THE MAGAZINE FOR THE UK
OFFSHORE OIL AND GAS INDUSTRY

ISSUE 39 - SUMMER 2017

WIRELINE

Making connections

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Facing the future

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Decisive and determined

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Regulars


Unit operating costs fell to
$15.30 /boe
production has increased by
16%
since 2014, following over a decade of continual decline

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"There is a strong future ahead for the sector, but it's up to all of us to create and secure that future."

"Vision without action is a daydream. Action without vision is a nightmare." This Japanese proverb powerfully sums up why a visionary and purposeful approach need to go hand in hand.

This could not be more pertinent as we work with the Oil and Gas Authority, industry, government and other stakeholders to set out Vision 2035 for oil and gas production and the sector's supply chain (p15).

Strong conviction, decisive and bold actions, and innovative thinking to fulfil a vision are the threads that run through the stories from our member companies in this issue of *Wireline*.

Dr Robert Trice, CEO of Hurricane Energy, has been a long-time proponent of the untapped opportunity fractured basement reservoirs represent. And his passionate pursuit in this area appears to be bearing fruit. Hurricane's latest drilling results offer the prospect of potentially the largest undeveloped discovery on the UK Continental Shelf, in the west of Shetland, and, moreover, they highlight the potential for other valid basement targets across the basin (p20). Hurricane's efforts confirm that there is a lot of life left in the basin after already 50 years of exploration and production.

And with that comes ongoing opportunities for the UK supply chain. The strong relationships Hurricane has forged with its suppliers are crucial to bringing its discoveries closer to development in the most effective way possible.

Companies like Lokring Northern and EM&I featured in this issue (p29) also put a spotlight on the resilience of the supply chain. Both these firms are reaping the rewards of offering a novel way of working in a very different climate today.

While, the Aberdeen Marine Logistics Alliance (p35) is an excellent example of an initiative started nearly 20 years ago that is still making waves today as companies pursue greater efficiencies and cost savings.

I hope all these stories provide a source of inspiration for us all and are a timely reminder that there is a strong future ahead for the sector, but it's up to all of us to create and secure that future.

Deirdre Michie, Chief Executive, Oil & Gas UK

Wireline is published by Oil & Gas UK, the voice of the UK oil and gas industry.

Contact the editorial team on editorial@oilandgasuk.co.uk

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News

1. *Business Outlook highlights urgent need for fresh investment*

Oil & Gas UK's *Business Outlook* provides an authoritative insight into the sector's recent performance and prospects. It reveals that the industry is now in better shape to compete for much-needed investment and confidence is slowly returning following an intensive two-year drive to improve efficiency, streamline costs and boost productivity. However, exploration remains at record lows and the basin urgently needs fresh capital to stimulate activity.

"Confidence is slowly returning to the basin," says Michael Tholen, upstream policy director. "The revival is led chiefly by exploration and production companies which may collectively see a return to positive cash-flow for the first time since 2013, provided costs are kept under control and commodity prices hold.

"However, this is unlikely to translate immediately into reinvestment or increased activity. It is crucial that existing projects are progressed efficiently through to development and new ones matured to avoid a potentially significant production decline after 2020 and provide much needed business opportunities for the supply chain."

Download a copy of the full report, access quick facts and figures, and view videos outlining the key findings at www.oilandgasuk.co.uk/businessoutlook.

And turn to p15 for an interview with Oil & Gas UK's chief executive Deirdre Michie for more on the sector outlook, Oil & Gas UK's priorities and the industry's vision for 2035.


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2. *Study examines Brexit's impact on industry*

Oil & Gas UK has written to the Prime Minister highlighting findings from research that assesses the potential impact and opportunities of Brexit for the sector. The study, commissioned by Oil & Gas UK, looks at the implications for trade costs and labour movement. Under a worst-case scenario, where the UK reverts to World Trade Organization rules with the EU and the rest of the world, the likely cost of oil and gas-related trade will almost double to around £1.1 billion per annum; assuming trading behaviours remain unchanged. Meanwhile, skilled roles filled by EU workers are often critical for projects and Oil & Gas UK asks government to consider these posts when developing domestic immigration policy.

Industry is becoming more globally competitive, but remains sensitive to any additional burdens in relation to cost, or restrictions on the movement of key personnel required for critical operations. Oil & Gas UK recommends the UK Government prioritises the following during negotiations:

- Smooth access to markets and labour
- Maintaining a strong voice in Europe
- Protecting energy trading and the internal energy market

Deirdre Michie, chief executive of Oil & Gas UK, adds: "We would welcome discussions with government officials to outline industry's concerns and opportunities and help identify a path forward during Brexit negotiations. Our request of government is that any change, whether domestic or European, is managed in a manner that minimises risk to the oil and gas industry and provides predictability and clarity wherever possible, through constructive dialogue and consultation."

Read more about the findings at www.oilandgasuk.co.uk/brexit-and-the-uk-oil-and-gas-industry.

3. *Oil & Gas UK responds to Industrial Strategy consultation*

Oil & Gas UK has submitted a response to the UK Government's Industrial Strategy consultation following extensive engagement with members. Views were collected through two workshops in Aberdeen and London as well as written feedback. The submission identified five priority areas with recommendations to shape government policy and help the industry achieve "Vision 2035". The vision outlines the oil and gas supply chain's potential to double its turnover within a generation by capturing a larger share of export markets as well as increasing gross revenue from extending UK Continental Shelf (UKCS) production. This could generate additional revenue of over £290 billion (2016 money) for the UK economy.

The five priority areas identified in the consultation response are:

1. Establish a UK energy policy that realises the full benefits of indigenous resources
2. Ensure the UKCS is globally competitive for investment
3. Take practical steps to progress the supply chain
4. Strengthen research and innovation within the sector
5. Create a flexible and skilled talent pool


The many uses of oil and gas

Oil & Gas UK also used the document to shape a blueprint for government ahead of the General Election in June. Business excellence director, Stephen Marcos Jones, says: "Our submission not only reinforces the vital contribution that the oil and gas industry has and continues to make to the UK economy and its security of energy supply, it also sets out Vision 2035, which outlines the significant opportunity that could be realised if this sector is included as a key element of the Industrial Strategy."

Contact Jenny Stanning with any queries on jstanning@oilandgasuk.co.uk.

4. *Calls for alignment between Scottish and UK energy policies*

In response to the Scottish Government's Energy Strategy consultation, Oil & Gas UK has asked for a Strategy that aligns closely with UK Government energy policy and promotes oil and gas as part of a diverse energy mix. The response was submitted following engagement with members. The Strategy outlines the Scottish Government's vision for the country's future energy system to 2050. It identifies the priorities for an integrated approach that considers both the use and the supply of energy for heat, power and transport.

5. *Budget responds positively to industry asks*

Oil & Gas UK welcomed the acknowledgement in the Spring 2017 Budget that tax issues slowing down asset transfers need to be resolved so that recovery of the UK's remaining oil and gas reserves is maximised. Measures announced in the Budget include:

- A discussion paper on tax issues relating to the transfer of late-life oil and gas assets, which has now been published.

- A new expert panel that will scrutinise the issues raised in the discussion document. The panel is chaired by HM Treasury and includes HM Revenues & Customs, the Oil and Gas Authority, Oil & Gas UK, as well as industry representatives. Oil & Gas UK is hosting the meetings at its London and Aberdeen offices.

- The Statutory Instrument that aims to extend the scope of the Investment Allowance to certain categories of investment and leasing expenditure. It has been published and the economic benefits of the extension are backdated, so companies can generate the allowance for any allowable expenditure since 8 October 2015.


Image ©iStock.com/godrick

Deirdre Michie, Oil & Gas UK's chief executive, comments: "The UK Continental Shelf continues to offer an attractive range of opportunities and it is vital that we draw in a diversity of investors to ensure these are realised. Enabling assets to transfer, when appropriate, to new owners is key to this strategy. The tax regime has presented some significant barriers to asset trading, which we have been working on with Treasury for several years. These must be addressed as a matter of urgency and we are looking forward to working with the new government to achieve a successful solution."

Contact Romina Mele-Cornish with any queries on rmele-cornish@oilandgasuk.co.uk.

6. *Extractive industries report shows commitment to transparency*

More than 95 per cent of the UK oil and gas companies that were asked to provide information about their upstream tax payments in 2015 have done so as part of the global Extractive Industries Transparency Initiative (EITI). This demonstrates a high level of participation in a voluntary initiative.

The UK Government launched its latest EITI report in Aberdeen at the end of March. It has now published two reports that reconcile the data provided by companies with information from HM Treasury on the payments it has received. The first was in April 2016.

Download the latest report at http://bit.ly/EITI17.

Margot James MP, Parliamentary Under Secretary of State for Business, Energy and Industrial Strategy, addresses guests at the EITI report launch

Image ©iStock.com/mikeuk

7. *Sharing lessons to improve project delivery*

Recommendations on how to improve project delivery on the UK Continental Shelf are outlined in a report released by the Oil and Gas Authority (OGA). Cost over-runs and delays were highlighted as the key barriers to success following analysis of 58 major projects executed over the past five years. Oil & Gas UK is working with the ECITB and other key industry stakeholders to develop new guidelines for robust project delivery that aims to share good practice across the sector. The guidelines are due to be published in 2018.

Get a copy of the OGA report at http://bit.ly/2qLrI8I.

An ECITB toolkit aims to promote and support collaboration in project delivery. Find out more at http://bit.ly/ECITBtoolkit.

8. *Simplifying subsea developments*

The potential of the UK Continental Shelf's small pool reserves could be maximised by employing more cost-effective ways to create subsea developments, delivering savings of between 15 and 30 per cent. This is the key message of a set of Oil & Gas UK guidelines released under the auspices of the Efficiency Task Force (ETF).

The publication is the culmination of extensive work by the ETF's multi-disciplinary Subsea Standardisation Group, involving over 70 people and 30 companies and led by Steve Duthie and Guy Trumper of TechnipFMC. The group has demonstrated through real-life case studies how subsea developments could be simplified and standardised, bringing reserves into production more cost-effectively.

Stephen Marcos Jones, director of business excellence at Oil & Gas UK, says: "This project is a shining example of what can be achieved when industry experts are given the licence to innovate, share knowledge and tackle project delivery with fresh eyes."

Guidelines are free for members of Oil & Gas UK. Get your copy of the Subsea Standardisation Guidelines at http://bit.ly/SubApp17.

Also, see the Spring issue of Wireline for articles on simplifying subsea developments and halving well construction costs to improve the basin's competitiveness at https://cld.bz/IBBsFhu/18.

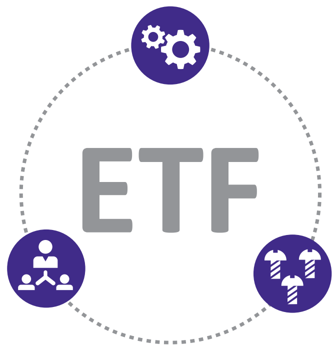
Images courtesy of TechnipFMC

9. *Efficiency challenges in production, maintenance and repair under the spotlight*

Oil & Gas UK's Share Fair spotlight series continues this year with the latest two events on 28 March and 4 May focused on maintenance and repair, and production efficiency, respectively. The interactive format encourages constructive conversations so that delegates and presenters can explore together how the industry's most pressing challenges can be solved through cost-effective application of supply chain services, expertise and equipment.

More than 90 delegates attended the March event where major purchasers Chrysaor, Nexen and Stork shared their repair and maintenance needs. While at the spotlight in May, Maersk Oil, Repsol Sinopec, Total E&P, Nexen, BP and CATS Management explored opportunities for the supply chain to work with them to minimise operations downtime, maximise flow rates, and deliver oil and gas more efficiently.

10. *On the road with the Efficiency Task Force*



Aker Solutions hosted representatives of the industry's Efficiency Task Force (ETF) on 20 April as part of a regular series of roadshows that allows employees to hear more about the ETF's work, find out how they can get involved and share their own achievements in driving continuous efficiency improvements. Around 150 members of Aker's staff heard presentations from Nexen's Mike Backus and Aker's Darren Cylde showcasing positive examples of efficiency gains within their companies.

Want to host/co-host a roadshow, or attend one of these events? Get in touch with Mariesha Jaffray on mjaffray@oilandgasuk.co.uk.

11. *Promote and demonstrate good supply chain practice*

Oil & Gas UK is encouraging all industry members to sign up to the Supply Chain Code of Practice (SCCoP). The aspirational code of conduct, which has been updated this year to reflect current industry challenges and priorities, is being actively promoted to improve performance, streamline processes, eliminate unnecessary costs, add value and boost competitiveness. It aims to develop and maintain an efficient and effective supply chain. By signing up, members will be demonstrating their commitment to the principles of co-operation that will help the UK supply chain improve commercial relationships in line with the industry's strategy to maximise economic recovery.

Ken Cruickshank, Oil & Gas UK's supply chain manager, adds: "We are working with various industry organisations to expand on existing tools. This includes encouraging signatories to the Code to make more use of the Oil and Gas Authority's Project Pathfinder tool. This gives them a real-time view of UK oil and gas projects. We are also encouraging signatories to make better use of FPAL – the oil and gas supply chain database – so that purchasers can more effectively identify, select and manage current and potential suppliers. Also, FPAL can be used to provide two-way feedback between purchasers and suppliers to drive closer relationships between them and help support improvement in competitiveness.

"At the same time, we are taking a fresh look at pre-qualification and tendering processes to identify ways to reduce the time and cost often associated with drawing up contracts. We hope the recently launched Tender Efficiency Framework will be a useful tool for members."

Find out more about the Code at www.oilandgasuk.co.uk/SCCoP.
The Tender Efficiency Framework is available to download at http://bit.ly/TenderEF17.

12. *Logistics Summit promotes conversation on collaboration*

Operators and contractors gathered for a Logistics Summit at Oil & Gas UK's Aberdeen office on 25 May to explore opportunities for improving logistics in the sector and how a regional approach to sharing helicopter and vessel capacity could improve efficiency. Logistics currently represent 8-14 per cent of annual operating costs offshore. At the workshop, Carlo Procaccini of the Oil and Gas Authority, Bibby Offshore's Vikki Thom and ASCO's Allan Scott shared their own experiences and findings, followed by an interactive brainstorming session. Driving improvements in logistics is one of the priority areas for the Efficiency Task Force.

For more information, contact Mariesha Jaffray on mjaffray@oilandgasuk.co.uk. ***See p35 for an article on the Peterson-operated Aberdeen Marine Logistics Alliance.***

13. *BP's Joe Docherty scoops supply chain young professional award*

Joe Docherty of BP has won this year's Young Oil and Gas Supply Chain Professional of the Year Award for leading a team that has streamlined the company's entire North Sea maintenance supply chain processes. Historically, tendering for BP's offshore and onshore maintenance work would be handled separately by each of its facilities/businesses, often resulting in duplication. Joe worked with stakeholders and suppliers to develop 27 work scopes across three categories: scaffolding, insulation and painting, and maintenance and lifting services. The new process means tendering companies now respond to one market enquiry from BP rather than multiple tenders submitted for similar jobs across different facilities, and, in turn, BP can make procurement decisions faster and more effectively.

The award was presented at Oil & Gas UK's Aberdeen breakfast briefing in April where speakers explored how businesses can shift from short-term survival to long-term resilience.

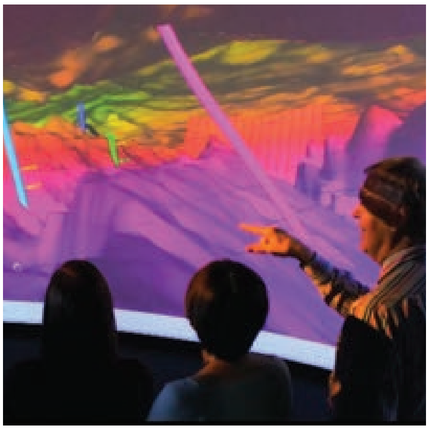
View the presentations from the breakfast briefing at http://bit.ly/2qM31pv.

Joe Docherty (centre) of BP scoops the 2017 Young Oil and Gas Supply Chain Professional of the Year Award

14. *Maximising the North Sea's potential*

The Oil and Gas Authority (OGA) has joined forces with the Netherlands Organisation for Applied Scientific Research (TNO) to explore the hydrocarbon potential of Jurassic rock formations across the North Sea. The OGA will sponsor research on the South Western Approaches and east Shetland platform areas, which are also included in the government-sponsored seismic acquisition programme. Outcomes from the research will be publicly available later this year.

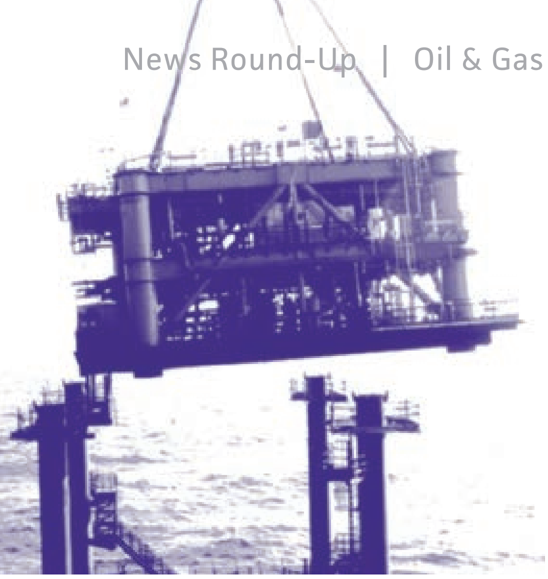
Find out more at http://bit.ly/2rHjpsq.



15. *OGA awards contracts for subsurface databases*

The Oil and Gas Authority (OGA) has awarded eight contracts with a value of £1.5 million to a range of companies to purchase comprehensive subsurface databases and information sources. The aim is to encourage further exploration in under-explored areas of the UK Continental Shelf. The datasets will underpin much of the OGA's work across the exploration and production life cycle, including promotion of future licensing rounds and undeveloped discoveries, regional exploration projects, area strategies and asset stewardship. Data from four of the contracts awarded will be made freely available this year.

Find out more at http://bit.ly/2rsybpQ.



16. *Scottish Government announces decommissioning fund*

A £5 million fund from the Scottish Government is designed to help the supply chain in Scotland benefit from the business opportunities that will come as North Sea infrastructure is decommissioned. The Decommissioning Challenge Fund will support infrastructure upgrades and innovation in salvage and transport methods at Scotland's ports and harbours. It will also encourage work at key sites to build business cases that will attract further private investment.

Expressions of interest are being accepted at https://consult.scotland.gov.uk/dcf/5f6d1d09/. For a comprehensive picture of decommissioning activity in the UK and Norway, check out Oil & Gas UK's Decommissioning Insight at www.oilandgasuk.co.uk/decommissioninginsight.

Image ©iStock.com/bluestocking

17. *First graduates in petroleum data management*

The first cohort of students of the pioneering Graduate Certificate in Petroleum Data Management are graduating this summer. The course, developed by Common Data Access Limited (CDA) and Robert Gordon University, provides new entrants to the profession with a solid foundation in petroleum data management and allows those already in the industry to formalise or extend their existing skills and experience (see box out right). Applications are now open for the next intake in September.

Malcolm Fleming, CDA chief executive, says: "Effective management of data is the key to maximising business value from assets and revealing untapped potential in exploration. Having staff with the knowledge and competencies to drive the best value from that data will support critical business activities, decisions and, ultimately, successful operations."

September also sees the first intake of students on the new Masters degree in Petroleum Data Management at the University of Aberdeen. The course has been developed in agreement with CDA and is sponsored by leading companies including Shell, Total and Chevron.

Subjects taught on campus will include data governance and quality, information security, and service and project management. The programme is offered on a part-time basis to accommodate those in full-time work. Full-time and distance learning options will be available in 2018 and 2019, respectively.

Find out more about these courses at http://bit.ly/2qNvhJw for Aberdeen University and http://bit.ly/2d8YZEc for Robert Gordon University.

What do the graduates say?

Sheena Hickey,
Subsurface Data Management Co-ordinator,
TAQA, Aberdeen

"I now have a better understanding of data model life cycles, governance and how to align data management with business needs. This has helped me improve our subsurface policies, procedures and guidelines. My professional network has also grown. Having connections with like-minded data managers is so important for interaction and bouncing ideas around."

Lewis Faryma,
Geoscience Technologist,
Apache, Aberdeen

"The tutors are very supportive and the coursework is directly applicable to my current job. My research and academic writing has improved and I'm learning new skills as well. Being able to learn from fellow students has been very valuable and the distance learning has proved easy to fit around work and other commitments. Above all, I really appreciate formal recognition of my data management skills and experience."

Dean Melo,
Geologist,
Petrobras, Rio de Janeiro

"The course gave me a useful, well-structured overview of petroleum data management that helps address real problems. The connection between different types of data becomes clear and I can see how their quality impacts asset evaluation. When I graduate, I plan to offer some informal training in data management in local universities to promote this important area among undergraduates."

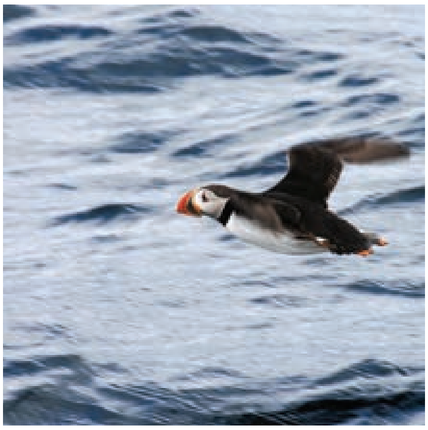


Image ©iStock.com/milehightraveler

18. *Updated seabird oil sensitivity index*

A new seabird oil sensitivity index is now available for use in operators' Oil Pollution Emergency Plans (OPEP). It is based on data taken from visual boat and digital video aerial surveys run between 1995 and 2015. Oil & Gas UK commissioned the work following recommendations from the Oil Spill Prevention and Response Advisory Group (OSPRAG) that the industry needed to validate and update existing seabird data in collaboration with the Joint Nature Conservation Council.

Louise O'Hara Murray, Oil & Gas UK's environment manager, says: "The new Seabirds at Sea Oil Sensitivity Index (SOSI) is a great example of industry and government working together. Furthermore, the data are now available for the first time in geographic information system (GIS) map format."

Access the data at http://jncc.defra.gov.uk.

19. *Get up to speed on the latest environmental legislation*

Users of Oil & Gas UK's Environmental Legislation website will find a much-improved search function and interface. Timelines have been added to prompt operators on the types of permits they need to apply for and by when. The website is a unique resource that lists all offshore oil and gas legislation and guidance and it's free to use.

Keep up to date at www.oilandgasukenvironmentallegislation.co.uk.

20. *Scotland Conservative Group meets with industry reps*

Oil & Gas UK organised a roundtable meeting between the north east of Scotland Conservative MSP group and industry representatives earlier in the year. This was followed by a visit to member company Petrofac. At the meeting, the parliamentarians received an overview of the industry and discussed the UK Government's Industrial Strategy and Brexit.

Walter Thain, managing director at Petrofac, also shared the latest outputs from the Efficiency Task Force, which he chairs. Attendees included Alexander Burnett MSP; Bill Bowman MSP; Liam Kerr MSP; Ross Thomson MSP; and Peter Chapman MSP. At Petrofac's Emergency Response Service Centre, the group witnessed a simulated emergency response exercise in the Incident Management Room, followed by a tour of Petrofac's Fast Rescue Craft Coxswain training site – the only freefall lifeboat training facility in Scotland.

Membership Matters

Shell's Steve Phimister

21. *Board appointment*

Oil & Gas UK is pleased to announce Steve Phimister's appointment to its Board as he takes up his new role as vice president of Shell's UK & Ireland upstream business unit. Steve is replacing Paul Goodfellow who moves on to another role. Also, Bel Valves' Neil Kirkbride has completed five years as a valuable member of the Board and has now stepped down as per governance rules. He will continue his work with the association through the Efficiency Task Force, leading on efforts to simplify engineered products. Neil's replacement will be announced in due course.

View the full list of Board members at www.oilandgasuk.co.uk/about-us/executive.cfm.

22. *Companies join Oil & Gas UK*

We are pleased to welcome the following companies that have joined Oil & Gas UK membership: Aberdeen City and Shire Hotel Association; Airpac Bukom Oilfield Services; British American Business; Clyde Training Solutions; Codex Integrity Limited; ConsortiQ; Essex Court Chambers; IMRANDD Ltd; Newgate Communications; PPS Scotland; Quartzelec Ltd; Texo Drone Survey and Inspection Ltd; and Woodside Energy Ltd.

Dates for your diary

Raise your profile and have your finger on the pulse at Oil & Gas UK's industry-leading events.

Book Online
oilandgasuk.co.uk/events

Members receive 35% discount

29 June
Health and Safety Seminar
Aberdeen

29 June
London Breakfast – Decommissioning
Sponsored by HERBERT SMITH FREEHILLS

23 August
Offshore Safety Awards
Aberdeen
Principal Sponsor MAERSK OIL

24 August
Share Fair Spotlight – Wells Challenges
Aberdeen

5 – 8 September
Offshore Europe
Aberdeen

6 September
Aberdeen Breakfast – Economic Report Launch
Sponsored by Deloitte.

7 September
London Breakfast – Economic Report Launch
Sponsored by HERBERT SMITH FREEHILLS

12 September
Aviation Seminar
Aberdeen

19 September
Continuous Improvement Seminar
Aberdeen

21 September
Legal Conference
Aberdeen
Principal Sponsor BRODIES LLP

3 October
London Breakfast
Sponsored by HERBERT SMITH FREEHILLS

3 October
Members Only – Offshore Wind Routes to Diversification
Aberdeen

1 November
Share Fair
Aberdeen

2 November
Oil & Gas UK Awards
Aberdeen
Principal Sponsor

15 November
London Breakfast
Sponsored by HERBERT SMITH FREEHILLS

27 – 29 November
Offshore Decommissioning Conference
St Andrews

5 December
Aberdeen Breakfast
Sponsored by Deloitte.

12 December
Environmental Seminar
Aberdeen

Facing the future

Parts of the UK oil and gas industry are starting to come up for air following a major drive to boost efficiency, streamline costs and bolster productivity. *Wireline* caught up with Deirdre Michie, chief executive of Oil & Gas UK, for the latest on what's been happening over the last two years and what's expected to come.

Q: Oil & Gas UK published its *Business Outlook* in March – what did it say?

A: Our *Business Outlook* – which replaces our *Activity Survey* – provides a picture of past and future activity on the UK Continental Shelf (UKCS). It gives a full sector view based on information gathered from businesses across the whole supply chain: from operator to contractor members (see infographics throughout this feature).

Generally, findings show that after two stormy years, industry is now heading in the right direction. Production continues to rise and unit costs are coming down, putting the UKCS in a much better place to compete for badly needed investment.

But while some companies are moving forward with cautious optimism, as they see a return to positive cash flow for the first time in years, that's not the case for all. With development drilling at its lowest since the '70s and exploration remaining at record lows, the drop off in activity has hit companies across the supply chain particularly hard, with an average 30 per cent drop in revenues over the last two years. However, we believe that thanks to the intensive industry efforts to improve efficiency, we are now moving in the right direction in terms of increasing our competitiveness.

But there is no escaping the fact that we need to bring fresh money into the UKCS. Spending in the basin is forecast to fall over the next two years, and we face a significant production decline after 2020 if more capital is not urgently secured.

Despite the difficulties of recent years, we can't afford to lose sight of the bigger picture. There are still up to 20 billion barrels of oil and gas to go after, and we have a supply chain with world-class capabilities servicing an industry supporting 330,000 UK jobs.

We can still make a major contribution to the UK economy but this needs a continued focus on costs and efficiency improvements, the sanctioning of new projects and increase in exploration and appraisal drilling. >

Q: What are the priorities for Oil & Gas UK?

A: It's now ten years since the industry created Oil & Gas UK. Since 2007, we have constantly reviewed our priorities to ensure they remain relevant to member issues and responsive to their concerns. There are seven focus areas for 2017, with health, safety and the environment remaining at the heart of all our activities.

Our priorities are:

1. **Competitiveness** – to continue to improve industry cost and efficiency and promote the UKCS as a world leader in basin operations.
2. **Investment stimulation** – to ensure ours remains a fiscally competitive and attractive basin that encourages MER (maximising economic recovery) throughout the exploration and production life cycle.
3. **Late-life asset management and decommissioning** – ensure the long-term role of oil and gas within the energy mix and government energy policy.
4. **Energy policy and climate change** – to ensure we are part of the solution to the challenges around climate change.
5. **Supply chain resilience** – to sustain and progress our supply chain, showcasing its capabilities regionally, nationally and internationally.
6. **Brexit** – to retain influence in Brussels, frictionless access to people, markets and services as well as sustained government focus on MER.
7. **Industrial Strategy** – to ensure our sector is at the heart of the UK Government's approach to building a modern industrial policy.

Q: Can you summarise Oil & Gas UK's response to the UK Government's green paper on the Industrial Strategy?

A: Our submission stressed the vital contribution industry makes to the UK economy and its energy security. We identified five courses of action that we believe – if adopted by government and aligned with the MER UK strategy – will unlock the UKCS' full hydrocarbon potential and allow the service sector to expand its range and markets.

The five action points are:

1. Establish a UK energy policy that realises the full benefits of the UK's indigenous resources.
2. Ensure the UKCS is globally competitive for investment.
3. Take practical steps to progress the supply chain.
4. Strengthen research and innovation within the oil and gas sector.
5. Create a flexible and skilled talent pool.

Related to this – and set out in our response – is Vision 2035: the industry's aspiration for oil and gas production and the sector's supply chain some two decades from now. Turning this vision into reality could generate additional revenue of over £290 billion for the UK economy over the next 20 years.

Q: How will Brexit impact the UK offshore oil and gas sector?

A: Oil & Gas UK commissioned research to review the industry's current trading footprint as well as to determine where the sector's personnel come from. We found that around £73 billion worth of oil and gas related trade, including both fuel and non-fuel goods and services, flows between the UK and the rest of the world.

- Around £12 billion worth of that trade relates to services not subject to tariff.
- A further £31 billion worth relates to the trade of unrefined fuel products, also not typically subject to tariff.
- The remaining £30 billion of trade is subject to a range of tariffs – which average around 2 per cent across a number of different products.

In our current position – with the UK part of the EU – the total cost of tariffs on this trade in goods is around £600 million per year. Under a worst-case scenario, if a negotiated deal on trade cannot be agreed and the UK switches to World Trade Organization rules, the likely cost of trade for our sector will almost double to around £1.1 billion per year.

But if the UK can negotiate more favourable terms with the EU and trading partners around the world, the total cost of trade could fall by around £100 million a year.

In addition, around 5 per cent of our staff in the UK – about 8,000 – come

> ***We can still make a major contribution to the UK economy.***

from other EU countries, and around 70 per cent of these are skilled – with one in two holding a professional or managerial role. In an industry that regularly brings people with specialist skills from all over the globe into the UK to work on specific developments, these posts are often project-critical.

Therefore, we want the government to ensure the smoothest of access to markets and labour post Brexit. We also need to support energy trading and the internal energy market by maintaining a constructive influencing position with Europe.

Q: How is Oil & Gas UK working with the Oil and Gas Authority on MER UK initiatives?

A: We work closely with the Oil and Gas Authority (OGA) through a range of task forces, forums and joint projects, providing an industry perspective and collective experience on the challenges facing the basin.

The task forces address issues of asset stewardship, decommissioning, efficiency, exploration, supply chain and exports, and technology. They are key to shaping policy and drive delivery.

For example, we are involved in the exploration strategy that aims to make a significant difference to the level of exploration and appraisal activity on the UKCS. It led to the introduction of the more flexible Innovate Licence, brought in with the 29th Licensing Round, which is targeted at encouraging new companies with different business models and fresh ideas to enter the UKCS.

We are also part of work being done by the Decommissioning Task Force where companies share their approach to delivering compliance in their decommissioning projects. The exercise has identified some cost saving opportunities, initially based around the southern North Sea, which are being developed further by the task force and will be extended across the basin.

On asset stewardship, the aim is to boost reserves recovery. This means identifying new and efficient methods of maximising the potential of existing fields and promoting these methods across the industry to help ensure we recover as much of the remaining oil and gas as possible.

Q: OGA's *Lessons Learned* report was somewhat critical of industry – how is Oil & Gas UK responding?

A: The report was the culmination of a review of major UKCS oil and gas projects conducted over the last five years – between 2011 and 2016 – and presents common lessons from these projects, together with recommendations that, if implemented, should improve future project delivery on the UKCS. While there is always room for improvement, industry has since made progress, not least through its willingness to work together to identify the action and behaviours needed to improve project delivery. There are many examples of good practice and Oil & Gas UK is working with the ECITB, and industry, to create new guidelines that will share good practice across the sector. These are due to be published in 2018.

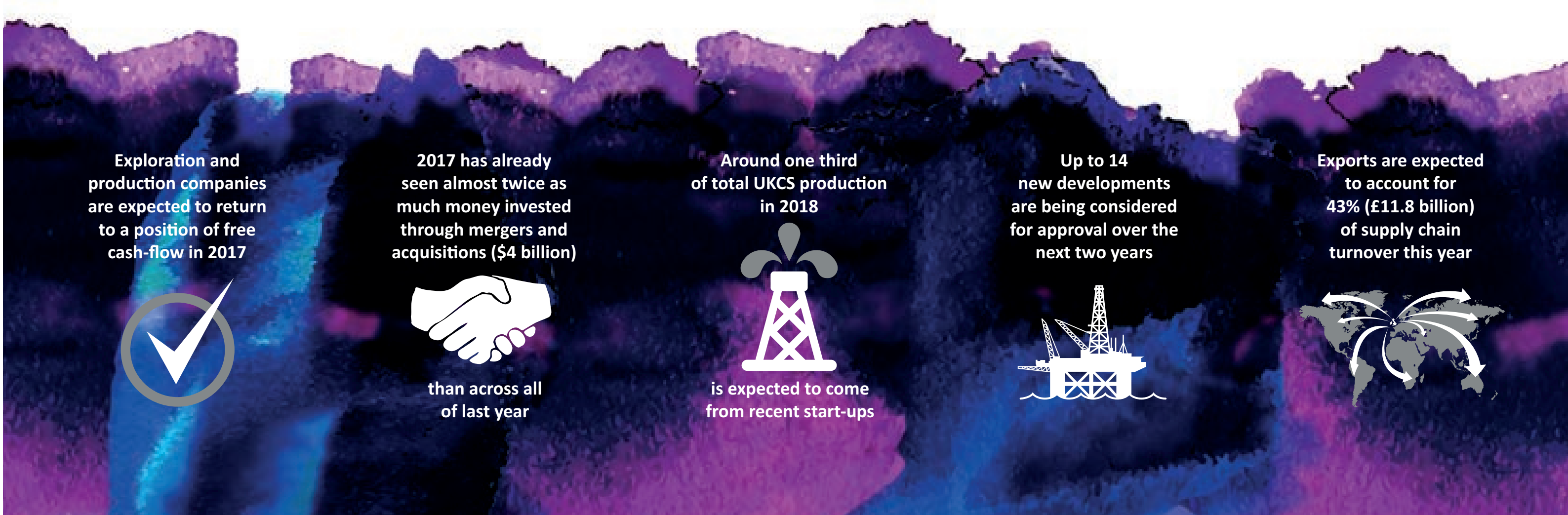
Q: Were you pleased with the announcements for industry in Budget 2017?

A: The government clearly understands the importance of our industry to the wider UK economy and it was particularly reassuring to hear recognition of the need to maximise recovery of remaining UK oil and gas reserves.

The response to our call to resolve tax issues that have presented significant barriers to asset trading was also very welcome. This relates to the current tax treatment of decommissioning liabilities which makes it harder for existing owners to sell mature assets and often leads to lengthy, complicated deals that slow down activity in the basin.

Recent sales of mature UKCS assets highlight the attraction the basin still holds for some investors, but more transactions could be achieved, and more quickly, if this issue is resolved. The UKCS continues to offer a striking range of opportunities and it's vital that we draw in a diversity of investors to ensure these are realised. We need fresh investment in mature, late-life assets to extend production and delay decommissioning. This would be to everyone's benefit, providing jobs, a secure primary energy source and tax receipts for the Exchequer.

Resolution of these tax issues must therefore be addressed as a matter of urgency and we are now participating in the new expert panel, convened by the Treasury, that is considering how best to address the issue. We are confident a solution agreeable to all >



will be found that will unblock asset deals and support MER, ensure security of supply in the future and provide a wider economic benefit.

Q: Is there a particular area of Oil & Gas UK's work that excites you?

A: It has to be the drive for greater efficiency and competitiveness. Our Efficiency Task Force (ETF) is making good progress in providing support to companies to compete in the lower oil price world.

It's exploring how companies can work together to share resources and good practice. It's developing and encouraging simplified approaches and standard solutions to help tackle costs, and it's holding roadshows, within companies, as part of that exchange of information to help keep efficiency at the top of the industry agenda.

A motivated and engaged workforce is critical for delivering the efficiency agenda and therefore we are looking to see where we can support companies with their workforce engagement. We know of companies that are taking positive action on this front, but our members have also told us that they would welcome support as well as the opportunity to exchange ideas with their peers.

Our role here is to provide information about industry, as well as providing guidance and a mechanism, via the development of a workforce engagement hub on our website, to share good practice. We also have a workforce engagement group.

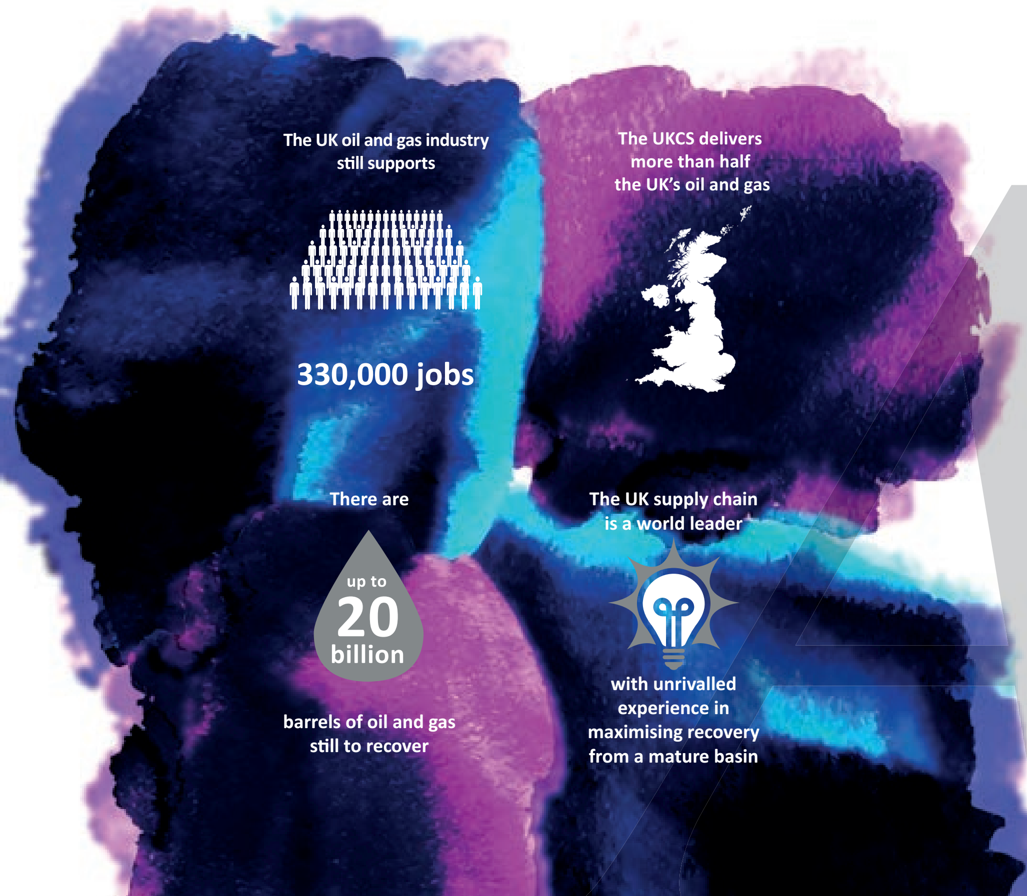
> ***"Companies can work together to share resources and good practice."***

Oil & Gas UK has made supply chain resilience one of its key priorities and is doing all it can to support the companies that have established the UK's world class supply chain with industry expertise.

Tools and good practice materials the ETF has developed in areas such as tendering, inventory management and logistics, are helping companies make their operations more efficient and lowering costs.

We are also monitoring performance using the Supply Chain Code of Practice and Industry Behaviours Charter, which help govern supply chain relationships between our operator and contractor members, as well as building good working relations between purchaser and supplier.

www.oilandgasuk.co.uk/efficiency

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HURRICANE – *a force to be reckoned with*

Hurricane Energy has the wind in its sails after making a high profile – and potentially game-changing – breakthrough in its exploration and appraisal programme west of Shetland.
Wireline met chief executive Dr Robert Trice to find out why he believes this could be highly significant for the UK Continental Shelf.

When Hurricane Energy confirmed in March that its Halifax well was indeed an oil discovery, the prospect of a major new development on the west of Shetland captured the industry's imagination.

Initial results from the latest drilling programme indicate there is a "very significant" hydrocarbon column of at least 1,156 metres within the fractured basement reservoir at Halifax. The data also suggest that Halifax and Lancaster – which itself has estimated recoverable reserves of almost 600 million barrels – are one linked structure, representing potentially the largest undeveloped discovery on the UK Continental Shelf (UKCS).

"The fact that Halifax has an extensive column and that we cannot map a barrier between Lancaster and Halifax, gives us the belief that it's a single accumulation," says CEO Dr Robert Trice. "Of course, further appraisal will be needed to confirm our model, and a top priority will be to demonstrate commercial flow at Halifax and pressure communication between Halifax and Lancaster.

"Even if they are different fields, we have a whacking great big oil column at Halifax and the same at Lancaster. There's no obvious downside."

In uncertain times, this has generated a welcome wave of industry optimism, with the potential for more good news from Hurricane's nearby Lincoln and Warwick prospects. The former was the subject of successful exploration drilling in late 2016, the latter is as-yet undrilled.

Pioneering projects

For Robert, however, there's an even bigger story that extends beyond the west of Shetland to a potential game-changer in the UKCS story. The latest drilling results vindicate his long-held conviction that fractured basement reservoirs represent a largely untapped opportunity. From the outset, Hurricane has been a pioneer in its focus on this distinctive geological occurrence typically found under softer sedimentary sandstone.

"In my view, our results support the argument that fractured basement is

Image courtesy of Daren Cook Design

Our results support the argument that fractured basement is a valid target. We've demonstrated that there is permeability in the granite that can support commercial flow. What logic is there to say that this is confined to the west of Shetland?

a valid target," asserts Robert. "We've demonstrated that there is permeability in the granite that can support commercial flow. What logic is there to say that this is confined to the west of Shetland? Basement underpins the North Sea, from the central North Sea all the way to Ireland and so I think there's sufficient evidence to get people looking underneath the conventional traps and reservoirs."

Fired up

Hurricane's approach has its origins in Robert's early years in the industry. The graduate in geography and geology from the College of St Paul and St Mary Cheltenham hadn't planned a career in oil and gas. "When I was studying I thought perhaps mining or field geology might be my thing; quite frankly I thought fractures were the most boring thing you could study. I couldn't see any interest in them whatsoever," he admits.

Having decided to join Stratographic Services International (SSI) in the late 1980s, Robert unwittingly embarked on a professional journey that has put fractured basement reservoirs front and centre of his career.

He spent five years working with SSI before joining Enterprise Oil. His role with the exploration and production company saw him working on fractured reservoirs in Italy, Greece and Norway. "I actually found it very interesting because of the new borehole imaging technology and the ideas around predicting how these fracture networks behave," he explains. "In the UK, the workforce is used to sandstone production but you have to think differently when dealing with >

fractured basement reservoirs. You're employing similar technologies but interpreting it with a different eye, and therefore it's easier to consider it too risky to take on. I realised that, as an industry, we didn't have a recipe for fractured reservoirs and that really fired up my curiosity."

He assumed more senior petrophysicist positions within Enterprise Oil and remained in the role following its acquisition by Shell, while also acting as a global consultant on fractured reservoir that involved work on the Clair field. He had by now completed a part-time PhD at the University of London (on the platform carbonate successions of southern Italy) and spent time as a visiting professor at Trondheim University in Norway teaching MSc and PhD students.

In 2004, passion for all things fractured basement took over and he moved to a specialist characterisation business called C&C Reservoirs.

> ***Our activity has de-risked a new play to a significant degree.***

Storming ahead

As Robert made plans to capitalise on his knowledge and create his own business, fate lent a helping hand.

"I got talking to a taxi driver who was taking me to the airport for a flight to Houston to meet prospective investors," explains Robert. "The driver mentioned he had a friend with an interest in oil and gas, and encouraged me to contact him. I did precisely that and entrepreneur James Hudleston decided to back me. Both James and I gave the taxi driver shares in Hurricane as a reward for his introduction."

The company and subsequent field names reflect his longstanding interest in World War II fighter planes. From a makeshift office in his garden shed in Surrey, Robert established Hurricane in earnest in the market town of Godalming in 2005. And in the 23rd Licensing Round, he secured nine blocks that include the prospects that today form the centrepiece of the business.

After drilling four initial wells, it was in 2013 that activity stepped up as Hurricane was listed on the AIM London Stock Exchange and funds were secured to drill the first horizontal well at Lancaster demonstrating commercial hydrocarbon flow.

Today, the business employs 14 people. Along with consultants, around double that number are now working on the next stages of Lancaster/Halifax.

"We're still very focused on our vision, which is 'small is beautiful'," Robert explains. "I can't envisage us going beyond 30 people and so we use consultants heavily as the project requires. We work with people who are innovative thinkers, building on current industry thinking and learnings whether that's in engineering, cost controls or geology."

Hurricane's belief in working with a trusted network of consultants and service providers has been reaffirmed by the success of its work to date. Over the years, the business has steered its way through challenges ranging from the oil price drop to rig availability to reach its present-day status (see box-outs).

New plays

He also praises the Oil and Gas Authority's (OGA) contribution. "It's a two-way process – we've made an

(continued overleaf) >

Supply Chain Solutions

Early Production System

Costain worked closely with Hurricane Energy to explore different field development options for the Lancaster discovery. A concept called the Early Production System (EPS) has been put forward that takes into account the current low oil price environment.

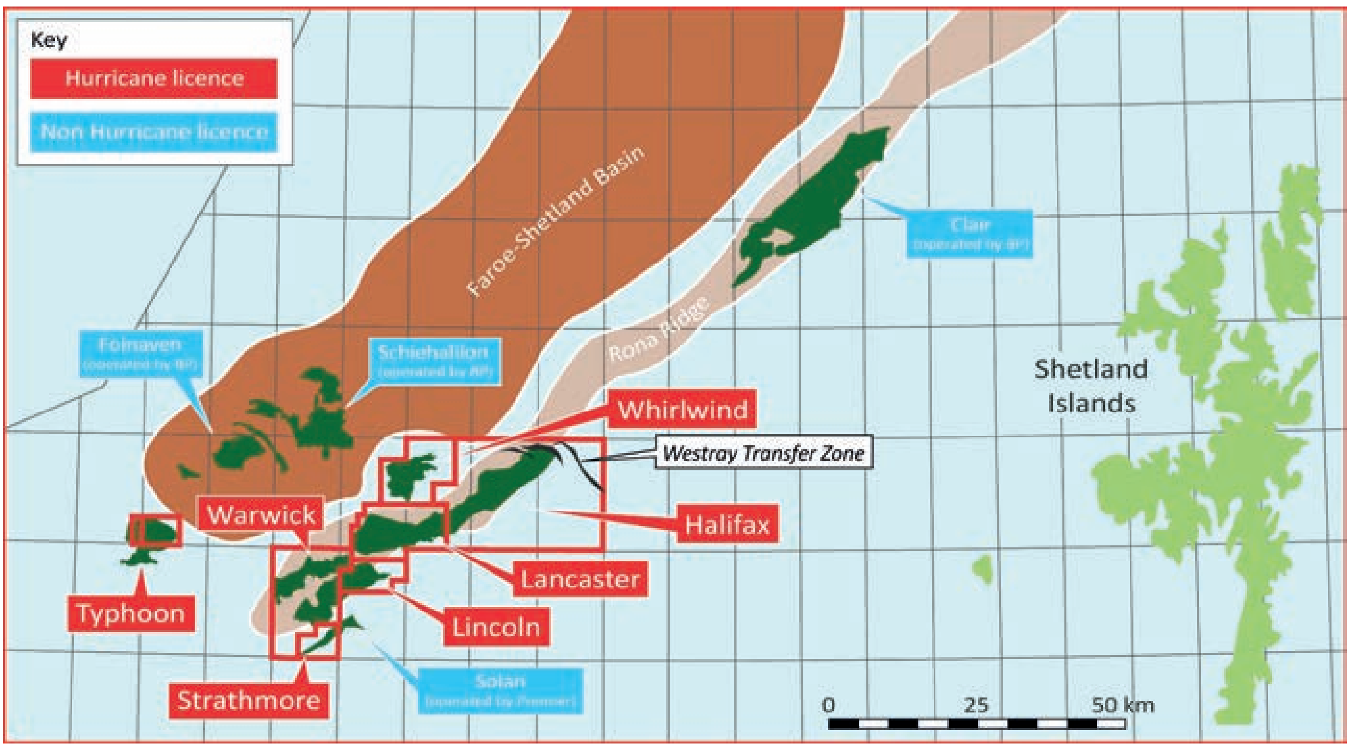
The EPS – effectively phase one of an overall development – will involve a two-well tie-back from Lancaster to a floating, production, storage and offloading (FPSO) vessel. This allows additional knowledge to be gleaned from the reservoir while minimising capital exposure.

"We will evaluate how the reservoir behaves through the EPS and then decide the best way to go to full field development," outlines Dr Robert Trice, CEO of Hurricane Energy. "It has to involve positive cash generation and provide technical answers on reservoir performance."

Senior account manager Peter Kirkbride at Costain adds: "Our relationship with Hurricane is integrative and collaborative. Early engagement in this project definitely helped us to align ourselves with Hurricane's objectives and business drivers, and essentially created the feeling of 'one team'. The EPS will drive progression of this innovative project, allowing true understanding of reservoir performance but – critically – also delivering an economic return on investment so far."

A team from Costain is now working at Hurricane to support contractor TechnipFMC in delivering the subsea, umbilicals, risers and flowlines as well as the mooring system installation.

> ***"The Early Production System has to involve positive cash generation and provide technical answers on reservoir performance."***



Well operations

In the first contract of its kind in the UK, Petrofac has been appointed well operator by Hurricane, with responsibility for all future exploration, appraisal and development wells activities.

The well operator capability has evolved from Petrofac's outsourced Service Operator Model, which combines the responsibilities of installation operator, pipeline operator and well operator for the first time to support independent operators that are entering the UKCS.

Alex Macdonald, who leads Petrofac's well engineering team, believes it represents a new model for collaboration. "As the industry adapts to new economic realities, almost everywhere we are seeing clients develop lean operating models. By focusing on their core expertise and turning to trusted partners for everything else, they can benefit from significantly reduced operating costs," he says.

"We will work closely with Hurricane to assure well integrity and deliver a safe and cost efficient drilling programme to support further advancement of the development."

Petrofac is also playing a key role in the ongoing front end engineering design (FEED) study for Lancaster's Early Production System.

"We work with people who are innovative thinkers, building on current industry thinking and learnings whether that's in engineering, cost controls or geology."

Drilling deep

Hurricane Energy CEO Dr Robert Trice has praised contractor Transocean for its joint work on a contracting model for the 265-day hire of the Transocean Spitsbergen rig for Hurricane's recent drilling campaign.

The programme saw one development well (Lancaster sidetrack), one appraisal well (Lancaster), one intervention on the 2014 horizontal well (in preparation for well completions in 2018) and two exploration (Lincoln and Halifax) wells being drilled.

Robert adds: "Transocean's pragmatic approach to commercial and contractual negotiations has been a breath of fresh air in today's tough industry environment and has facilitated Hurricane's successful campaign during a time when UK exploration and appraisal drilling has been at a low.

"We have now completed the well stock for our Early Production System for Lancaster and, in the process, materially increased and de-risked the resource volumes associated with it. The exploration wells on Lincoln and Halifax have resulted in the discovery of extensive oil columns and we therefore expect that later iterations will significantly upgrade our resource base on both the Greater Lancaster and Greater Warwick Areas."

effort to communicate with them, to tell them what we're doing and what the challenges are, and they've made an effort to understand and help wherever possible."

In November 2016, the OGA awarded Hurricane the Innovate Licence for Halifax in an out-of-round application. The Innovate Licence, launched last year, allows licensees to work with the OGA to design an optimal work programme and implements a process for better monitoring of progress.

The next key step for Hurricane is the final investment decision on the Lancaster Early Production System (EPS). The company is targeting first oil in 2019.

Robert says: "For the UK oil and gas industry, our activity has de-risked a new play to a significant degree and this opens up the question of what other new plays are yet to be drilled. I'm a firm believer that the UKCS has got a lot more oil in it and it just takes committed teams with focus and funds to evaluate those yet-to-be-tried opportunities."

www.hurricaneenergy.com

Energy Jobs Taskforce

Scotland's Energy Jobs Taskforce – made up of operators, suppliers, government bodies and trade unions – has been running for the past two years with a mandate to support the workforce amid a difficult time for the industry. *Wireline* catches up with its chair and chief executive of Scottish Enterprise, Lena Wilson.

Q: What have been the key priorities for the Taskforce over the past year and how have you been addressing them?

A: Our priorities remain the same as they did when the Taskforce was first set up – to minimise the impact of the global downturn on companies and individuals and sustain the long-term future of the sector in Scotland. Our efforts have focused around five key themes: supporting our people; retaining talent and skills; cultural change and leadership; business resilience; and balanced messages, which are all led and driven by industry or trade union leaders.

Q: Of which achievement is the Taskforce most proud?

A: That's a difficult question as there are lots we're really proud of. The Taskforce is unique in its format that brings with it a different perspective on issues, informing actions and activities that can make a real impact going forward.

For example, over 4,200 people have received help and advice through five Partnership Action for Continuing Employment (PACE) support events organised by Skills Development Scotland (SDS), and through the new Transition Training Fund, also administered by SDS, we have helped almost 2,000 individuals undertake training opportunities to help them find new jobs and opportunities both within and outwith the sector.

> ***Over 4,200 people have received help and advice through Partnership Action for Continuing Employment.***

Additionally, we've supported over 800 companies in areas such as innovation, leadership, internationalisation, business resilience and diversification. Responding to the Taskforce priorities, my own organisation set aside £10 million of innovation support to oil and gas in February last year and, by the end of the second quarter, we had contributed £7 million towards 70 projects totalling a combined investment of £16 million. This includes £1.1 million of support to artificial lift system specialists, ZiLift Ltd, to support the development of its SpeedDrive2625 product, which was facing a two-year delay as a result of the downturn.

Scottish Enterprise, Oil & Gas UK and the Oil and Gas Authority have also made great progress in developing shared values and principles that has seen a considerable change in culture, behaviour and quality of relationships. We are now seeing more focus on effective workforce engagement and more regular strategic engagement between the key organisations and trade unions. We've also seen stronger relationships

Employment support event

developing between supply chain companies and operators, which, in turn, are contributing significantly to the wider business efficiency agenda.

Q: What has surprised you most over the last 12 months during your work with the Taskforce?

A: I continue to be immensely impressed with the resilience of the individuals working within the sector and of the companies involved. Despite this being one of the toughest downturns the industry has seen, we are seeing the leadership in the industry taking the challenges full on and working tirelessly to resize, implement new ways of working, address cultural issues, and look at new opportunities internationally and in new markets.

I am delighted to see the inroads that have been made in the competitiveness of the UK Continental Shelf (UKCS) and, as Oil & Gas UK's *Business Outlook* has highlighted, the drive to improve competitiveness through cost and efficiency has had a significant impact on the performance of the overall sector.

Q: How do you see the work of the Taskforce developing and evolving this year?

A: A big focus for us to date has been on delivering large-scale events to ensure companies and individuals are aware of, and know how to access, the significant amount of support available. These have included employment support events, a conference on learning from other sectors, innovation workshops, and seminars on leadership, diversification and internationalisation.

Moving forward, we aim to deliver a deeper more targeted approach, helping companies focus on the short-term priorities while, at the same time, encouraging them to put in place the necessary actions to ensure sustainability and growth in the long term.

We will continue to support individuals impacted by redundancy through PACE and the Transition Training Fund, with Business Gateway offering great assistance for those looking to set up their own business. Scottish Enterprise has also teamed up with Aberdeen-based Elevator to deliver a new programme, Grey Matters, to bring together professionals from differing functional backgrounds, skillsets and experiences to help generate high growth oil and gas companies of the future.

We are also continuing to ensure that the actions the Taskforce identify are not adding new initiatives to the landscape but instead are embedded within the activities of the many support organisations that exist for the sector.

Q: What's the biggest challenge for the Taskforce this year?

A: Our biggest challenge is to ensure we keep the fantastic momentum we've created to help the industry look forward for new opportunities, prioritise innovation and return the supply chain to growth where possible. This will help to sustain the future of the industry in Scotland against a backdrop of what will continue to be a challenging global environment.

Q: Do you think the Taskforce will still be here next year?

A: We knew at the beginning change wasn't going to happen overnight, but after two years we're seeing strong progress – collaboration has improved dramatically, efficiency savings are being achieved, and the skills and experience built up over the last 50 years remain focused on maximising economic recovery in the North Sea, as well as on international markets and investigating additional opportunities in other sectors.

Through strong partnership, collaboration, leadership and, above all, hard work, a significant amount of support and help has reached thousands of individuals and hundreds of companies.

The Taskforce has put in place the foundations to ensure the sector remains sustainable in the longer term and I'm pleased we're beginning to see many of the initiatives we've developed being picked up under 'business as usual' by both industry, trade bodies and government agencies. I am fortunate to have many senior leaders from the industry around the Taskforce table and I continue to take their counsel on the need for the Taskforce and the role it plays...we will continue to be here for as long as its members feel it is needed.

www.scottish-enterprise.com/EnergyTaskforce

"We've supported over 800 companies in areas such as innovation, leadership, internationalisation, business resilience and diversification."

Decisive and Determined

EM&I's Research and Development Centre

In a regular series, *Wireline* catches up with two more UK oilfield service companies about their strategies to survive and indeed flourish during the recent tough times for the industry. Here we speak to EM&I and Lokring Northern.

Lokring Northern consultants visiting offshore client sites

Taking bold decisions has always been the central plank of Lokring Northern and EM&I's strategies for growth. Both companies were started by lone entrepreneurs who had a vision and the determination to succeed. The downturn has not dampened this drive – if anything, it's made both businesses more resolute to strengthen their positions.

EM&I started out as an Aberdeen-based non-destructive testing business set up by chief executive Danny Constantinis in the 1980s. The company's portfolio has broadened over subsequent years to encompass engineering, management and inspection – hence the initials EM&I.

"Even in those early years, it became clear that the world we wanted to be in was floating rather than fixed," explains Danny. "We could see the future was in deepwater drilling and production and we grew our understanding of what the associated inspection world would look like."

By the early 2000s, the business – which today provides asset integrity, inspection and specialist repair and maintenance services – was firmly established in the FPSO (floating, production, storage and offloading vessel) market. The business employs around 170 people worldwide with offices in Dyce (Aberdeen) and Wilmslow (Cheshire) in the UK; Singapore; Perth (Australia); Macaé (Rio de Janeiro, Brazil); Halifax (Canada); Houston (USA); and Kuala Lumpur (Malaysia).

EM&I's HullGuard trial, a diverless system to protect the outside of a hull

The hull picture

But with an eye to continually innovate and move forward with the market, EM&I changed tack ahead of the most recent downturn. This turned out to be a smart move in securing continued success at home and abroad in the much tougher climate that has followed.

"We saw that FPSOs were now being used for more and more deepwater and extended field life projects," says Danny. "We realised that as these vessels are going to be on station for perhaps 25 years or more, the industry could no longer rely on existing, periodic, hull inspection techniques and technologies that involve moving the FPSOs to sheltered waters or dry dockings."

To tackle this, EM&I took a leading role in forming the Hull Inspection Techniques and Strategies Joint Industry Project (HITS JIP) in 2011, involving vessel owners, operators, leaseholders and classification organisations in the UK and internationally. The JIP has proved pivotal in identifying the top three inspection challenges: minimising diving operations; avoiding personnel entry into confined spaces; and reducing the need to take vessels offline to clean the oil tanks for inspection.

The group has since met regularly to monitor, validate and promote prospective new solutions that overcome those issues. It has already been the catalyst for several technology-led solutions, including ODIN – launched in 2015. This diverless inspection method has been devised and introduced by EM&I for inspecting hulls, isolation valves and other underwater infrastructure. It also incorporates a diverless isolation valve repair or replacement method. A mix of technologies are integrated, including mini ROVs (remotely operated vehicles), miniature cameras and ultrasonic techniques to inspect the inside of the hull.

Lokring flanges installed on site

"Avoiding putting people into high risk situations to carry out inspections underwater or in confined spaces is safer," notes Danny. "Remote inspections overseen by personnel are used extensively in the nuclear, aerospace and other industries so we decided to adapt these technologies to our sector.

"Also, in recognition of the industry's approach to the continuing low oil price environment, we realised we needed to deliver sustainable long-term savings to our clients by changing the approach to long established techniques and ways of working. We can now quantify cost reductions of over 50 per cent over a five-year inspection cycle compared with conventional underwater inspection methods, as well as allowing improved availability of equipment and assets, offering even greater cost and safety advantages."

> ***It's always been our strategy to be technically ahead and disruptive; to do things that haven't been done before. When the market is down, people are ready to try new solutions.***

Inspector gadget

While ODIN is a new way of inspecting the underwater hull and isolation valves, EM&I's NoMan technology addresses the challenge of putting inspectors into confined spaces such as cargo and ballast tanks, which also takes tanks out of service for extended periods.

The UK North Sea was the first to use NoMan commercially. It deploys advanced camera technology on a robotic arm allowing inspection data to be gathered, while reducing costs and downtime for vessels by more than 60 per cent.

So far EM&I's ODIN and NoMan systems have been used around the world including: the UK, Bay of Bengal (India), Nigeria, Angola, Singapore and the Gulf of Mexico (USA) with 14 successfully completed projects under its belt (and counting). EM&I conservatively anticipates at least the same number in 2017, with significant recent contracts won with clients including Seadrill and Ensco.

"These methods have created significant growth increasing our UK team to around 55," enthuses Danny. In 2017, we will launch HullGuard, a diverless system that protects the outside of the underwater hull using an electrical field."

To support these high-tech activities, EM&I has developed a new Hull Inspectors Competency Training programme as part of the HITS JIP. Pat Lawless, deputy chief executive officer and chief operating officer, adds: "It's rather like when surgeons had to get to grips with keyhole surgery. We recognised that we had to invest in additional specialist skills for our team. We are also working through the HITS JIP to create a new hull inspector competency standard and expect that this will evolve into an industry-wide requirement."

Strong connections

At Lokring Northern, established a decade ago by managing director Ross Millar, there's similar confidence in the future.

The business – one of a network of exclusive international distributorships for US-based manufacturer Lokring Technology – now has bases in Aberdeen and Leeds supplying advanced, cold-worked, weld-equivalent pipe and tube connectors. It includes Ireland in its operational territory and has recently been appointed the distributor for the Middle East.

Pacific Sharav Drill Ship. The location of the seventh ODIN project for EM&I. Image courtesy of Pacific Drilling

Lokring Technology is a mechanically attached pipework connection that the company says is a faster and lower cost alternative to welded and flanged pipework, eliminating the need for hotwork and the associated health and safety considerations.

Since its inception in 2007, Lokring Northern (UK) has seen significant progress and uptake of the concept in the oil and gas, refining, chemical, petrochemical, nuclear, shipbuilding and pharmaceutical industries, resulting in a 15-fold increase in turnover since then.

And despite the recent downturn in the oil and gas market, Ross was determined to keep up the momentum behind this growth so that the firm can consolidate its position in the North Sea and extend into the Irish market. He and his team saw the challenges facing their clients as a chance to promote the value they can add. >

He explains: "I was confident that we could work through the downturn by highlighting the commercial advantages of our products and technologies as customers look to tighten their belts. In doing so, we can grow our market share."

Senior technical sales consultant Tom Brown adds: "When we arrived in Aberdeen, there was limited familiarity around the technology. It's a very safety-critical, highly technological sector and innovations are understandably heavily scrutinised and critiqued.

"We spent a lot of time demonstrating our capabilities and, before the downturn, our clients' key interests centred on technical acceptance. However, cost savings have increasingly become a factor, so focusing on the significant efficiency opportunities has proved very successful."

Following a challenging but stable couple of years for the company in the oil and gas sector, the strategy is paying off. This year, the firm saw its best-ever quarter one results. The company has also increased its footprint in Aberdeen with continued recruitment and doubling of office space in Altens at the end of last year.

"Aberdeen has been, and remains, critical to our growth," insists Ross. "We do consistently well in other industries and geographical areas, but the Aberdeen market has undoubtedly helped us to expand and to invest in the business.

"Our office expansion will offer improved facilities for our client installer training programmes, for supplying overseas territories, and additional space to steadily increase staff numbers in our offices and workshops."

On site

To give customers the best value possible, Lokring Northern has also introduced long-term rental models for tooling to install its connectors. These packages are more financially attractive than one-off hires for customers who are using the tools frequently. With some clients also now holding connector stocks offshore, it's an approach that has helped to minimise downtime and maximise production output as operators have all the elements they need to complete work quickly and efficiently on site.

Ross Millar (left) and Tom Brown (right) of Lokring Northern providing training in Qatar

A southern North Sea operator, for example, made cost savings of over 28 per cent and time savings of over 26 per cent during a diesel ring main replacement programme on an installation. Instead of the required spools being fabricated onshore and tied-in offshore using flanges, Lokring Northern's products and technology were deployed to construct the entire system quickly and efficiently on the platform.

"I was confident that we could work through the downturn by highlighting the commercial advantages of our products and technologies as customers look to tighten their belts. In doing so, we can grow our market share."

The work involved installing 250 Lokring fittings on around two kilometres of pipe. Tom says: "We made huge savings in offshore construction hours, which could have been even higher if the personnel involved did not have other workscopes to progress at the same time."

Big ambitions

Looking ahead, Ross believes the future is bright and that closer partnership with the industry over time will bear yet more fruit. The latest development as exclusive distributor to the Middle East presents huge potential; the challenge being to replicate the progress that has been made to date in Aberdeen. "We've had a fantastic response and are very optimistic," he says. "When you consider how much we've achieved in Aberdeen, we think the Middle East is ripe ground for us."

EM&I also plans to continue capitalising on the opportunities afforded by being a global player. EM&I (UK) Ltd has been designated an export champion and star SME in the north west of England by the Department of International Trade (DIT), and has participated in several DIT trade missions including a successful visit to Mexico in February.

Danny notes: "We have a big focus on research and development. Our centre in Cumbria in the UK is being used to adapt nuclear inspection techniques and other specialised technologies from other industries with support from the nearby nuclear plant at Sellafield. That is how ODIN, NoMan and HullGuard came about and we're exporting those technologies and services. It's always been our strategy to be technically ahead and disruptive; to do things that haven't been done before. When the market is down, people are ready to try new solutions."

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Pool together

The benefits of sharing resources are all the more obvious – and welcome – in a low oil price environment. *Wireline* takes a look at the maritime initiatives led by Peterson that are continuing to make waves.

From the days of fielding numerous phone calls and managing a multitude of spreadsheets in the late 90s, to a fully automated digital workflow in recent years, the Aberdeen Marine Logistics Alliance (AMLA) has come a long way. But its purpose remains fundamentally the same – to support and manage the sharing of offshore vessels for ad hoc shipments, in pursuit of greater efficiency and cost savings.

The latest figures from Peterson – the energy logistics business behind the initiative – underline its value. The combined financial gain for companies taking part in the alliance during 2015 and 2016 was £2 million. It also yielded significant environmental benefits in the same period. Carbon dioxide emissions from such vessel movements reduced by around 950 tonnes in 2016 – the equivalent of removing almost 300 cars from the road in a year, says Peterson.

"As was recently highlighted by Oil & Gas UK and others, there's an urgent need for widespread collaboration in the North Sea to improve the efficiency and long-term competitiveness of the basin," notes Peterson's regional director Chris Coull. "We believe significant opportunities exist within the supply chain to do just that through vessel sharing. AMLA is based on one of our core principles – taking waste out of the supply chain by promoting the concept of sharing and underpinning it with advanced technology."

The scheme means operators can use spare capacity on a vessel operated by another company to transport materials to their offshore assets. Thirty operators are now signed up to AMLA and demand for increased collaboration in the sector is reflected in a record rise in vessel shares last year. 2016 saw 50 vessel shares, up from 21 in 2015. There have been 18 up to April this year so far.

The role Peterson plays, which includes all back-room legal and administrative support for the alliance, was recognised when it triumphed in the collaboration category at the 2016 Offshore Achievement Awards.

Chris flags that the arrangement means "participating operators pose themselves the question, do we really need a whole vessel to ourselves or can we get access to available capacity on vessels in the vicinity?"

> **Participating operators pose themselves the question, do we really need a whole vessel to ourselves?**

Sharing is caring

For Maersk Oil, AMLA has become fundamental to its logistics management since it joined the alliance in 2005. "Where we have a requirement for suitable ad hoc cargo shipments, our first port of call is AMLA," says head of logistics Elaine McEwan.

"The large number of industry participants means there is scope for a wide range of shares. Reducing the number of vessel voyages has many advantages – it minimises safety risk as fewer vessels are being moved; environmentally, fewer journeys means less emissions; and reduced costs for the vessel charterer and share partner.

> ***Reducing the number of vessel voyages has many advantages – it minimises safety risk as fewer vessels are being moved; environmentally, fewer journeys means less emissions; and reduced costs for the vessel charterer and share partner.***

"Also as the industry sees more new companies active in the sector, sharing might be the most effective way to meet needs without the costs of dedicated resources."

Shell, meanwhile, has been a member of AMLA for 20 years. Jackie Alexander, head of delivery, logistics, says "the arrangement adds resilience to our supply operation" by using spare capacity on other vessels for last-minute or urgent materials that can't be accommodated on Shell's own fleet. The approach also minimises the company's exposure to spot market risks, availability and costs.

Jackie adds: "It's important for industry to pursue these opportunities to drive the right mindset of collaboration and sharing. The benefit is that we pay minimal costs by using a proportion of a vessel rather than having to spot hire a full vessel. It also means we can offer spare capacity on our own fleet of platform supply vessels (PSVs).

"While all operators have 'right-sized' to reduce the number of their PSV fleets and, in turn, spare capacity in the current climate, the opportunity to share wherever possible drives further efficiencies and promotes the right behaviours."

On a journey

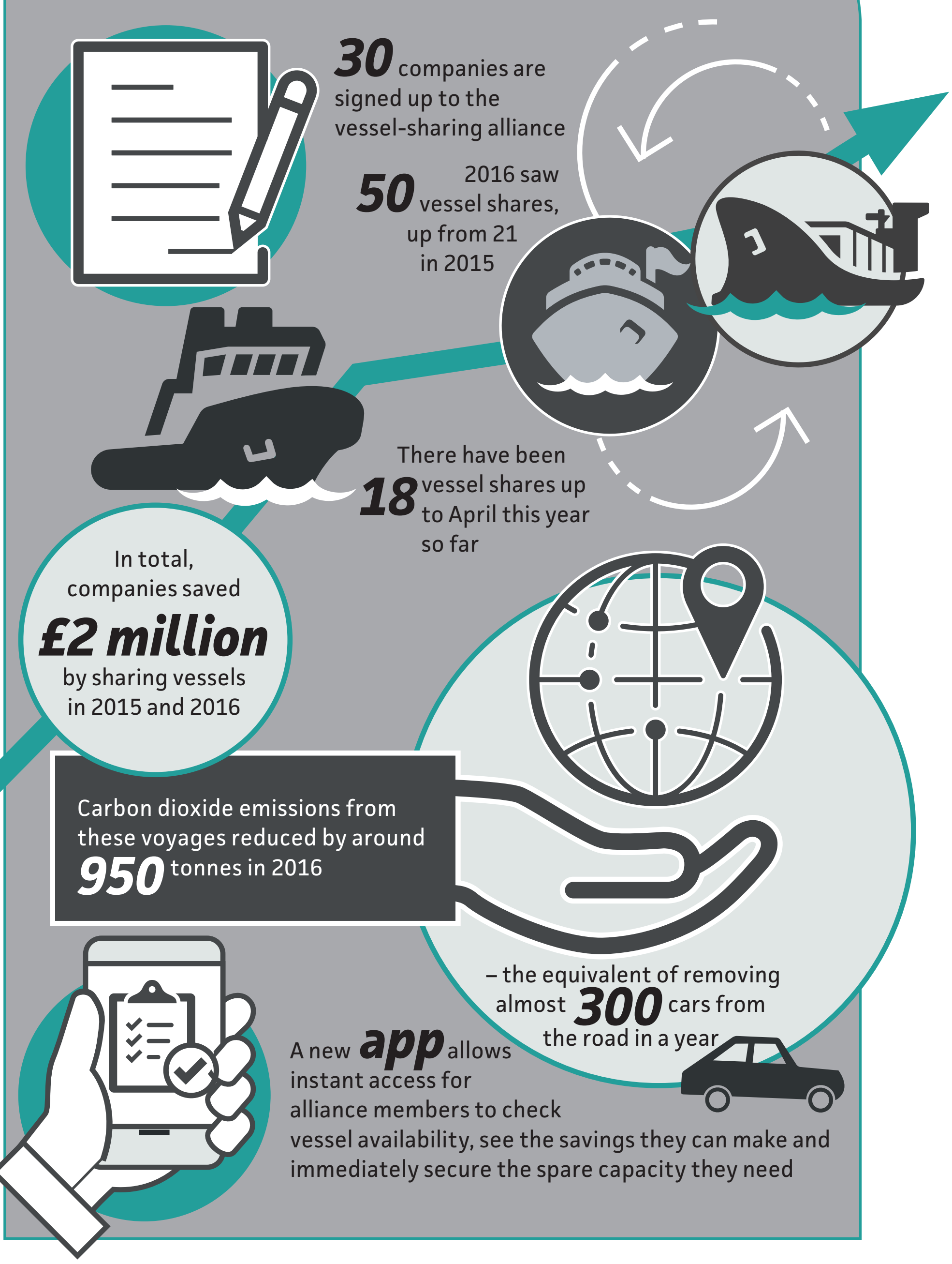
But Peterson's efforts in this space don't stop there. It also runs the Southern North Sea (SNS) Pool, which was formally established in 2002.

The SNS Pool, based at Den Helder in the Netherlands, represents the ultimate integrated approach.

Nine operators are sharing all their marine and aviation requirements. The scheme covers operations in the UK, Dutch and Danish sectors of the southern North Sea and services more than 150 offshore installations. Peterson says the pool is delivering annual savings of around 40 per cent – equating to millions of pounds – for operators who have embraced this model.

To cope with the complex planning process, unique, proprietary software calculates and allocates each partner's share of the operational costs, taking into account the actual used capacity and handling time per offshore installation. >

The Aberdeen Marine Logistics Alliance in a nutshell



Building on this success, Peterson is now set to launch a similar initiative in the central and northern North Sea (CNNS) made up initially of four operators. Starting out as a vessel agreement, it will see operators share one vessel, chartered by Peterson, for all of their offshore assets out of Aberdeen. "The new pool aims to offer maximum fleet flexibility and, in turn, optimum efficiency," adds Chris.

Online and on course

The CNNS initiative represents the latest step forward for Peterson, which employs approximately 750 people across a network of UK bases that primarily support offshore, renewables or decommissioning operations. As part of a wider group, globally, it employs 4,000 people across 70 countries.

Its UK infrastructure includes a nine-berth facility at Aberdeen Harbour and a series of warehouses in the north-east of Scotland; an extensive base in Shetland; a 105-acre storage and warehousing facility at a former US Naval base at Edzell; and bases in Great Yarmouth, Heysham and Sellafield.

Alongside an ongoing programme of facility development – Peterson recently invested in new heavy lift apparatus at its Shetland base – the company also embarked on a digital transformation programme about five years ago.

"The business was successful in the past, but operated in a very manual way," explains Peterson's new director of projects and innovation, Sarah Forbes. She was appointed to the leadership team in January after playing a key consultancy role in developing the company's suite of digital platforms.

"To be able to scale up, we realised that we had to do things differently, not just to deliver efficiencies internally, but for our clients as well," she says. "The first business stream we looked at was our quayside operations, and within a six-month period we went from spreadsheets and clipboards to a centralised digital application in 2012."

"It's important for industry to pursue these opportunities to drive the right mindset of collaboration and sharing."

The system, called eCargo, features direct online interaction between Peterson and its clients to deliver a streamlined, end-to-end cargo load management process. It was the forerunner to a succession of further technological innovations, including a similar framework for the company's truck operations and the automated AMLA process. The latter includes a new app to manage vessel-sharing requirements.

In the sailing seat

AMLA's high-tech makeover gives its members instant online access to check vessel availability, see the savings they can make, and immediately secure the spare capacity they need.

"Having that information at their fingertips is proving invaluable," says Sarah. "It's allowing them to make better business decisions based on the data."

Chris continues: "Our approach of building software from the bottom up helps us deliver solutions from a user perspective and we engaged with AMLA members throughout the development and testing stage. Input and feedback told us that instant access to real-time sailing and capacity was fundamental. This app puts members in control, significantly shortening the time from request to finalising the booking."

Members can also upload availability of their own vessels so that any additional capacity on voyages around the North Sea is available on the market. With all the legal agreements already in place, a suitable share can be finalised in one hour.

Sarah notes that clients appreciate the improved visibility. "We can join up operational and financial information to understand how contracts are performing and form a long-term view of how we can optimise them.

"We can join up operational and financial information to understand how contracts are performing and form a long-term view of how we can optimise them."

"As consumers, we're all used to engaging via phones or tablets. All we have done is translate that drive of technology and apply it to our business. We're proud of what this means for the industry. The process is no longer kept in the dark – clients have an instant view of their logistics."

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