether the project should go ahead. "I'm a developer, so yes, but I want it to go ahead. It is very difficult to say, you shouldn't do it, and you won't have electricity, you won't have jobs.

Oil and gas production in the region links to the Sustainable Development Goals in many ways – providing money to the state to alleviate poverty, giving people fuel for transportation and access to electricity. But fuels also emit CO2, something people are very aware of.

## Energy overview

As a regional energy overview, the region has much hydropower, but other than that, the main energy sources are biofuels (wood and cow dung). There is a little solar, geothermal and wind power, a little imported oil and gas, and some indigenous gas in Tanzania, where the producers struggle to get paid by their customers.

The Chinese government is investing and lending billions of dollars for projects in the region, with schemes to build ports and railways, LNG schemes, mine cobalt in the Democratic Republic of Congo and much more. In Ethiopia, large investment is being made in natural gas projects. There is a big hydroelectric power project.

One Chinese supported investment is a rail line from the coast of Kenya to the interior. It is aimed to link to a rail line in Uganda which brings its own challenges. The rail lines are mainly for transporting cargo, and relieving traffic from the road.

Although so far, locals do not necessarily find it easier to offload cargo from rail to trucks in Nairobi, a capital city – it could be easier offloading it from a vessel onto trucks in the port of Mombasa, where there is more space.

"I don't think anybody is thinking about these kind of infrastructure issues," he says. "The Chinese just put money in and hope it all works."

And some of the investment funds going into infrastructure mean less money going into healthcare and education. "The trend of the relative amount of money going into social investments is declining and is looking to continue decline for a number of years."

South Sudan has been producing oil and gas for many years, and it has been a cause of conflict over ownership. Mozambique is developing massive LNG schemes in the North, which has attracted interest from terrorists, so "people need to go to work in armoured personnel carriers."

There is a plan to build a pipeline in Kenya, connecting the oil production near Lamu, in the interior, to a port on the coast. Currently 2,000 bopd is sent from Lamu to the coast by truck, so 20 trucks a day. The road goes through the middle of Nairobi, where there are often lengthy traffic jams.

The LAPSSET PROJECT (Lamu Port South Sudan Ethiopia Transport Corridor) will add up to $10-$20bn of investment, in a country with a GDP of $75bn. Tullow is planning to sell part of their Lokichar oil development project to provide financing capacity for their project.

"Managing expectations is one of the bigger issues that occurs in this part of the world. Governments want to promise jobs, big investment, everybody gets to move to new home. But it is not happening at the rate / expectations are being created but not being fulfilled."

## Uganda

In Uganda, there is Chinese investment in hydroelectric power. It is structured as a loan, which should be repaid to China through electricity bills. Individual projects can cost $1bn to $2bn, with power generation of 180 MW.

Currently only 15 per cent of people in Uganda have access to reliable electricity, and there's a big push by government to create more access.

It requires power lines, agreements about land, tariff agreements to pay for power and robust systems and processes.

The government is hoping to pay back some of the loans with revenues from oil and gas development, he said.

The main oil development, Tilenga, operated by Total, is at the North end of Lake Albert, and the Chinese (CNOOC) operated Kingfisher field is at the south end. Uganda plans to build a big industrial park in Hoima, mid-way between them. The British government has lent the Ugandan government $300m to build an international airport in the industrial park.

The industrial park adjacent to Lake Albert will eventually include a 60,000 bopd refinery, a petrochemical plant, with an airport in the middle, in an area 6km to 5km. It was designed by an architectural firm in

*Greg Coleman, chairman of oil and gas consultancy Petromall*

Singapore, used to building industrial parks in dense areas of Singapore and China. But it may not be a suitable design for Uganda, which has much more space, and "a place which doesn't understand perfection," he said.

The Environmental and Social Impact Assessment (ESIA) for Kingfisher is 3400 pages long, with a 150-page executive summary, and the ESIA for Tilenga is 2400 pages.

"It is the document set that the regulator and the communities look at to understand the environmental impact these developments will have on local area," he said. "Most of them won't read, English language is not that well developed in this region. So, there's no way this can be a proper consultation in my book. The day 200,000 people arrive in the area looking for jobs, they'll say, you all had a chance to opine on these ESIAs."

"Total is the main leader of this. They are one of the more responsible companies in our sector. Total has a global reputation, a long-term view, they've done this before in West Africa. But they have a lot of challenges in front of them."

"Some 'fly by night' local company won't know what's going to happen."

The Kingfisher oil processing centre is on the edge of Lake Albert, with the refinery on top of an escarpment, and oil development on the bottom, adjacent to the lake, so any oil spills may pollute the water. Total is planning to extract 400,000 bopd from the lake to inject into its oilfields, which may lower the water level and make fishermen unhappy.

In order to do it properly, you might want to ensure fisherman understand that there's an oil development going on, and what to do if there's a spill. It might be better to move the refinery away from the lake. It may be well built today, but problems might emerge in 10 years if it is not well managed."

Political pressure is being imposed on Total and the Chinese to provide feedstock for the refinery, which may mean that not enough feedstock is going into the pipeline to pay for it. And there is a question about the market for the refinery's output.

Uganda has set up its oil and gas institutions, with help of advice from the Norwegian government. It has a national oil company, a regulator, and a ministry separate to the regulator, a policy and a workforce strategy. "But it's all on paper, not in practice," he said.

The project will employ 12 to 13,000 people at the peak but there are 15m people looking for a job in Uganda, and locals will not be able to do all the jobs. When the project goes into operation there will be around 2,000 jobs.

"Governments all went to be re-elected- so they promise lots of jobs and get re-elected and let someone else worry about social impact," he said.

There are questions about how the waste will be managed. It will probably be the responsibility of Total, the operator.

The pipeline planned to Tanga, on the Tanzania coast, will be 1500km long, the longest heated pipeline in the world, crossing a national boundary.

On the other side of Lake Albert is the Democratic Republic of Congo, and South Sudan and Kenya to the North, with millions of refugees and people looking for jobs.

There is some improvement in transparency – when $200m was borrowed from a fund set aside for pensions to build a highway, people were aware of it, although were unable to prevent it.

In terms of what could be done better, the industry could tell a better story about what it is doing, including engaging with reporters who make the effort to understand the industry, and providing public information in more depth and with more accuracy. It needs to "find investors sympathetic to what you are doing."

# Roberto Bencini – CCS from an investor perspective

**Carbon capture and storage (CCS) may soon become investable to a certain extent, if the carbon price is higher than the costs, said CCS expert Roberto Bencini of Petromall. But a more interesting issue may be whether oil companies engaging in it can improve their CCS "score" with investors**

Roberto Bencini of Petromall, a petroleum geologist and CO2 storage expert, said that carbon capture and storage could soon be 'investable' in itself – and perhaps oil and gas companies which engage in it should 'score' higher in ESG assessments by oil companies.

Power experts have seen since 2001 that carbon capture and storage could take a large share of the CO2 emission reduction needs, and the same is true now, he said.

There are ways to reduce CO2 which are cheaper but limited in scope, such as substituting coal to gas. And there are ways to reduce CO2 which are more expensive, such as renewables, when all costs are considered.

The cost of capture and storage has been slowly decreasing over the past decade. There is a target price of $20-$30- per tonne of CO2 avoided, but that has not yet been reached.

Meanwhile the market for CO2 emission trading scheme certificates stayed stagnant from 2008 to mid-2017, at around Eur 5 / tonne – but started rising from the beginning of 2018, touching Eur 29 a tonne a couple of months ago. In theory CCS will be viable when the curves cross, so the cost of carbon capture is the same as the ETS price.

The capture, getting a supply of pure CO2 from fuel combustion, is the biggest part of the costs.

There are three ways to do it - post combustion separation of CO2 from the flue gas, pre combustion separation (gasified fuel combusted with oxygen from an air separation unit), and oxyfuel combustion, which has CO2 taking the place of nitrogen in the combustion air mixture. Post combustion is most common, oxyfuel is perhaps most promising, he said.

CO2 can be used to improve production from oilfields in enhanced oil recovery, which could give CCS a business case - although that needs a suitable oil composition and a particular set of pressures and temperature, and so not suitable for every oil field.

*Petromall's Roberto Bencini*

Bioenergy with CCS is "a good idea", growing biomass to take CO2 out of the atmos-

phere, burning it for power production, and sequestering the CO2, he said.

CO2 can be stored in deep unmineable coal beds, where it could be used to drive methane production. There have been several experiments, including in New Mexico and the Silesian Coal Basin of Poland. Coal will absorb the CO2, so it remains immediately trapped in the coal matrix.

But the simplest, most tested way to store CO2 underground is to use deep saline aquifers, as used in the Sleiper project offshore Norway.

People sceptical of the safety of CO2 storage can consider that there are many natural CO2 fields in the subsurface, where CO2 has been stored for millions of years, including in parts of the world with many earthquakes, such as Italy.

Being engaged in CO2 capture and storage should count as an ESG factor for oil and gas companies, he said.

Petromall is proposing a scorecard scheme involving different ways petroleum companies are engaging with ESG, which could include involvement in CO2 capture and storage, which could be called "Petroleum ESG Assessment".

# Social: The Social Impact of Decarbonisation

Jay Wagner of Plexus Energy gave some advice and ideas about how companies should approach the "S" – for "social" - part of ESG

Jay Wagner, Director of London-based social risk management consultancy Plexus Energy, noted that the shift towards deep reductions in carbon emissions and the deployment of Renewable Energy (RE) at scale to implement the Paris climate targets will have major socio-economic implications, both at a societal and a project level that energy companies and their investors should take into account.

He explained that the decarbonisation agenda involves decisions on the kind of energy systems to build, where to build them and how to distribute their benefits, costs and risks.

He emphasized that there is a gap between the expectations of a fast renewable energy-driven energy transition and the continued reliance on fossil fuel-based energy systems.

He outlined some of the social impacts associated with decarbonisation and noted

*Jay Wagner of social risk management consultancy Plexus Energy*

that it is a complex socio-technological transformation with major economic, political and social implications.

He explained that alongside environmental, engineering, financial and political considerations particular emphasis will have to be placed on public acceptance, social impact management and stakeholder engagement.

Noting that the "S" in ESG stands for "Social" he emphasised the importance at a project level of getting local community relations right. He presented a number of examples of social factors that oil and gas and energy companies and their investors need to consider.

Mr Wagner defines social performance as "positive and negative impacts that projects can have on local communities and societies in which they operate".

Emphasising that while many companies and projects carry out Environmental and Social Impact Assessments (ESIA), "this does not indicate whether the ESIAs are of a sufficiently good quality."

"The indices, for example, do not indicate whether the ESIA or related stakeholder assessment was properly carried out. Communities, moreover, rarely speak with one voice and that they are often quite fragmented," he said.

E&P, energy and climate change-related issues affect local communities and stakeholders in many different ways. For example, the removal or lowering of fuel subsidies and the resulting increase in fuel prices can result in violent protests as recently happened in Ecuador.

"Phasing out fuel subsidies is of course a logical conclusion of the Paris Climate Agreement, but many governments in Africa, Asia and Latin America have real concerns that this will result in social unrest." "Even with relatively minor increases in the price – you have the risk of social unrest."

The UN Sustainable Development Goals (SDGs), for their part, include the goal (SDG 7) that people have a right to affordable and clean energy, he said. Currently a billion people don't' have access to electricity. "SDG 7 is a worthy and important goal."

Access to clean and affordable energy could, for example, reduce the number of premature deaths due to air pollution, including indoor air pollution (e.g. from inefficient wood stoves).

Lack of access to electricity, and the collection of firewood, is also linked to deforestation in many parts of Africa, Asia and Latin America. But how this goal is achieved will have important implications from a sustainability and social perspective.

## Keeping the locals onside

To illustrate some of the problems energy projects can encounter from local opposition, Mr Wagner presented an example of a 23MW hydropower project in Guatemala.

Planning for the project started in in 2010, and construction began in 2014, but was halted following violent protests which resulted in a number of fatalities and the destruction of equipment. One of the problems in this case is the fact that local communities expected the project would result in access to electricity, but this has for a variety of reasons not been the case.

"The community is completely split – those for it and those against it," he said. "There were pre-existing community tensions. When you introduce a project with a large footprint like this one it risks fragmenting local societies even further, especially when there has been an absence of meaningful stakeholder engagement. That's what has happened in this case."

"Hydropower is of course not necessarily a bad thing, but in this case the impact assessment was flawed, which contributed to poor impact management," he said. A key conclusion from this case is that "local people often have a different take on whether

and how a project like this should be constructed." If you ignore this aspect it can result in significant delays, cost overruns, reputation damage and outright cancellation of the project.

Social protests in many parts of the world have in fact resulted in the cancellation of some projects. In all such cases it is essential to consider the social dimension and to think through what the value proposition for local communities is. Where there is a gap between local expectations and the delivery of benefits, or where the stakeholder engagement process has been insufficient, there is a risk of social conflict and opposition to the project, be this a traditional oil and gas or a renewable energy project.

Local objections have also been an obstacle in CO2 sequestration projects.

If carbon capture and storage is one of the stepping stones to get us to decarbonization, a key issue will be public acceptance. An example is the Dutch Barendrecht project in 2010, planning to sequester CO2 from Shell's Pernis refinery.

Before work started, local acceptance had been seen as a potential risk, since the CO2 would pass through densely populated areas. In the end, the project was cancelled due to public opposition, in part due to safety concerns but also due to a flawed stakeholder engagement process.

A more positive example was the Benban solar power project in Egypt, one of the world's largest solar power projects. It is in a remote desert location in southern Egypt. Encouraged by international development banks funding the scheme, the project team placed strong emphasis on meaningful public engagement, working with local tribes regarding local hiring and working closely with contractors to ensure social commitments were properly implemented.

"Solar projects, it is worth pointing out, are not impact free," he said. "These projects often are spatially quite extensive, resulting in the loss of agriculturally productive land and habitat loss."

"You have to remember that communities may have a different way of looking at this than the energy investor, banks or government."

"In all of this – perception is reality. What people hear, fear and see, is real to them. These questions have to be addressed."

Mr Wagner briefly mentioned the case of a project he worked on a few years ago on the relationship between fishing and offshore oil and gas operations in Liverpool Bay (UK).

One of the representatives of the local fisherman's association was initially sceptical and reluctant to be interviewed because he thought the project was about offshore wind development.

When he realised the project was in regard to offshore oil and gas, he became more relaxed and was willing to engage, noting the need for the wind industry to listen more and learn the hard-won lessons of the oil and gas industry in regard of community relations, which would help to build trust.

In closing Mr Wagner reminded the audience that while decarbonisation represents significant opportunities for investors and energy companies alike, the measures required to achieve the steep cuts in carbon emissions the Paris Agreement implies will have profound socio-economic implications, both at a societal level and at a project level.

He emphasised that decarbonisation is inherently difficult, and that renewable energy is only one of several pathways to get the world on track to meet the targets set out in the Paris Climate Agreement.

Whichever energy system and solution is chosen, he reminded the audience that it is essential to think beyond engineering and financial aspects and to address the social impacts of the Energy Transition.

In this regard he noted that it is important to learn from the lessons of the extractive industry regarding social impact management and that ignoring the social dimension risks value erosion in any type of energy project. In all cases, public acceptance and delivering visible benefits to local stakeholders are an integral part of the process.

# Responsible Investing in Oil and Gas
# Friday, December 6, 2019 The Geological Society, London, Attendees

Hugh Ebbutt, Director, A T Kearney

Anish Kapadia, Founder, Akap Energy

Geoffrey Boyd, Field Development Consultant, Antium FRONTFIELD

John Charles, Commercial analyst, Capterio

Sharon Howe, Business Manager, CGG

Michele Turitto, Management Consultant, Chaucer

John Glass, MD, Cloverfield Consulting Ltd

David Boote, DBConsulting Ltd

Henry Lang, Director UK and Africa, Ensure Environmental Consulting Ltd

Charlotte Wolff-Bye, VP sustainability, Equinor

William Cross, Environmental Consultant, ERM

Avinga Pallangyo, Events Manager, Finding Petroleum

Karl Jeffery, Editor, Finding Petroleum

John Leggate, Managing Partner, Flamant Technologies

Nick Norton, Senior Energy Advisor, Foreign Office

Peter Clutterbuck, MD, Global Energy Consultants

Trudi Stevens, Director, Green Lantern Training

Charlotte Jones, Senior Engineer, HSBC

Peter Dolan, Founding Non-Executive Director, Ikon Science Limited

Nick Steel, Consultant, Independent

Mark Robinson, Consultant, Independent

Manouchehr Takin, Independent consultant

Safina Jivraj, Technical Director, Environmental Consultancy, IO Consulting

Katie Jeffery, Jeffery ESG

Ludivine Wouters, Managing Partner, Latitude Five

Datta Kulkarni, LTI

Chantal Beck, Partner, McKinsey and Company

John McCarthy, Head of Research, Minerva SRM Ltd

Adrian Gregory, Principal Consultant, MORE Consultancy plc

Keith Nunn, Managing Director, Nunngeo Consulting Ltd

Pietro Mezzano, Project Co-Ordinator, OGCI

Andreas Kyriacou, Director, Oil Infrastructure

Paul Barrett, MD, OK Energy Limited

Charles Lesser, Managing Director, Panmure Gordon

Greg Coleman, CEO, Petromall

Roberto Bencini, Chartered Petroleum Geologist, PetroMall Ltd

Frederic Yeterian, Director, Philax International (UK) Ltd

Jay Wagner, Director, Plexus Energy

Philip Frank, PLF Consulting

Josh King, Analyst, RAB Capital

Catherine Howarth, CEO, Share Action Group

David Lawton, Chief Geoscientist, SLR Consulting Ltd

Ewan Whyte, Technical Director, SLR Consulting Ltd.

Oxana Bristowe, Director, Stand4More

Chris Wheaton, Director, Stifel

Iain Pickard, Partner, Strategia worldwide

Nick Woodburn, Director - UK Data Processing, TGS

Bolhassan Di, Non-Executive Chairman, Upland Resources Ltd