THE MAGAZINE FOR THE UK OFFSHORE OIL AND GAS INDUSTRY

WIRELINE

ISSUE 26 - WINTER 2013-2014

HIDDEN DEPTHS

An exciting partnership between industry and academia shines a light on the undersea environment *p16*

published by Oil & Gas UK

itf™

TECHNOLOGY showcase

The ITF Technology Showcase is back for its 5th year and it is bigger and better for 2014

Exhibition & Conference

5 March 2014

Aberdeen Exhibition and Conference Centre

www.itfenergy.com

In partnership with:

Oil & Gas UK
the voice of the offshore industry

Supported by:

Department of Energy & Climate Change

Technology Strategy Board
Driving Innovation

WIRELINE

Issue 26

Contents

REGULARS

"The number of pupils choosing engineering as a university course has risen year on year at the school, with last year being the joint top choice with medicine." p25

FEATURES

"What we are trying to do in the grand scheme of things is to make a big MRI scan of the Earth – acoustics on that scale are very difficult…That's challenging and very fulfilling." p13

QUICK LINKS
Look out for this symbol in the magazine and scan the accompanying QR code with your handheld device for easy direct links to online material. Download the QR code reader from your app store.

Proud. Positive. Packing a punch. This sums up my feelings (and I hope yours) on the many milestones of 2013, and what they might mean for 2014 and the many decades ahead.

2013 has seen record planned capital investment of £13.5 billion on the UK Continental Shelf (UKCS); the launch and implementation of a joint industry-government strategy for growth (see p20 for an update); the guarantee of tax relief on decommissioning costs unlocking capital for investment and production; and an independent review being led by Sir Ian Wood into the UKCS (p6).

All of these developments have the potential to change the landscape of the industry with the common objectives of maximising economic recovery of the remaining oil and gas resources and ensuring the long-term health of our world-renowned supply chain.

In line with this, we of course also need to uphold collaborative and constructive engagement across the industry and with government to improve production efficiency, increase exploration, address the demand for skills (p7) and maintain our focus on achieving continual improvements in safety (p5).

The industry after all is the UK's largest industrial investor and its continued success is critical for the UK economy and energy security. This in turn offers us the opportunity to keep telling great stories about the talent within the sector, of which the finalists and winners of the Oil & Gas UK Awards are a fine example (p29).

UPDATE ON INDUSTRY GROWTH STRATEGY *p20*

With the relaunch of this magazine in 2013, we aim to focus on our members' work on innovative projects and in burgeoning sub-sectors across a range of disciplines.

I hope you enjoy this issue and are inspired by the stories our members have to tell, whether it's support for the remarkable SERPENT Project, which celebrates ten years of research this year into marine biodiversity (p16), or efforts to inspire schoolchildren with the exhilarating possibilities of STEM subjects and the dynamic careers on offer in oil and gas (p25).

Working in this sector is certainly not about standing still, as exemplified by our profile piece on Eivind Fromyr, chief geophysicist at PGS (p13), and our feature article on some of the many companies in the supply chain that are expanding and creating jobs in the south east (p22).

On that note, I'll leave you to enjoy this issue, but with thanks from all of us at Oil & Gas UK for your continued support. I bid you Season's Greetings and a Happy New Year.

Malcolm Webb,
Chief Executive,
Oil & Gas UK

***Wireline* is published by Oil & Gas UK, the leading representative organisation for the UK offshore oil and gas industry.**

We want to hear your views on our magazine so please send us your feedback as well as ideas for future articles to Rupal Mehta, editor, on rmehta@oilandgasuk.co.uk.

Editor
Rupal Mehta, Oil & Gas UK

Contributors
Bill Phillips, Charlie Mayo, Elaine McClarence, Graeme Smith, Helen Jackson, Lucy Gordon and Trisha O'Reilly

Designed by
The Design Team at Oil & Gas UK

Cover image
Pictured is the hydroid, *Corymorpha glacialis*. This specimen was found in temperatures of minus one degree celsius and at a depth of 1,080 metres below sea level in the Tornado field, west of Shetland.

Printed by
The Print Centre (TPC), Berkhamsted

ISSN 2053-5392 (Print), ISSN 2053-5406 (Online)

Oil & Gas UK
6th Floor East
Portland House
Bressenden Place
London SW1E 5BH

020 7802 2400

www.oilandgasuk.co.uk

twitter
@oilandgasuk

1.

SUMBURGH HELICOPTER ACCIDENT

On 18 October, the Air Accidents Investigation Branch (AAIB) issued a *Special Bulletin* as part of its ongoing investigation into the fatal L2 helicopter accident on 23 August off Sumburgh Head, Shetland. The bulletin states that "to date, the wreckage examination and analysis of the recorded data have not found any evidence of a technical fault that could have been causal to the accident although some work remains to be completed. The ongoing AAIB investigation will focus on the operational aspects of the flight, specifically on the effectiveness of pilot monitoring of instruments during approach, operational procedures and the training of flight crews". It should be noted that the report also says "the main rotor shaft was intact, as was the main rotor gearbox. The main rotor gearbox was inspected internally via access panels; no evidence of any pre-impact damage was found. The engines also showed no evidence of pre-impact damage".

Oil & Gas UK operations director, Oonagh Wergren, says: "It is important, both for those directly involved in this tragedy, and for all the men and women who work offshore, that the AAIB continues its very important task and reaches conclusion in a timely fashion."

Following the accident, the Civil Aviation Authority (CAA) has launched a "strategic safety review of UK offshore public transport helicopter operations in support of the exploitation of oil and gas in the North Sea area". In addition, the helicopter operators are conducting a joint review of safety, training and procedural best practices while Oil & Gas UK is currently looking at the resilience and flexibility of the helicopter fleet.

FOR MORE INFORMATION

Please visit www.aaib.gov.uk and www.caa.co.uk or contact Robert Paterson on rpaterson@oilandgasuk.co.uk.

www.aaib.gov.uk

www.caa.co.uk

2.

The Centrica CPC1 platform with the new helideck lighting in place

2. INDUSTRY RESPONDS TO UNITE SURVEY

Oil & Gas UK acknowledges the concerns raised by Unite the Union in its 'Back Home Safe' campaign, calling for immediate improvements to the safety of offshore helicopter flights. Oil & Gas UK is working closely with Step Change in Safety, which is addressing similar concerns raised by the workforce through the Helicopter Safety Steering Group (HSSG) and the recently formed Helicopter Task Force (HTF). The trade unions, including representatives from Unite, are active participants in both the HSSG and the HTF.

With regard to the specific issues raised in Unite's campaign, the HTF is working with the helicopter operators to review the emergency lighting inside the passenger cabin, and with Eurocopter to review the seating configuration of the EC225.

The implementation of safety recommendations from past offshore helicopter incidents have been largely the responsibility of the Civil Aviation Authority (CAA), European Aviation Safety Agency (EASA) and the Federal Aviation Authority (FAA). However, a recommendation for the industry from the 2006 incident was to improve helideck perimeter lighting which was completed in 2009; the industry is now working with the CAA to improve visual cue lighting in the central area of the helideck. Oil & Gas UK and Robert Gordon University (RGU) are also engaged in a year-long study into the size and shape of offshore workers. The study will inform the future design and operation of offshore infrastructure and equipment, such as the survival suit.

For more information, please contact Robert Paterson on rpaterson@oilandgasuk.co.uk.

3. EU OFFSHORE SAFETY DIRECTIVE

Oil & Gas UK has created two work groups to address the transposition of the EU Offshore Safety Directive into UK law and to consolidate/coordinate queries on the industry's behalf.

The transposition process has to be completed with UK regulations in place by 19 July 2015. Meetings with the Health and Safety Executive and the Department of Energy and Climate Change have already begun and will continue on a regular basis as part of an informal consultation with the industry and the trade unions.

This will result in a formal public consultation document being published around April 2014.

For more information, please contact Boyd Wright on bwright@oilandgasuk.co.uk

3.

4. WOOD REVIEW RELEASES INTERIM RECOMMENDATIONS ON MAXIMISING RECOVERY

Sir Ian Wood was commissioned in June 2013 by the energy secretary Edward Davey MP to conduct an independently-led review into UK offshore oil and gas recovery and regulation. The interim findings of this review were published on 11 November.

Industry is invited to comment on the interim findings of the Wood Review at www.woodreview.co.uk

The central recommendation is for more rigorous stewardship of the remaining domestic oil and gas resources through strong tripartite collaboration between the Department of Energy and Climate Change (DECC), HM Treasury and the industry. Sir Ian also proposes that DECC should establish a new arm's length and well-resourced regulatory body and calls for the requirement to Maximise Economic Recovery for the UK (MER UK) to be considered in all production licences. Sir Ian believes that full and rapid implementation of the proposals will deliver at least three to four billion barrels of oil equivalent (boe) more than would otherwise be recovered over the next 20 years, bringing over £200 billion additional value to the economy.

The review team has interviewed a wide range of companies, representing more than 95 per cent of UK Continental Shelf (UKCS) production, key government figures, and regulators from neighbouring regimes. Sir Ian says: "The UKCS has changed radically over the last 20 years. While some regions are mature, there are still frontier areas and significant emerging potential where technology is opening up important new plays. It is therefore an opportune time for government and the industry to take stock and reshape the stewardship regime that will be required for the decades to come."

For its part Oil & Gas UK has warmly welcomed Sir Ian's proposals and hopes they will be implemented as a matter of some urgency. However, we also believe that the industry is already paying more than enough to generously fund this new regulator through the annual rentals required to be paid to the government under production licences (some £70 million per annum in total); we would expect at least some of those funds to be dedicated to the new body – and not for it to be financed by simply another tax on the industry.

The industry is invited to comment on the interim report at www.woodreview.co.uk. Publication of the final report will follow in early 2014.

5. OIL & GAS UK PUBLISHES THE ENVIRONMENT REPORT 2013

Oil & Gas UK has published an enhanced Environment Report containing key metrics of the sector's performance, information on the environmental challenges faced and how these are being addressed. Environmental issues director Mick Borwell hopes the report will lend transparency to a complex and heavily regulated industry. All activities on the UK Continental Shelf (UKCS), including emissions and discharges, require government approval, authorisation or permits. Helping member companies understand and maintain compliance with existing and new environmental regulation is a core function of Oil & Gas UK.

Download at www.oilandgasuk.co.uk/environment-report.cfm.

6. BRITAIN URGED TO RECLAIM THE 'INNOVATION NATION' MANTLE

Business secretary Vince Cable MP hailed business innovation as key to the UK's economic future at the 'Innovation Nation' debate organised by Oil & Gas UK on 15 October in London. The event was the culmination of the pilot 'Energising the Nation's Future' campaign to raise awareness of the industry.

The panel (see picture right) pointed to the oil and gas sector's role in fostering technology development and also called for better and earlier education on invention and intellectual property, as well as more flexible funding for creative enterprise.

A video of the highlights is available to view at http://energisingthenationsfuture.co.uk.

The debating panel at Innovation Nation comprised (l-r) celebrated inventor of the wind-up radio, Trevor Baylis; head of BP's North Sea operations, Trevor Garlick; and Scottish entrepreneur and former land speed record holder, Richard Noble; alongside business secretary Vince Cable MP

7. EY INVESTIGATES THE SUPPLY CHAIN'S GROWTH POTENTIAL

Appointed by Oil & Gas UK, EY is undertaking further research into the economic contribution of Britain's oil and gas supply chain – believed presently to be worth £27 billion. The study is a key deliverable for the industry-government oil and gas growth strategy launched in March 2013.

The research will be used to develop market intelligence reports on those sub-sectors identified as offering high growth, profitability and capability for UK companies, and will give government and industry an indication of the opportunities available.

Business and energy minister Michael Fallon MP says: "The UK's oil and gas supply chain is highly robust with the potential to contribute significantly to economic growth over the coming decades. Gaining further insight into its strengths and capabilities will only help to…create new jobs, encourage investment and increase exports."

For more on the industrial growth strategy, see p20 for a Q&A with the chairman of the Oil and Gas Industry Council, Gordon Ballard of Schlumberger. For more information, please contact Stephen Marcos Jones on smarcosjones@oilandgasuk.co.uk.

8. LABOUR MARKET INTELLIGENCE PROJECT UNDERWAY

Labour market intelligence (LMI) is being gathered to help address the sector's demand for skilled personnel and grow the talent pool. Commissioned by the industry and managed by OPITO, the project will involve collating and analysing data on skills, demographics, job roles and anticipated future requirements in the workforce. Findings will be published in early 2014 and is one of the deliverables of the industrial strategy launched in March 2013.

For more information on the LMI project, please email research@opito.com.

Findings from the labour market intelligence project will be shared across the industry and with education providers, government agencies, other industry bodies and stakeholders

9. LONDON SEMINAR ON ACCESS TO CAPITAL

The Access to Capital Seminar, held on 29 November in London, increased awareness of how to access funding to help businesses succeed. Attended by over 100 people, the event was organised by Oil & Gas UK in partnership with the Department of Energy and Climate Change, the Department for Business, Innovation and Skills and PwC.

It featured a keynote address from business and energy minister, Michael Fallon MP, and explored the views of an independent operator, SME and equity investor, as well as addressing private equity for oil and gas companies; sovereign wealth funds and national oil companies; corporate sources of finance; and government finance initiatives.

The presentations are available to download at www.oilandgasuk.co.uk/events/archive.cfm.

Business and energy minister Michael Fallon MP at the Access to Capital Seminar in London, organised as part of the industry-government industrial strategy

10.

Pictured (l-r) Debbie Pivoriunas, HR manager; Clive Charnock, VP engineering; Gavin Barwell MP; Phil Hobden, VP project; and James Leeson, VP business development

11.

The one-to-one sessions at PILOT Share Fair are hugely popular, offering the opportunity to meet many potential clients in one day at one event

12.

The winners of the Supply Chain Code of Practice tiered compliance awards were announced at the PILOT Share Fair 2013 on 6 November

10. CROYDON MP VISITS SNC-LAVALIN

SNC-Lavalin welcomed Gavin Barwell, the Member of Parliament for Croydon Central, to its offices in his constituency on 13 September. The meeting, arranged by Oil & Gas UK, gave the team at SNC-Lavalin the opportunity to explain its work globally and describe the projects undertaken for the UK oil and gas sector. Mr Barwell also received a tour of the site.

He says of the visit: "It was a real pleasure to visit SNC-Lavalin to see first hand the excellent work that it is doing to support skilled structural engineering. Having its hub based in my constituency in Croydon is therefore something that I'm incredibly proud of."

Oil & Gas UK member companies that require assistance in arranging a visit by their local politician are invited to contact Ashley Shackleton on ashackleton@oilandgasuk.co.uk.

11. NETWORKING AT PILOT SHARE FAIR 2013

With 1,400 delegates, exhibitors and presenters at the largest event in the Oil & Gas UK calendar, PILOT Share Fair, on 6 November in Aberdeen, once again offered a major networking opportunity for attendees.

Delegates were the first to hear about the latest business development opportunities from major operators and contractors and members of the supply chain gained valuable insights into the procurement processes of individual purchasers. Delegates were able to make useful company contacts by attending presentations from 13 companies and participating in over 1,000 one-to-one sessions with potential clients.

For more information, please visit www.oilandgasuk.co.uk/events/pilot_share_fair.cfm.
Save the date for the 2014 event on 5 November.

12. CELEBRATING SUPPLY CHAIN BEST PRACTICE

In a clear indication that the UK supply chain is growing in efficiency, 23 operators and contractor companies have demonstrated their commitment to the PILOT Supply Chain Code of Practice (SCCoP) by earning awards in its tiered compliance scheme.

The SCCoP is a key tool to help industry improve performance, eliminate unnecessary costs and boost competitiveness.

For more details on the award winners, visit www.oilandgasuk.co.uk/news/news.cfm/newsid/900.

Also find out more about the Supply Chain Code of Practice at www.oilandgasuk.co.uk/knowledgecentre/SupplyChainCodeofPractice.cfm.

13.

The new portal, UKOilandGasData.com, was unveiled at the PROSPEX Exhibition from 11 to 12 December

13. NEW SYSTEM STREAMLINES ACCESS TO SUBSURFACE DATA

Common Data Access Limited (CDA), the Oil & Gas UK subsidiary responsible for managing and providing the industry's subsurface data, has streamlined its services by launching a new single gateway at UKOilandGasData.com. The system merges CDA's well-known, publicly available 'DEAL' website and its member-only 'DataStores' for seismic and well data. All users of the previous sites can now log on to the new portal where they will enjoy the same privileges and rights as before.

The single portal is "designed to deliver faster and therefore more cost-effective access to quality data on UK Continental Shelf (UKCS) wells, seismic surveys, production licences and infrastructure", says Malcolm Fleming, CDA's chief executive. "This is all the more important as the industry sharpens its focus to ensure that the maturing basin of the UKCS continues to be productive beyond 2050."

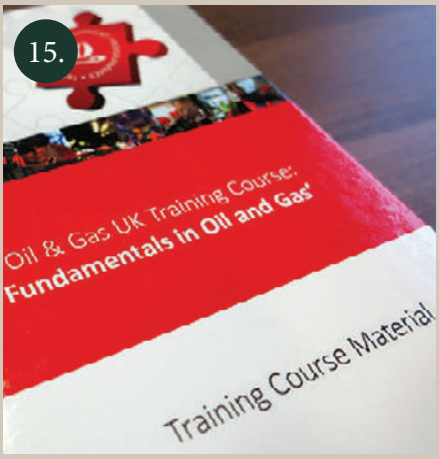
For more information, visit www.UKOilandGasData.com.

14. ROADSHOW TAKES TO EAST ANGLIA

Companies in East Anglia, with its rich heritage of manufacturing and wealth of contractor expertise, are well placed to help execute projects on the UK Continental Shelf. This is why Oil & Gas UK organised a roadshow in Norwich on 22 November, in association with East of England Energy Group (EEEGR) and GDF SUEZ E&P Ltd. Over 100 delegates attended the event to:

- Gain a deeper insight into how to do business with GDF SUEZ E&P Ltd and hear about their forthcoming plans, including the Cygnus project
- Hear more on Oil & Gas UK's vision for ensuring a sustainable long-term future for the UK industry supply chain
- Learn how EEEGR will honour its commitment to achieving continued development of the energy sector in the East of England

For more information, please contact memberevents@oilandgasuk.co.uk.



15. FUNDAMENTALS IN OIL AND GAS

Oil & Gas UK ran its first two-day 'Fundamentals in Oil and Gas' training course from 24 to 25 September in Aberdeen with 120 delegates attending.

The course, which has been well received, provided a solid understanding of the main processes, dynamics and issues relevant to offshore oil and gas activities on the UKCS. It offered essential training on activities from licensing and exploration through to decommissioning, covering diverse aspects of the operational and business environment, from health, safety and environment to economics and energy policy. Watch out for details of the 2014 course dates.

16. COMPETENCY BENCHMARKING AVAILABLE FOR DATA MANAGERS

The first Competency Management System (CMS) for geoscience data managers in the oil and gas industry has gone live.

Developed by Common Data Access Limited (CDA), the portal offers an online competency profiling system, which will help to develop benchmarks for recruiting to such roles and will assist in certifying data managers with a view to defining a global industry professional standard.

The CMS is available globally and marks an important milestone on the road to professionalising the role of geoscience data managers.

The Competency Management System is online at www.CDACompetency.com.

For more information, please contact Malcolm Fleming on mfleming@cdal.com.

17. MASTERCLASS FOR SMES

Oil & Gas UK hosted its first free members' only Masterclass for SMEs on 18 September in Aberdeen.

In the interactive session hosted by Shirlaws, directors and decision makers heard how to develop a growth strategy that guides the business towards its long-term goals.

This is part of an ongoing events programme to be rolled out in 2014.

18. GUIDELINES AID BEST PRACTICE DURING ASSET SALES

Serious operational consequences, failure to comply with regulations and breach of intellectual property rights can result from mistakes that occur during data transfers for asset sales. As a result Common Data Access Limited has updated its 2006 guidelines on *Best Practice for Managing Information Transfer at the Time of Asset Sales*.

At the heart of the guidelines is the principle that both parties (the seller and the buyer) should work together in good faith and in an interdisciplinary manner to reduce the total effort, time and costs involved in identifying, preparing and transferring the information and to safeguard both parties' regulatory and statutory obligations.

The revised guidelines are available to download from www.cdal.com/cda-documents/index.cfm. For more information, please contact Malcolm Fleming on mfleming@cdal.com.

Also see https://publ.com/MosReqe#28 for an article on Apache North Sea and TAQA's experiences in taking on producing assets.

Oil & Gas UK's *Decommissioning Insight 2013* was launched at the annual Offshore Decommissioning Conference (see box below for more details)

19. NEW DECOMMISSIONING REPORTS AND FORECASTS AVAILABLE

Oil & Gas UK has published a suite of documents to help operators and contractors prepare for decommissioning projects. The annual *Decommissioning Insight* is the leading forecast for decommissioning activity on the UK Continental Shelf (see box below for details). Also released are the *Guidelines on Decommissioning Cost Estimation 2013* and a report on the *Decommissioning of Pipelines in the North Sea Region*. The documents were launched at the annual Offshore Decommissioning Conference in St Andrews from 1 to 3 October, which attracted over 300 delegates.

The publications are available to download at www.oilandgasuk.co.uk/knowledgecentre/decommissioning.cfm.

Also visit www.oilandgasuk.co.uk/events/archive.cfm to view presentations from the Offshore Decommissioning Conference.

20. UPDATED DECOMMISSIONING SECURITY AGREEMENT

An Oil & Gas UK work group has reviewed and updated the industry standard Decommissioning Security Agreement (DSA) in light of the introduction of Decommissioning Relief Deeds (DRDs), which are contracts between government and companies guaranteeing specified levels of tax relief on decommissioning costs.

The DSA is now available to download in two forms – one applicable to fields which are liable for Petroleum Revenue Tax (PRT) and the other for non-PRT fields.

To download the agreement, visit http://bit.ly/17KJKtS.

SPOTLIGHT: *DECOMMISSIONING MARKET*

INSIGHT INTO THIS BURGEONING SECTOR

Drawing on the plans of 27 operators in Oil & Gas UK's membership, the 2013 *Decommissioning Insight* report indicates that a total of £10.4 billion is to be spent on decommissioning assets on the UK Continental Shelf (UKCS) between 2013 and 2022. Breakdowns are provided by region and for the various components of the decommissioning process.

Spending on decommissioning of all existing assets will be in excess of £31.5 billion through to 2040, and beyond for any new developments.

The annual publication is the leading forecast for decommissioning activity on the UKCS. It highlights the growth of the sector in coming years and offers the opportunity for both operators and contractors to collaborate to maximise efficiency and reduce costs.

The full report is available to download at http://bit.ly/1bh4CnT.

MEMBERSHIP MATTERS

MEMBERSHIP REACHES 400!

Nearly 100 new members have joined Oil & Gas UK in the past year, bringing the total membership to a milestone of over 400. We are pleased to welcome the following companies who have joined since the last issue of *Wireline*.

Addax Petroleum UK Ltd, Arnlea Systems Ltd, ASET International Oil & Gas Training Academy, Awilco Drilling, BMT Argoss Ltd, Bracewell & Giuliani (UK) LLP, Clydesdale Bank, Cutting Underwater Technologies Ltd, First Hose Ltd, Haden Freeman Limited, Harran Limited, IHS, ISNetworld, Level 3 Communications Ltd, Mentor Aviation Services Ltd, MCX Dunlin (UK) Ltd, Meta Downhole Ltd, MHW Associates, MJM Energy, North Sea Compactors Ltd, One6 Consulting, Penspen Ltd, Replicon Europe Ltd, Rig Deluge, Samuel Jones Consultancy, Scopus Engineering, Skibo Technologies, Sulzer Wood Ltd, Survitec, The Industry Technology Facilitator (ITF), TSG Marine Ltd and Wilhelmsen Maritime Services.

Eddy Winters, membership manager, is committed to ensuring that our member benefits are tailored to members' needs. Please contact Eddy on ewinters@oilandgasuk.co.uk.

Download the Membership Pack at www.oilandgasuk.co.uk/aboutus/membership_pack.cfm.

MEET OUR 400TH MEMBER – HADEN FREEMAN LTD

Haden Freeman Ltd has become the 400th company to join the UK oil and gas industry's leading representative body. The independently owned engineering design and project management company employs approximately 150 people at its headquarters in Manchester, and additional sites in Southampton and Qatar.

Haden Freeman's managing director, Wayne Baxter, comments: "On hearing we'd become the 400th member to join Oil & Gas UK we knew we'd made the right decision. Clearly the association is a big hitter in the industry. As an SME (small to medium enterprise) we have to constantly evolve, and from our original background of chemicals, we have moved into other sectors such as pharmaceuticals and food and beverages. The time is now right for oil and gas."

Established in 1984 in north west England, one of the UK's supply chain hotspots, Haden Freeman has transformed from a specialist process engineering consultancy serving the chemical industry into a major multi-disciplinary engineering resource serving the wider process sector. It now has capabilities that encompass engineering consultancy, design and construction services. The firm has also developed expertise in process safety, which includes conducting hazard and operability studies (HAZOPs) as well as full functional safety life cycle consultancy services.

Haden Freeman's managing director, Wayne Baxter

Wayne adds: "All our disciplines are in-house and our team has a broad range of engineering capabilities including work in the field of civil and structural engineering. A good example of a typical project is delivering full process improvement services to major chemical companies. Another is our provision of oil and gas equipment such as fired heaters.

"We are looking forward to become active members of Oil & Gas UK and benefiting from the wealth of information, such as best practice guidelines, disseminated by the organisation. We are also very interested in participating in Oil & Gas UK's safety-related forums, for example, those focusing on process safety and major hazards issues."

As a member of the UK oil and gas industry's supply chain, Haden Freeman will now be represented on Oil & Gas UK's Contractor Council which offers members the chance to influence Oil & Gas UK's priority policy areas. The Council provides a unique opportunity for senior industry leaders to network and discuss issues for the greater good of the domestic oil and gas industry.

To find out more about becoming a member, visit www.oilandgasuk.co.uk/aboutus/membership.cfm.

Dates for your diary

Raise your company's profile and be better informed about the important issues of the day by attending Oil & Gas UK's industry-leading events.

For more information, please visit www.oilandgasuk.co.uk/events.

BOOK ONLINE NOW

MEMBERS' ONLY EVENT

4 February
Oil & Gas UK Exploration Conference: Pitfalls of Exploration and How To Avoid Them
London

5 March
Technology Showcase
Aberdeen
Jointly organised with the Industry Technology Facilitator

SAVE THE DATES

26 February
Activity Survey 2014 Breakfast Briefing
Aberdeen

30 April
The UK Oil and Gas Industry Safety Awards
Aberdeen

Principal Sponsor
MAERSK OIL

10 to 12 June
Oil & Gas UK Conference
Aberdeen

5 November
PILOT Share Fair
Aberdeen

6 November
Oil & Gas UK Awards
Aberdeen

Eivind Fromyr's role as chief geophysicist at PGS offers him the opportunity to play a key role in discovering and recovering the world's oil and gas. He relishes the technical challenges involved

Rock on

When we pull off in our cars or turn on our boilers as the cold spell hits, it is easy to forget where the energy comes from and the technical ingenuity that made this possible. At the heart of oil and gas discovery are the men and women who are the sector's very own 'intrepid explorers'. *Wireline* chats to Eivind Fromyr, chief geophysicist at PGS, about three decades filled with restless innovation.

"I'm in the UK today, going to Asia next week and South America the week after," says Eivind as we try to pin down a time to chat with him. If ever there was proof required that geophysics in the oil and gas industry is an exhilarating field to work in, Eivind's schedule would provide the hard evidence to back this up.

"It is a global industry which gives me an opportunity to see parts of the world I wouldn't normally see. I have travelled through Asia, Africa, South America and North America, so in that sense it is an exciting way to get to know the world," he says.

It's no wonder then that Eivind was seduced by the opportunities of working in oil and gas; it wasn't in his original career plans. He thought he would end up developing cruise guided missiles when he was studying cybernetics (the scientific study of how people, animals >

and machines control and communicate information) at the University of Oslo as part of his masters degree in Physics in the early 1980s.

"It was a professor of both medicine and physics who made me interested in cybernetics," Eivind explains. "He used cybernetic models to study the human body and I became fascinated by it. Cybernetics, or systems theory, is used in so many applications – everything from the physiology of the body to rockets. I studied the cruise missile control system which is a very complex, integrated navigation control system."

But before he had the chance to take off in that direction, whilst at university he was offered an opportunity to work at Det Norske Veritas (DNV) on the stability of semi-submersible rigs. This project made use of his complex mathematical modelling skills. The work took him to the periphery of the oil and gas industry, and thoughts of cruise missiles soon disappeared. He has not looked back since. Three decades on he has been involved in groundbreaking work to help discover and recover the world's oil and gas and, in doing so, the industry has offered him tremendous excitement and fulfilment.

Entrepreneurial spirit

Eivind's first professional opportunity in the sector came about because DNV was the main shareholder in what was at that time the fledgling Geophysical Company of Norway, known as Geco (today WesternGeco).

He was offered a role there in 1983 because of his background in maths and physics. Having learnt a considerable amount about geophysical services at the company, he and two colleagues were inspired to launch Read Well Services in 1987, offering borehole seismic services with bases in Aberdeen, UK, and Bergen, Norway.

"People often have an education geared towards a very specific career but my career hasn't been like that at all. I had a general background in physics, so continuous learning is really what it is all about, using your background and then going into new fields."

That plunge into the unknown and exploring new challenges have been the hallmark of Eivind's career. He says: "We were still young and started the company from scratch and had to make it succeed both technically and commercially; it was very hard work.

"The three entrepreneurs were me, a professor of seismology and an operations guy so we had a wide range of backgrounds. Although I learnt a lot about geophysics at Geco, I probably learnt even more from founding Read Well Services."

He notes that, "people often have an education geared towards a very specific career but my career hasn't been like that at all. I had a general background in physics, so continuous learning is really what it is all about, using your background and then going into new fields."

The effort paid off, having established himself in the oil and gas industry, Eivind was headhunted by PGS in 1995. He has since remained with the company in a number of roles and is now chief geophysicist for the marine contracts division based in Weybridge, Surrey, with responsibility for ensuring the integrity of the geophysical services and products offered by the division. The company employs around 2,500 people worldwide (310 in the UK) who work onshore as well as offshore on seismic surveying vessels for projects on the UK Continental Shelf (UKCS) and overseas.

Eivind explains: "My work to a very large extent is discussing technical solutions with experts in oil companies. I also spend a lot of time on internal technical reviews making sure that the processes are in place for quality control and assurance and that we are developing the right technology."

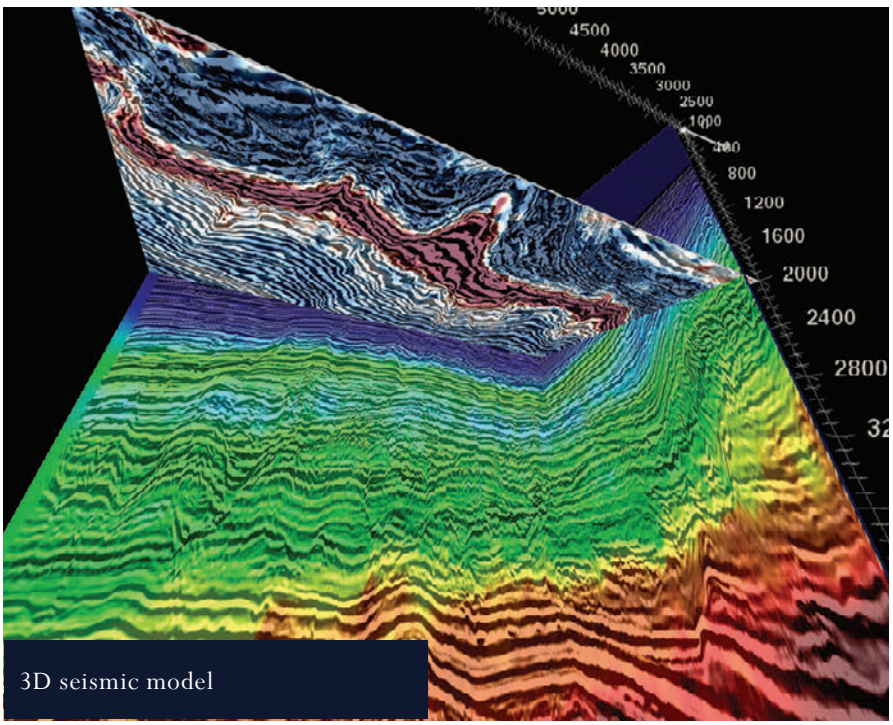
He continues: "What we are trying to do in the grand scheme of things is to make a big MRI scan of the Earth – acoustics on that scale are very difficult. It requires sophisticated models to describe the wave propagation and enormous computing power to take the measurements made from seismic vessels and turn them into images of the Earth. That's challenging and very fulfilling."

Model behaviour

Eivind notes that transformational developments in geophysics over the decades have been key to discovering resources in mature and complex basins like the UKCS.

"In the 1970s, we had very primitive 1D and 2D models; in the 1980s, 3D meant more complex computations. That was the first wave of change," he outlines.

"The next wave was when instead of making images a function of recorded



3D seismic model

A seismic surveying vessel towing the Geostreamer technology, which PGS launched in 2007 with updates in 2011. Seismic surveying offshore involves using a submerged airgun array to generate a pulse of sound energy which travels through the Earth and a small proportion of this is reflected from the rock layers. Geostreamer removes 'seismic ghosts' (reflection of the sound energy from the sea's surface) using dual sensor and wavefield separation technologies, leading to data with a broader frequency bandwidth and clearer image

time (two-way time), we started making images that had depth and that has revolutionised oil and gas exploration. You would never be able to carry out subsalt exploration in the North Sea, the Gulf of Mexico, or any complex geologies without that migration."

He adds: "The third wave is 4D, or time-lapse seismic – shooting seismic surveys over the same area of a producing field at different time intervals to detect changes over time."

Eivind has been intimately involved in a number of key developments. For example, he says, "back in the mid-2000s we worked closely with BP on new geometries for seismic acquisition. Instead of just acquiring the survey once, we looked at the possibility of acquiring data in different directions (multi-azimuth) to improve illumination of the subsurface in complex structures. We did work both in the North Sea and around Egypt.

"BP then took it to the next level in the Gulf of Mexico, called wide azimuth, where we worked closely with them on surveys called Crystal 1 and 2."

Eivind admits, however, that he was sceptical about the potential success of the other innovative technology he was involved in, attributing its success to "some very stubborn people at PGS".

"What we are trying to do in the grand scheme of things is to make a big MRI scan of the Earth – acoustics on that scale are very difficult… That's challenging and very fulfilling."

It had been well established that combining the pressure sensors used on ocean bottom seismic with vertical motion sensors produced a better image due to the enhanced bandwidth. However, this approach was almost an order of magnitude more expensive than conventional ocean bottom seismic, which is still used to solve extremely complex problems.

Eivind notes that the "the grand idea" at PGS was to do something similar, but behind streamer vessels, and his scepticism was because it would be a noisy operation to which the sensors were likely to be very sensitive.

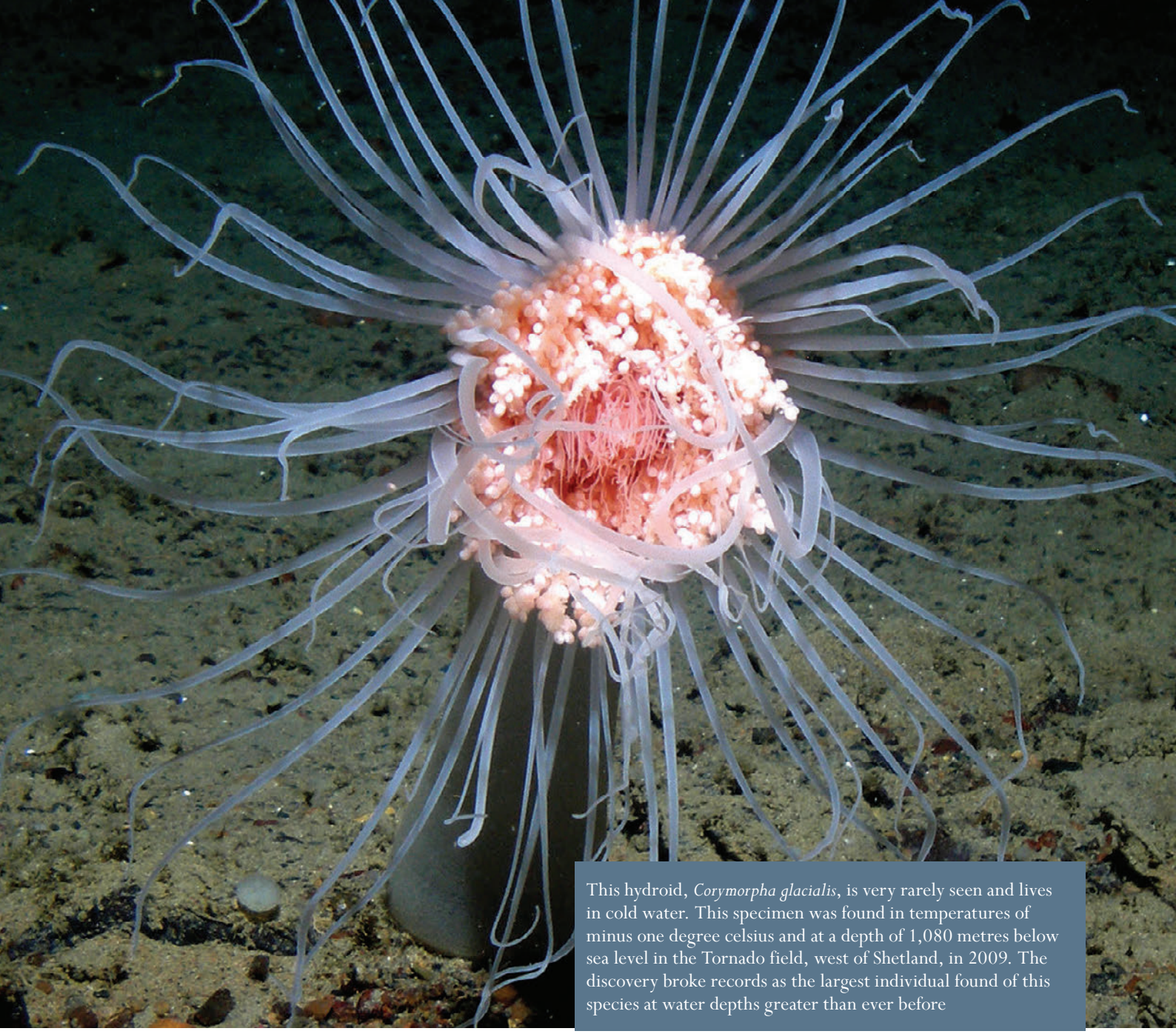
"Many of us thought it was a long shot," he recalls, "but there were people at PGS who took inspiration from, among others, the US Navy, who has done some similar work behind some of its submarines. Eventually, we came up with a new sensor streamer in 2007 and called it Geostreamer".

Beating the drum

Eivind's experiences over the last three decades reinforce that technical innovation is at the heart of the sector. He notes: "My personal view is that even with a massive effort the world will still have to use oil and gas for the next 40 years or more, so let's keep trying to find the best possible way of doing that. We can apply advanced technology on all fronts."

Eivind is keen to beat this drum at work and at home. His wife Marie-Sophie is also a geophysicist, although their son Daniel, 17, is not planning to follow in their footsteps. Eivind says it gives him "great pride and joy" to teach Daniel mathematics and physics, but he plans to be a doctor "and unfortunately I can't argue with that!" ⓦ

For more information, please visit www.pgs.com.



This hydroid, *Corymorpha glacialis*, is very rarely seen and lives in cold water. This specimen was found in temperatures of minus one degree celsius and at a depth of 1,080 metres below sea level in the Tornado field, west of Shetland, in 2009. The discovery broke records as the largest individual found of this species at water depths greater than ever before

Hidden depths

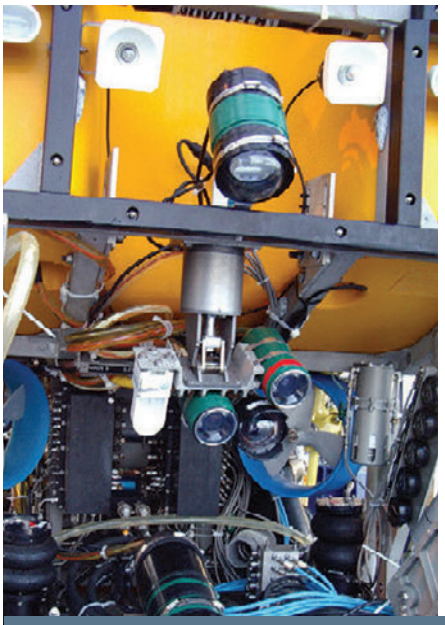
A pioneering partnership forged a decade ago between the UK offshore oil and gas industry and the scientific community continues to reveal the hidden depths of the undersea environment. *Wireline* delves deeper into the inner workings of the SERPENT Project.

As unbelievable as it may seem, scientists believe we know more about the surface of the moon than we do about our undersea environment. "It's thought that more than 99 per cent of the ocean floor still remains unexplored," says Dr Daniel Jones of the National Oceanography Centre (NOC) in Southampton.

Shining a light on the most inaccessible seabed locations around the UK – and the world – the SERPENT Project (Scientific and Environmental ROV Partnership using Existing Industrial Technology) harnesses the technological capabilities of the offshore oil and gas industry.

"It's an important UK 'export' – it was born here, but it's now a truly global programme."

"We've done a huge amount of work in the UK by accessing many hundreds of hours of ROV time that would have cost us millions of pounds."



Pictured (left) a remotely operated vehicle (ROV) and (right) SERPENT scientists in the ROV control van. The SERPENT Project makes use of the oil and gas industry's ROVs to explore previously inaccessible seabed locations

ROVing reporters

The project evolved in the UK in the early 2000s during collaboration between the industry and marine scientists at the NOC on environmental assessment work for BP in the west of Shetland. SERPENT Project leader Daniel says it became clear during that time that there was a unique opportunity to use the offshore infrastructure to pursue more than one kind of exploration.

"There were many remotely-operated vehicles (ROVs) in use in UK waters but they weren't operating 24/7," says Daniel. "We didn't have a deep-water science-class submersible facility of any kind at the time in the UK so the ROVs were clearly a resource we could really benefit from."

It's a view echoed by Dr Ian Hudson, who is currently HR director for Europe, Africa and Asia at offshore drilling company Transocean, one of the founding partners of SERPENT. Ian got involved while working for NOC on his PhD project. "I was given the opportunity to use the equipment on a large ROV operating in BP's Schiehallion field and came back with footage, photos and data. That single two-week trip produced enough material for three research papers on marine life in the region."

One of the early, exciting discoveries was a snapshot of a monkfish feeding on a cod (see image overleaf). "Scientists knew how monkfish operated – sitting on the seabed and attracting food – but no-one had actually seen it happen in the deep ocean before," says Daniel.

The results set in motion a process that led to SERPENT being formed – a collaboration between operator BP, drilling company Transocean, offshore services contractor Subsea 7 and NOC. The initiative taps into the industry's ROV filming and data collection capabilities and quickly expanded to embrace other offshore operators and contractors. It's now a global programme, featuring research work on the UK Continental Shelf, as well as in Canada, West Africa, Australia, Venezuela and many more.

"It's an exciting and ground-breaking concept," enthuses Subsea 7's group environmental manager Lala Gandilova. As a founding partner of the SERPENT project, the company has provided access to its ROV technology for hundreds of hours of operations. "SERPENT is an exceptionally powerful tool to promote awareness of deep sea life. Using cutting-edge ROV technology to support the worldwide science community is incredibly >

SERPENT PROJECT BY NUMBERS...

10 YEARS
THE LIFESPAN OF THE PROJECT SO FAR

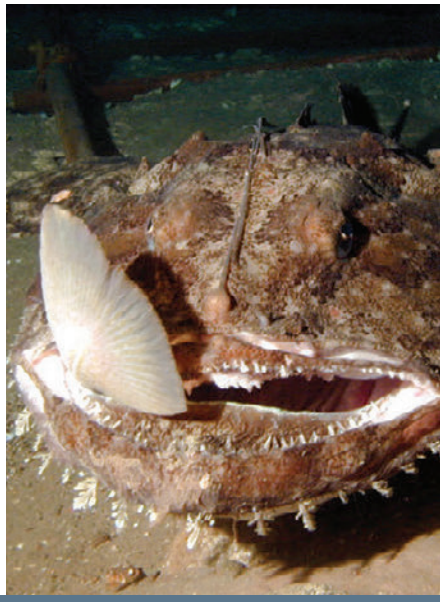
2,500 MEDIA FILES
UNIQUE PHOTOS AND VIDEO CLIPS GATHERED IN UK WATERS AND OVERSEAS

15 MISSIONS
COMPLETED IN UK WATERS

1 YEAR
THE EQUIVALENT TIME SPENT BY SERPENT SCIENTISTS ON OFFSHORE MISSIONS WORLDWIDE

30 RESEARCH PAPERS
THE NUMBER OF PEER-REVIEWED SCIENTIFIC PAPERS GENERATED BY THE PROJECT

"You think you know your own backyard, but then take a second look from a fresh perspective…there's always something new to discover and learn."



Left: *Gorgonocephalus caputmedusae* is a large (50 centimetre in diameter) basket star which is commonly found around the deep waters of the UK and Norway. The SERPENT scientists have seen this species feeding on small crustaceans called krill at several of their study sites

Right: A snapshot of a monkfish feeding on a cod in the waters west of Shetland. The moment was captured for the first time ever during the early work at BP's Schiehallion field

important, contributing to research for us and for future generations," adds Lala.

In doing so, Daniel says SERPENT has overcome two huge obstacles – reaching ocean locations and accessing the necessary equipment to explore them – in one fell swoop. "We've done a huge amount of work in the UK by accessing many hundreds of hours of ROV time that would have cost us millions of pounds," he explains.

Mission control

The succession of 'missions' in UK waters (see a log of UK missions left and see right for case studies on two of the most recent) have yielded significant new data; scientists now know much more about marine biodiversity and the seabed environment in some areas off the UK coast than they did just ten years ago. Research themes explored in this region include: biodiversity and habitat mapping; sedimentation; changes in particle size and chemical analysis; macrofauna sediment sampling; and animal stress.

One of the most significant outcomes has been a much greater understanding of the distribution and movements of krill, small crustaceans which are an important source of food for other water creatures. The study was based on hundreds of observations taken over the past decade.

Ian says: "It's hugely gratifying to go to an area that's already been well researched and still find new things. You think you know your own backyard, but then take a second look from a fresh perspective and discover that you perhaps don't know so much. There's always something new to discover and learn."

Knowledge exchange

BP group marine biology expert Anne Walls was among those leading the company's participation during the earliest years of SERPENT and continues to do so. She notes that "it's an important UK 'export' – it was born here, but it's now a truly global programme".

She believes the partnership with scientists from NOC also promotes "fresh engagement for offshore crews, who get a whole new perspective of the environment that they are working in. They can identify with it and that means they're encouraged to protect it".

LOG OF UK MISSIONS

- 2003 Foinaven and Schiehallion, Faroe-Shetland Channel, West of Shetland
- 2003 Two further missions in Schiehallion, Faroe-Shetland Channel, West of Shetland
- 2003 One further mission in Foinaven, Faroe-Shetland Channel, West of Shetland
- 2004 Buzzard, Central North Sea
- 2005 Buzzard, Central North Sea
- 2007 Laggan, Faroe-Shetland Channel, West of Shetland
- 2007 Rosebank-Lochnager, Faroe-Shetland Channel, West of Shetland
- 2009 Rosebank North, Faroe-Shetland Channel, West of Shetland
- 2009 Lancaster Well, Faroe-Shetland Channel, West of Shetland
- 2009 Tornado Well, Faroe-Shetland Channel, West of Shetland
- 2010 Lancaster Well, Faroe-Shetland Channel, West of Shetland
- 2010 Whirlwind, Faroe-Shetland Channel, West of Shetland
- 2010 Lagavulin, Faroe-Shetland Channel, West of Shetland
- 2011 Whirlwind, Faroe-Shetland Channel, West of Shetland

It's a sentiment endorsed by Lala: "Our ROV pilots enjoy using their skills to contribute to an important scientific study. Feedback from the offshore teams has been nothing other than positive.

"They've always shared an interest in what happens on the seabed, and are ready to contribute their time and efforts towards exploring habitats and viewing species behaviour that was previously off-limits to researchers."

"Our ROV pilots enjoy using their skills to contribute to an important scientific study. Feedback from the offshore teams has been nothing other than positive."

Natural shots

Daniel notes that the industry devotes a lot of time and resources to understanding the environment where it's operating – and minimising the impact of its operations. SERPENT is helping to supply robust environmental data which support that objective.

"We're helping companies to increase their knowledge in terms of environmental stewardship," Daniel adds.

Whilst the operators provide the opportunity for the work to be undertaken, they have no input into the reports and so the data generated are impartial.

Daniel enthuses: "We get to study the species in their natural habitat. That can be an amazing and rewarding experience."

For more details on these missions, please visit www.serpentproject.com/miss.php.

The breadth of industry collaborators involved in specific UK missions includes: BP, Chevron, Dolphin Drilling, Fugro, Hurricane Energy, Nexen, Oceaneering, OMV, Senergy Oil and Gas, Statoil, Stena Drilling, Subsea 7, TOTAL and Transocean.

CASE STUDY

LAGAVULIN EXPLORATION PROGRAMME, WEST OF SHETLAND, 2010

Chevron had already been an active partner in the SERPENT Project, domestically and internationally, when a new collaborative opportunity arose at Lagavulin, west of Shetland.

"We had been impressed by the quality of work that they had undertaken in 2009 at our Rosebank location, west of Shetland," says Chevron Upstream Europe's HES technical services team leader, Peter Oliver. "It made sense to continue the partnership in a new, slightly deeper, area.

"Taking the opportunity for industry and academia to work together in a cutting edge environmental programme yielded research results that could not otherwise have been possible."

He says the "mutually beneficial" project also provides the perfect platform for highlighting the environmental dimension of offshore operations to employees, especially as high definition cameras were used at Lagavulin, creating images of greater clarity. "Inevitably, high quality pictures of this deep water environment and the organisms that live there have a much bigger impact than statistics or words in a presentation."

The data from this mission are still being analysed with research papers to be produced and peer-reviewed thereafter.

"Inevitably, high quality pictures of this deep water environment and the organisms that live there have a much bigger impact than statistics or words in a presentation."

CASE STUDY

LANCASTER AND WHIRLWIND DISCOVERIES, WEST OF SHETLAND, 2009 TO 2011

Many SERPENT missions are one-offs, 'piggybacking' as they do on single drilling programmes. The pattern of Hurricane Energy's activities in the Lancaster and Whirlwind discoveries, west of Shetland, presented SERPENT's scientists with a rare opportunity to capture a longer-term view of seabed conditions.

"Because we had rigs over the same locations on a number of occasions, it was possible to go back," explains Hurricane's subsurface team leader Clare Slightam. "What SERPENT did at our locations was ground-breaking. They put down markers before drilling started and went back around a year after drilling occurred. There was evidence of recolonisation of the seabed close to pre-drilling levels."

She adds: "It's a great example of how SERPENT is producing some really useful data for the industry, while meeting its own research objectives."

The data from this mission are still being analysed with research papers to be produced and peer-reviewed thereafter.

"What SERPENT did at our locations was ground-breaking."

Forging ahead

The Oil and Gas Industry Council is steering the delivery of the industry-government strategy for growth of the domestic oil and gas sector. Gordon Ballard, of Schlumberger and chairman of the Council, brings *Wireline* up to speed with the progress.

Q: How is the UK-based oil and gas supply chain currently contributing to economic growth?

A: Over 40 years of exploration and production operations in the UK have resulted in a supply chain which offers a unique range of products and services across the oil and gas life cycle; our engineers are in high demand around the world. The supply chain generates sales of around £27 billion a year, including £7 billion in exports, and provides employment for most of the 450,000 people associated with the industry.

Q: Why is it important for the UK Government to have a strategy for the oil and gas industry?

A: The UK Government recognises that over the past five decades no other industrial sector has created more prosperity for the UK than oil and gas. Britain relies on the products of this industry to keep our homes and businesses warm and lit, and to keep us on the move. At the Innovation Nation debate, held recently as part of Oil & Gas UK's Energising the Nation's Future pilot campaign, business secretary Vince Cable MP confirmed that he saw the oil and gas sector as one that warrants the government's support in order to maximise its potential.

The Oil & Gas Industrial strategy, launched in March 2013, provides a clear signal that the government is committed to supporting our industry and that the need for a stable political and fiscal environment is understood. By using the scale and strength of the whole of the UK, the strategy aims to maximise production, sustain and promote growth of the supply chain, build skills and encourage collaboration within the industry and with government.

"By using the scale and strength of the whole of the UK, the strategy aims to maximise production, sustain and promote growth of the supply chain, build skills and encourage collaboration within the industry and with government."

Q: Who is responsible for the strategy and how is progress being monitored?

A: The strategy is the collective responsibility of the government and industry. Without either, what we are setting out to achieve simply couldn't be done. Representatives from across the industry and government consult regularly to assess progress across a range of projects. We haven't had a government strategy to work towards for the last 40 years and given the large scale of work we are hoping to cover, collaboration is key to keeping progress on track.

At the Innovation Nation debate in London, business secretary Vince Cable MP confirmed that he saw the oil and gas sector as one that warrants the government's support in order to maximise its potential

Q: How has the government engaged with industry since the strategy's publication?

A: Oil & Gas UK and its members now have several platforms for constant dialogue with all government departments to ensure a business environment in which companies can flourish and the economic benefits for the nation as a whole can be maximised. The Oil and Gas Industry Council is a forum at which industry can discuss current and arising issues with the Department for Business, Innovation and Skills and the Department of Energy and Climate Change, and advise the government on the development and delivery of the sector-specific strategy.

Over 40 years of exploration and production operations in the UK have resulted in a supply chain which offers a unique range of products and services across the oil and gas life cycle

The industry is also working closely with the Scottish Government following the publication of its excellent strategy for the oil and gas sector.

Q: What are the biggest opportunities for future growth of the UK-based oil and gas supply chain?

A: We know that the current scale of the UK oil and gas supply chain is extensive in terms of sales generated and the jobs supported and spread across the country, and, in October 2013, EY was appointed to undertake further research into its economic contribution. Using data from over 1,000 companies, the study will look across 42 sub-sectors at factors including skills and exports to develop three market intelligence reports on those sub-sectors identified as offering high growth, profitability and capability for UK companies. When this work concludes in March 2014, we will be able to put focused and tangible actions into place to ensure those sub-sectors reach their potential.

Q: What would success of the strategy look like to you?

A: Put simply, it would be an upturn in the level of economic production from the UK's offshore oil and gas resource, as well as domestic and international growth of the supply chain, which will support British jobs over the long term. We're aware that this is no small task. Success for me would be less about achieving a percentage improvement within a year or two, and more about continuous dedication to improvement for the decades ahead.

Q: In your view, what are the biggest barriers to growth?

A: The future talent pool and access to capital are, in my opinion, two of the biggest barriers to growth. In order to address these, I believe the success of this strategy lies in the degree of dedication and participation of those involved. The appetite for change will determine where we end up.

The development and implementation of new technology is also vitally important to maximise the recovery of our natural resources. Our R&D spend at 0.3 per cent of sales is currently far too low – particularly when compared to Norway, which, in a similar environment, invests the equivalent of approximately four per cent of sales. Facts like these spurred us on to act and we recognise the need to build a programme to support innovation. Technology now sits with the industry council and forms an integral part of the industrial strategy.

"We recognise the need to build a programme to support innovation. Technology now sits with the industry council and forms an integral part of the industrial strategy."

Q: What is being done under the strategy's framework to address skills shortages?

A: A range of measures to tackle this issue have been put in place, from establishing a national programme to support retraining of military personnel, to working to address the lack of young people choosing to study STEM subjects. Currently OPITO is working with the industry and government to collect data and perform a skills gap analysis to tailor our strategy for the future as part of the Skills Gateway project (see p7 for more details).

Q: What are the next steps for government and industry in development of the strategy?

A: Since the launch of the strategy in March 2013 we've taken some significant steps but there is still a long way to go. The strategy puts our industry and the government on the right path to ensure future decades of investment and production on the UK Continental Shelf. To ensure maximum economic recovery and that supply chain hubs remain anchored in the UK, we must now ensure that momentum is maintained. Ⓦ

The industrial strategy for UK oil and gas is available to download at: www.gov.uk/government/publications/uk-oil-and-gas-industrial-strategy-business-and-government-action-plan.

For more information, please contact Stephen Marcos Jones on smarcosjones@oilandgasuk.co.uk.

Pictured Mike Hawkins (left), technical director at Jee Ltd, and Graham Wilson, lead engineer and team leader. As well as bringing them closer to those customers based in the south east, the company's new office in London offers scope to draw upon the pool of talented professionals in and around the capital

Branching out

"It's far, nothing to do with us", might say the uninitiated in the south for whom the UK offshore oil and gas industry could well seem remote. But in reality the burgeoning sector and its supply chain continue to create jobs throughout the UK. AMEC, ADIL and Jee Ltd shed some light on why London is important to their plans for growth.

Vibrancy and passion exuded off the screen during the opening ceremony of the London Olympics 2012, bringing to life Britain's many success stories. London, in particular, was showcased throughout the Games as a dynamic and welcoming international city with considerable investment potential. Something the UK oil and gas industry knows all too well.

"Our London offices complement our project management and engineering experience in Aberdeen, Darlington and Knutsford, as well as globally," explains Nick Shorten, managing director of

"It is close to many customer bases and with easy access via the main transport arteries into Waterloo, London Bridge, Kings Cross and Euston."

Proximity to existing and potential domestic and international oil and gas clients based in London was the driving force behind the opening of ADIL's office near Bond Street to complement its headquarters in Aberdeen. The development is important to the firm's growth strategy

AMEC's Greenfield business. He says: "A presence in London gives us complete geographical coverage of the UK for oil and gas projects. It is close to many customer bases and with easy access via the main transport arteries into Waterloo, London Bridge, Kings Cross and Euston."

Over the last 18 months, AMEC, ADIL and Jee Ltd, among others, have all expanded in the heart of the capital. Engineering and project management consultancy AMEC's London presence dates back to 1848 and the company has recently opened new offices in Farringdon and London Wall to add to its existing sites in the capital. These offices will accommodate engineers working on major contracts, notably on the UK Continental Shelf (UKCS), the west of Shetland BP Clair Ridge project and the multi-platform GDF Suez Cygnus gas field project in the southern North Sea.

The company employs over 1,200 people in the capital in total and has recruited over 600 for its oil and gas operations in London since June 2012, with plans to bring in at least a further 400 to deliver its increasing portfolio of work. This includes working with its business in Kuwait to deliver a multibillion dollar new refinery project for the Kuwait National Petroleum company.

Nick adds: "Our London teams are no strangers to running major projects. Whilst we still continue to deliver large projects in the North Sea, we also have a global focus. We work with a myriad of international clients who find it easy to travel into the capital."

Location, location, location

Provider of full field development services, ADIL also recognises the export growth potential of having an additional base in London. It opened its first office in the capital in December 2012 to work alongside its site in Aberdeen. The new branch near Bond Street is intended to support existing and potential UK oil and gas clients located in and around London, as well as increase exposure to international companies with a presence in the south east. "A base in London is an important step in our growth and proximity to clients here is vital to build relationships," notes Rob Pickles, general manager of ADIL'S London office.

"The London office is already involved in important projects, such as with PA Resources, the development operator for the Bergman field on the UK Continental Shelf."

In just seven years of operation the company has expanded to over 170 personnel and is currently providing field development services for projects with capital expenditure in excess of £2.5 billion. As a small independent consultancy, Rob explains the importance of offering its clients a high level of expertise; the team in London will provide full engineering services like the headquarters in Aberdeen.

"Ideally we will recruit people with a complementary skills set to our team in Aberdeen," he says. "The London office is already involved in important projects, such as with PA Resources, the development operator for the Bergman field on the UKCS."

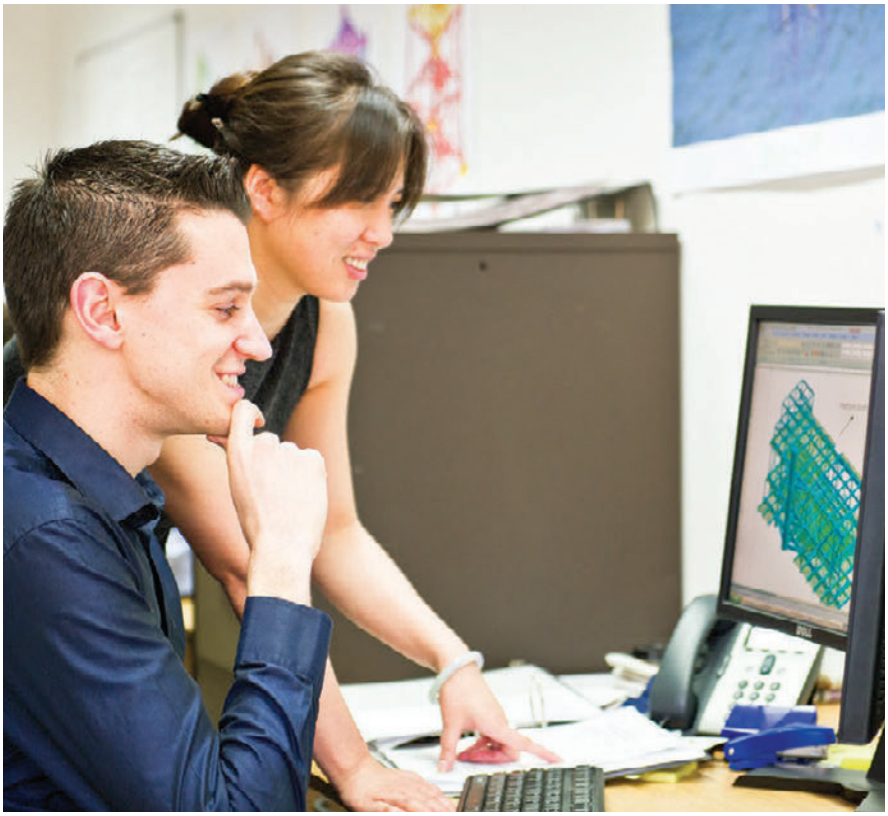
And in August 2013, ADIL secured a contract to provide project management services for PA Resources' Broder Tuck field, an undeveloped gas condensate field in the Danish sector of the North Sea. ADIL will lead the pre-development work from its London office, working with its staff in Scotland to determine the best facilities configuration to deliver production from the field.

As a result of such projects, the London base has already expanded from four to ten employees in the past six months, with plans underfoot for the team to explore new products and services.

Growing strong

Jee Ltd certainly sees the importance of expanding its offering. This year, the company celebrated its 25th anniversary, evolving from a one-person consultancy to becoming a multi-discipline firm, with a team of nearly 100 spread across three offices in the UK. >

"Our London location enables us to draw upon skilled professionals in the south east and south west of the country."



AMEC's new sites in Farringdon and London Wall accommodate engineers working on some major UK oil and gas projects. The company has recruited over 600 people for its oil and gas operations in London since June 2012

Initially, Jee worked exclusively on pipeline technology, but has developed to provide whole life-of-field engineering and sees growth opportunities in projects related to end of life extension.

The company's technical expertise and comprehensive knowledge base facilitated the diversification into training in 1995. Jee now offers 25 subsea engineering courses, delivered globally face-to-face and online, and continues to expand.

Mike Hawkins, who joined as the first full-time staff member in 1994 and is now technical director, notes that "over the last five years alone we have seen phenomenal growth in both turnover and personnel".

To meet demand for its engineering services, the firm opened a new site in London in January 2013. This was quickly out-grown and in August the team moved to larger premises right next to Waterloo train station, adding to its existing bases in Tonbridge, Kent, and in Westhill, Aberdeen.

The objective is to "help us to better service our customers in the south east", says Mike. "We have also moved our Aberdeen team into a new office twice as big as our previous premises." Jee intends to grow its business further before looking to expand its activities abroad.

Raising awareness

One of the added bonuses of the moves in the capital is increasing exposure to an entirely new talent pool. "Our London location enables us to draw upon skilled professionals in the south east and south west of the country," explains Mike.

Nick echoes the benefits: "It gives us access to the universities down here for our graduate intake, as we believe succession from within is a priority for maintaining our standards for the future."

With the demand for UK oil and gas supply chain services so strong domestically and overseas, there is scope for creating even more jobs in the north, south and everywhere in between.

For more information, please visit www.amec.com, www.assetdev.com and www.jee.co.uk.

TOTAL E&P UK's graduate level engineers have designed and developed a range of models to demonstrate complex offshore processes to schoolchildren

At the grassroots

Encouraging and instilling an interest in science, technology, engineering and maths among schoolchildren throughout the UK is crucial to ensure future take-up of the exciting opportunities available in sectors such as oil and gas. *Wireline* puts a microscope on just some of the many industry activities at the grassroots level.

"We want to secure a high level of future candidates that can work for TOTAL E&P UK (TEP UK) and TOTAL globally for many years to come. We can only do this by speaking to school pupils from an early age to help them better understand our business, what we do, where we are going and how they can contribute," asserts Sandra McIntosh, communications adviser at TOTAL.

Many companies in the UK oil and gas industry play a valuable role in supporting STEM (science, technology, engineering and mathematics) activities nationwide. These connections with local schools are beneficial for both parties, helping teachers bring the subjects to life through practical classroom projects, talks, visits, work placements or STEM clubs.

TEP UK finds that its newly recruited graduates, in particular, are effective >

'STEM ambassadors', providing schoolchildren within the north east of Scotland with an interface to industry that they can more easily relate to. Staff are encouraged by the company to register as ambassadors so that they can complete the necessary training and get involved in local school projects.

The graduates at TEP UK, for example, have designed and developed a range of models to demonstrate complex processes offshore; these are showcased at science fairs and engineering days, as well as at dedicated bespoke workshops run by the company. "They are fully interactive and great fun," says Sandra.

As well as developing their own networks with individual schools, TEP UK engages with students through a variety of larger educational schemes, such as the Edinburgh International Science Festival's Generation Science tour and the Young Engineers and Science Clubs Scotland project, inspiring, involving and informing students about energy matters.

Barbara Gray, headteacher of Charleston School in Aberdeen, explains: "For the past two years Charleston School has enjoyed the privilege of working with TEP UK. The children have benefited in so many ways, including the provision, free of charge, of an excellent science workshop from Generation Science. The children described this experience as 'awesome'. It clearly sparked their enthusiasm for the world of science!

"We were [also] delighted to welcome staff from TEP UK as judges for our Primary 7 Science Fair. Their presence certainly raised the profile of our fair and it meant so much more to our children to have 'real' scientists evaluating their work and providing meaningful feedback."

Leading by example

Inspiring schoolchildren in this way is key, notes Steve Way, human resources manager at Aquaterra Energy.

Being an international offshore engineering solutions company with its headquarters in Norwich, East Anglia, he explains that it is "challenging to attract people to this part of the country". Aquaterra Energy's work in the region aims to build lasting relationships with local schools and show pupils the opportunities available for a good career in the area and in the sector.

The Engineering Education Scheme (EES) Presentation Day at Norwich School. Aquaterra Energy has supported the students in their projects for the EES for the past six years

For the past six years, two graduate engineers from the company have each year supported four teams of Year 12 students (aged 16 to 17) at Norwich School with projects for the Engineering Education Scheme (EES). The EES brings together companies and schools to tackle real scientific, engineering and technological problems. In this way, students gain the in-depth experience they need to make informed decisions about their future studies and career. This year the challenge was to design a new release system for Aquaterra Energy's cement top-up systems.

"The experience of not only tackling a real challenge faced by the company but also being able to work with professional engineers has been extremely valuable," enthuses Meg Ling, physics teacher at Norwich School. "Many of the participants have gone on to study engineering at university with one winning the national 'Year in Industry' prize. Others have gained prestigious placements as a result of their experience with EES and Aquaterra Energy."

She adds that "the number of pupils choosing engineering as a university course has risen year on year at the school, with last year being the joint top choice with medicine".

Steve notes that, in turn, the firm's engineers "enjoy working with the younger generation. Indeed, this works towards their professional development".

Aquaterra Energy's young engineers have also visited a number of other local schools to provide an insight into being an "engineer in the modern world" and the firm is one of the sponsors of a new academy opening in 2014 – the University Technical College (UTC) Norfolk – for 14 to 19 year-olds. The academy is set to offer full-time courses in engineering and energy, combining technical, practical and academic studies in collaboration with local employers. Aquaterra Energy hopes to participate in a number of activities, including guest lectures.

"Their [TEP UK judges] presence certainly raised the profile of our fair and it meant so much more to our children to have 'real' scientists evaluating their work and providing meaningful feedback."

Shaping the future

Based in Newcastle upon Tyne, Bel Valves Ltd, manufacturers of valves, controls and actuators for the oil, gas and petrochemical industries, has also worked with schools in its region for more than a decade.

In particular, it has provided growing support for Bede Academy in Blyth,

"The number of pupils choosing engineering as a university course has risen year on year at the school, with last year being the joint top choice with medicine."

Northumberland, since the school opened in 2009. Alan Corner, assistant vice principal, says: "As an academy with an engineering specialism, we hold an annual Engineering Day to which we invite local companies to hold a series of lessons/tutorials. Bel Valves has always sent a team of people and their session has been one of the most popular, as they have provided an exciting mixture of 'hands on' experience along with an interesting talk about the company."

The link with Bede Academy has been further strengthened by the company's involvement in the Bede Enterprise and Engineering Forum, whereby a group of businesses meet regularly to advise students on how they can be better prepared for the world of work and how the teachers can best support the development of the students.

Bel Valves also supports five other local schools with their career days, and provides advice on interview techniques and applying for jobs.

"These types of activity provide us with strong applicants for our apprenticeship programme," notes Bel Valves' marketing manager Alison Ennis. "We also encourage our new apprentices to get involved. This gives them a chance to reflect on their own learning and career paths. As a result our apprenticeship programme is oversubscribed and we maintain a strong stream of candidates at this and higher entry levels."

On site

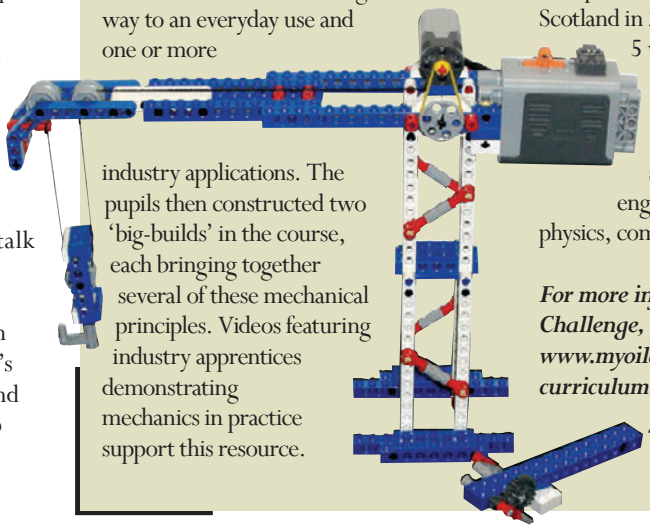
But it's not all about venturing into the classroom. With a 'hands-on' approach the mantra for all these firms, they are keen to bring the students into the working world, offering them placements or site visits. These are key elements of the educational outreach programmes. >

OPITO LEGO CHALLENGE

MECHANICS IN PRACTICE

OPITO, the UK oil and gas industry's focal point for skills, learning and workforce development, ran two pilot programmes of its new 'Lego Challenge' in June 2013 at Meldrum and Dyce Academies in the Aberdeen area.

The hands-on initiative ran for four weeks and saw schoolchildren, aged 12 to 13, initially construct simple Lego models demonstrating a single mechanical principle, including levers, pulleys, inclined plane, cam, gears and structures. Connections are made along the way to an everyday use and one or more industry applications. The pupils then constructed two 'big-builds' in the course, each bringing together several of these mechanical principles. Videos featuring industry apprentices demonstrating mechanics in practice support this resource.



Plans are underway to roll out the initiative across more schools in the UK. Vivien Ellins, curriculum developer at OPITO, says: "It is very encouraging to see a significant increase in pupils' confidence in physics, technical studies and problem solving. Although it is early days, it looks like the girls are challenging the perception that technical and engineering roles appeal more to boys."

As part of its work, OPITO also formed an Industry Curriculum Work Group. It has submitted proposals for 45 oil and gas industry topics for the new exams and qualifications coming into place in Scotland in 2014. National 4 and National 5 will replace Standard Grade at General and Credit levels, new Highers and Advanced Highers will follow. OPITO's topic suggestions cover outcomes in engineering science, chemistry, physics, computer science and biology.

For more information on the Lego Challenge, please visit www.myoilandgascareer.com/curriculum-resources-scotland-third-fourth/technology.

Pupils from Monkseaton School in Whitley Bay visited Bel Valves as part of the UK Government's 'See Inside Manufacturing' initiative

EARTH SCIENCE EDUCATION

TEACHER TRAINING

Helping teachers develop their own skills and knowledge of Earth science is the premise of the Earth Science Education Unit (ESEU) based at Keele University.

Funded by Oil & Gas UK since 2007, the ESEU aims "to influence teachers and trainee teachers in primary and secondary schools to develop critical thinking in order to promote a better understanding of how the Earth works and better equip future generations to steward it", explains Professor Chris King, who leads the programme.

Since 1999, the ESEU has engaged nearly 11,000 teachers, who between them teach more than two million pupils, as well as over 20,000 trainee teachers.

One of the ESEU's most popular free workshops for secondary school teachers is on the Dynamic Rock Cycle and each participant is given a CD ROM with supporting materials. Teachers are also invited to sign up to the ESEU Facebook page whereby they receive a weekly update on Earth science teaching and resources as they become available.

Chris believes that the workshops have proved effective because they are relevant to the national curriculum and the content is guided by feedback and continual evaluation.

© Peter Kennett, ESEU

He adds: "The workshops [deliver] a range of activities that the teachers can use in the classroom straight away. They are also able to test and evaluate a range of methods designed to bring Earth science alive to their pupils, who might otherwise think that Earth science is about dusty rock specimens in a drawer and not realise that Earth scientists investigate the dynamic Earth."

For more information, please visit www.earthscienceeducation.com.

"As a result our apprenticeship programme is oversubscribed and we maintain a strong stream of candidates at this and higher entry levels."

Aquaterra Energy, for example, provides up to three places a year for work experience, while TEP UK supports work placement opportunities across the range of professions employed by the company. And Sandra notes that the visits to its St Fergus gas terminal are also a hit among pupils. "Approximately 50 pupils a year from local schools attend," she says.

Bel Valves also provides work experience every year to eight or nine students within any of its departments, from commercial activities, to project management or the shopfloor. And most recently, the company participated in the Department for Business, Innovation and Skills' 'See Inside Manufacturing' initiative to transform students' perceptions of manufacturing in strategic sectors.

Alison explains: "The recent visit by 15 to 16 year-old pupils from Monkseaton School was organised by OPITO as part of 'See Inside Manufacturing'. We set the stage by explaining what it is that we actually make, how our valve products fit into the upstream oil and gas infrastructure, and why the engineering and manufacturing specialities are so important.

"With that knowledge we then showed the pupils how our products are designed, produced and tested. You can see the enthusiasm of the pupils when they see it for themselves. To give that opportunity at a crucial stage in their decision making process does pay dividends promoting manufacturing and engineering alike."

Oil & Gas UK and OPITO are working together to consider how more schools in the UK could be reached more frequently with a consistent message about the importance of STEM subjects and the opportunities they open up for building an exciting career in the sector. For more information, please contact Alix Thom on athom@oilandgasuk.co.uk.

Celebrating our industry

The Oil & Gas UK Awards recognise the talented individuals and innovative companies that make up our industry. *Wireline* reports

The annual Oil & Gas UK Awards, sponsored by Shell U.K Limited, were once again a stunning showcase of the industry's brightest talent. Over 600 people turned out at the glittering awards ceremony in Aberdeen on 7 November, making for a memorable night as the great and good gathered from across the industry to celebrate the winners' achievements.

Keynote speaker Damien Bates, Editor of the *Press and Journal* and editor-in-chief at Aberdeen Journals Limited, gave the after-dinner speech, while the sponsors of each category presented the winners with awards for people development, business efficiency, mentoring, young technician of the year, and overall excellence (see overleaf for details of the winners).

Oil & Gas UK's chief executive, Malcolm Webb, says: "Judging by the quality of entries this year, there is clearly an abundance of real talent, innovation and enthusiasm in our industry – something which I'm sure will come as no surprise to those of us lucky enough to work in it. I look forward to hearing more stories of excellence for many decades to come." >

AWARDS WINNERS 2013

AMEC
(pictured: Lesley Birse, HR Director Europe)

The Apache/OGN Project Team
(pictured: Craig Melville, CCO & Deputy CEO, OGN)

Archie Crawford,
Technical Authority NDT,
Bilfinger Salamis UK

James Gladden,
Control Room Operator,
BG Group

Kenny Baxter,
Operations Representative – Mechanical,
Chevron North Sea Limited

Award for People Development

AMEC picked up this award (sponsored by the University of Aberdeen) for its exceptional tools and mechanisms to support the career paths of its staff. AMEC Career Paths, an online assessment programme, assists individuals to perform a gap analysis of their skills, allowing staff to identify the job best suited to them within the business. Judges were particularly impressed by AMEC's people development programmes, which have led to high levels of retention; seventy-seven per cent of employees state that "opportunity" is the primary reason they choose to work at AMEC. In addition, staff engagement with local primary schools has proved mutually beneficial as pupils are introduced to engineering whilst AMEC graduates develop their leadership skills.

Award for Business Efficiency

The Award for Business Efficiency (sponsored by Apache North Sea) went to **Apache and OGN** for the installation of the 1,500 tonne Forties Alpha platform, a project which extended the life of the field by an additional 25 years. Despite the fact that this was the first time Apache had built a fixed installation for UK waters, and Newcastle-based OGN had only been established for a few months, the team worked closely to reduce the cost and accelerate the project. In addition to demonstrating impressive collaboration, judges commented on the measurable benefits. Installed platform costs were 20 per cent less and project duration was six months shorter than the industry norm.

Award for Mentoring

Archie Crawford, technical authority NDT, at Bilfinger Salmis UK scooped the Award for Mentoring (sponsored by Chevron North Sea Limited) because of his longstanding and impressive commitment to mentoring. Archie leads Bilfinger's training and competence verification of over 300 technicians, in addition to acting as a mentor to more than 100 technicians. Since the beginning of his career he has championed mentoring, coaching those who had lost their jobs with the Ministry of Defence to make the transition into stable and skilled jobs in the oil and gas sector. The judges praised Archie as an example of someone with a selfless spirit to help others, "benefiting both the organisation and the entire industry".

Award for Young Technician of the Year

The Award for Young Technician of the Year (sponsored by BP) went to **James Gladden, control room operator at BG Group**. Having joined BG Group two years ago, James has established a great reputation for devising, supporting and delivering initiatives that yield benefits for the company's Lomond platform. Praised by judges for making a "significant impact", James has delivered an enhanced shutdown plan, reduced work-scope backlogs and developed a robust 'threats and vulnerabilities' register which helps to raise issues to management. In addition, his innovative approach to tackling an increase in flaring led to a rise in gas production and a fall in flared gas. Judges also praised James' leadership attributes, which they felt were "of a high standard for someone so young".

Award for Overall Excellence

The final award of the night – the Award for Overall Excellence (sponsored by the Engineering Construction Industry Training Board) – went to **Chevron North Sea Limited's Kenny Baxter, operations representative – mechanical**, in recognition of his performance, commitment to learning and ability to get the job done. Kenny has had an impressive career so far, rising from apprentice to operations representative on a major capital project in just eight years. The judges noted Kenny's performance exceeded expectations, in particular, on the Rosebank field facilities development project, which saw him recommending an optimised thruster configuration that would deliver the necessary capacity with reduced weight loading and significant cost savings. Chevron's management has high expectations of Kenny as a future leader, and the judges echoed this in their praise for his flair and ingenuity across multiple projects.

For more information on the awards and for details on all the finalists, visit www.oilandgasuk.co.uk/events/awards.cfm. And also don't forget that the UK Oil and Gas Industry Safety Awards are opening for nominations in January 2014. See right for more details.

Nominations open Monday 6 January 2014

The search is on for the outstanding people and companies helping to make the UK oil and gas industry one of the safest in the world

THE UK OIL AND GAS INDUSTRY SAFETY AWARDS

Sponsored by

MAERSK OIL

This year's award categories are

Safety Leadership
– for an inspirational and motivational team leader

Safety Representative of the Year
– for an enthusiastic and committed safety rep

Preventative Safety Action
– for a quick-thinker who has helped prevent a potential incident

Most Promising Individual
– for an up-and-coming person with potential

Innovation in Safety
– for a company which has put in place a clever safety process or technique

Workforce Engagement
– for a worksite or installation which has embraced engagement with its workers

****New for 2014****
The Health Award
– for demonstrable positive effects on the workforce by an individual/team/company that has taken steps to actively improve the health of its workforce.

PLUS

Ideas in Safety Prize
– £5,000 prize for an individual/team with an idea for reducing or preventing hydrocarbon leaks.

How to enter

Visit ***www.oilandgasuk.co.uk/safetyawards*** for more details.

Jointly organised by Oil & Gas UK the voice of the offshore industry

STEP CHANGE IN SAFETY

THE UK OIL AND GAS INDUSTRY
SAFETY AWARDS

NEW EDITION
Fully revised and updated

BRITAIN'S OFFSHORE OIL AND GAS

The essential guide to a great industrial success story

The new edition of *Britain's Offshore Oil and Gas* book:

- Examines the activities, processes and technology advances in the UK
- Covers geology, exploration, development, production and decommissioning
- Outlines the health, safety and environmental principles that guide industry operations
- Considers the sector's future prospects

Available to order online at www.oilandgasuk.co.uk

Full price: £15.00

Oil & Gas UK Member price: £10.00

www.oilandgasuk.co.uk

@oilandgasuk

Oil & Gas UK
the voice of the offshore industry