No 1 / April 2013
Distributed within The Independent

MEDIA PLANET

THE FUTURE OF ENERGY

Attracting the younger generation

A need for fresh talent in the energy sector

Managing risk

Regulations ensuring a safer working environment

Edward Davey

The Secretary of State for Energy and Climate Change discusses long term plans

A CHANGING ENVIRONMENT

Richard Branson discusses the need for sustainable biofuels and the exciting developments happening within the industry

PHOTO: VIRGIN GROUP

CHALLENGES

Energy policy in the UK has the three broad aims of carbon reduction, affordability and energy security. EU targets on renewables and greenhouse gases require carbon reduction (or decarbonisation as it is often referred to) and this means that the UK is investing in both cleaner and greener technology, says Angela Knight CBE, chief executive, Energy UK.

UK targeting key changes by 2020

The EU has targets which this country has signed up to on renewables and carbon reduction. The UK target is 15 per cent of energy from renewables by 2020, which results in 30 per cent of electricity being required to be generated from wind and other renewables by the end of this decade.

Generating electricity from gas will have a strong part to play and is especially important as back-up for renewables which are intermittent.

At the same time, a number of our older power stations are closing — particularly coal fired facilities — because they are not able to meet the EU emission requirements. And the nuclear power stations are coming to the end of their life too and need to be rebuilt.

On most days this year, around 40 per cent of electricity has been produced from coal and a further 15 per cent from nuclear — and these are also the power stations that are currently producing electricity relatively cheaply — which shows the extent of the challenge ahead.

Critical decisions to be made

The investment required for new plants and for renewing and upgrading the energy transmission and distribution networks is estimated at £110bn over the next decade.

To get this investment requires a focus on the key transition period — which is between now and 2020 — with particular attention to affordability, energy security and openness.

It takes time to build new generators, and the start of the new nuclear programme still awaits the final go-ahead. The critical decisions on what generating capacity the UK needs are also still awaited, and how it is going to be put in place requires a decision on another part of the legislation known as the capacity mechanism. This needs to be made and urgently.

Angela Knight CBE
Chief executive, Energy UK

The need for investment

The current position of the authorities making the decisions is unsustainable. It has resulted in an early short-term cost to consumers, who in turn direct their anger at the energy companies, with everyone else hiding behind the price rises and without explaining the complete view. The public must be informed of the energy story and the regulations, environment and politics put in place for UK plc to maximise its energy security, keep the lights on and bring the jobs and supply chains here.

A big investment brings with it jobs and economic revival — but it isn't free.

Angela Knight CBE is chief executive of Energy UK, the trade association for the energy industry. Energy UK has over 80 companies as members, which generate more than 90 per cent of UK electricity, providing light and heat to some 26 million homes and last year invested over £10bn in the British economy.

WE RECOMMEND

PAGE 10

Mike Tholen
Economics director, Oil & Gas UK

'The lowest hanging fruit has largely been picked and now we need to spend more exploiting reserves that are deeper and more difficult to reach'

MEDIA PLANET
We make our readers succeed!

THE FUTURE OF ENERGY
1ST EDITION, APRIL 2013

Managing Director: Chris Emberson
Editorial and Production Manager: Faye Godfrey
Business Developer: Sara Downes

Responsible for this issue:
Project Manager: Scott Korda
Phone: 020 7665 4415
E-mail: scott.korda@mediaplanet.com

Distributed with: The Independent
Print: The Independent

Mediaplanet contact information:
Phone: 020 7665 4400
Fax: 020 7665 4419
E-mail: info.uk@mediaplanet.com

COMMERCIAL FEATURE

SHALE GAS – A SAFE ELEMENT IN OUR ENERGY MIX?

Where does shale gas fit in?

UK shale gas production has the potential to provide energy security, reduced energy costs, inward investment, new jobs and reduced carbon emissions. Yet it is also controversial due to fears of contaminated water supplies and increased air pollution.

Simon Talbot
Managing director, Ground-Gas Solutions Ltd

However, I believe that shale gas can be developed safely.

Is the UK's shale gas regulation fit for purpose?

The UK has the most rigorous regulatory system in the world. A system that has been forged out of the combined experience of over a hundred years of onshore and offshore petroleum production. What we have is a goal based approach to regulation that focuses on the specific well design, local geology and site-specific issues. Each of the licensing, health and safety, environmental management and local impacts are regulated separately and effectively.

How can the public be confident that best practices will be used?

The recently published UK Onshore Operators Group (UKOOG) best practice guidelines emphasise the need to reduce risks to as low as reasonably practicable (the ALARP principle) using best available technologies (BAT) and best environmental practice (BEP). Individual operations will be required to adopt this approach by the regulators.

Is independent monitoring effective?

GGS has developed a robust and efficient system of continuous environmental monitoring before, during and after site operations. This approach is in line with the government's response to the 2012 Royal Society and Royal Academy of Engineering's independent review of shale gas and hydraulic fracturing. This ensures that no pollution incident, if it were to occur, can go undetected. Equally important continuous data is easy to understand by both technical and non-technical audiences.

Simon Talbot
Managing director
Ground-Gas Solutions Ltd
Tel:
0161 232 7465
Email:
info@ground-gassolutions.co.uk
Website:
www.ground-gassolutions.co.uk

ggs ground - gas solutions limited

SUPPORTING INNOVATION AROUND THE WORLD

Norton Rose has one of the largest global energy practices of any law firm in the world. We have a reputation for understanding complex issues quickly and providing our clients with the innovative solutions they need, when they need them.

Our legal expertise covers the full spectrum of energy industry sectors. It is our breadth of experience combined with our strength in multiple disciplines which enables us to provide our clients with truly commercial and balanced legal advice.

The scale of our energy practice sets us apart from the rest of the field. Many of our global energy experts have worked at major energy companies and in the world's leading energy-producing countries. We know how to capture this knowledge and how to use it to our clients' best advantage.

On June 3 2013, Norton Rose and Fulbright & Jaworski LLP will join forces to create Norton Rose Fulbright – a global energy legal practice with representatives in every major energy market in the world.

"a one-stop shop for energy."

Energy and Natural Resources: Chambers UK 2013

nortonrose.com/key-strengths/energy

NEWS

OIL AND GAS CENTRAL TO UK'S ENERGY MIX

Secretary of state, Edward Davey, is quick to underline the 'and' in his energy and climate change brief, believing the roles of keeping the lights on and emissions down are not mutually exclusive.

What is the coalition government's key aim — domestic independence, lowering CO2 emissions, predictability in supply or affordability?

! My job is to make sure the country has secure energy supplies, so the lights don't go out, at a price that people can afford, and bring climate change emissions down at the same time. Some would say these are competing priorities but I believe that we can achieve all three. That is what the Energy Bill before Parliament is all about — attracting the investment to replace our current ageing, carbon-heavy energy infrastructure with modern, indigenous, lower-carbon energy.

We supply nearly half our energy needs at the moment, will this proportion increase or decrease? Which energy source do you see contributing most to filling the UK's impending 'energy gap'?

! Unabated gas is the cleanest fossil fuel so it is right that we look to gas to help replace coal in the energy mix. The cleaner the fuel the better. But the contribution of nuclear and the growing role of renewables to the mix should not be underestimated. In the longer-term, if we can develop carbon capture and storage systems that are economically viable, CCS will also play an important role. But just as important will be energy efficiency.

Are oil and gas energy sources we cannot do without or energy sources we need to replace as soon as possible?

! Oil and gas, from the North Sea and elsewhere, will remain central to the UK's energy mix for decades to come, even as we make the transition to a low carbon economy. That includes the possible contribution that shale gas can make. I don't think shale gas is the passport to cheap energy that some have suggested. UK reserves are as yet unknown and tapping them may be technically challenging. But it makes sense to investigate whether shale gas production in the UK can be economically viable, environmentally sustainable and a boon, not a curse, for local communities.

Will the government be able to keep to its planned reduction in greenhouse gases by 2017 and the longer-term halving of emissions, against 1990 levels, by 2027 and then by 80 per cent by 2050?

! The UK's emissions reductions targets are the product of an unprecedented cross-party consensus, so I am confident that successive governments will strive to meet the ambitious targets that we have set ourselves. Emissions have been on a downward trajectory and are over 25 per cent lower than the 1990 baseline. The government's Carbon Plan sets out the pathway through to 2050. We are acting now to keep pressure on. In my area, energy, we are cutting emissions by saving energy through the Green Deal and other initiatives, and by increasing lower-carbon energy generation such as moving from coal to gas, nuclear and renewables.

Edward Davey
Secretary of State for Energy and Climate Change

ENCOURAGING THE YOUNGER GENERATION
The energy industry in the UK is lacking young talent, leaving a potential skill shortage in years to come
PHOTO: IMPERIAL COLLEGE LONDON

Industry needs to attract brightest talent

The energy sector needs to tap into the bright talent being produced by engineering colleges to reverse an ageing skill set, warns Imperial College London's Professor Nigel Brandon.

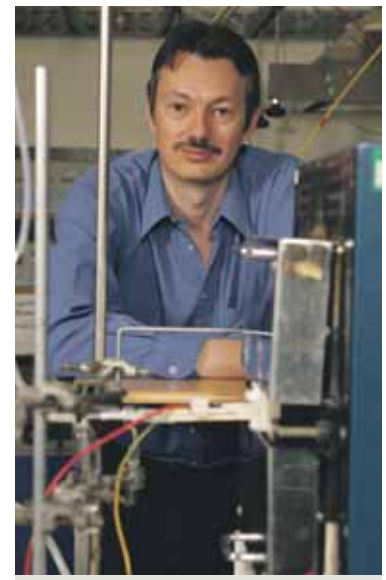
CHANGE

It is not clear whether the youngest, brightest talent has traditionally had an issue with the energy industry or whether the sector has been too slow in snapping them up. The result, though, is in no doubt. Engineers are progressing towards retirement without sufficient young blood coming through to replace them.

It has been a problem with the sector for some time, according to Professor Nigel Brandon, director of the Energy Futures Lab at Imperial College London. Interestingly, however, there are many countries where there is no similar problem with an ageing workforce, he reveals.

"Historically, you can't be sure whether it's been because industry hasn't felt the talent is there or whether they've simply not recruited in sufficient numbers," he says.

"Whatever the reason, it's an ageing industry and so they need new people.



Professor Nigel Brandon, director, Energy Futures Lab, Imperial College London

It's not the same in other countries, such as Germany, where they have sufficient new people coming in to the sector. The big difference in countries where they don't have the same issue is that the energy sector is highly regarded by engineers who are better rewarded than in the UK."

Brighter future

Traditionally, Professor Brandon believes, other engineering sectors have appealed more to young, newly-qualified engineers and the power industry has not been top of the wish-list. However, that could be on the verge of changing.

"The decarbonisation of the industry is going to be very helpful in attracting engineers," he says.

"Young people want to change the world and so they want to work in sustainable industries where there's a lot of innovation going on. So energy decarbonising is offering new opportunities in renewable, sustainable fuel sources which are going to be a very attractive proposition to graduates."

While universities can continue to produce top quality engineers, it is also incumbent on energy companies to "sell" the industry and reward top talent appropriately, Brandon believes. Some of the large players in the sector already do a great job in this, he assures, but it is only if the entire industry promotes itself that young graduates will consider energy roles above job offers in other sectors.

The good news, Brandon assures, is that the impending energy gap and decarbonisation of fuel sources means the industry is both taking centre-stage and offering fresh challenges that bright minds will relish rising to.

SEAN HARGRAVE
info.uk@mediaplanet.com

INSPIRATION

Richard Branson and Suzanne Hunt offer their insight on the steps being taken to lead the aviation industry into a more sustainable future.

Major breakthroughs in the war on carbon

Richard Branson
Founder and chairman, Virgin Group

Suzanne Hunt
Operations lead: renewable jet fuels, Carbon War Room

What are the most important challenges facing the biofuel industry today?

Suzanne: There is a whole suite of complex sustainability, technology, information and market-related challenges facing the advanced biofuels industry. Their biggest challenge right now is obtaining the finance needed to scale up their production systems. The economic downturn made it nearly impossible for new companies with innovative, early stage technologies to obtain finance, especially considering how capital intensive the fuels industries are. A number of the advanced biofuels companies that went public over the past few years have seen their stock prices plummet.

Richard: While they are competing against the oil industry, with its 150 year head-start developing a legal, financial and physical infrastructure, the first batch of commercial scale, advanced biofuel production facilities have come online or will do this year.

Why are biofuels and sustainability so important?

Richard: It's crucial to make air transportation more efficient, but we also need sustainable biofuels. Petroleum derivatives power nearly all of the planes, ships and autos in the world and this nearly total dependence on one source of energy has dangerous financial and geopolitical implications.

What is the Carbon War Room and how are you working towards finding solutions to some of the world's most important issues?

Richard: The Carbon War Room (CWR) is a not-for-profit organisation that we founded in 2009 to accelerate entrepreneurial solutions to achieve profitable, gigaton-scale reductions in carbon emissions. Climate change presents the greatest challenge in human history and will result in one of the greatest wealth creation opportunities ever. We must remove market barriers that are stopping the successful scaling of entrepreneurial solutions and estimate that $1 trillion will need to be invested annually to reduce global warming pollution and stabilise the global climate system.

Suzanne: We at the CWR created www.renewablejetfuels.org in order to enhance information transparency and knowledge about renewable jet fuels technologies, sustainability assurance schemes, companies, etc. We are also working with airlines, advanced biofuels producers, finance providers, government officials, and other key stakeholders to develop innovative financial tools to help this young industry overcome key finance challenges.

'Petroleum derivatives power nearly all of the planes, ships and autos in the world and this nearly total dependence on one source of energy has dangerous financial and geopolitical implications'

Richard Branson, Founder and Chairman, Virgin Group

What is Virgin's role in the development of biofuels in aviation?

Richard: Virgin Atlantic aims to be the leading airline on sustainability — driving solutions for the whole industry. In 2008, Virgin Atlantic was the first airline in the world to operate a commercial aircraft on a biofuel blend. The Boeing 747 flew a short flight from London to Amsterdam, using a 20:80 biofuel to kerosene blend in one of its four engines. The biojet fuel was made from coconut oil and babassu nut oil, both sustainably cultivated crops. While we didn't expect the biofuel we used for our demo flight to be used by the industry long term, we wanted to show that it was technically possible and to make a visible demonstration of our commitment to find a sustainable alternative to traditional crude-oil based kerosene. At that point, we proved to a largely sceptical industry that it was possible to replicate the very strict performance and safety characteristics of normal jet fuel.

Since the ground breaking biofuel blend flight, we've been supporting the development of rigorous sustainability principles for aviation biofuels: we are a founding member of the Sustainable Aviation Fuel Users Group and support the Roundtable on Sustainable Biofuels — the leading biofuels sustainability standard — it's what we ask our potential sustainable fuel suppliers to sign up to.

We've also been developing solid foundations for the next phase of our low carbon fuels programme. In October 2011 we announced a world-first low carbon aviation fuel deal. We have partnered with the exciting new fuels company LanzaTech. Their technology uses a microbe to convert waste carbon monoxide gases from steel mills (which would otherwise be flared off direct to the atmosphere as carbon dioxide) into ethanol. The alcohol is then converted to jet fuel through a second stage process. LanzaTech estimates that its process can apply to 65 per cent of the world's steel mills, offering the potential to provide 19 per cent of the world's current jet fuel demand — and nearly 100 per cent if applied to aluminium plants. The new fuel will be sustainable environmentally (it has lower lifecycle carbon emissions and won't cause deforestation), socially (it won't compete with staple food crops or agricultural land) and economically (crucially it will be available in viable quantities and at a comparable price to conventional jet fuel).

I think this is one of the most exciting developments of our lifetime and a major breakthrough in the war on carbon. We're working hard to see the technology through to commercial use in our aircraft. We hope to have a demo flight using the new fuel this year and plan to uplift fuel in commercial quantities next year.

LEADING THE WAY
Virgin Atlantic was the first airline in the world to operate a commercial aircraft on a biofuel blend
PHOTO: VIRGIN GROUP

NEWS

New deposits offer onshore boost

Question: There is a lot of talk about onshore 'fracking' for shale gas. Is it new?

Answer: The onshore oil and gas industry is more than a century and a half old and has been 'fracking' for decades already.

The onshore oil and gas industry may only produce around 1 per cent of the country's energy requirements today, but that could be set to change over the next two to three years.

While nobody is guaranteeing that shale gas deposits will have as revolutionary an effect on the British economy as they have on America's, there is considerable optimism that hydraulic fracturing (known also as fracking) could play a major role in making the UK more self-reliant for energy as well as bringing down household bills.

Ken Cronin, chief executive, UK Onshore Operators Group (UKOOG)

The technique is already in use, but concerns have led to its safety being investigated. Several reports, including one from the Royal Society and Royal Academy of Engineering, have indicated hydraulic fracturing's risk are manageable.

Awaiting figures

According to Ken Cronin, chief executive of the UK Onshore Operators Group (UKOOG), close attention will now be paid to the British Geological Survey's announcement over the next few months of how much shale gas is believed to lie below ground in the UK.

"It's expected to be trillions of cubic feet worth of gas but, of course, what would actually be economically recoverable will be significantly less than the total amount," he says.

"The next two to three years will see an exploration stage and there will also be a lot of work from the government in to planning guidelines for wells and whether it is going to consider any tax advantage at any part of the process to make deposits more economically viable.

"The industry will also be putting a lot of work into social consent. We're reaching out to affected communities to see how they might benefit from new wells, beyond the boost to the local economy from new jobs, of course."

Self-sufficiency

Cronin points out that people probably do not realise the potential wealth of onshore energy below the ground nor know that around 10 per cent of the oil and gas produced onshore in the UK is already produced through hydraulic fracturing.

At a time when the country needs to fill an impending energy gap through building new power stations and is also aiming to reverse the trend towards increasing fuel imports, the shale gas deposits that could soon be exploited hold significant promise, Cronin insists.

In the absence of widespread renewable energy, the looming energy gap can possibly only be filled through hydrocarbon or nuclear power and the latter would take many years to bring online. Conversely, oil and gas power plants can be set up sooner at lower cost.

SEAN HARGRAVE
info.uk@mediaplanet.com

PHOTO: SHUTTERSTOCK

BRIGHT FUTURE AHEAD OF ONSHORE

The UK's onshore oil and gas industry has a surprisingly long history. Oil has been extracted from land-based wells since as far as back as 1851, the year of the Great Exhibition.

Gas production started more than 40 years later, in 1895. In fact, the first gas deposit was discovered by accident when railway workers were digging for water. The lucky find was used to provide lighting for the railway station.

The onshore industry's heyday was back during the First World War when it was decided the country was too reliant on fuel imports and domestic production was ramped up to 50,000 barrels of oil per day.

Today that figure is around the 20,000 barrels per day, although this is very likely to increase if, as expected, it is announced by the British Geological Survey that there are extensive reserves left and exploration companies find underground fields are economically viable.

New exploration efforts will intensify the debate around 'ydraulic fracturing or fracking but of the 2,000 active onshore wells, one in 10 are already using the technique to split rock layers to gain access to deposits below.

The industry has also become adept over the past 20 to 30 years at drilling horizontally so exploration holes can change direction, meaning well heads do not have to be immediately above the oil and or gas deposits.

SEAN HARGRAVE
info.uk@mediaplanet.com

COMMERCIAL FEATURE

Regulating the revolution:

Regulatory responses for the recommencement of UK shale gas exploitation

Exploited safely, the government believes shale gas will provide significant new economic opportunities for the UK, contribute towards energy security and help keep prices down. However, public perception of fracking remains guarded at best, hostile at worst.

The UK's dense population will mean that shale gas drilling sites are never too far from urban areas. This, together with public concern over the environmental issues surrounding shale gas, ensures that shale gas exploitation will remain the subject of intense public debate, vented through mainstream and social media.

Regulatory authorities face a tough challenge: to support government policy to promote shale gas development, whilst maintaining public confidence in its safety and ensuring that the economic benefits are not advanced at the expense of safety, the environment and local communities.

Regulatory responsibility for onshore oil and gas exploration and production is divided across a number of authorities, particularly:

- The Department of Energy and Climate Change (DECC), headed by Secretary of State Edward Davey, responsible for petroleum licensing and regulation of the exploration and production of oil and gas, including assessing and monitoring the competency of new licensees and operators
- The Environment Agency (and its equivalents in Wales and Scotland), responsible for environmental legislation and monitoring, together with the Department for the Environment, Food and Rural Affairs
- The Health and Safety Executive, responsible for regulating and monitoring the safety integrity of drilling operations
- Local planning authorities which control planning for drilling and production sites

In December 2012, Davey announced the formation of an Office for Unconventional Gas and Oil, designed to connect the responsibilities of the existing regulatory authorities and provide a single contact point for investors to ensure a safe yet uncomplicated regulatory regime.

The limited exploratory drilling for shale gas that has taken place in the UK to date has been executed under the existing onshore regulatory regime, which has not differentiated historically between exploration for conventional petroleum and shale gas. DECC recently considered the sufficiency of the existing regime to strike the right balance between encouraging shale gas exploitation and caution in managing public concerns appropriately.

Following its review DECC has revised its competency guidelines for any company seeking approval as a shale gas operator. Significantly, the guidelines are rationalised for unconventional and conventional activity: An applicant shale operator must demonstrate specific fracking experience and know-how; conventional drilling experience alone is not sufficient.

Ensuring companies seeking permission to frack have recent and relevant experience is intended to be positive reassurance for the public that there will not be an experimental tone to UK shale operations. This may mean that 'traditional' petroleum exploration and production operators make way for new operators with roots in places where the unconventional gas industry is more mature, like the US, or Australia, where Cuadrilla Resources, the first operator to frack in the UK, has its parentage.

The guidelines also require an operator to make a pro-active commitment to public engagement and to implement an effective crisis management plan. Both are critical to managing the public's understanding of shale gas issues and to mitigating the practical consequences of any problem to the greatest possible extent. Integral to all of this is establishing that every operator has a robust internal governance framework enabling it to effectively manage any situation which might emerge, whether induced by technical, commercial, environmental or social factors.

DECC's specific new corporate governance requirements for shale operators include:

- Summarising the approach to proper risk-assessment
- Defining the hierarchy of decision-making
- Preparing a plan for local community and public engagement, including providing a 24 hour telephone response line
- Establishing a plan for ongoing monitoring and crisis management

DECC's evolution of the existing regime for shale gas recognises the importance not just of an operator's technical excellence but also of sophisticated corporate governance to support a safely executed drilling campaign. There is clear emphasis on ensuring operators take responsibility for issues arising from activities and adopt a central role in resolving them. Problems cannot always be avoided but, properly managed, their impact can often be extensively reduced. The tumultuous public and media reaction to the seismicity issues experienced nearby Cuadrilla's drilling campaign is a good example. Although the seismicity was, by all accounts, no greater than that induced by coal mining and caused no surface damage, the public and media called for the suspension of Cuadrilla's operations.

Perhaps if the public had been better informed and the situation better managed, the reaction might not have been so negative, something DECC's revised guidelines clearly seek to address.

GET IN TOUCH

Garry Pegg
Managing Partner
King & Spalding International LLP
+44 (0)20 7551 7562
gpegg@kslaw.com

Susanna Marshall
Associate
King & Spalding International LLP
+44 (0)20 7551 7576
smarshall@kslaw.com

King & Spalding is representing eCORP Oil & Gas UK Limited in connection with its application to DECC to be the first UK shale operator appointed since the Secretary of State's announcement in December that exploratory fracking could resume.

KING & SPALDING

NEWS

Governments tap into offshore's success

Question: What does the oil and gas industry do for the UK?
Answer: Aside from keeping the proverbial lights on, it contributes billions to the Treasury and supports a massive supply chain.

People may sometimes be tempted to think the North Sea has had its best days and that the offshore oil and gas industry is treading water until reserves run out.

The truth could not be further removed. This year the industry will spend around £22bn on maintaining current fields and equipment as well as exploring new deposits and bringing them online. At the same time, the industry will pay something like £11bn in tax (the sum paid in 2011) and support a supply chain that will turn over £27bn. The £5bn difference between the amount the industry will spend and the supply chains draws attention to a very important point, Mike Tholen, economics director at Oil & Gas UK, points out.

Mike Tholen
Economics director, Oil & Gas UK

"As an industry we've been doing a lot of things very well very quietly, but now the government and other countries are starting to realise the economic benefits we offer," he says.

"So that difference in what we spend and what the supply chain makes is accountable as exports. Other countries realise we have top quality people, equipment and safety records and so our services are now in demand across the globe."

Public promotion

Tholen believes this recognition by government is responsible for some new flexibility around taxation. Oil companies' profits are taxed at around 60 per cent but just relaxing this to around 50 per cent, in some circumstances, is encouraging new fields to be explored and opened.

"The UK is still sitting on massive oil and gas reserves. We're opening up fields now that will be productive for the next 20 to 30 years," he says.

"The point is that the lowest hanging fruit has largely been picked and now we need to spend more exploiting reserves that are deeper and more difficult to reach. It makes operations a lot more difficult and expensive and has been the reason why the industry has calmed down a little from its most recent heyday at the turn of the millennium. With a slight relaxation, new fields become more attractive to investors and so production will increase."

> "The UK is still sitting on massive oil and gas reserves, we're opening up fields now that will be productive for the next 20 to 30 years

This is hugely beneficial because not only does it open new production capabilities which result in employment and more tax flowing to the Exchequer, but the country is empowered to become more self-sufficient.

Hence Tholen reveals the Department of Business, Innovation and Skills is devising a strategy around how the industry can be better promoted and supported. Although Whitehall normally tends to want to promote sexy biotech or aeronautical advances, Tholen believes politicians and civil servants are coming to realise that the offshore industry has a lot to offer also.

SEAN HARGRAVE
info.uk@mediaplanet.com

PHOTO: SHUTTERSTOCK

SAFETY IMPROVING OFFSHORE INJURIES

The encouraging news for the offshore industry from the Health and Safety Executive figures for April 2011 to the end of March 2012 is that although, tragically, there were two deaths, the number of major injuries was reduced to 36 from 50 just two years before.

The figure for injuries which incapacitated a worker for three days or more was also down, as a proportion of the overall workforce, by 75 per cent against a peak recorded in the mid-90s. In fact, by going back as far as 1995, it was revealed that the injury rate stood at its second lowest rate of 123 per 100,000 workers. This was down from 152 the year before.

Dangerous incidents were also reported at nearly half the levels recorded during the 2000 to 2001 monitoring period.

In terms of the riskiest roles in the industry, the most general injuries were suffered through construction and maintenance work, followed by deck operations. In terms of major injuries, construction and maintenance roles, as well as production, were the most risky jobs.

The figures are collected every year and allow the HSE to report on how the industry is doing in improving safety. The HSE does not collect figures on helicopter transport to and from oil rigs because this is overseen by the Civil Aviation Authority.

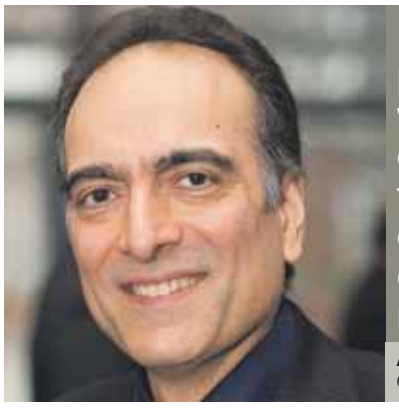
While always aiming for improved figures, the HSE believes the latest report is encouraging for a lowering in injuries, although tragically the figures are marred by the industry's first deaths in five years.

SEAN HARGRAVE
info.uk@mediaplanet.com

COMMERCIAL FEATURE

Shale gas trail, the European scenario

The global shale boom has been pioneered by the US, driven by the need for energy supply security and independence. Given its subsequent dramatic impact on the national economy and far-reaching consequences for the whole gas chain, many countries are now actively pursuing development of shale gas and shale oil, though numerous challenges remain. Azfar Shaukat, director of Mott MacDonald's Oil & Gas practice based in London offers his expert insights:



'Numerous perception issues will need to be overcome first, through increased credibility and demonstrable safety measurements'

Azfar Shaukat, director of Mott MacDonald's Oil & Gas practice based in London

Proponents of shale gas refer to the positive effect on the US gas market while opponents cite environmental concerns. What are the myths and the truths?

As we have seen in the US, there can be significant impact on the economy, energy security, and local employment from shale gas. In 2012, almost 1 million jobs were created in the US and tax revenues are expected to reach $100bn by 2014. So, the positive impact of shale gas on state budgets is not in doubt.

There are persistent concerns related to the use of chemicals contaminating drinking water or crop fields, and the possibility of shale gas fracking causing earthquakes. However, the sheer number of wells that have been drilled without incident seem to suggest that many safety and environmental concerns appear to be based on perceived impact in the worst case, rather than actual.

Do you think Europe will follow a comparable path to the United States?

Europe is fundamentally different, in terms of geology, legislation, mineral rights, exploration and production taxes, and so on. Also due to the higher population density in Europe and the fact that there are 27 different countries, approvals and permitting can be extremely complex. In terms of prospects for shale gas, significant initiatives have been under way in Ukraine, Poland and of course the UK. However the biggest potential could be in North Africa, given its highly promising geology.

How do you expect shale gas to develop in the UK?

The UK government has expressed its support and approved shale gas development at a specific site. Depending on the results, there could be new players entering the market, investing in new technology to achieve higher recovery rates.

However, numerous perception issues will need to be overcome first, through increased credibility and demonstrable safety measurements. The UK has probably the most complex environment to solve the concerns, but I can envisage shale gas supplying 10 per cent of gas demand in the UK by 2025.

In short, shale gas is here to stay, and we have to find the right balance between the commercial interests of developers and requirements of regulatory bodies to allow safe and sustainable development. It is inevitable that more of our gas (as well as oil and chemicals) will be coming from shale in future, not only in Europe but also globally.

Oil, gas and petrochemicals
E: oilandgas@mottmac.com
W: oilandgas.mottmac.com

Mott MacDonald

NEWS

MANAGING RISK
The offshore industry has had a good safety record in recent years due to a strong regulatory framework set out by the HSE
PHOTOS: SHUTTERSTOCK

Safety lies at the heart of offshore

■ **Question:** Is the offshore oil and gas industry the UK's riskiest?
■ **Answer:** It's certainly a high risk working environment, but safety regulations mean fatalities are, thankfully, rare.

OFFSHORE SAFETY

Working, sleeping and eating up to a couple of hundred miles offshore drilling for highly flammable hydrocarbons next to a chemical plant with a helicopter pad on the roof is never going to be the safest working environment.

However, the offshore industry has a very good safety record since the Health and Safety Executive (HSE) was asked to oversee it, following on from the Piper Alpha disaster 25 years ago which claimed 167 lives.

With two fatalities between April 2011 and the end of March 2012 — after five years without a single death — the offshore oil and gas industry is way behind the UK's construction industry which tragically sees an average of one death per week.

Steve Walker, head of strategic intervention at HSE's Energy Division, is quick to remind that there are still significant dangers.

Steve Walker
Head of strategic intervention, HSE

> "The big advance we've noticed is engineers talking to one another and sharing knowledge in to how these events can be reduced

"It's a low probability but high consequence industry," he says. "One problem can have devastating effects, so we have a very strong regulatory framework.

"We have what's called a 'permissioning' regime whereby operators have to show they're able to run a platform safely and manage risk. The onus is on operators to adhere to regulations but we do have a hundred inspectors who visit the 300 or so installations we're responsible for, and if they don't like what they see, they can shut a platform down instantly. Normally, it's just a case of verbal and written advisories."

Leaks improving

The HSE does not only measure the offshore industry in terms of deaths and injuries, but also for incidents which could have caused an issue. Hydrocarbon leaks are incredibly dangerous because, even thought the vast majority do not lead to disaster, it only needs one to ignite for there to be multiple fatalities.

"We set the industry a challenge three years ago to halve the number of hydrocarbon leaks that occur each year because they had come down in the past but had then reached a plateau," says Walker.

"So far, it's looking good and the industry is on track to reach the target. The big advance we've noticed is engineers talking to one another and sharing knowledge into how these events can be reduced. Previously the proverbial low hanging fruit had already been picked and to get off the plateau they need more collaboration — it's been a big step for the industry."

Walker points out that offshore sector is very responsive to HSE requests and guidelines because all share the same commitment to protecting lives in a potentially hazardous working environment. One only has to look at a single incident, such as Deep Water Horizon in the Gulf of Mexico, to realise how important safety is to saving lives and maintaining a positive brand image.

SEAN HARGRAVE
info.uk@mediaplanet.com

Industry meets to discuss the future of energy

The Unconventional Gas & Oil Summit (UGOS) is Europe's leading international conference exploring the latest trends in unconventional gas and oil, taking place in London between 3-6 June.

Described as "the event to get valuable first-hand information on the European shale gas development before it gets published", UGOS is where the entire unconventionals supply chain will be gathered under one roof to meet, network and share the latest news and developments in the industry.

Addressing the key challenges and opportunities for finding sweet spots, implementing regulations and commercialising unconventionals will be top international oil majors, independent oil companies, technology providers and policy makers.

On the regulatory side, find out what needs to be done to encourage the industry to advance in unconventionals, including the European Commission's regulatory framework for future gas developments and solutions for adhering to the IEA's Golden Rules and other best practice recommendations. Operators will also be offering their expertise and you can discover what technologies have been introduced and how costs can be driven down for the exploration, drilling and completion of shale in Europe and worldwide.

■ Find out more information about the Unconventional Gas & Oil Summit and all of the speakers involved at www.oilandgasunconventional.com

■ If you'd like to attend, quote the VIP code FKE2243MP to get a 10 per cent discount.

COMMERCIAL FEATURE

GE delivering on the UK subsea opportunity

Oil and gas has been the largest sector of industrial development throughout the past four decades and it continues to support over half a million jobs across the UK economy. The competence of UK skills and the quality of our technology, particularly subsea, is very much in demand, with our technology exports now able to sustain the UK domestic industry beyond the life of the UK Continental Shelf (UKCS).

Rod Christie
CEO of GE Oil & Gas Subsea Systems

The UK is recognised as a global centre of excellence for subsea engineering. In Aberdeen and across the UK, GE is developing extremely complex and advanced technical solutions that will meet the challenges of safely and efficiently recovering deep-sea oil and gas reserves to power the world.

The success of the industry and the investment behind it has led to significant growth in new orders from across the globe, which means we are well-placed to create jobs that benefit the UK economy. Our industry segment is growing faster than other areas in the energy sector and we can expect this trend to continue for the medium to long term.

Finding the talent

Often, industry and media attention focuses on the changing projections of how much oil and gas there is, how difficult new reserves are to reach and the sustainability of oil and gas as a future energy source. What is often overlooked is the fact that exploration and production technologies have advanced significantly and projections show that peak oil production has yet to be achieved. The real question surrounding sustainability is talent development. The oil and gas industry is facing a precarious shortage of trained and skilled people.

As many senior petroleum engineers move toward retirement, there are fewer and fewer young engineers following to fill in for them.

Successful companies must go where the resources are. For continued growth, the gaps must be bridged between old and young engineers by attracting talent from adjacent hi-technology engineering sectors such as aviation, nuclear and defence that are currently experiencing a downturn in activity. As an industry we also need to partner with schools and universities, inform students of the career opportunities that exist and help these institutions develop the skills that are needed for the future.

GE is working hard to become an "employee of choice" that can attract the best talent, and is going on the offensive. We have developed industry training programmes that will enable us to efficiently re-train skilled workers from other industries to the oil and gas sector. We are engaging with education establishments globally to work on demand planning and program development for the future graduates and skilled workers.

Last month we held a recruitment event in Aberdeen that was attended by over 380 applicants and we have been actively hiring ex-service personnel with great transferable skills. We are constantly meeting people from a variety of backgrounds; apprentices and graduate level, many from alternative industries looking for advice or opportunities to join our conversion programmes, as well as existing subsea engineers from the competition and ex-employees looking to return. Our latest recruitment event was in Nailsea near Bristol on 20 April and we will be running a series of events across the UK throughout this year to help us meet our ambitious growth targets.

> "For continued growth, the gaps must be bridged between old and young engineers by attracting talent from adjacent hi-technology engineering sectors

Once on-board, our employees benefit from ongoing quality training and career development paths for both technical and managerial tracks that ensure there are always incentives for doing great work and staying for the long term.

Investing in the UK

GE Oil & Gas has been heavily investing to expand the capabilities of its existing facilities in the UK.

Last month we announced that we were expanding our Newcastle facility which specialises in the engineering and production of high-quality flexible pipeline products and solutions for subsea oil and gas production. The move was made possible with aid of a Regional Growth Fund grant of £3m to help with the expansion and will support us in the creation of 200 new jobs.

GE has spent more than £1m on transforming its Nailsea site near Bristol into a modern production facility capable of delivering the highest levels of quality on subsea oil and gas production system controls, making this the premier global site in the sector. Earlier in the year GE announced plans to create a new subsea centre in Bristol at the city's Aztec West Business Park, creating another 200 new jobs.

Last year, we kicked off a £9m (US$15m) investment at our manufacturing plant in Montrose that will double the site's current size to 4200m^2 and a multi-million pound investment programme at our Aberdeen production facility to increase production capacity and extend the range of activities undertaken at these sites. GE is currently recruiting over 150 people to work at its Aberdeen and Montrose facilities.

These developments will ensure that new, much larger deep-water projects can be manufactured in the UK, enabling us to meet increasing demand and accelerate the manufacture of subsea equipment that will support projects worldwide.

The investment is a reflection of the company's long-term commitment to the UK, and further indication of the sustained growth in business that we have seen globally over the last two years. It's an exciting time to be working in the oil & gas industry and specifically for GE in the subsea sector here in the UK.

ROD CHRISTIE
CEO of GE Oil & Gas Subsea Systems

PANEL OF EXPERTS

Professor Paul Stevens
Senior research fellow; energy, environment and resources, Chatham House

Martin Grant
Managing director, energy, Atkins

John Loughhead
Executive director, UKERC

Question 1:
How can we develop and retain the best skills and talent to ensure technological advancement in the industry?

Ensure that all the energy industries increasingly take account of environmental issues. Too many talented young people see energy industries as old and dirty. They therefore have little interest to invest their future in industries that are seen to be past their sell by date. To change this perception requires serious commitment on the part of governments and the private sector, and not just the lip-service that has characterised so much of the discourse to date. At the same time, research needs adequate funds which, in the case of the UK government, has not been the case in recent years.

We need a talented, diverse critical mass at all levels to continue to challenge and innovate. Three things support this: firstly, collaboration across industry, government and academia to secure the right investment, training and environment to ensure engineering is an enticing career prospect from an early age. Secondly, bringing skills, perspectives and best practice from other sectors will help the energy sector to adapt to new challenges. Thirdly, by making work as accessible as possible to as many as possible the sector is far more likely to attract and retain skilled workers as well as encourage a more diverse workforce at senior levels.

Increase our ambition for energy system innovation, show commitment to realising it, and raise the profile of major projects to excite the imagination of young potential technologists.

Ask the experts!

Question 2:
With populations increasing and reserves more difficult to extract, what is the best way to secure energy supplies in the short to medium term?

Energy supply includes energy efficiency as the so-called "fifth fuel". All the evidence shows that the most cost-effective way to increase supply is to promote energy conservation using prices and regulation. The latter is key because energy markets are riddled with market failure that requires government intervention. They cannot be left to the market alone. Too much energy policy has been aimed at the supply side neglecting conservation. Conservation can also produce very quick results. In addition, improved conservation addresses both security of supply and concerns about climate change.

We are already working with operators in the oil and gas, nuclear and thermal generation sectors to safely extend the life of assets beyond their design lives, to secure supply in the short term while we wait for new sources of energy supply come on line. Hand in hand with ensuring supply, we also need widespread adoption of energy-efficient technology and behaviour that can help reduce consumption per capita. This period of transition is an important one — the decisions we make now to plug the short-term gap must support a low carbon, sustainable and secure energy mix for the future.

The most important move is to implement means to reduce permanently the demand for energy, while maintaining the level of energy services. A focus wholly on the supply side wil not be sufficient.

Question 3:
What would you say is the single most important investment to ensure energy supplies in the next 30 years?

Ensure sufficient investment on research and development on energy conservation. This research should be aimed at improving the energy efficiency of appliances — the hardware — but also greater understanding of how energy consumers behave — the software. The latter is key to developing conservation policy levers. The private sector should be encouraged to undertake such R&D, for example by the use of tax breaks or offering significant prizes to solve specific problems. However, a lot of this R&D involves basic scientific research that must be funded by the government making results freely available.

The solutions to our energy challenge are already available. Nuclear and offshore wind together offer us a proven route to low carbon electricity generation which works at scale. Their only drawback is a relatively high build cost. Investing in the construction of nuclear and offshore wind now in a controlled way will ensure that we learn how to do it well and bring costs down. These low carbon sources of energy will complement well the use of hydrocarbons which we envisage continuing to be an important part of the energy mix.

Energy is a complex system that must be considered as a whole, so there is no single most important element. Investment in new energy sources, networks and demand elements are all equally important.

FINDING THE RIGHT PEOPLE IS ONE OF THE BIGGEST CHALLENGES FACING THE GLOBAL OIL AND GAS INDUSTRY TODAY

WE LOVE A CHALLENGE

Simpson Booth is a specialist resourcing and HR consultancy company, with a focus on the subsea industry.

Established by two former senior executives from the subsea sector, we are bringing something new and exciting to the industry.

Find out more about us at www.simpson-booth.com

PROFESSIONAL CONTRACT PERSONNEL | PERMANENT PLACEMENT
EXECUTIVE SEARCH | STRATEGIC HR BUSINESS SOLUTIONS
+44 (0) 207 887 1388 | info@simpson-booth.com

Simpson Booth

Unleash your potential

WHAT SETS RLG APART

- We focus on performance (safety and operational excellence) improvements to your bottom line.
- We provide a balance between behaviour and result changes.
- We work full-time, on-site to provide coaching and follow-up to ensure performance improvement.
- We individually coach your people on leadership and business skills.
- We help improve the effectiveness of your planning and learning to ensure proper inclusion of front line employees and to help follow-up on opportunities and actions.
- We help you identify leading key performance indicators that your front line employees can influence and drive business improvements.

We partner with organisations who share the belief that engaging and involving your workforce will provide significant performance improvements.

Our commitment is to coaching your people to effectively execute your operational strategy throughout your organisation. The key to our success is a balanced approach to developing every employee's business acumen while enhancing individual leadership behaviours.

Founded in 1983, our solid reputation has been earned in a wide range of industries including aerospace, oil and gas upstream and downstream, manufacturing, nuclear power, forestry and mining.

Our on-site implementation coaches have worked in 38 countries across the globe and have completed over 2,200 performance improvement projects, committing to our clients a minimum of a 4:1 ROI and a visible 'results-based' culture. We've worked in delivery of major capital projects safely, on time and on budget as well as establishing highly efficient continuous operations.

Employees in all levels of your organisation are a valuable investment and a source of incredible potential.

RLG International's professionals work on-site with your staff to plan and implement customised systems that connect the front line to your bottom line.

Learn more about how our international clients in the oil and gas, and manufacturing businesses have achieved sustainable results with RLG by visiting

www.rlginternational.com

or call Scott McKenzie at +44 (0) 1224 56 26 56.

RLG INTERNATIONAL

Connecting the Front Line to the Bottom Line