



London Section

Issue 22 | June 2017

# SPE REVIEW

## LONDON



- **Dr. John Barker: exclusive interview**  
**PLUS**
- **Opportunity: Carbon Capture and Storage**
- **Discussion: Making Good Decisions**

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## ABOUT US

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# Information

At SPE Review London, we strive to provide you with knowledge and information to navigate our changing, and challenging, industry.

From technical information and industry news, to opportunities for personal and business development, and increasing interaction and collaboration among local energy professionals in the Greater London area, we trust you find this June issue of SPE Review London to be useful and informative.

This month's technical features: 'Making Good Decisions' – Jonathan Ovens, SPE Review London's Chief Editor, reports on the useful and informative discussion at the SPE London Section Evening Meeting (page 4) – slides from the evening presentations can be found on the SPE London website. Sam Gomersall, Petroleum Engineer and Director at Pale Blue Dot Energy, shares his thoughts on the science behind CCS, the opportunities as they currently stand, and his vision for future steps, on page 5.

WiE Focus offers an insightful interview with Leigh-Ann Russell, Keynote Speaker at the 2017 SPE Women in Energy conference (page 7), while Dr John Barker (recipient of the 2017 Reservoir Description and Dynamics Award) shares his opinions on industry challenges and opportunities on page 10.

Meet the people 'behind the scenes': The SPE Review Editorial Board (page 3) and the SPE London Board (page 13). Our regular feature 'Month at a Glance' is on page 14.

Consider getting noticed – write an article for SPE Review London (page 3), and remember to get tickets for the SPE London Annual Conference on 27 June (page 8).

Keep up to date with industry events, and networking opportunities listed on page 15. And don't forget to check out our social media pages: Facebook, Twitter, and LinkedIn.

**As always, this issue of SPE Review London offers the opportunity to be educated, entertained and informed.**

## We appreciate all your feedback!

SPE Review London is **YOUR** online magazine, so please send us your ideas, comments and suggestions for articles, interviews and/or topics you'd like to see in future issues.

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# Behind the Scenes: SPE Review Editorial Board



**Jonathan Ovens**  
Chief Editor

Jonathan Ovens joined Shell in 1986 after completing a Ph.D in Physics at Cambridge University. He worked as a Reservoir Engineer, particularly in the areas of hydraulic fracturing, pressure transient analysis and reservoir simulation. Between 1997 and 2012, he worked as an independent consultant for a variety of companies, covering the North Sea, North Africa and the Middle East. His experience ranges from Exploration and Development planning through to Reserves Evaluation. In 2013, he joined JX Nippon E&P (UK) Ltd as a Senior Reservoir Engineer, working a wide variety of assets in the North Sea. Between 2009 and 2015 he served on the SPE Europec Technical Committee and is a member of the SPE London Board.



**Josh Beinke**  
Editor

Josh Beinke is an established Petroleum Engineer consultant, with 10 years of prior experience with Chevron Corporation, Origin and Santos. Since earning a Petroleum Engineering degree from the University of Adelaide, he has found particular satisfaction specialising in Well Test Analysis, Integrated Production Modelling and numerous wellsite Production Engineering roles, notably through the construction and commissioning

of the Gorgon LNG Project. He recently moved to Europe from Australia and looks forward to continuing his involvement with the SPE in London.



**Ffion Llwyd-Jones**  
Designer

Ffion Llwyd-Jones is an editor and business writer, with 15+ years experience in Canada, the US, and the UK. She is Editor for several trade and consumer magazines (print and/online); and also provides industry-related case studies, and detailed, research-driven B2B reports and white papers. She is an accomplished photographer. Educated in Canada, and in the UK, Ffion is completing a BSc (Hons) with

the Open University. She enjoys the challenge of creating the information-driven SPE Review London.

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# Making Good Decisions

## SPE London Section Evening Meeting Report by Jonathan Ovens

### Pete Naylor (Shell)

Pete introduced the evening's proceedings by highlighting the importance of making good decisions in our industry. In 2016, he undertook a Distinguished Lecture Tour (see here for a link to his SPE DL Slides), and at each section he asked members of the audience if they had heard of Decision Risk Analysis (DRA) and whether it was regularly used in their company.

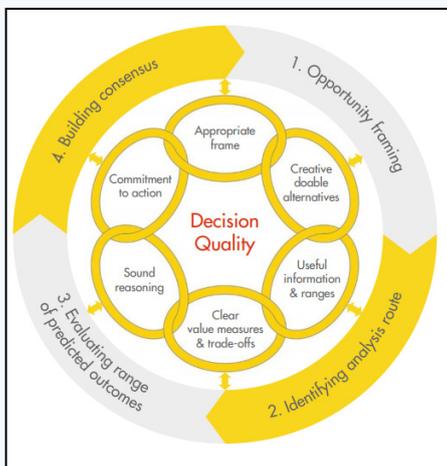


Figure 1: Decision Risk elements (source Shell)

On average, only 30% attendees had heard of DRA, but almost all (95%) the attendees to the London Section Meetings had exposure to DRA, 81% of us had used DRA and 81% of us had conducted a VOI analysis.

Pete went on to outline the six key elements of Decision Quality (DQ) that need to be addressed before making a decision. They are illustrated as the inner rings in *Figure 1*.

The outer ring in the figure indicates the four steps involved in undertaking an effective DRA analysis. DRA is the process and DQ is the dashboard to gauge whether sufficient work has been undertaken to justify making a decision.

### Andrew Tweedie (Nexen)

Andrew presented a short video on decision risk analysis as used in Nexen. The video will be available via the SPE YouTube channel soon.

### Peter Wood (Shell)

Peter presented a case example from Shell's Worldwide portfolio, which illustrated how rigorous application of Decision Quality can assist in making significant decisions and help to communicate and obtain buy-in of the decision with all stakeholders, including Government, where very large costs were involved. A deep water oil field had been sanctioned using a tension leg platform as the development concept. Producers would be supported by water injection, but the existing platform design meant there were a limited number of well slots. The time between FDP and First oil was six years, but in year four (when a significant amount of the facilities had been designed and built), new seismic data showed that the field was more faulted than previously thought, raising doubts around the development concept. After conducting a Decision Risk Analysis, Shell decided to continue with the development, keeping the first oil date, but re-assessing the number of water injectors required after startup.

### Discussion

After the presentations mentioned above, Pete returned to the microphone to host a discussion around increasing the use and effectiveness of Decision Analysis (DA). He identified four barriers to the use of DA, namely

- Poor communication – eg. I'm too busy to hold a workshop!
- Lack of understanding – DA uses statistical techniques that are often not fully understood (or not trusted!) by the decision makers
- Inertia – Decision makers may not see the need for further analysis or may use past success as a good guide to the future
- Attitude – Decision makers do not see DA as part of their job

These points, and more, were brought out in comments from the floor. Particular problems noted was when someone with a strong character was involved in the decision process and the dangers of separating those charged with making the decisions from those who had to carry consequences of those decisions.

Finally, Pete pointed us towards three useful resources:

1. An SPE Technical Report 'Guidance for Decision Quality for Multicompany Upstream Projects' (SPE-181246), available for download from the SPE website. It is free to SPE members.
2. Two books are also highly recommended:
  - Decision Quality by Carl Spetzer, Hannah Winder and Jennifer Meyer, Wiley, 2016.
  - Making Good Decisions, Reidar Bratvold and Steve Begg, Society of Petroleum Engineers, 2010.

*Continued on page 9*

# Carbon Capture and Storage (CCS) – Opportunity for the Oil and Gas sector

Sam Gomersall, Petroleum Engineer and Director at Pale Blue Dot Energy discusses some of the key points to this report, including the science behind CCS, the opportunities as they currently stand and his vision for necessary future steps.

## CCS – an opportunity for the Oil and Gas sector

Carbon Capture and Storage (CCS) is at present the only technology that enables continued use of fossil fuel reserves while complying with the 2-degree climate change limit. It is also one of the few technologies that can support the decarbonisation of heat, heavy industry and power generation. What opportunity then does CCS present for the oil and gas sector and where does the UK sit in terms of CO<sub>2</sub> storage potential?

## CCS reminder

Carbon Capture and Storage involves separating CO<sub>2</sub> from large point sources (e.g. power stations and heavy industry) and compressing the CO<sub>2</sub> for transport and injection into wells for sequestration deep underground, see *Figure 1*.

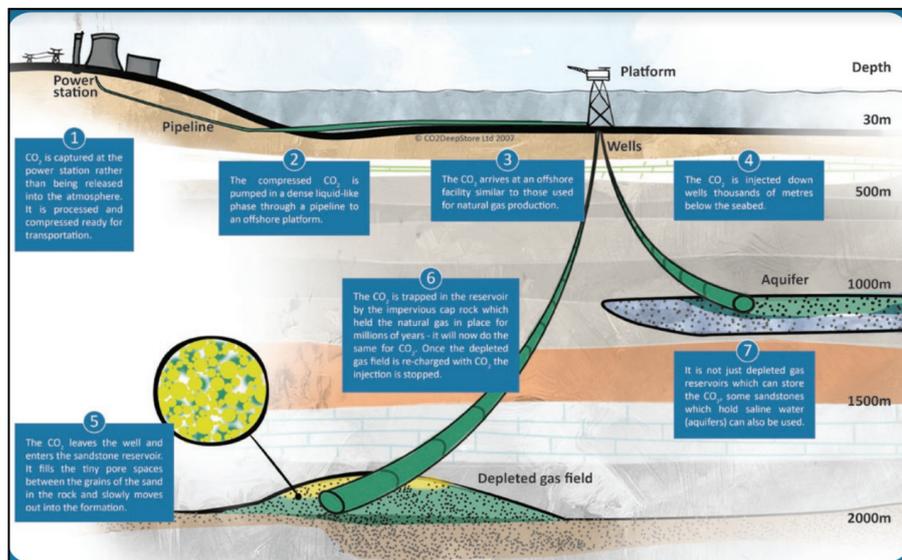


Figure 1: Basic Process for Carbon Capture and Storage [1]

At its simplest, successful CO<sub>2</sub> storage is characterised by three main components:

1. Capacity – connection to underground pore space of storage reservoirs within which to store the CO<sub>2</sub>.
2. Injectivity – the ease that CO<sub>2</sub> can be pushed into the storage reservoir adjacent to injection wells. The process depends upon permeability, thickness and the ability to dissipate pressure.
3. Containment – an impermeable cap rock which assures the injected CO<sub>2</sub> will be contained safely for the long-term within the storage reservoir and other trapping mechanisms which work together to retain the injected CO<sub>2</sub>.

## CCS related opportunities for the Oil & Gas sector

**Emissions reduction:** CCS remains fundamental to the future of the UK oil and gas sector. The UK passed its Climate Change Act in 2008, obliging it to cut its 2050 emissions by 80% compared to 1990. In Paris, December 2015, 171 countries committed to cutting emissions to constrain global average temperature rise to less than 2°C. To meet these targets, we must either drastically reduce the use of fossil fuels altogether or use CCS to mitigate CO<sub>2</sub> emissions from fossil fuel sources. As the reality of delivering the Paris Agreement sinks in, countries are turning to CCS as a long-term transition technology to enable continued use of some fossil fuels. In the UK, the application of CCS is the only way we can deliver our Maximising Economic Recovery (MER) targets and meet our climate change obligations.

CCS provides a range of business areas for the oil and gas sector, these are illustrated in Figure 2 (on page 11) and discussed further in the following paragraphs.

**Retain reserves value:** As climate change actions progress and regulatory and economic drivers develop, there is a considerable risk of ‘stranded assets’ i.e. oil and gas reserves becoming uneconomic or unavailable for production on regulatory grounds. The risk that climate change poses for oil and gas companies is generally not well communicated with shareholders, who are starting to ask for increased transparency on this threat. CCS provides a means by which some of these reserves could be monetised whilst still delivering on climate change obligations.

*Continued on page 11*

# Leigh-Ann Russell: Keynote Speaker, 2017 SPE Women in Energy conference

Leigh-Ann Russell is a powerhouse. As a Keynote Speaker at this year's SPE Women in Energy conference on April 7th, she captivated the room with her fierce intelligence, disarming wit and charm. Why is gender parity important in the energy sector? 'Because it's 2017,' she says with simple effectiveness.



Leigh-Ann Russell

*Taking time out from her responsibilities as Vice President, Technical Functions and Performance for BP's Global Wells Organization, Leigh-Ann shared her thoughts on being a leader in the petroleum industry, as well as personal insights and excellent advice for those following in her footsteps.*

**There is a well-documented correlation between higher female participation in management roles and improved financial company performance, however only 5% of executive board members in the oil and gas sector are women. What will it take to improve these figures?**

We are making progress in our industry. At BP we are doing extremely well at meeting our 2020 targets for female representation at senior management and executive levels. To support this, we ensure we have diversity on our interview panels, particularly for senior leadership positions, and we are also removing barriers. For example: in our wells organization we have moved all morning rig calls to begin after 8 am. They were typically held as early as 6 am and it was difficult for people with young children to take part in them.

I do believe we should set targets for our diversity goals. This practice has proven successful in Norway as well as in the UK where we are close to reaching the targets set out in the Davies report, which set a target of all FTSE 350 boards having 33% female representation by 2020. In business we get what we measure and even aspirational targets can be enough to change unconscious behaviours, which are often barriers to women progressing.

While all promotions must be meritocratic, if there are two candidates with equal skills, then we should choose the candidate that will boost the diversity of the organization. Having diversity of thought will lead teams to make better decisions for the business. To build this diversity we need to foster an inclusive culture. There is no point in being diverse if you are not inclusive. My highest performing teams have been the most diversity – in gender, ethnicity, background, leadership style and sexual orientation. I can draw an absolute link to the diversity of a team and its performance.

**Have there been times in your career that surprised you in terms of how you were treated by men in the workplace?**

I have been very fortunate in my career to have rarely felt that I was being treated differently, certainly not in a conscious way. However, very early in my career I did have a concern that I was offered a role more so because I was one of the few women in that company rather than based on my merit. I turned down that role. These and other challenges still exist for women today. That's one of the reasons I mentor through the SPE membership program where I can reach out to women outside my company and provide support and coaching.

I was told once that for professionals, business is never personal. If someone behaves improperly towards me, I assume they are not a professional. I maintain confidence in my technical and leadership skills and downplay incidental poor behaviours or address them offline with individuals. However, if you are subjected to a pattern of bad behaviours you must address them promptly. Bullying or sexual harassment must never be tolerated and Human Resources should be involved.

**What lessons have you learned on your journey that you would most like to share?**

When my daughter was born more than 10 years ago, I really worried that my career progression might be over. However, I have been fortunate to have had good line managers and a company who support me to be the best employee and mother can be.

It starts with performance. If you are known as a high performer, it is easier to negotiate the balance you need as a parent. Set boundaries for what is important for you as a parent and try not to deviate from them. I do still work very long hours, but I manage to have dinner with my daughter most nights and try to work my schedule such that I rarely miss school events like concerts. I used to wonder if I was letting my daughter down by not staying at home, but I now realise that by placing great importance on weekend and vacation time I am able to balance the hours that I am at work. Therefore, we are very close and she has a strong female role model.

I think the most important advice I was given was to have patience with my career – to build a solid technical foundation that you can develop leadership skills around. In this way, you cultivate reputation and credibility that gives you the self-confidence to handle bigger and more challenging roles.

My best career choices have always involved seeking advice from my mentors, then making the decision I felt was best for my development and added the most value. If you make informed decisions and take accountability for them yourself,

*Continued on page 8*

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## Leigh-Ann Russell: *continued from page 7*

you are unlikely to regret those choices. My worst career choice was turning down a job because I did not think that as a mother of a young child I could manage the role due to the early start time. Ironically the job went to a less qualified male who worked the role around his family and sporting life! I think women (forgive the stereotype) often put extra burden on themselves to be perfect for a role before accepting it, whereas generally men will generally be comfortable applying for and accepting a stretch role.

The women who work for me are a constant source of inspiration. They are smart, ambitious, resourceful and well organised. I try to do everything in my ability to help them succeed. I was particularly inspired the day I realized I had a brilliant woman on my team whose career was very likely to progress such that I could be working for her one day! It did not make me feel competitive; rather it made me feel proud and renewed my inspiration to help her and other women to reach their potential. We have made progress, but this can go backwards as well as forwards, and there is still much to do. Don't assume all of the challenges of being a woman in our industry have been solved. Get engaged in the issues.

Believe in yourself. There is a difference between arrogance and confidence. Be humble, but be confident. I have always been my own greatest critic and while self-reflection keeps you humble, lack of confidence could result in missed opportunities. I want women to know they can take on the whole world if they choose to.

**Leigh-Ann joined the oil and gas industry in 1997 after graduating from Aberdeen University with a degree in mechanical engineering. She worked for several industry-leading companies before joining BP in 2005. Leigh-Ann is a diversity champion within BP and has been a long-time supporter of women's career development in the energy industry. She is on the executive committee of the BP Supplier Diversity Board and an active member of BP's Million Women Mentors STEM initiative and GWO's Women in Wells initiative.**

*This interview was coordinated by Kathleen de Meillac, a Senior Reservoir Engineer at BP and member of the SPE London Women in Energy Committee.*

### OIL AND GAS INDUSTRY IN A NEW EPOCH

#### SPE LONDON ANNUAL CONFERENCE 2017

27 June 2017, ETC St Paul's - 200 Aldersgate Conference Centre





### 'Oil and Gas Industry in a New Epoch' plenary speakers confirmed!



**John J. Moon**  
Morgan Stanley



**Nikolai Lyngo**  
Statoil



**Niels Kirk**  
Citi





**Renu Gupta**  
Gupta Energy  
(Moderator)

 #17LOND Find out more on [www.spe.org/go/17lond](http://www.spe.org/go/17lond)

# Making Good Decisions continued from page 4

3. Presentation material from the evening is on the SPE London website.

## Craig Smalley (Imperial College)

Craig began by citing evidence that only 22% of oil industry projects could reasonably be called successful. His thesis was that we could make better decisions and enjoy better business outcomes if we were better at defining risks and managing them effectively. He suggested that an event based risk management approach could be applied to subsurface risks. *Figure 2* shows the conceptual outline for an event based risk management system

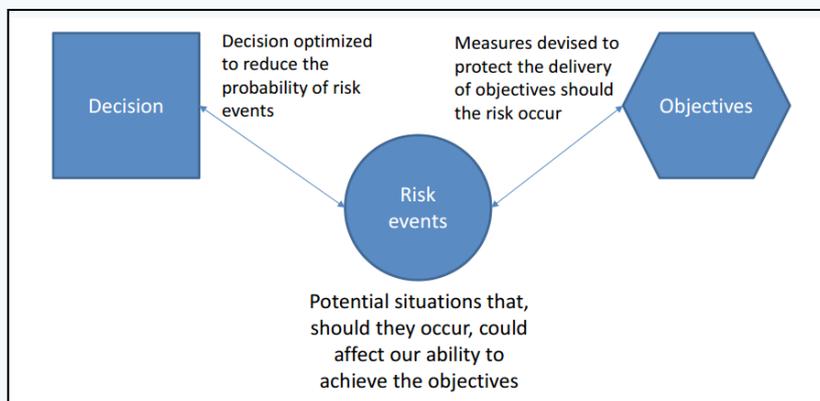


Figure 2: Conceptual risk-event diagram (Source: Craig Smalley, Imperial College)

here is that the infill wells produce less than the minimum required production rate of 5 mbd, producing undesired consequences that compromise the success of the project.

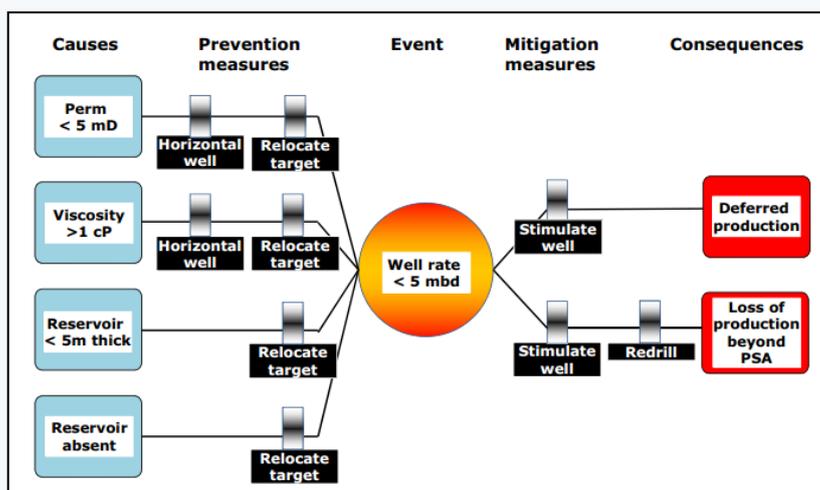


Figure 3: Example bow tie risk event diagram (Source: Craig Smalley, Imperial College)  
The filled circles represent the onshore sources of CO2 and the open circles are the offshore sinks (i.e. storage places). The size of the circle represent the size of the source or sink.

Thus the approach was to take decisions that reduce the probability of a risk event taking place (i.e. prevention) while at the same time putting in place measures to protect delivery of the objectives should the event occur (mitigation).

An example of this thinking might be in planning an infill drilling campaign (*Figure 3*). The risk event

Once we establish the potential causes of the event (e.g. low perm, high viscosity etc.), we can design our well to prevent these unknowns leading to the occurrence of the risk event. At the same time, we can plan mitigation measures (e.g. well stimulation) to mitigate against the outcome after the event. Readers of this Review will perhaps recognize the above diagram as a 'bow tie' diagram that Ron McLeod introduced in his lecture in October 2016 – see the November 2016 issue of SPE Review London.

In order to analyze further risks in the E&P Sector, Craig made use of a database of 1456 subsurface risks extracted from a much larger global risk register database. Each risk was categorized and placed in a taxonomy under one

of the following three categories: Area of consequence, style of risk event and type of cause.

Risk frequencies could be analyzed to determine the major risks that needed to be prevented or mitigated in a particular situation. For instance, risks related to initial in place volumes are more frequently identified in deepwater oil field and gas fields that feed LNG plants, where resource volumes are critical to support the large project capital costs. For mature fields, operational efficiency tends to show up more frequently.

This analysis could be useful in the industry by helping to identify key risks relevant to a given decision frame.

### For more information, see:

PC Smalley & K Chebotar (in press). Event-based risk management for subsurface risks: an approach to protect value generation from oil and gas fields. AAPG Bulletin. doi: 10.1306/11301616084.

AAPG members can preview online at:

<http://archives.datapages.com/data/bulletns/aop/2016-12-21/images/aapgbtln16084aop.pdf>

# 2017 SPE North Sea Regional Award

Dr. John Barker, Technical Director in Reservoir Engineering with Gaffney, Cline & Associates, is the recipient of the 2017 SPE North Sea Regional Reservoir Description and Dynamics Award. He spoke to SPE Review London about industry challenges and opportunities



Dr John Barker

Dr. John Barker, Technical Director in Reservoir Engineering with Gaffney, Cline & Associates, is the recipient of the 2017 Reservoir Description and Dynamics Award. The Award recognises outstanding achievements in, or contributions to, the advancement of petroleum engineering in the area of reservoir description and dynamics. (This award was formerly known as the Reservoir Engineering Award.) He is also a SPE North Sea Regional award winner.

For more than 32 years, John has worked on oil, gas and gas-condensate fields of all types. An acknowledged expert in reservoir simulation and its use in reservoir development planning, he has extensive experience in reserves/resources estimations for stock market and other purposes and is a member of the SPEE as well as the SPE. He has served on several SPE technical committees and was Executive Editor of the SPE Reservoir Engineering journal in 1999-2000.

Speaking to SPE Review London, John comments:

'I have been considering why I was given this award, and I think it's probably for two reasons: I started my career in research and published some papers on EOR and reservoir simulation, which I would like to think made a contribution to reservoir description and dynamics; and I also spent several years on the SPE Editorial Review Committee, which involved reviewing hundreds of SPE papers. It's always pleasing to get recognition for one's work, but for me the main motivation was the work itself, which gave me a tremendous opportunity for learning, as well as helping with my career development.'

Asked about current industry challenges and opportunities, John mentioned three particular issues: the low oil price, the effect of environmental concerns, and the technical aspects of unconventional resources.

Regarding the new oil price environment, John comments that the industry always gradually adjusts to any new oil price. 'We had 20 years of low prices from 1986 onward, and while it was a shock in '86,' by the early '90s the industry had adjusted to it.'

John also believes that while environmental issues are important, the oil and gas industry is not going to disappear or lose its importance in the near future. He adds: 'If someone starting out today in the industry has an expectation of a career spanning 30 to 40 years... well, that's a long way into the future, but certainly for the next 10 to 20 years, oil and gas will still be very important. I think gas will become more important than oil for environmental reasons because gas is a cleaner fuel. While renewables may be the ultimate goal, I think it will be a long time before renewables can replace hydrocarbons. Meanwhile, replacing coal and oil with gas would go a long way to reducing carbon emissions.'

The third challenge that John identifies is more technical, and relates to unconventional hydrocarbons. 'The technical aspects of unconventional resources are quite different,' he comments. 'Certainly from a reservoir description and dynamics point of view, it's a very different world. What reservoir engineers have been learning and doing for the past 40+ years does not necessarily apply to unconvensionals. It's not an area I've worked in a lot, but the challenges are not all solved, so there is progress to be made in understanding what's going on. I think it's an area that will see exciting developments over the next few years.'

John adds that unconvensionals are, by their nature, more expensive to produce than conventional resources in similar locations: 'There is tension where the unconvensionals are now the new swing producer: if the price of oil goes back up, unconventional activity will also go back up, and that will keep a cap on the price. If the price falls, then activity will drop off again.'

'But unconvensionals won't go away,' he adds. 'They're the long-term future of the industry. It's always getting harder to find new conventional resources, and while we know there's likely to be a lot of them left, the challenge is producing them economically.'

**Commenting that technology drives exploration into deeper water, and to greater depths, John concludes that 'technology is constantly freeing up both conventional and unconventional resources. Improved technology will enable the industry to do things better, further, and faster than before.'**

# Carbon Capture and Storage (CCS) – Opportunity for the Oil and Gas sector *continued from page 5*

**Oil & Gas asset re-use:** Whilst many oil and gas assets will be unsuitable for CCS, some infrastructure can be re-used. These are likely to be certain pipelines and coastal terminals. Generally speaking, offshore facilities and wells are unlikely to be

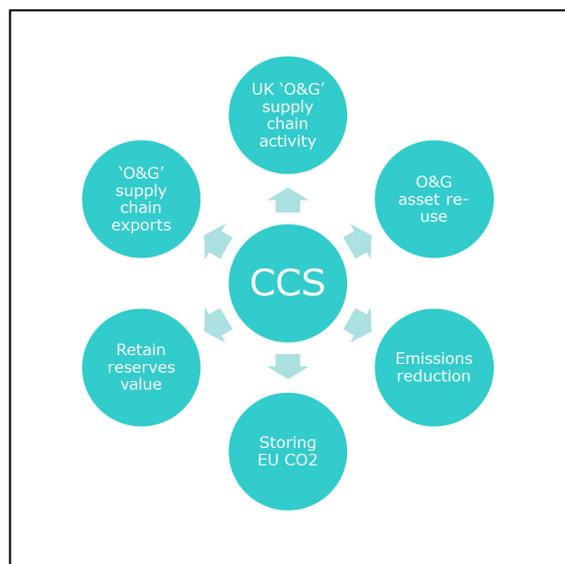


Figure 2: Oil and Gas Opportunities for CCS

re-used for CCS. Re-use of assets will help reduce costs and accelerate the initial phase of CCS project development.

**Supply chain opportunity:** CO<sub>2</sub> transport and storage project developments and operations require all the same services as oil and gas. The oil and gas supply chain is ideally placed to address the CCS market as it develops, both domestically and internationally. Despite the challenges of early projects to date, there could be a significant CCS market in the 2020s and beyond.

**Storing EU CO<sub>2</sub> in the UK:** As we discuss below, the UK has significant storage potential and could store CO<sub>2</sub> imported from other European countries by ship or pipe.

## UK CO<sub>2</sub> Storage potential

In 2015, Pale Blue Dot Energy was commissioned along with Axis Well Technology and Costain by the Energy Technology Institute (ETI), to identify a select inventory of 20 CO<sub>2</sub> storage sites with detailed appraisal of five sites to assess their potential contribution to mobilising

commercial scale CCS projects in the UK. The project was supported by £2.5m in funding from the Department for Business, Energy and Industrial Strategy (BEIS) formerly the Department of Energy and Climate Change (DECC). The project verified the potential of almost 1000 million tonnes of storage in UK waters.

When added to the work carried out on the three stores, which were developed as part of previous UK CCS projects, this provides the UK with a range of storage options with sufficient capacity for the next 30 years at least. It is hoped that this

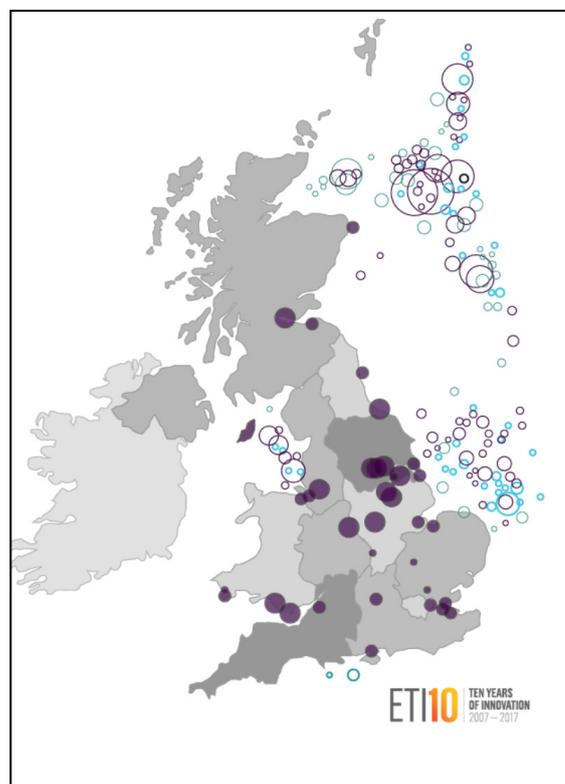


Figure 3: Map of UK CO<sub>2</sub> Emissions Sources and Potential Offshore Storage Location

demonstrated level of capacity will help to provide confidence to investors in UK projects that the capacity exists to meet their needs. By carrying out storage appraisal work early to provide assurance of the quality and security of stores this should greatly reduce the complexity and financial risk for associated onshore investment in CO<sub>2</sub> capture and transport systems, by clearly demonstrating the storage element of the value chain.

The map (Figure 3) shows UK land based emissions sources and potential offshore storage reservoirs. Alongside key knowledge documents published following previous CCS competitions, this means the UK now has, in the public domain, one of the most comprehensive and mature propositions for CO<sub>2</sub> storage.

## What can the Oil & Gas sector do now?

CCS should be a key part of any long-term vision for UK oil and gas.

With CCS, the opportunities will; help sustain and create jobs, enable North Sea production to continue, support MER and enable the oil and gas supply chain to diversify. Without CCS, all these are at risk. To date, CCS has been largely seen as a power generation waste problem, so that other than some regulatory obligations, the oil and gas sector has been waiting for projects to emerge. This waiting strategy is no longer appropriate.

Whilst recognising there will be little CCS project activity in the next few years, proactive engagement of the sector is

*Continued on page 12*

# Carbon Capture and Storage (CCS) – Opportunity for the Oil and Gas sector *continued from page 11*

required to ensure that in the early 2020s CCS in the UK can become an important source of value to companies in the O&G sector. The UK should leverage its oil and gas sector capability and become a global player, but the oil and gas sector needs to act now.

## References

[1] “Sustainability in the Spending Review”, Briefing for the House of Commons Environmental Audit Committee, National Audit office, UK HM Treasury, July 2016. <https://www.nao.org.uk/wp-content/.../07/Sustainability-in-the-Spending-Review.pdf>

[2] Link to this at <https://pale-blu.com/2016/05/19/summary-and-build-out-reports/>

## Editor’s Note

The Paris climate Agreement, adopted in December 2015 following worldwide consensus to reduce greenhouse gas emission, has been newsworthy following Donald Trump’s declaration of the United States’ intent to withdraw.

Closer to home, we saw the 2016 cancellation by the UK Government of its pioneering £1bn Carbon Capture and Storage (CCS) competition, with two projects competing to demonstrate the economic viability of CCS being left stranded by withdrawal of funding. In the National Audit Office’s “Sustainability in the spending review” [1] report, HM Treasury concluded that ‘while CCS could help achieve long-term decarbonisation objectives there were strong arguments for the competition to stop.’ These arguments centred around a desire to defer expenditure until a more cost-efficient international carbon price presented itself. This did little to support investor confidence in CCS, being the second such UK Government withdrawal from a CCS competition.

‘Progressing Development of the UK’s Strategic Carbon Dioxide Storage Resource’ [2] confronts such issues, with Lord Browne of Madingley postulating that these delays might merely serve to ‘bring much earlier cost increases if we are to remain on track to meet national carbon budgets in the 2020s and ‘30s.’ Through appraising, verifying and making publically available an inventory of UK CO<sub>2</sub> storage locations, the authors intended to demonstrate industry leadership by seeking to reduce risk for prospective CCS investors.



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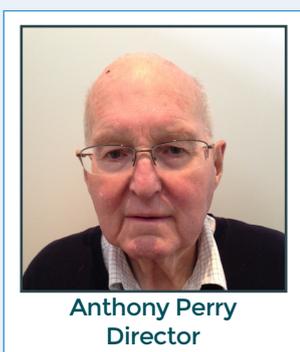
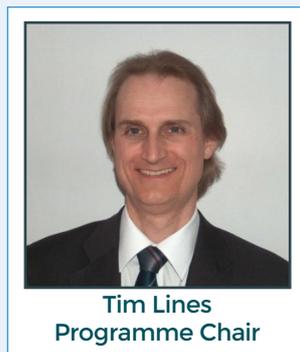
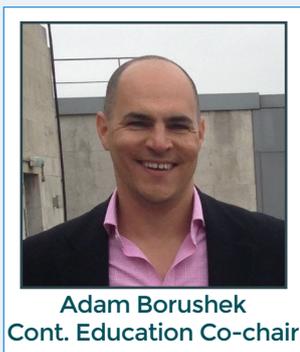
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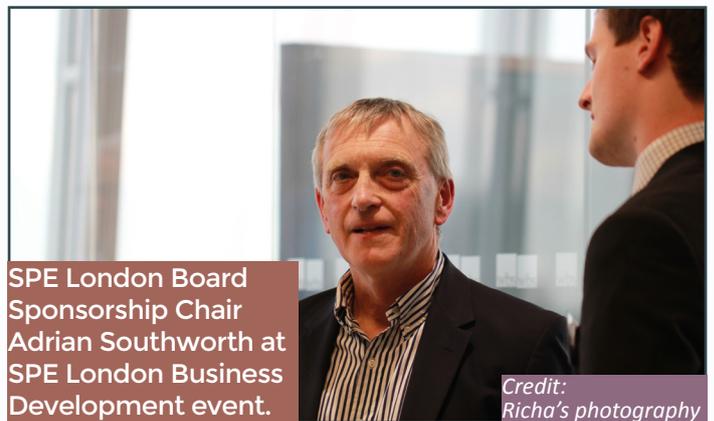
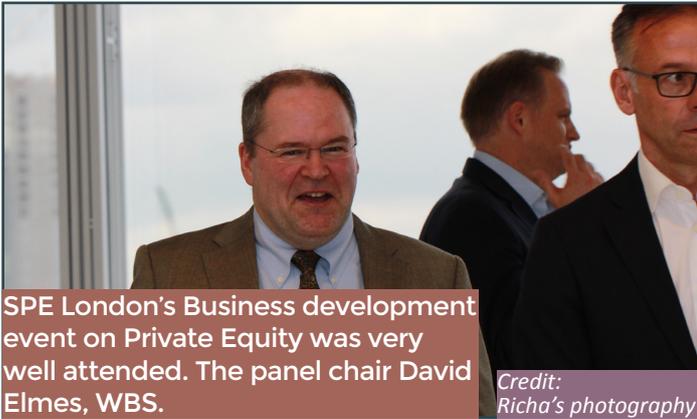
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# Month at a Glance

SPE London has been busy with activities! Here's a pictorial overview of what's been happening. Keep track of all our activities and events – check out the Events page on SPE London's website.



## EVENTS: Upcoming events 2017

27 June 2017 (London, UK)

**SPE London Annual Conference**

The conference sessions will focus on:

Oil &amp; Gas Industry in a New Epoch (Confirmed speaker: Niels Kirk, Managing Director, Global Energy Group, Citi Corporate &amp; Investment Banking)

Financing and Valuations - financial restructuring, investment options and cost drivers

The End Game/Mature Provinces (North Sea, West Africa)

Technology, Innovation and Project Hotspots in the Upstream World

**For more information, and to register:** <http://bit.ly/2rDyR7W>

17 - 20 July 2017 (Houston, Texas, USA)

**Carbon Management Technology Conference 2017 (CMTC 2017)**

The 2017 Carbon Management Technology Conference (CMTC 2017) will focus on carbon capture, utilization, and storage (CCUS) technologies that provide options for lowering greenhouse gas emissions while maintaining fuel diversity for sustainable growth. CMTC 2017 provides an unbiased platform to present information on carbon management solutions for continued energy and economic growth. The Carbon Management Technology Conference 2017 (CMTC 2017) builds on CMTC 2015 that attracted over 200 speakers and attendees from 16 countries, of which, 54% were from industry, 34% from academia/research organization and 12% from numerous governments.

**For more information, and to register:** <http://bit.ly/2rktg6s>

24 - 26 July 2017 (Austin, Texas, USA)

**SPE/AAPG/SEG Unconventional Resources Technology Conference**

Shale plays continue to hold a significant place in the world's energy future. URTEC is the only event that brings the entire asset team together under one roof to connect on all things unconventional. With 2,500+ attendees, 293 technical presentations and 125 exhibiting companies in 2016, URTEC continues its success as the premier science-based conference and marketplace for unconventional exploration, drilling and production ideas and technologies.

**For more information, and to register:** <http://bit.ly/2pUCCbL>

26 - 28 July 2017 (Xi'an, China)

**SPE Workshop: Effective and Efficient Development of Fractured Carbonate Reservoirs**

This workshop will contrast challenges, techniques, methods and technologies applied in fractured carbonate reservoirs, with special attention to the effects of vugs and karsts, on well location and design and on enhancing reservoir productivity and recovery.

**For more information, and to register:** <http://bit.ly/2rPHxv4>

5 - 8 September 2017 (Aberdeen, Scotland)

**SPE Offshore Europe 2017**

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