ISSUE 113 • FINAL

EUROPEAN
OIL&GAS
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Improving productivity

Adopting best practice can significantly improve operational efficiency

Head to the clouds
Cloud computing and the advantages it can bring to the industry

Collaborate to succeed
Collaborative working is essential to address the skills shortage

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> "A well defined process and fully integrated asset management solution will manage the risk and complexity associated with assets"

It seems obvious to say that the oil and gas industry must continually improve and optimise its operational and financial efficiency, but as the search for resources moves to more hostile environments, the 'easy oil' increasingly disappears, and oil and gas companies become more mindful of costs and budgets, it will be vital for ongoing success.

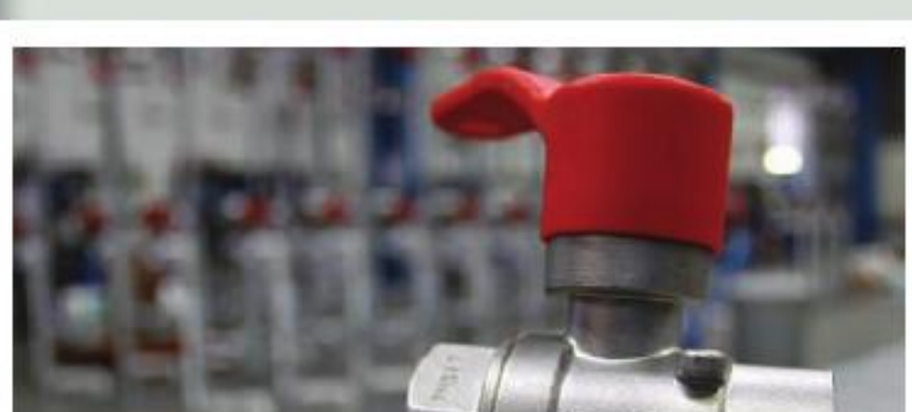
Key to achieving this efficiency throughout your organisation is adopting best practice in your asset management strategies, which is explained by Lee Sands in this issue's cover story. "A well defined process and fully integrated asset management solution will manage the risk and complexity associated with assets, enabling a detailed view of asset costs and where this cost can be reduced," he says on page four. With many of the industry's assets well exceeding their operational lifetimes and the process for extracting resources becoming increasingly complex, it's a vital area for all operators to focus on.

Our focus in this issue is very much on financial and operational challenges as in our second lead feature we discuss how shrinking margins and declining returns on assets are making capital discipline essential for owner operators in large capital projects. We hope you can gain some important insights and valuable lessons that contribute to future success!

EDITORS LIBBIE HAMMOND & MATT HIGH

Regulars

Profiles



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Improving productivity

LEE SANDS LOOKS AT HOW OIL AND GAS COMPANIES CAN IMPROVE FINANCIAL AND OPERATIONAL EFFICIENCY THROUGH ADOPTING BEST PRACTICE IN THEIR ASSET MANAGEMENT STRATEGIES

The oil and gas industry is very asset intensive and any downtime can have a significant impact on an organisation's bottom line. The maintenance of these assets is not only important from a productivity point of view but because of the significant health and safety implications of any failure.

A well-defined process and fully integrated asset management solution will manage the risk and complexity associated with assets, enabling a detailed view of asset costs and where this cost can be reduced. It will also ensure the right people are in the right places with the right tools, thereby enhancing safety precautions. This progress is possible with the correct solution and the right software partner to support your organisation as it's transformed into an asset focused, proactive enterprise.

Seamless integration with existing or new systems

Asset management systems do not stand-alone; they necessitate close integration with existing financial, procurement, human resources and Supervisory Control and Data Acquisition (SCADA) systems. Global organisations will benefit from extending this to Geographic Information Systems (GIS) and mobile solutions, which will enhance their asset management capabilities further.

The financial benefits from reducing administration expenditure and increasing data quality can be considerable. Integrating a dedicated asset management solution with your existing business systems means you'll have one source of truth and increased confidence in your data, giving employees the time to proactively add value to your organisation and not get tied down with complex systems.

Authorisation for Expenditure (AFE) control

So you've got a budget, but do you enforce it? Do you control spend against an AFE? Do you have workflow around that AFE, meaning no spend can be allocated against it until it's approved? Are you able to swiftly bypass a budget when an urgent issue arises, so that downtime is not increased due to long periods awaiting a budget holder's approval?

An asset management solution should allow your planned AFE's and budgets to be readily available and reworked, meaning you can set approval limits against them and automate workflow when overspend is required. It's important to avoid overspend, but it's equally important to implement quick solutions when urgent excess budget items arise!

There are thousands of platforms in operation around the world; a high proportion of these would have been in operation for 20 years or more. The ability to keep these aging assets running is key to the performance of an oil and gas organisation. The environments in which many assets reside are also important as they influence how often assets are maintained and/or replaced. Offshore assets will get

constant abuse from salt water and wind, whereas onshore assets may suffer extreme heat. As a result they perhaps don't perform as well as expected and the advised planned maintenance schedules may need to be increased to keep an asset online for longer.

Imagine if your organisation had this information readily at hand and could easily identify that current maintenance efforts weren't sufficient, or you had the ability to undertake a quick cost benefit analysis to measure the cost of increasing maintenance effort versus replacing an asset. Then imagine all this functionality available from anywhere in the world, on any device, and you'll begin to realise the power of a true asset management solution.

Business intelligence

Why does Generator A require significantly more effort than Generator B? They were installed at the same time, they're from the same manufacturer, so do you have the data to understand why they perform differently? Do you even have the ability to see such a difference in the first place? When you've been collecting data on assets for such a long period, why not start making it work for you

With useful information you can extract the knowledge as to why some assets are performing better than others. By drilling down you could find that Generator B is performing better because of the superior skill set of the engineer that fixes it, so the engineer working on Generator A could benefit from training, which would improve that asset's performance. You may even realise that a related asset is causing higher breakdowns; so replacing this asset could make the whole process run more smoothly and consistently. With an asset management tool, such analysis could change the way you manage maintenance.

Optimise your stock levels

Imagine an organisation with multiple storerooms. How often are these storerooms acting in isolation, ordering materials when perhaps a nearby storeroom already has a surplus? The cost of an internal transfer would be lower and faster than procuring from a supplier, when you're reducing your economies of scale by buying small quantities and more than likely paying an increased freight cost for a quick delivery. Optimising your warehousing can be as simple as offering employees a solution to see real-time stock levels of neighbouring storerooms.

How about stocking the right amount of materials? Not so few that you can't repair critical assets, but not so many that they potentially expire or you spend money on storing items you don't need. A tailored solution can automatically set economic order quantities. It can even reduce your administration costs by releasing purchase requests automatically, and thus allowing your organisation to keep optimum levels of stock on the shelves whist reducing the costs to procure them. O&G

> Why does Generator A require significantly more effort than Generator B? They were installed at the same time, they're from the same manufacturer, so do you have the data to understand why they perform differently?

Keep employees safe

Whilst speed of response and cost saving is important in the management of oil and gas assets, corners can never be cut on safety! A useful solution should inform workers when certain hazards exist, or what precautions to take when working in particular environments or with particular assets. What if a well site has hazardous hydrogen sulphide – isn't it best practice to ensure areas are checked and cleared before employees are sent to undertake work? Shouldn't the correct tools be selected for such dangerous sites, therefore increasing the safety of all involved? These types of considerations are essential, and the correct asset management solution will associate safety information with particular locations and assets. This means every time work is raised in those areas workers are informed of the precautions to take and the tools to utilise.

Health and safety hazards and the dangerous conditions surrounding oil and gas staff can result in injuries and fatalities from any number of things including vehicle accidents, explosions, fires, chemical exposure, confinement and accidents with machinery. Therefore it's more important than ever to reduce the risk and ensure workers receive precautions, that relevant permits are applied to dangerous locations, and tasks are not assigned to anyone who is not fully qualified. Ultimately there's more at stake than the downtime of your assets.

Reduce payment time

Your workers are just as important in the management of assets as the assets themselves. Without human interaction, experience and knowledge you can't possibly begin to reap the advantages of continuous improvement. Put yourself in the place of one of your contract staff, an individual with specialist knowledge of how to keep a critical asset in operation. If that individual faces lengthy processes that delay their payments or doesn't have the tools required to undertake their job, they are likely to leave, which could prove a massive loss to your organisation. Solutions are more than software tools, they provide the ability to improve processes and reduce transaction times. Combine this with experienced consultant knowledge and it's the perfect opportunity to take a fresh look at your usual business tasks and question

whether you're implementing best practice. It's better to be proactive than to change only when disaster strikes.

Escalate issues – alerts

How often do critical items slip through the net because someone is on holiday, or priority items are left in limbo because instructions aren't clear or someone doesn't have the correct authorisation to proceed? What if you were able to alert someone automatically when a critical asset is in danger, or when a high priority job has not yet been addressed? Such escalation and alerting procedures could prevent a complete system outage, or ensure an important invoice is paid to keep a pivotal project moving. Speed of response enables swift action and in such a demanding industry you can't afford to react slowly to productivity related issues.

Warranty claims

Do you currently track all jobs you undertake to see whether you have a cash claim? Do you know when warranties are going to expire? What if you could be informed and extend warranties before expensive breakdowns cost you money once warranties have lapsed. You could increase warranty cost recovery by 50 per cent, maybe even more, if you manage this process electronically with a dedicated asset management solution. The return on invest associated with this one benefit alone can sometimes justify the initial cost of a solution.

Scalability and ease of use

Maybe you're an exploration company, or you currently contract out extraction and the maintenance of your assets, but want to take ownership in the future. Alternatively you may have maintained your own assets for years, but want to undertake the transportation in-house in the near future. Whatever your situation, you need a solution that is easy to use and scalable as you develop and shift into new revenue streams. What you want is a solution that once implemented gives you the ability to take control in the future, i.e. you don't need to rely upon a partner's services to change processes, but a dedicated support network is available to help your company grow.

The right partner

It's not only important to choose the rights tools, but the right partner. By working with a partner capable of providing business solutions within the global energy sector you'll be able to improve financial and operational efficiency. Ensure you select someone who can offer innovative and sector focused solutions that will assist you both now and in the face of future growth. With the pressing need to maximise asset uptime, it's extremely important that partners provide 24-hour support and understand best practice as a result of prior collaborations and implementations with similar clients. Ultimately, having the right software tools is only part of the solution; an established partner with the experience and knowledge to maximise the solution's value also counts. O&G

Going global

IKM Subsea has been awarded a contract by eni Indonesia to provide ROV services onboard the Drill Rig Scarabeo 7, operating in Indonesia for drilling various exploration and completion wells. The contract value including options is in the region of $16 million USD (100 million NOK) and duration term is firm for 2.5 years.

Ben Pollard, managing director of parent company IKM Subsea says: "We are especially pleased to be awarded such a big contract in a new market for us such as Indonesia. It is a complement to our organisation that state-of-the-art equipment built in Norway, can be competitive and be awarded for work in South East Asia"

Equipment for the contract will be mobilised from IKM Subsea HQ in Norway, whereas the contract will be run from IKM Subsea Singapore, through its affiliate; IKM Subsea Indonesia. IKM Subsea would be providing the in-house built Merlin WR200 Workclass ROV and the Sub Atlantic Mohican Observation ROV, together with all necessary toolings and personnel onboard the rig to support the operations.

Mahesh Govindan, general manager of IKM Subsea in Singapore says: "This is an exciting project to be involved in and we are pleased to have been awarded this. IKM Subsea in a very short term has grown to be a reliable ROV service provider globally and will look into this as a stepping-stone to participate in more Rig projects."

To serve and protect

Oiltanking, a world-leading independent oil, chemical and gas storage firm, is expanding its Terneuzen tank farm in the province of Zeeland, located on the estuary of the Western Scheldt between the main ports of Rotterdam and Antwerp, next to the new Westerschelde tunnel.

The ultra-modern terminal has stainless and mild steel tanks, all with a cup-tank or a «tank-in-a-tank» construction, which serves as containment for any leakage as well as occupying less land area. The terminal serves industrial complexes in the Benelux region and is run in accordance with the latest environmental and safety standards.

Hempel is currently supplying 60,000 litres of paint for the ongoing project of coating ten new tanks, including linings and outer walls and roofs. As a sea and land transport hub, this important industrial area is classed as a marine environment in terms of steel protective coatings.

Given the extremely tight deadline for completion, Hempel's rapid response and delivery times have been instrumental in painting contractor, Van der Ende's, decision to use its coatings. Also, Hempel's technical assistance on site is another significant factor in ensuring the project progresses smoothly towards conclusion with no unforeseen impediments.

Hempel has prepared and delivered a coating specification for each different area to be protected: tank roofs and external cup shells, external tank shells and internal cup shells, cup floors, internals of non-heated tanks, and other items such as pipelines and handrails.

HEMPADUR MASTIC 45880 is the most widely used coating in this project because of its ability to provide hard wearing protection on roofs, outer and inner walls and cup floors. This multipurpose, two-component, polyamide adduct-cured, high-solids, high-build epoxy paint forms a hard coating, with good wetting properties and low temperature curing, making it ideal as a primer, intermediate or finishing coat in heavy-duty paint systems, where low VOC and high film build are required.

The inner surfaces of non-heated tanks are being coated with a two-layer system consisting of HEMPADUR 15590 and HEMPADUR 35760.

HEMPADUR 15590 is a two-component epoxy primer coating specially designed to be used on surfaces exposed to severe abrasion on submersed and non-submersed areas.

HEMPADUR 35760 is a solvent-free, two-component, high-build, phenolic epoxy paint, which cures to a durable tank lining with very high corrosion protection properties and excellent chemical resistance.

Finally, external and visible surfaces will be given a topcoat of HEMPATHANE 55610 in the stipulated colour for each item. This two-component polyurethane topcoat, cured with aliphatic isocyanate, is renowned for its good gloss and colour retention, ensuring tank walls will remain clean white for many years to come, while fire-fighting and other piping can be clearly distinguished according to the colour codes used.

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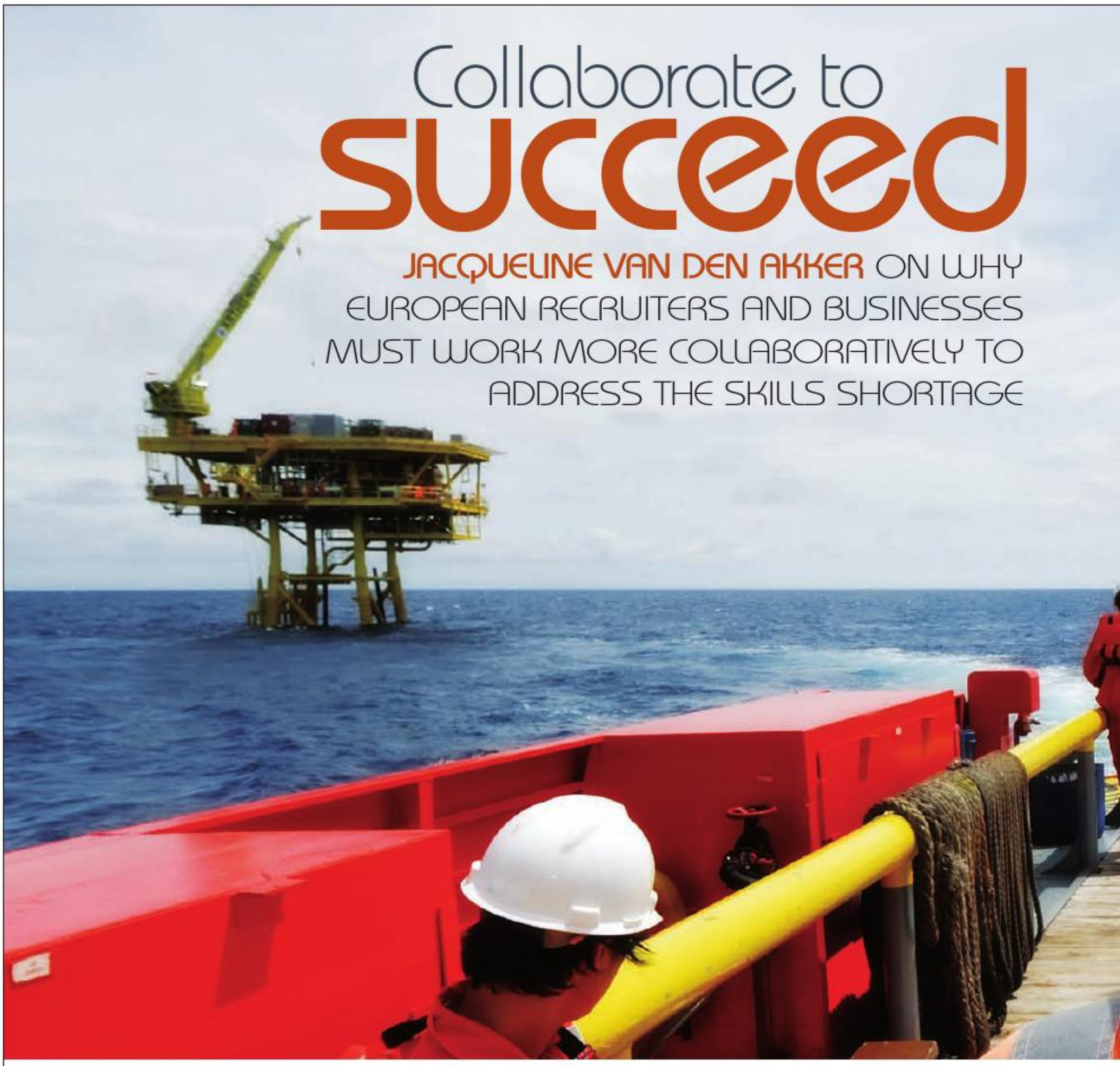
Collaborate to succeed

JACQUELINE VAN DEN AKKER ON WHY EUROPEAN RECRUITERS AND BUSINESSES MUST WORK MORE COLLABORATIVELY TO ADDRESS THE SKILLS SHORTAGE



Making the move to a career in the oil and gas industry from other industries isn't as easy as it should be. All too often if the words oil and gas don't feature on an otherwise impressive CV, strong candidates may struggle to get a foot in the door.

Investment has been made to improve the efficiency of production processes in oil and gas. Now the same approach should be applied to recruitment procedures throughout European energy centres. For too long, good people have been overlooked because they can't immediately match the requirements of a narrowly defined set of skills.

To welcome new talent into the industry there has to be respect and recognition for people coming from other sectors, so we can enlist the expertise of these highly trained people from other fields and harness their innate aptitudes. Bringing outsiders on board can invigorate our businesses and allow a fresh eye to be cast over systems, even introducing solutions to problems we have wrestled with for too long. New recruits with a fresh approach also give a boost to the existing workforce, inspiring them with fresh ideas and strategies.

Interdependence

European companies now working in the North Sea are crying out for larger recruitment pools. Improved communication and collaboration between neighbouring North Sea countries is key to delivering a skilled workforce to maximise economic recovery.

In a labour market where jobs are daily being outsourced to emerging Eastern economies, it's vital European firms work together to benefit from work in their own backyard. The notion of international collaborative working is a hard sell to some sectors. There's a natural inclination to put

national interests first.

Yet there is already significant sharing of the global workforce, especially at the more senior and skilled levels. The international industry is also constantly striving to standardise operating practices to ensure approaches to safety are of a universal high standard.

The same unity of purpose and co-operative spirit now needs to be applied to recruitment among North Sea neighbours like the UK, Norway, Denmark, Germany and the Netherlands. The five countries share responsibility for the North Sea and its hydrocarbon reserves.

But to work more effectively, there needs to be better communication between these neighbouring nations and more collaborative working on recruitment. Businesses in all of these countries can improve their operations by broadening the scope of their recruitment strategies and offering appropriate training to equip new entrants.

Making reserves count

The North Sea is maturing year on year. Its resources have been tapped for more than four decades. It has been a turbulent time for individuals, operators and service companies, but for the foreseeable future oil prices and tax incentives, which dictate the viability of new projects are stable. Trade body Oil & Gas UK knows that the UK Continental Shelf attracted nearly £14 billion of capital investment last year and gauges that for every £1 billion spent 20,000 people are needed in the workforce.

The UKCS is currently relying on a handful of large fields and is at a critical point in its history. Oil & Gas UK expects production to pick up in 2014 and 2015 as up to 25 new fields come into service. By 2018, 40 per cent of produced oil and gas will come from new developments according to experts. It is therefore vital to have both the people and knowhow to find and work new streams. OSG

Every day recruiters meet naive candidates who think they can board a helicopter and work in a secure offshore job tomorrow. At the same time some major companies pay lip service to the concept of transferable skills for those further up the career ladder. A reality check is needed on both sides

Technology has caught up to allow hard to reach places on the seabed to be investigated. Extracting these remaining reserves from the North Sea needs effective recruitment strategies. That means recruiters need to cast their nets wider. Firms should also be aware and responsive to the skills people bring from other sectors. The industry has to make it easier for newcomers to become energy literate and equip themselves with the basic skills to speed their transition into oil and gas.

Making it happen for bright sparks

Filling the skills gap means having the wit to identify transferable skills and recognising that smart people from other industries can adapt and quickly learn new skills. We shouldn't flatter ourselves that the energy industry has already monopolised the world's brightest and best. There are other bright sparks out there, often people who are in declining areas and on the lookout for new opportunities. With such slowdowns in other industries, the oil and gas industry should direct its attention to attracting sharp new recruits from sectors in downturn.

As recruiters we need to persuade companies to be open to newcomers and to understand that expertise from other industries may be the catalyst to bring new efficiencies to our operations. With the shortage of properly trained people now at a critical stage, recruitment is also already focused on encouraging more women into the sector and bringing on board more young people to ensure longer-term sustainability. Growing numbers of young women are gaining skills in science and engineering subjects or returning to college in their twenties and thirties to upskill in subjects like mechanical engineering. But we need more of them.

In our own business, extending the appeal of the oil and gas sector has meant sharing our knowledge of the industry and giving outsiders a better insight into a sector they may view with scepticism. Some youngsters think of offshore work as dirty with shifts away from home that disrupt family life. Others are under the misapprehension they can walk into a job in the oil and gas industry whenever they feel like it.

Hard hats and helicopters

Every day recruiters meet naive candidates who think they can board a helicopter and work in a secure offshore job tomorrow. At the same time some major companies pay lip service to the concept of transferable skills for those further up the career ladder. A reality check is needed on both sides.

Offshore work is a long-term commitment; it requires strength of character, focus and endurance. The lifestyle has its rewards, but 12 hour shifts require stamina and trips can

last more than three weeks. Away from the support of family, friends and without home comforts – it's not a routine that appeals to everyone.

But talking to younger oil and gas industry personnel who are nearer to their age, helps give youngsters a more up to date and accurate picture of the range of jobs on offer both on and offshore. It also gives them a more realistic idea of what the daily routine involves. It's not all about hard hats and helicopters.

The information needs to be accessible to youngsters at the right time. With this in mind, we have made it our business to go into schools and colleges in the UK and the Netherlands and give young people timely information about oil and gas before they make important decisions about subject choices and career paths.

Military discipline

Both the UK and the Netherlands have experienced significant budget cuts to the military, which has opened new opportunities to recruit former military personnel to the oil and gas industry. Recruiters in both countries have been urging companies to give the chance of a fresh start to ex-soldiers, sailors and air personnel who have served their countries.

The forces offer a pool of thousands of talented people who are already technically skilled and qualified and bring all the benefits of a military background. They have transferable skills in fields like mechanical and electrical engineering and also offer an aptitude for communications equipment and new technologies.

Their military training guarantees discipline and situational awareness, as well as the ability to make speedy risk assessments. They will be punctual and can follow instructions accurately, as well as being able to cope with adversity in high-pressure situations.

Military training equips people to make decisions quickly in challenging circumstances and trains them to work effectively in teams and as individuals. All of these skills bring benefits to a workplace as harsh and difficult as the North Sea. Although military training will not bring oil and gas industry expertise, our background as recruiters helps us recognise that it does bring this wealth of valuable transferable talents. People will come with management and leadership skills and the ability to see every job through to completion.

In our business at RedWave, we have seen how ex-military personnel adapt and thrive in the energy sector. Efforts are underway in the UK and the Netherlands to increase training for industry newcomers and extend educational opportunities for the upstream oil and gas industry.

The same initiative that is bringing ex-military personnel into oil and gas needs to be repeated with people working in different sectors of European industry. Only with a more imaginative eye on CVs and an openness to transferable skills will the industry harness the necessary talent and bring outsiders inside. O&G

Chris Knox, offshore medic and former marine.

I joined in 1998 when I was 25 and was four years a rifleman before joining the naval medics. I was then with 45 CMO at Arbroath. I was straight from my training to America. It was an uphill struggle to begin with.

Q Why did you decide to switch to the oil and gas industry?

The oil and gas industry is a similar set-up as the military, the routine and the technology is the same and obviously being away from home. It is an adaptable industry. I am a single dad with two children of six and four and so it suits me with the time I get to spend at home and being able to plan ahead.

Q How do you see recruitment in oil and gas - is it difficult to get into?

It is difficult to get that first placement offshore, but for a medic it is so important to get the first one done. It is similar to the services, the same humour etc. I attended an oil and gas fair in Basra, it was for big business groups. With RedWave they know what they are doing so you know what you are doing, it's very professional. It's great to have this contract where I can be 16/17 days on and nine or so off before I'm back again. It's especially good for the kids and I can plan not only a week ahead but also five or six weeks ahead.

REDWAVE

Jacqueline van den Akker is the director of RedWave, a specialist recruitment company for the European oil and gas industry with offices in European oil and gas centres, including Aberdeen and the Netherlands. Formerly known as Inter-Services, the company was founded in 1989 and became RedWave earlier this year. RedWave provides people for drilling, production and maritime operations, as well as a medical support service, Medi Support. The business has staff working in the UK, Danish, Dutch and Norwegian sectors of the North Sea and further afield.

For further information please visit:
redwave.co.uk

Head to the clouds

SUSAN MACLEOD OF CGI DISCUSSES CLOUD COMPUTING AND THE ADVANTAGES IT CAN BRING TO THE OIL AND GAS INDUSTRY

Cloud computing, whilst not new has grown rapidly in recent years providing a range of significant benefits to businesses in terms of efficiency, flexibility, agility and optimising business performance. The oil and gas industry in particular, with its global nature and need for the exchange of vital information and data across organisations, relies on up-to-date and efficient information management in order to be successful. As the industry develops it faces a number of increasingly complex challenges, such as a growing demand for extensive geophysical data; reservoir modelling to optimise reservoir exploration, production and management; transmitting data across a global organisation whilst reducing security risks and maintaining regulatory compliance; and integrating data to reduce asset and operating costs both upstream and downstream.

Furthermore, as E&P moves to the extreme locations and harsh environments around the world, further increasing the distance between businesses, departments and divisions the volume of exploration data expands rapidly, providing a problem in terms of scaling, storing and accessing this information in the most efficient manner – so information management. Additionally, businesses are entering into joint venture projects and developing future solutions, all of which will heighten the need for efficient and effective information management and data transferring. Companies are beginning to realise that cloud computing can provide the necessary agility and flexibility to allow businesses to collaborate globally, manage their processes, their data, their assets and their people more efficiently, and expand their overall performance significantly.

To find our more about the integration of cloud into the energy industry *European Oil & Gas* recently spoke with Susan Macleod of CGI, one of the world's leading independent information technology and business process services firms in the world. Susan is a director at CGI responsible for oil and gas consultancy and the company's business strategy in the UK. CGI has a global footprint, providing solutions to companies throughout the sector from upstream through to the retail end of the downstream market.

"Looking at cloud computing in the oil and gas industry we are certainly seeing a move towards implementing such solutions by companies," she explains. "So, we've been seeing a number of organisations setting up their initial cloud capability and an increased propensity for major global operators being driven towards the cloud. It is still a relatively new area for the energy sector and in some senses I feel that we are still at the beginning of the journey,

Below
Susan Macleod, strategy director for CGI's oil and gas business

particularly in terms of key drivers like how companies are going to best implement cloud solutions, or how can it be used to really maximise scalability and flexibility across an organisation, so there is so much more to come once businesses can truly get the most from cloud solutions."

While still in its early stages of adoption there is little doubt that implementing cloud can help companies to increase productivity, maximise their reserves and to collaborate on projects and initiatives more effectively and efficiently. Cloud creates a strong, flexible and agile platform for companies to configure and monitor all of their IT resources and data from geophysical data, analytics, reservoir modelling and lifecycle applications, through to supply chain data, records and compliance management, audit trails, and employee information or training programmes. By having this information managed and shared across the business, its customers and its partners, better performance can be achieved.

"If you look at the different functions and operational processes throughout the industry, both upstream and downstream, then there are a number of areas that lend themselves very readily to the cloud format," Susan explains. "Take an area such as incident management, which is vital for an oil and gas company and could have serious implications to your brand globally if not implemented correctly. Using cloud-based technology provides companies with the ability to have a platform where all of the critical information needed in a major incident can be held and accessed in a secure environment so that, rather than say picking up the phone or emailing, everything needed is holistically held in one place – so, the documents you may need to refer to, who you may need to invite or involve in dealing with the incident, what they can access and the information they need, it's all held internally in a safe environment effectively making dealing with any incident more efficient, more effective and safer.

"Of course cloud can extend across a whole range of a company's operations, so another very different area for example would be graduate programmes and training, both vital to the ongoing success and growth of the industry," she adds. "So for graduate engineers, who move around an organisation rotating between different roles and varying sectors of the business, cloud enables companies to be able to easily keep up to date with, monitor and store this progress when the business is spread out around the world and across departments. So in that sense it is vital in keeping these programmes moving forwards, sharing information and benefiting the community that will be working together in the future."

In the upstream sector companies are facing increasing challenges in terms of operations in hostile environments that require in-depth and extensive geophysical data, reservoir analytics and modelling, and real-time information about the operational aspects of an asset. The increasingly complex nature of E&P operations has given rise to a growing need for the exchange of information and data to enable better decision making at vital stages of an operation and more efficient workflows, as well as real-time access to operational and technical information to significantly improve downtime and increase time to first oil.

"Upstream is obviously an important area for businesses, and where cloud is implemented is in terms of operational reporting on those typical upstream functions and how that data, which is vital to effective production can then be shared," says Susan. "For example, consider a joint venture relationship in a commercial contract, or the structure of that partnership in terms of being able to successfully drive operations forward in the upstream business. At CGI we have an option called 'license to share', which is already being heavily used in the Norwegian Continental Shelf sector where, with one client to create a software that allowed them to collaborate across a joint venture under their license management framework.

"In practice, if you consider a typical field and the life of that field, we used to think that was around 20 years but now the figure is more likely to be 40 years plus. So our license to share allows a client to manage the life of that field throughout the different partnerships or joint ventures that OSG

may take place and the different stages of the operation. This enables a whole host of benefits, such as if someone leaves or is replaced in the joint venture then you are easily able to maintain and carry on those records and continue the relationship, it enables prompt and effective resolution of possible disputes, to manage legal issues and to resolve any problems that may occur around that joint venture."

As upstream operations venture further around the world then oil and gas companies are finding it increasingly complex to adhere to the large number of country and regional regulations, to make sure that they are operating within industry standard procedures and are compliant with the correct regulations. Maintaining this kind of adherence relies heavily on effectively managed data and information that can be shared across a business and its shareholders, and in this respect cloud can host this information securely and flexibly.

"When it comes to the large capital projects typical of the industry then document management is an enormous part of this, not just for health and safety but also in terms of your license to operate compliance and in closing out those contracts when it comes to completion operations, and the collaboration tools that are enabled by hosting this information in the cloud are vital in ensuring that things flow more smoothly than they sometimes do," says Susan.

Of course, in a multi-million dollar industry such as the oil and gas sector, security is key, particularly when operating under the threats of changing environmental and regulatory programmes, competition for energy reserves and their accompanying geological and seismic data, and oft-uncertain energy policies in frontier regions. Cyber security has been at the forefront of IT technology for some time, and in terms of implementing cloud in oil and gas concerns over security of sensitive information remain the key challenge.

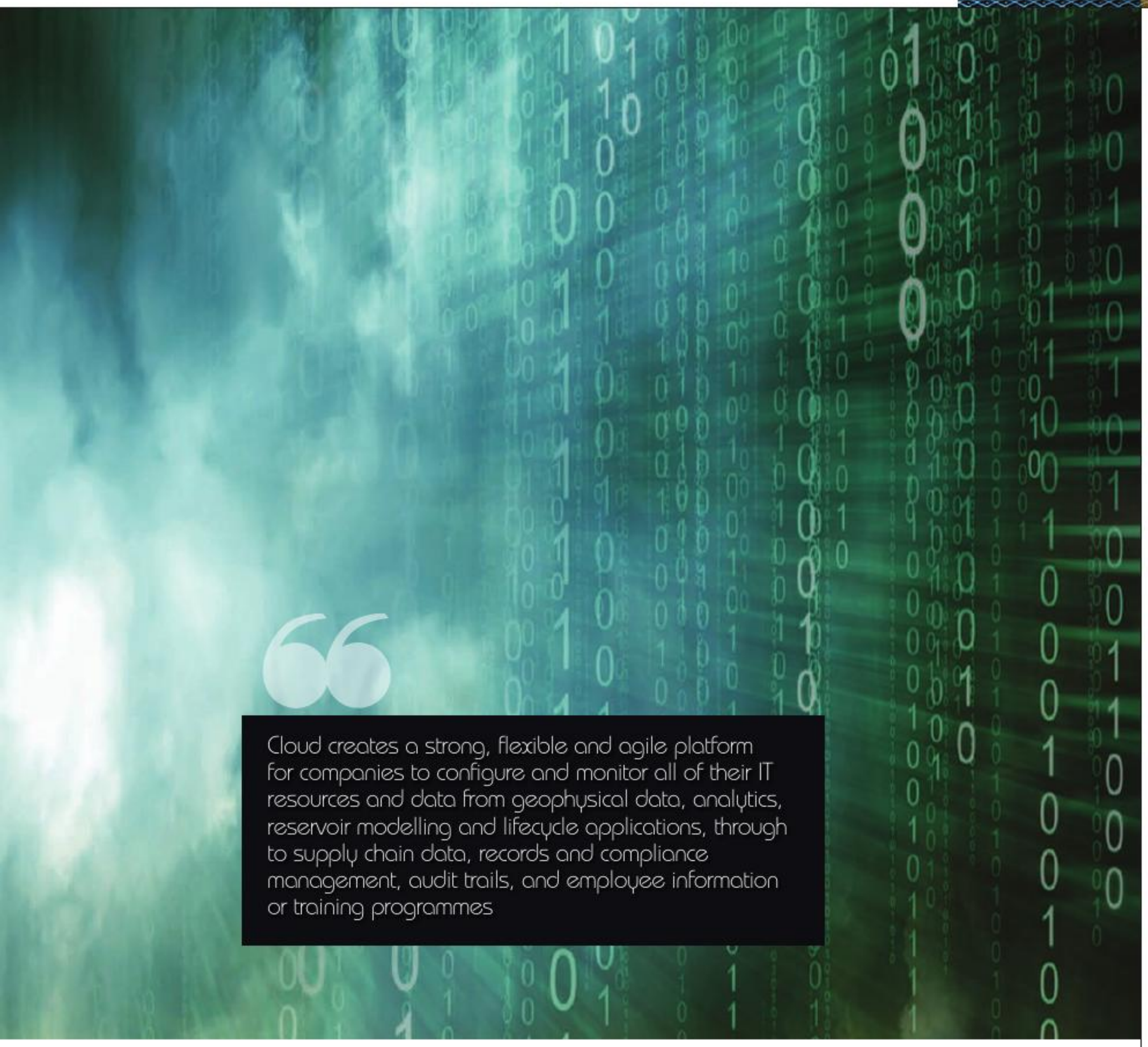
"When we talk about the cloud companies do still have concerns about the thought of their data being in morphis and not knowing where in the world it is being hosted, which means that at present things that you would see as core capabilities or information that is 'commercially sensitive' is not in the cloud at the moment," Susan highlights. "Many of these companies work in varying geological circumstances and so they have a lot of information that they really aren't comfortable putting in the cloud environment. Many exploration-focused companies in particular are very wary of using cloud because again, a lot of the data that they hold is commercially sensitive so it's still not an established and fully trusted capability across the industry.

"Companies must build their trust in the cloud ultimately, but there are things that can enable that, such as cloud developers building that trust with energy companies for example, showing that over time the services that they provide have been reliable. If you compare with other sectors such as retail or banking, they are really beginning to embrace cloud and so I would expect the oil and gas sector to be on that same journey now and I'm certain that the

trust in cloud and its capabilities will build over time so that companies are able to use it to their full advantage."

As the industry moves ahead there is an increasing need for collaboration between companies, particularly in the North Sea, as was highlighted earlier this year in Sir Ian Woods' report on enhanced oil recovery and maximising opportunities in the sector. Susan believes that cloud can contribute significantly to this: "We are certainly seeing a lot more collaboration going into the cloud, and many of the themes of the Wood Report are based around constructive collaboration to promote a healthy future industry, so its about being able to move at speed, and promoting information and knowledge sharing in the best possible way, for which cloud is essential.

"Where this could come into practice, going back to the theme of security for example, if there is an incident then cloud enables necessary information to be shared to all relevant parties at speed and with efficiency so as to



> Cloud creates a strong, flexible and agile platform for companies to configure and monitor all of their IT resources and data from geophysical data, analytics, reservoir modelling and lifecycle applications, through to supply chain data, records and compliance management, audit trails, and employee information or training programmes

prevent further incidents or to ensure that everyone acts on the information as quickly as possible, so it really is extremely beneficial in aiding this kind of constructive collaboration and in terms of being able to focus and react to events quickly."

While implementing technology across multi-national businesses is no doubt challenging, the benefits of cloud solutions for oil and gas companies are clear. "I think that for companies it is really about finding the right application for your organisation, and regardless of your ambitions are you really going to put everything into the cloud?" Susan concludes. "For me I see cloud as being just another stepping stone in the journey towards ultimate connectivity to enable us all to move across the globe and to achieve great things. Right now I think the challenge is whether it is commercially viable for organisations, and again, what will they hold in the cloud? But ultimately there is little doubt that it will increasingly enable the dynamism that you really need in the industry to survive. Its very competitive, it is fast moving and as an oil and gas organisation that needs to make quick and effective operational decisions the cloud can facilities that." O&G

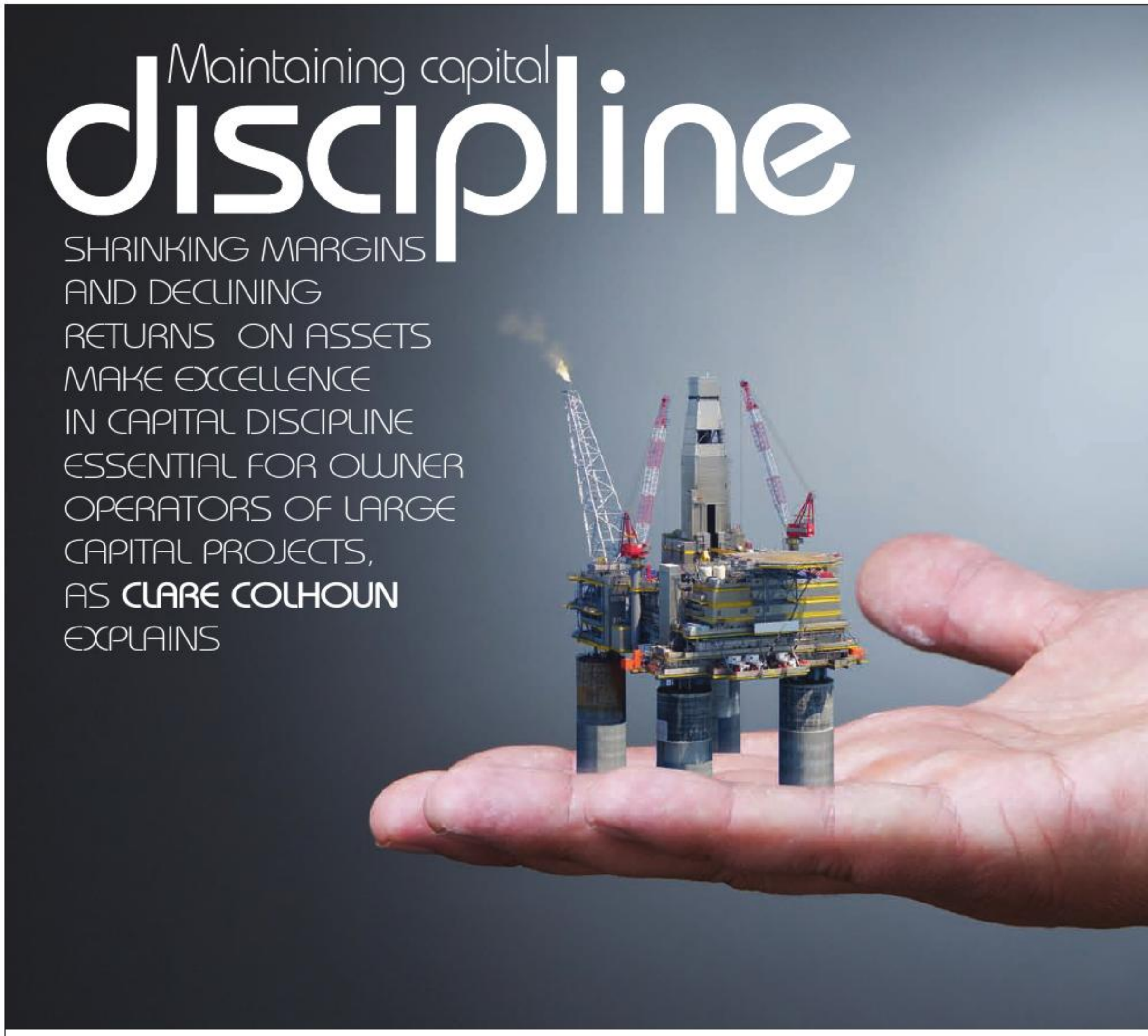
CGI

Having worked as a civil engineer in industry, Susan Macleod is now strategy director for CGI's oil and gas business covering both upstream and downstream. Over the past 12 years she has worked with major clients across a number of different industries, assisting them in the reusing of data from existing assets to provide innovative solutions that deliver safely to the bottom-line. Susan is also a member of The Oil Council, The Women's Oil Council, and has been a speaker at the Digital Energy Journal events for the oil and gas sector for the last two years.

For further information please visit:
cgi-group.co.uk

Maintaining capital discipline

SHRINKING MARGINS AND DECLINING RETURNS ON ASSETS MAKE EXCELLENCE IN CAPITAL DISCIPLINE ESSENTIAL FOR OWNER OPERATORS OF LARGE CAPITAL PROJECTS, AS **CLARE COLHOUN** EXPLAINS



Integrated oil and gas majors face a common threat: shrinking operating margins; declining production; and declining return on equity and on assets. Several of the majors issued profit warnings ahead of their Q1 2014 results, with the financials at three of the super majors confirming the downward trend [see Figure 1].

The decline in return on capital and operating margins has caused dismay amongst shareholders and investors. Analysts warned that 'fears over capital discipline' were a significant factor in the underperformance of the global oil and gas sector. Yet firms have been slow to respond, and few have failed to answer the question of why the downward trend is so pronounced.

Global energy companies will have to adjust their expectations for profits in order to make the investments needed to meet future world energy demand, the International Energy Agency (IEA) warns.

The capital cost of producing a unit of energy – whether oil, natural gas or power – has doubled since 2000, and continues to rise even as prices for key commodities have flattened out, the Paris-based energy group said in a report released recently.

"The doubling of capital costs is a serious issue," IEA's chief economist, Fatih Birol, said in an interview from Paris. "Companies have to improve their capital discipline and they have to be a bit more realistic in the future about rates of return, so long as prices remain at these levels."

The easy oil is gone, hydrocarbons are harder and more expensive to extract, and the largest capital projects are increasingly complex and unpredictable.

Projects also have more stakeholders, more investors, and are typically in frontier areas of the world with national government involvement. The result is significant growth in communications traffic laden with instructions, authorisations and vital content for decision-making. As such, projects today are not only technically challenging, but fraught with risk and change.

Figure 1: Falling yields at three super majors

Source: www.gurufocus.com

At the commercial interface

Change is a given in oil and gas projects. Even the best design team that produces the front-end engineering design (FEED) will never foresee and conceive of 100 per cent of what is required to deliver the project – thus contractors will always instigate change orders.

Variation requests and change orders made in communications from contractors take time to filter through to the financial teams and treasuries of owner operators. Over time, they can fester to significant levels that result in costly claims later on in projects, when it is harder to establish the origin and validity of the changes.

According to a report by McKinsey late last year, the key risks during project execution are related to contractual default, claims, keeping public political stakeholders aligned, and monitoring for mismanagement by contractors. The interface with contractors is therefore the critical element. This sentiment was echoed in a review of the way UK government contracts are managed. Prepared for the Ministry of Justice by Tim Breedon and made public in March 2014, the review identified the collaboration point between

contractors and government as being the key area where value leakage occurs as a result of change.

Schlumberger reports that 35 per cent of capital projects budgeted at over $5 billion will blow out by more than 50 per cent. The significance of this figure cannot be understated: the average project size in the oil and gas industry currently stands at about $1.9 billion and continues to rise as more 'super-sized' mega projects come online. Several projects are averaging between $30-50 billion and upwards, with the Kashagan oilfield development in Kazakhstan standing at $115 billion having suffered significant delays and cost overruns.

Managing contractual risk

Unplanned cost overruns and poor cost recovery not only impact directly on the owner operator's financial performance, they place shareholder value at risk. Earlier this year, shares in Spanish construction consortium Sacyr fell on news of a claim of more than $1 billion, relating to the Panama Canal Expansion project where it had the lead construction role. The dispute between Sacyr and its contractors over liability for the additional costs resulted in a substantial delay to the work to widen the waterway.

With large capital projects in the oil and gas sector increasingly characterised by several venture partners sharing both risk and return, the contracts that underpin them have many interdependencies. Clear rules of engagement must be defined in advance, both amongst the venture partners and between the venture and its contractors.

Successful contract execution in ground-breaking floating LNG (FLNG) projects, such as Shell's Prelude for example, involves developing a suite of project contracts across the FLNG value chain that creates an effective alignment of interests among each of the relevant project parties, whilst eliminating or mitigating risk.

Many interdependencies also mean many open channels of communication. These channels are absolutely critical, but are risk laden in that they can drive unnecessary change into the project. The inherent risk only becomes manifest when the owner operator looks to cost-recover a percentage from a joint venture partner, only to discover that the communications surrounding the change are untraceable. This is why instructions and the thread of communications that trigger a contractual change must be recorded meticulously, as the sequencing of events is relied upon in the event of arbitration.

DNA sequence

Contractual risk management entails de-risking the commercial engagement by ensuring that the chaotic communications that exist on a large capital project are streamlined and controlled – whether they are a communication about an instruction, an obligation, potential change, or site query.

Imagine for example, that time is a constant represented by a horizontal axis. Capital is deployed in increasingly larger amounts as construction of the project progresses over time. That capital is deployed via contracts, but without a system of engagement to provide a disciplined way of managing the risk inherent within those contracts, then the entire process is left open to change due to unnecessary, unstructured and cluttered communications channels. This occurs both internally with the owner operator and its partners, and externally with contractors.

Now imagine the application of contractual risk management as being like a coil that wraps around the project timeline. The 'coil' is a system of record. When it's switched on, it aggregates all communications across the project timeline. Here, unstructured communications become structured under specific categories. Crucially, the timeline and the coil are intertwined, much like a DNA sequence, to provide an indisputable record of all formal

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contract data, communications, contractual obligations, review decisions and decision response times.

By being able to retrieve, as required, auditable and irrefutable evidence held within a 'DNA sequence', owner operators are able to reduce instances of claims and maximise cost recovery to ensure all project and contract stakeholders bear their appropriate share of legitimate unplanned costs.

Early warning and proactive risk management

Applying analytics to a combined system of engagement and system of record, where disciplined and structured communications are stored within a single platform, owner operators can start to act on the business intelligence available. For example, if a variation order request on a major project is received from a contractor and has a significant value associated with it, that communication can be routed to those that need to see it and, more importantly, to those that need to take the decision on whether or not to approve it.

A further benefit is that owner operators can measure the riskiness of a particular project. Should a large volume of variation order requests come in over a short period of time, they can be escalated to appropriate stakeholders to notify them that scope is a problem and as such the project is at risk of blowing out. Action can then be taken to avert significant value leakage and scheduling overruns in commercial relationships with contractors, which current in-house systems are simply unable to achieve.

Contractual risk management solutions integrate fully with other enterprise systems and bring a disciplined approach to all communications between project partners and contractors by:

- Instructing contractors, partners and stakeholders to use a single formal commercial platform for communicating with owner operators whilst executing contracts and to adopt the oil company standards as a 'must'. All instructions and communications to and from the contractor and owner operator teams flow through this one channel in a pre-defined, organised way.
- Connecting the engineering world with the commercial world by insisting all technical queries, instructions and otherwise are routed through the commercial channel for review, checking alignment or disparity with the contract, and then to the contractor and owner operator's technical teams.
- Gaining significant and valuable insights by analysing the commercial communication traffic that highlights priority areas of the engagement that need attention. This is a new 'early warning' focus on potential change requests. It allows owner operators to accept necessary changes, but importantly, allows them to avoid unnecessary changes that can blindside a project when they fester to significant levels and result in claims.

Predictable outcomes

Several of the largest super majors, majors and independents are changing the way they manage change in the execution of their capital project contracts. What's more, they are generating $100s of millions – and even billions – of savings by driving greater discipline into their capital deployment processes and enhancing communications, governance and transparency. These elements are critical to realising maximum returns and mitigating contractual risk in large capital projects.

One international oil company (IOC) that has implemented a contractual risk management solution to drive capital discipline across 25 projects, reduced its actual outcome versus final investment decision cost target by some 65 per cent from a previous period. Another firm, a lead operator, recovered over $1.7 billion from partners on a major capital development programme in Africa.

Meanwhile, an oil major managing a $12 billion mega project recently completed the development with zero successful claims from contractors. In other words, not a single dispute or unapproved variation was accepted. Such triumph is previously unheard of in the oil and gas industry. One oil and gas independent has even deployed a contractual risk management solution based on a business case of recovering $1million per day in enhanced cost recovery.

Ultimately, by managing key contractual risks, owner operators benefit from connected decision-making through improved capital discipline, and therefore realise a much more predictable commercial outcome.

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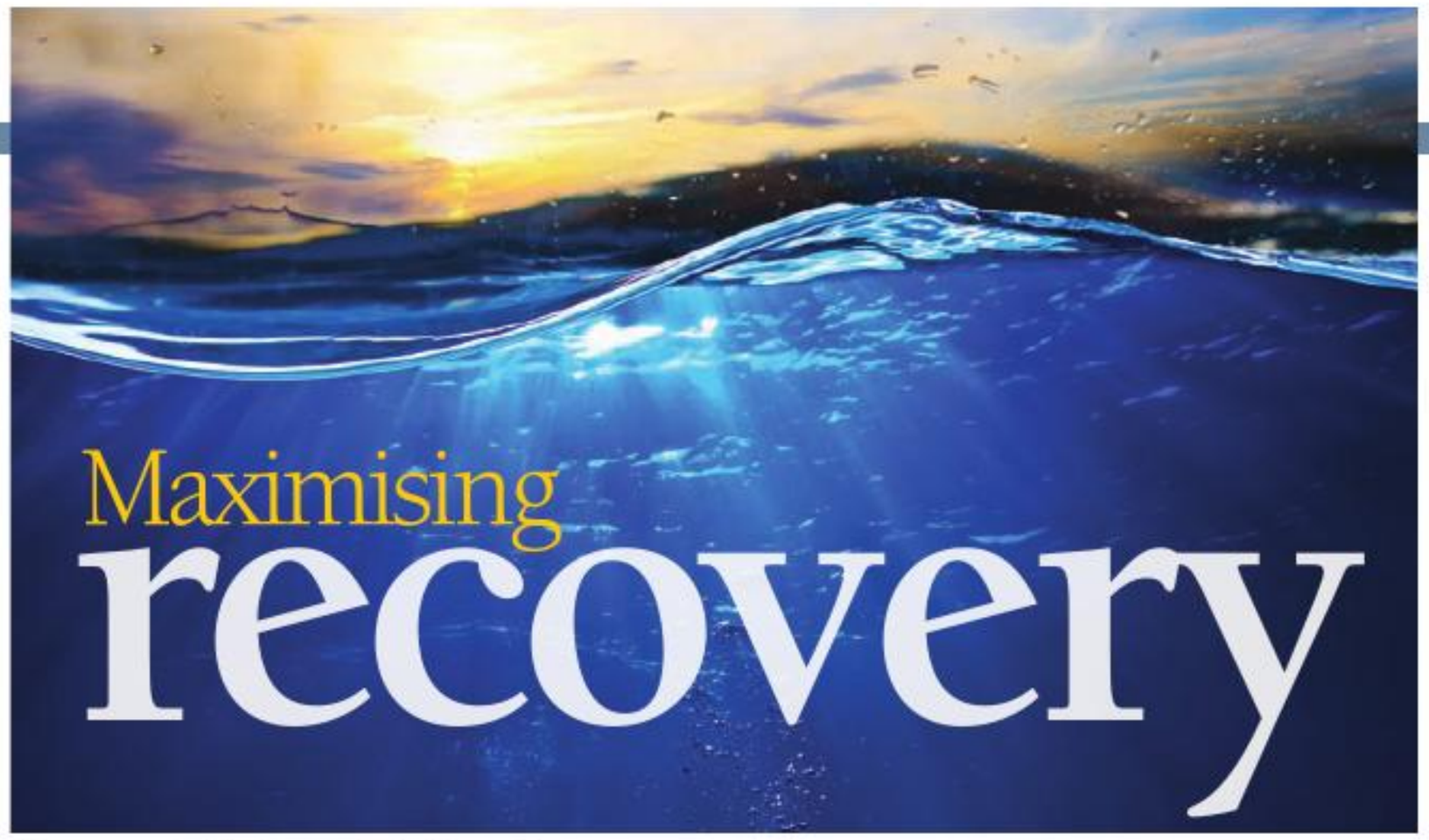

Maximising recovery

Deep Offshore Technology International (DOT) is the worldwide leading industry forum dedicated to confronting the technical challenges related to the lifecycle development of oil and gas in deepwater basins. Each year the event provides industry individuals with the opportunity to share collective experiences and new technologies that will ultimately improve the quality, safety and economics of current and future deepwater operations.

For over three decades the event has built on continued success, and this year's Deep Offshore Technology International proves to be no different. Being held between 14th and 16th October at the Aberdeen Exhibition and Conference Centre, Aberdeen, Scotland, it offers visitors numerous opportunities for networking and learning, allowing individuals to witness the latest technological innovations from the operating companies themselves, to engage with peers and industry leaders from around the world, to gain a firmer understanding of the key issues and trends that are facing the deepwater industry and explore current operations practices, and to discuss these with the key decision makers in the sector.

Consisting of conferences, plenary sessions and an exhibition Deep Offshore Technology International is widely regarded in the global energy sector. In fact, last year saw more than 1300 attendees from 33 countries and 17 operating companies in attendance including Anardarko, Shell, Chevron, BP, Hess, ExxonMobil, and ConocoPhillips. Such was the success of the event that 95 per cent of those that attended said that their expectations were met or exceeded, and 89 per cent of exhibiting companies said that their overall success met or exceeded what they expected from their visit.

This year's DOT, which is taking place on the shores of the UKCS for the very first time, is centred on the theme of maximising resource recovery, which is vital for the future success of the industry. Accordingly DOT 2014 will play host to many of the industry's leading thought leaders, analysts and technology developers and manufacturers, who will discuss some of the key topics around the main theme, looking at the latest deepwater trends, field applications and development concepts.

The conference programme, which covers all three days of DOT 2014 will cover a multitude of topics including North Sea outlook: opportunities and challenges, flow assurance, maximising resource recovery, floating production facilities, marginal field development and maximisation, practical approaches for reducing the cost of deepwater projects, deepwater trends and challenges, subsea boosting and processing, mooring integrity, riser technology, and enabling technologies to maximise resource recovery.

Alongside the conference programme runs the exhibition, where each year deepwater management, engineering, and technical professionals source new products and update their knowledge on key topics in the sector. Exhibiting companies span a wide range of industry sectors, from subsea technology, construction/installation, flowlines and pipelines, and field development through to drilling/well construction, floating production systems, operations, exploration, and flow assurance.

Whichever niche of the industry you are involved in Deep Offshore Technology International provides one of the most comprehensive and up-to-date platforms for the deepwater offshore industry. The mix of conference and exhibition enables visitors to experience all areas of the industry in one event, making it an essential addition to the oil and gas calendar. O&G

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Representing the industry

Attracting an audience of engineers, technical specialists, industry leaders and experts who meet to share ideas, opinions and technical innovations from the Norwegian Continental Shelf (NCS), Offshore Technology Days (OTD), is Norway's largest annual oil, gas and energy exhibition.

This year's event, OTD2014 BERGEN, will be the 16th consecutive year of the show, which over the last six years has been the largest of its kind in Norway. For example, attracting close to 30,000 visitors from 28 nations, and 510 exhibitors, the OTD exhibition has become one of the fastest growing oil exhibitions in the world, demonstrating the growing importance of OTD to the international oil and gas community.

The show has a national focus, geared around the slogan "We are the Norwegian Continental Shelf", and is a multifaceted event that promotes continuous learning and the showcasing of technological innovations, equipment, solutions, and the tools that are increasingly required to succeed in the modern oil and gas industry. Attending OTD2014 BERGEN provides visitors with free access to more than 40 technical presentations, exhibitions and networking events. This freedom to explore and connect with likeminded individuals is a key aspect of OTD2014 BERGEN, designed to help visitors improve their business and to support future success in the industry.

Over three days between the 14th and the 16th of October, OTD2014 BERGEN hosts a combination of professional content and social gathering to promote ongoing business in Norway. Not only are there various networking events and technical presentations, but also there are culinary experiences, music and entertainment, all intended to create a 'whole and fulfilling' experience.

The exhibition opens on Wednesday 15th October across three halls and it promises to continue to build on OTD's success. Last year was a record breaking year for the event, and with 510 exhibitors confirmed for 2014 there may be new records set.

Also at OTD2014 BERGEN are a range of SPE Workshops/Training Courses. The Society of Petroleum Engineers (SPE) is a not-for-profit professional association that acts as a key resource for technical knowledge and provides publications, events, training courses, and online resources. The workshops and training courses held at OTD2014 BERGEN are designed to assist visitors in learning new skills and techniques, and to ensure they are kept abreast of the latest trends and developments in the NCS and wider industry.

Held at the OTD exhibition centre the workshops cover a range of topics including deepwater EOR, an introduction to offshore decommissioning, and advances in well engineering design. The latter will be based around examples from the Norwegian oil fields and various other elements of well engineering such as completion, well integrity and failures, and a review of how such technology has evolved with a focus on methodology and underground knowledge.

Decommissioning is a rapidly developing market sector, particularly in the North Sea and the NCS, and as such OTD2014 BERGEN's decommissioning training events are essential for engineering managers, decommissioning managers, environmental engineers, HSE managers, regulators, accountants, governance managers, insurance brokers and lawyers, and other industry professionals. The course will provide an introduction to offshore decommissioning, covering topics such as what is decommissioning, law, regulation and other drivers, liability, the decommissioning engineering process and marine operations, latest technology, environmental and safety concerns, the transit from production to decommissioning, and decommissioning cost estimating.

While this is a brief overview of some of the opportunities on offer at OTD2014 BERGEN, in truth there is much more for all that are planning on visiting. Over the last 16 years the event has continued to grow, becoming an essential part of the Norwegian oil and gas industry. With this year set to continue this pattern of success OTD2014 BERGEN should be a date in everyone's diary. OEG

Attending OTD2014 BERGEN provides visitors with free access to more than 40 technical presentations, exhibitions and networking events. This freedom to explore and connect with likeminded individuals is a key aspect of OTD2014 BERGEN

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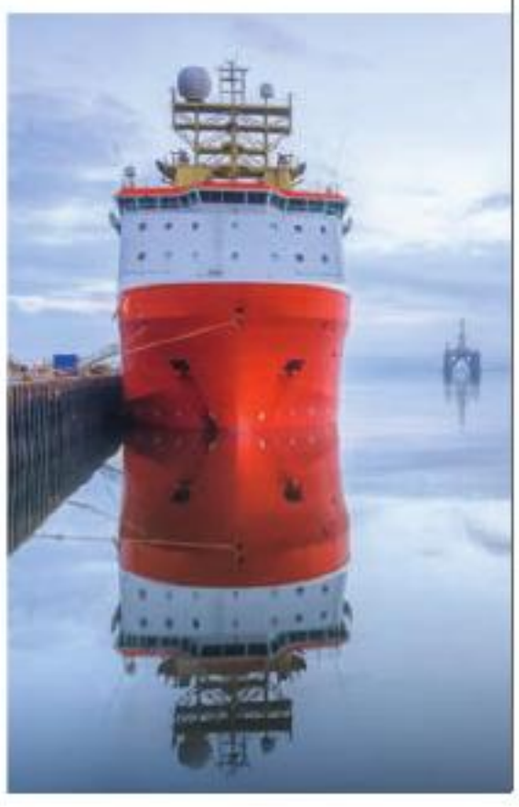

Established on January 7th 2011 through the merger of Acergy SA and Subsea 7 Inc, the new organisation took on the Subsea 7 name, while retaining Acergy's headquarters in Luxembourg and London. Benefiting from the seabed-to-surface engineering and construction experience of Acergy, which celebrates its centenary year in operation in 2015, as well as the total subsea field development expertise of Subsea 7, which was established in January 2002 under the name DSND Inc before taking on its current name on July 15th 2005, the joint venture can thus share its knowledge and skill to create innovative solutions with clients.

Following a simple vision to be acknowledged by clients and shareholders as the leading partner in seabed-to-surface engineering, construction and related services, Subsea 7 meets and indeed surpasses this goal through a consistent adherence to its shared core values. These include a strong commitment to an incident-free workplace in all areas of operation around the globe, the application of the highest possible ethical standards in all activities, a continuous focus on improving the efficiency of the business through investment in personnel and the innovation of technology, processes and operations. Moreover, the company is keen to retain an unrivalled reputation for reliability in its high quality performance; by striving for excellence in all areas and treating clients, people and suppliers with respect, it strives to continue earning their trust to develop mutually beneficial relationships that surpass expectation.

These qualities have held Subsea 7 in good stead over its early years of operation, as both the scale and complexity of projects within the offshore subsea market has continued to

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rise alongside growing global energy demands. By utilising the long track record of its parent companies, as well as its expert personnel and industry know-how, Subsea 7 has the capabilities and financial strength to deliver projects in a safe and efficient manner. Focused on its core strengths of engineering, project management, supply chain and vessel management, the company targets contracts that match its skill set, have a suitable risk profile and will generate attractive returns.

Today the company employs more than 2000 people in Scotland and was awarded more than £650 million worth of contracts in 2013 alone, following booming investment in the North Sea. This trend for growth has continued, with recent projects for the oil and gas services company including a £270 million contract announced in May 2014; it is the largest-ever UK EPIC contract for the firm and involves the construction and installation of a ten inch, 37 mile pipeline as well as associated facilities for Premier Oil. The scope of work includes three pipelines bundles, a riser system for the Catcher FPSO vessel and installation of the pipeline, which will be used on the oil major's Catcher field development, based east of Aberdeen. Subsea 7's office in Aberdeen will undertake the engineering and project management aspects of the contract, while fabrication will be undertaken at its Wick and Leith facilities and will involve up to 140 people.

Aiding the company's stratospheric rise in the oil and gas industry is its impressive fleet of 40 vessels, which range from high-performance global pipelay and heavy construction enablers to multi-functional support vessels that are suitable for flex-lay, light construction and diving/ remote intervention contracts. Constructed to meet the requirements of local markets, the fit-for-purpose vessels ensure Subsea 7 has a diverse and versatile fleet that can take on the most challenging of projects anywhere in the world. However, as the oil and gas industry ventures into more challenging environments, the development of more complex shallow and deepwater fields requires optimum performance and state-of-the-art technology.

Having anticipated this demand, Subsea 7 has made investments to develop a coveted fleet that can handle both single vessel and multiple vessel deployment projects. Furthermore, the firm uses its design expertise and ability to sustain investment in its assets to retain a competitive

edge. Recent additions to the fleet include the Seven Waves PLSV, a flexlay vessel that is capable of operating in depths of up to 2500 m; it is equipped with a vertical lay system (550 t top tension capacity) and twin ROVs.

In addition, as a pioneer of the development of remote intervention technology for more than 30 years, Subsea 7 collaborated with SeeByte, a leading provider of software solutions for unmanned underwater vehicles, to create an autonomous inspection vehicle (AIV). With the potential to revolutionise life-of-field projects through the provision of a cost-effective, low-risk inspection system, the AIV has the unique ability to operate directly from a host vessel, as well as from infield support vessels or mobile rigs. Highly suitable for supporting field survey, integrity management and intervention activities, the AIV successfully completed its first test mission in the North Sea for Shell in August 2014.

Moving forward, the highly adaptable firm has a number of major projects coming up, such as the three-year $160 million contract extension by BP for light subsea construction, inspection, repair and maintenance services in the Gulf of Mexico, and the $75 million three year subsea construction services contracts with ExxonMobil in offshore Canada. Despite its incredible success, Subsea 7 is keen to retain its leading reputation through further investments in vessels and the implementation of enhanced systems within the supply chain. O&G

Subsea 7
subsea7.com

Services
Leading global subsea contractor

Decade of drilling

When established on May 18th 2004 as a joint venture between Qatar Petroleum (QP) and Japan Drilling Co. (JDC), Gulf Drilling International Ltd (GDI) became the first onshore and offshore oil and gas drilling firm in Qatar. Originally retaining a 60 per cent share in the venture, Qatar Petroleum, which is also the country's national oil corporation, acquired a further 25 per cent of JDC shares; this raised the company's ownership in GDI to 70 per cent. Following this acquisition, QP's shares were transferred to Gulf International Services (GIS) on 12th February 2008; GIS then proceeded to become a public shareholding firm on 26th May 2008. It is listed on the Doha Securities Market (DSM). Today GIS retains 70 per cent shares of GDI, as well as 100 per cent shares in Gulf Helicopters, Amwaj Catering Services Company and Al-Koot Insurance Company.

As a growth orientated organisation GDI has a fleet of 12w drilling rigs and a workforce of more than 1080 employees; the fleet includes six offshore jack-up drilling rigs, six land rigs and one accommodation jack-up. On top of this, GDI has a lift boat under a management contract. With a market share of 86 per cent in onshore operations and over 40 per cent in offshore operations markets by the end of 2012, GDI aims to raise its share in the offshore market by 50 per cent by 2015 through the delivery of two state-of-the-art rigs.

Committed to the continued growth and success of the business, GDI officially signed four new contracts and four contract extensions with QP in the second quarter of 2014 for the provision of drilling rig services, each with a term of five years. The contracts, worth QR5.2 billion, include the delivery of two new offshore drilling rigs, 'Dukhan' and 'Halul', as well as two new land rigs. Signed by His Excellency Dr. Mohammed Bin Saleh Al-Sada, Minister of Energy and Industry and the chairman and

managing director of Qatar Petroleum, and Mr. Ibrahim J. Al-Othman, the chief executive officer of GDI while director of oil and gas ventures at QP Mr Saad Sherida Al Kaabi was in attendance, the contracts represent the largest single client commitment since GDI's formation a decade ago.

The contract covers the provision of onshore rigs GDI-1, GDI-2, GDI-3 and GDI-4, which have combined to drill 172 wells and work on an additional 279 wells. To ensure high-quality performance drilling, GDI is currently upgrading the equipment installed on the rigs; upgrades include high-volume centrifuges, shale shakers, and larger power packages; it will also enhance camp accommodations.

Delivered in August 2014, nine days ahead of schedule, within budget and with a spotless safety record, the 'Dukhan' jack-up was specifically customised with features that enable it to work anywhere in Qatar. It is also equipped with larger spud cans for reduced bearing pressure, which will expand its coverage when

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Our Noble Denton Marine Assurance and Advisory services have been setting the standard in marine warranty for over 50 years. Much of the industry follows our guidelines, standards and rules, and we have contributed significantly to developing global best practice in marine operations. But, with the oil and gas sector working on more complex projects in increasingly challenging environments, we believe that the benchmark can always be higher.

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operating in areas such as sea beds where soft oil is a primary challenge. The rig can operate in water depths up to 300 feet and also includes a 15,000 PSI choke system for well control that can drill wells up to 30,000 ft with an independent leg cantilever; it also features 7500 PSI mud pumpers and offline stand building.

Due to start operations in the second quarter of 2016, 'Halul' will be the fourth jack-up in GDI's fleet to operate under contract to QP; the other three contracted jack-up rigs are 'Al Doha', 'Al Zubarah' and 'Dukhan'. Having found a highly reputable shipyard with rig suitable for QP's requirements, GDI's fleet expansion will not only support its growth plan in 2016, but will also support its revenue growth in the long-term.

The key features of 'Halul' include a 1.5 million pound derrick, accommodation for up to 150 crew members, 75 foot cantilever outreach,

7500 horse power mud pumps, as well as other requested customisations as required by the contractor. The addition of another ultra-modern rig to GDI's fleet will not only raise the firm's technical capabilities, but will also reduce the average age of its fleet. Moreover, with four of its six cyber rigs able to operate in all offshore areas within the State of Qatar, GDI will also significantly enhance its versatility.

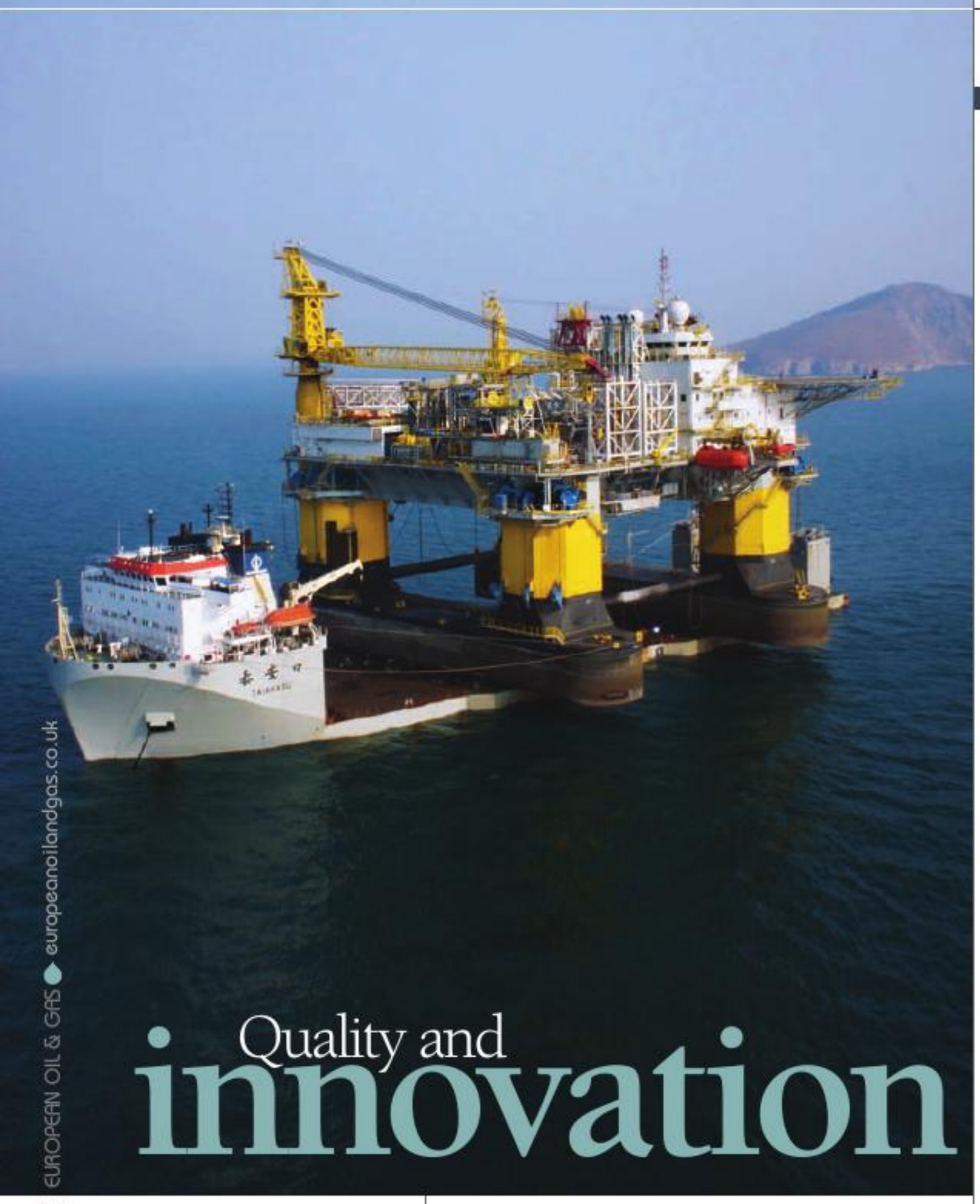
With the same vision of becoming a world-class drilling service provider and a mission to deliver safe, efficient and innovative drilling services since its inception, GDI's commitment to continuous improvement has resulted in an impressive fleet that will consist of eight jack-up rigs, six land rigs and two jack-up accommodation barges by 2015. These strategic developments will also result in the average age of the fleet reducing from 21.2 years in 2012 to 15.9 years in 2015.

To further strengthen its services, GDI has awarded two contracts worth $110 million to Nakilat-Keppel Offshore & Marine (N-KOM),

a joint venture between Nakilat and Singapore's Keppel Offshore & Marine (Keppel O&M). The first contract is for the construction of a self-elevating and self-propelled liftboat that has been customised for operations in the Middle East and North Africa (MENA) region. Once completed in the final quarter of 2015, the boat will be able to operate in water depths of up to 65 metres and will provide accommodation and platform support services for a client operating in Qatar. In addition, N-KOM has been awarded a six-year repair and maintenance contract for GDI's fleet of jack-up rigs that are operating in the Middle East. The contracts were signed in the presence of His Excellency Dr. Mohammed Bin Saleh Al Sada.

The liftboat was designed by Bennett Offshore, a naval architecture and marine engineering segment of Keppel O&M, in collaboration with N-KOM, to undertake a broad spectrum of services such as the commissioning, maintenance and decommissioning of offshore platforms. Equipped with two deck cranes, an open deck space of approximately 800 square metres, a helideck and accommodation capacity for up to 130 persons, the liftboat also allows a specially designed gangway bridge to link to the client's platform, which will enable emergency escapes. The liftboat will not only provide a more cost-effective and efficient alternative to traditional offshore service vessels, but will also enhance safety as its self-elevating feature provides a more stable work environment.

Having reached its ten-year-anniversary, GDI looks set to flourish within the offshore industry as it celebrates its five-year drilling contract with QP and continues to generate attention in the market thanks to its impressive fleet and enhanced drilling performance. OSG



Quality and innovation

Originally established under the name Bassdrill Ltd in 2007, Houston-based niche drilling firm Atlantica Tender Drilling Ltd has been part of a large rebranding effort to reflect the growing success of the company and its acquisition by private equity firm HitecVision. Additionally, because Atlantica is the name of the ancient continent that once connected West Africa and Eastern South America, the name represents the company's current core marketing area as well as its position as an expanding global provider of tender assist drilling vessels.

Formed to design, fabricate, market and operate safe and efficient drilling equipment in a highly competitive and heavily dominated market, the company is able to provide cost-effective solutions for the offshore drilling market as a result of its well-designed vessels, commitment to personnel safety and high quality equipment packages. Because of this focus on quality and innovation, the company has gained a strong reputation and witnessed demand for its services from oil majors across the globe. Discussing company operations, vice president of Atlantica Tender Drilling Mike Smith begins: "The offshore drilling business is dominated by jack-ups, drill ships and semi-submersibles. There are a far smaller number of tender drilling rigs. We use self-erecting tenders because we have a large crane and lift crane transportable drilling package from the deck of the rig onto the deck of the production facility.

"The drilling package actually drills down through the deck of the production facility and completes the wells there with the accommodation, power, mud system, pipe racks and support utilities in our vessel, which is moored alongside and connected to the drilling package with umbilical hoses and electrical cables and so forth. That is the unique aspect of tender drilling as apposed to drilling with the main types of rigs like jack-ups, drill ships and semis."

Since it was previously featured in *European Oil & Gas Magazine* under its previous name in June 2013, Atlantica Tender Drilling's substantial growth trend has slowed down over the last 14 months due to a somewhat softer market. Despite this, the company is continuing to find opportunities in the tender drilling sector and is focusing on its contracts with oil majors Petrobras and Total.

Following an agreed two-year firm period extension of the present contract for the company's Alpha vessel, which will commence at the conclusion of the present 12 well contract, Atlantica Tender Drilling was also awarded a contract from Total for a new build semi tender assist unit to be used on the Moho Nord development offshore The Republic of Congo in early 2013. The award follows an extended Compensated Call for Tender (CCFT), which the company entered in the first quarter of 2012 as part of a selected group of contenders that were asked to design a modular drilling package to be utilised on the tension leg platform for deployment in 2015. Following a now-concluded tender exercise, Atlantica Tender Drilling's semi tender, 'Delta', is due for delivery in the second quarter of 2015 and will feature a range of unique features as required by Total for its long-term drilling programme, which is due to begin in the third quarter of 2015.

Discussing the company's growing fleet, Mike says: "The Alpha is currently operating in West Africa. Barge type units are rectangular, barge-shaped and tend to work in South East Asia and West Africa because they aren't suitable for

BASSOE TECHNOLOGY

For the development of Atlantica's tender drilling units Atlantica has had a close co-operation with Bassoe Technology, which has been responsible for conceptual and basic design for Atlantica's four units. Bassoe Technology's engineers have long experience in design and construction of advanced offshore drilling units and have developed innovative tender units with very good motions performance. For BassDrill Beta Bassoe Technology developed a new proprietary hawser mooring system to facilitate the mooring of the tender alongside the TLWP.

more harsh environments. Meanwhile, the Beta is a semi-submersible rig that commenced its term contract with Petrobras in the Campos Basin, Brazil, in March 2014; this is the first time that tender drilling has been attempted in a reasonably harsh environment, but because there is constant motion in Brazilian waters the semi-submersible was chosen. Better motions means improved uptime and generally increased capabilities for customers.

"The Beta and Delta vessels are very similar and have the longest contracts, with an order of around four to five years for those two. However, Delta and Gamma are still under construction at Dalian Shipbuilding Industry Corporation (DSIC) in China. The Gamma is due for delivery in the first half of 2015 and Delta due in the summertime.

Beginning with two rigs capable of drilling past 6000 ft of water in 1996, to 40 by 2002 and approximately 150 in 2014, the ultra-deep water drilling fleet has witnessed dramatic growth over the last two decades. Atlantica believes the huge increase in deepwater wells drilled by this growing fleet will lead to a similar increase in deepwater production installations and therefore opportunities for tender drilling. Furthermore, with Seadrill selling to SapuraKencana, the company became the technology leaders of the niche tender sector, as Mike concludes: "We have two brand new semi tenders drilling on deepwater TLPs on the multi-billion dollar Moho Nord project and the Petrobras PapaTerra project. These are expensive, long-term, high profile projects, which is what we like about the deepwater semi tender business.

"Another benefit is that if we win a contract with an oil company that decided they are going to build a light weight, smaller TLP or Spar because it can be drilled with a tender, that means from then on it can only be drilled with a tender. They must commit to a tender drilling contract at the same time they commit to construction of their deepwater production facility, which allows us to order a new build with a drilling contract already in hand. These are the opportunities we will be looking for in the future." O&G

Atlantica
Tender Drilling
atlanticatd.com

Services
Manufactures and operates drilling equipment

Generating success

Yarmouth Rewinds Limited

celebrates its 11th year trading in October 2014 as one of the largest repair facilities in the eastern region of the UK, specialising in hazardous area motor and generator repairs. The business was set up to service the offshore oil and gas industry, later extending its services to include the marine and industrial markets. As an IECEx certified facility and Baseefa Licensed Repairer the company is one of the few in the UK to be approved and registered to take on the repair of electrical equipment used in hazardous areas.

The certification that the business holds is vital to the maintenance of its position within the industry. Baseefa is the leading internationally recognised certification body for explosion-protected equipment, delivering IECEx, ATEX and DSEAR certification to customers around the globe. The auditing of systems and procedures ensures that a certified company has the skills, equipment and the documentation in place to undertake such work. Additionally as an IECEx certified repair facility the organisation is approved to offer repair and overhaul of equipment for use in explosive atmospheres. The scheme covers the repair and overhaul of equipment used in potentially explosive atmospheres, providing both original equipment manufacturers and end users with the confidence that the repair facility operates in accordance with strict technical and quality system requirements laid down within an international (IEC) framework. The IECEx service facilities programme independently ensures the repair facilities' capability and imparts an international status that gives a competitive edge to its services. It offers a credible alternative to other, non–accredited schemes and addresses concerns within industry over poor standards of overhaul work. Many companies are now insisting that they work only with the repair and overhaul organisations that are certified by accredited bodies.

Working with the likes of Shell, Perenco, Hydramec, Petrofac, and Prior Diesel, the business benefits substantially from its location in Great Yarmouth, the main port for the southern North Sea. Being right on the doorstep of the hub of activity in the North Sea is important to bringing in the workload but it is significant that although the business is only 11 years old it has been built on a wealth of experience. Both directors, Paul Sheales and Melvyn Fowler, had been working in the industry in excess of 20 years prior to starting the business so have combined extensive knowledge of the motors, generators, and the platforms used across the sector.

The nature of the business means repair contracts are on an ad-hoc basis, however, this year the company was awarded a three year onshore repair contract with an additional two year extension with a major operator in the southern North Sea. In line with the ever-

increasing amount of work the business looks to grow its workforce, taking on at least one apprentice each year. The biggest challenge is employing skilled labour, this is overcome by using the apprenticeship programmes at Lowestoft College run in conjunction with in-house training, and so its new employees are able to learn the trade "hands on" whilst studying at the college on day release.

Yarmouth Electrical Mechanical Services is Yarmouth Rewind's sister division, which boasts a panel building division where it designs and manufactures bespoke control panels for both hazardous and safe areas. It also offers a full electrical engineering service supplemental to the panel manufacturing and repair service, and was a natural progressive step that the two business partners took with the growing skill set within the company.

Yarmouth Rewinds Limited was building control panels and repairing generator packages long before Yarmouth Electrical Mechanical Services was established. It was important to make clear that the company's services go beyond power generation. The division today is now almost as large as the rewind interests, and with a vast amount of its business being generated by offshore trading companies its engineers are trained for repair, inspection and servicing operations both on and offshore. With a natural closeness to the marine industry, demand for its services additionally comes from the marine industry with supply boats frequently entering the port. The company has electrical engineers specialising in undertaking work on the vessels, fault finding, as well as generator and all other electrical work.

Targeting growth over the next 12 months, the partners are looking into the manufacture of bespoke generator packages for the offshore industry. With 13,000 sq ft of space at its facilities the company is well geared towards future expansion into this area. The company has built a new generator package for an offshore platform in the southern North Sea using a Cummins engine as the prime mover and a Marelli 132kw alternator. The package included the design and build of the control panels, installation of wiring and engine management systems, and upon completion the company undertook commissioning, carrying out full load tests having used its own load bank.

Looking to the future, the business is working towards the development of the generator package - setting aside significant investment to ensure the venture is successful. Its focus on manufacture is set to occupy much of its time, alongside the growth of the panel building aspect. The company is fortunate to have developed such a strong business that has a good reputation in the area, supported by the certification that it holds, vital to the industries that it services. That reputation provides the opportunity to develop within new areas without the pressure of promoting those services. Offering a full turnkey solution, from initial designs to full manufacture, to service and repair, the business is gearing up for the push into power generation with new builds, servicing of the old systems, and upgrades to existing systems. O&G

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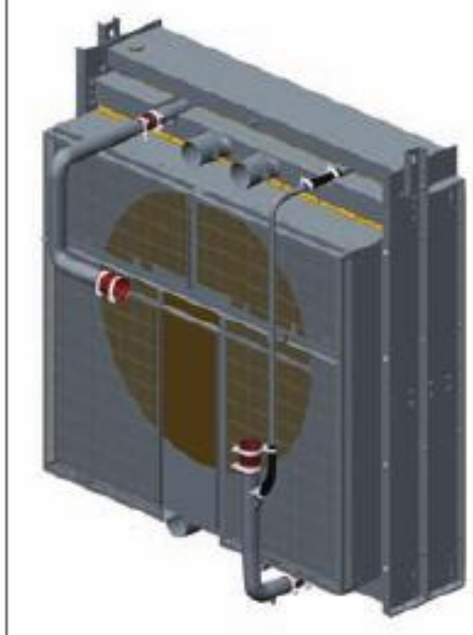
Yarmouth Rewinds Limited
yarmouthrewinds.co.uk

Services
Repair facility specialising in hazardous area motor and generator repairs

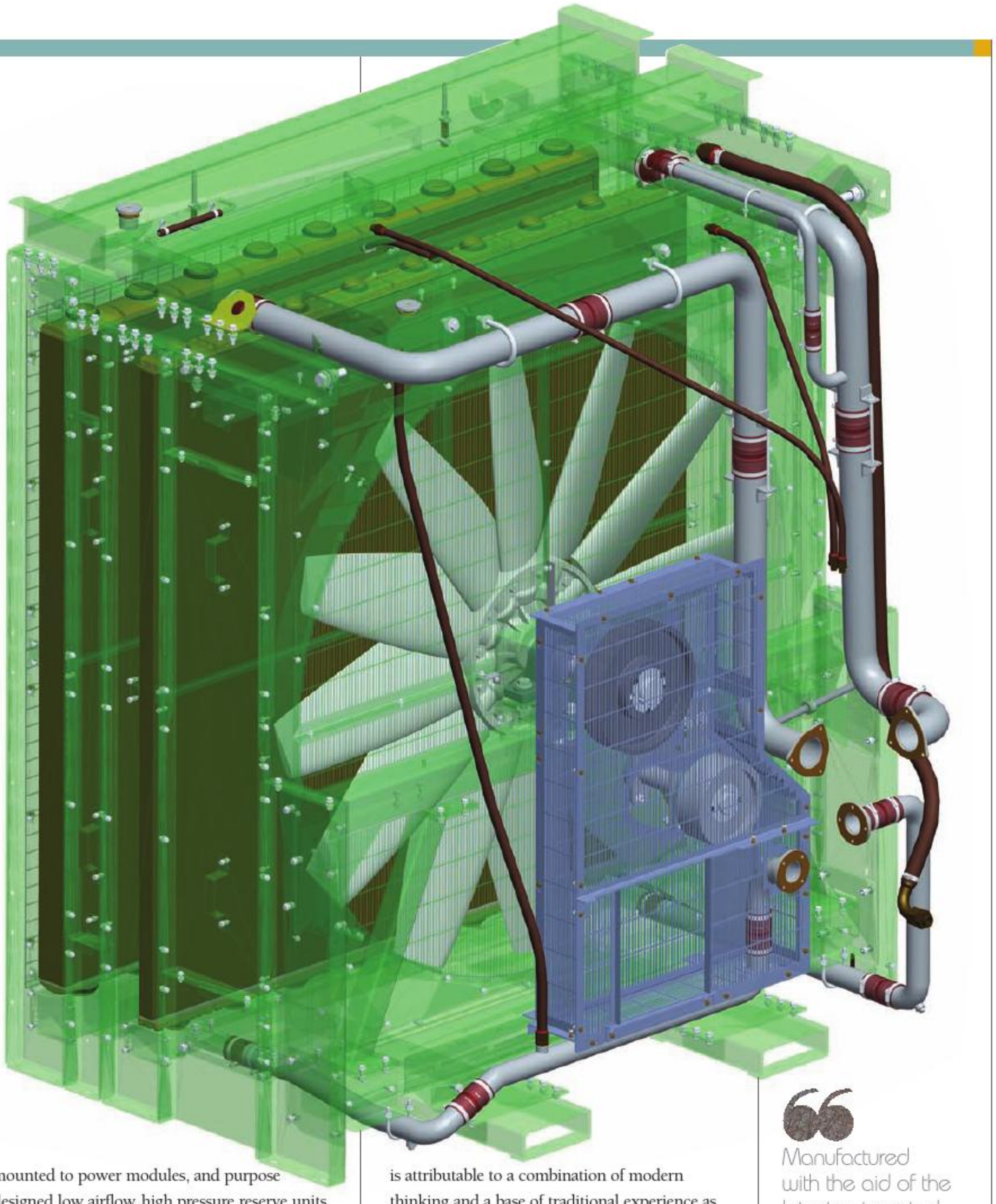
A global presence



With decades of experience and heavy investment in technology, the Wabtec owned company, Bearward Engineering Ltd is one of the largest producers of industrial radiators in the world. Growing annually since it was founded in 1958 the business is now based on a 40,000 square metre site in Northampton, UK. Supplying to the world generating set market, as well as supplying radiators for pumping and construction equipment, off highway, and other specialist equipment, the business manufactures over 35,000 radiators a year with a turnover of £50 million.

In an industry that has seen increasing requirements in the reduction of noise and emissions pollution, the business puts great emphasis on innovation and technical expertise. Leading the way for the industry, it has developed a new range of sectional radiators that provides customers with the most advanced range of cost effective material, backed by the worldwide and immediate after sales support. The applications and installations of the products are many and varied, from engine

O&G



mounted to power modules, and purpose designed low airflow, high pressure reserve units for high acoustic applications, and as such, Bearward manufactures a range of radiators to cool engines from 500 KW to 3MW including conventional jacket water radiators and water/charge-air configurations.

The company works closely with a large customer base covering the main manufacturers in the power generation and construction market such as Caterpillar, Cummins, MTU, Mitsubishi and SDMO. Recognised as a leader in innovation, the success of the business is attributable to a combination of modern thinking and a base of traditional experience as UK sales manager Matthew Eggleton explains: "Bearward has a number of old-school engineers combined with modern technology, which allows us to be very quick to market with new designs/bespoke applications. We have developed a product, which allows on site serviceability for any size of engine, and which is also designed to eliminate the failures associated with thermal expansion within cooling systems – this is our innovative sectional core solution."

Sectional radiators give huge benefits to O&G

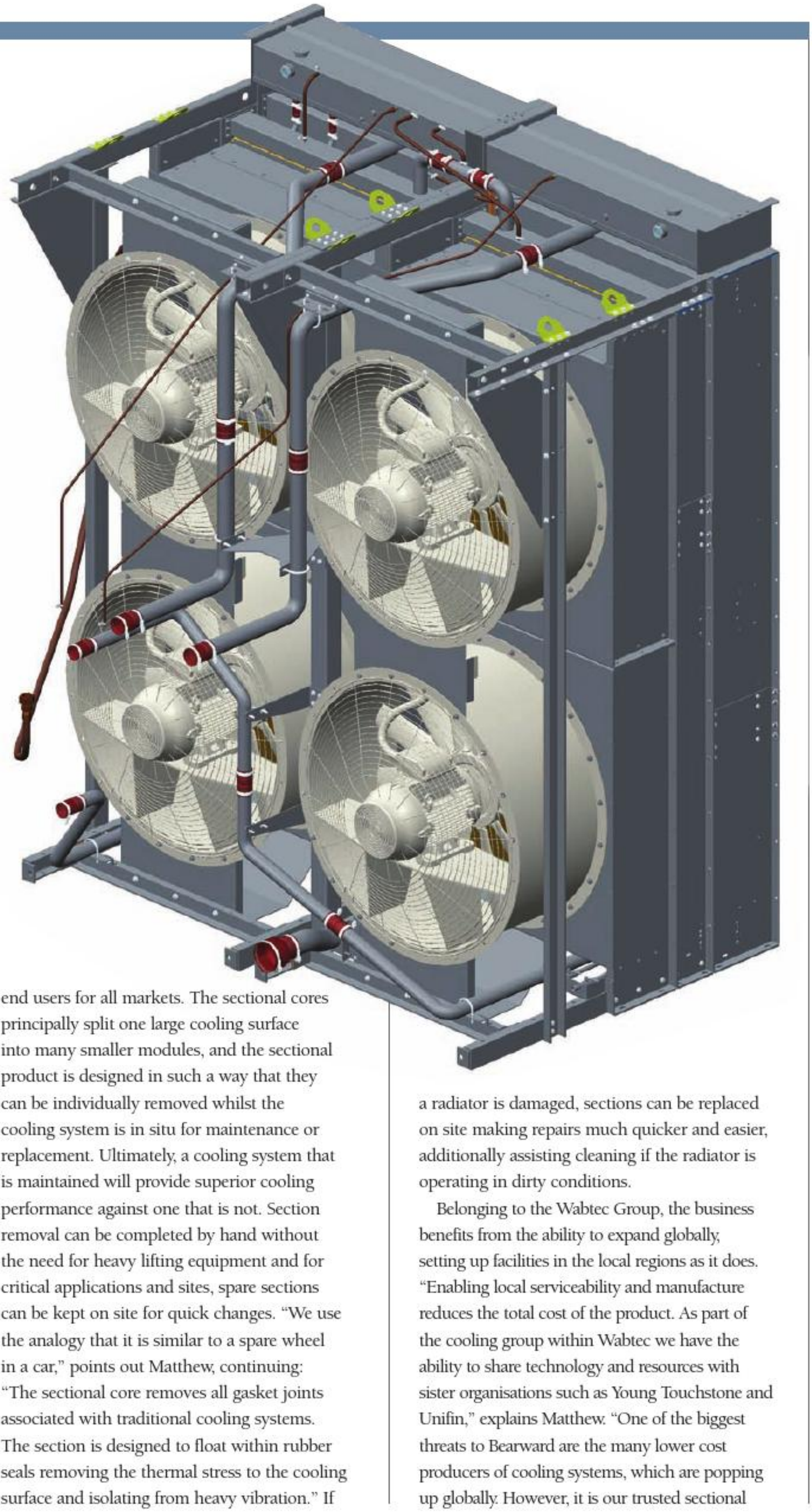
> Manufactured with the aid of the latest automated processes, quality is absolutely consistent, and Bearward's sectional radiators give the highest levels of process control

KNIGHTS OF OLD

Being strategically placed in the Midlands with an extensive transport network ensures there are no real geographical limits to our export packing offering. Servicing clients across the UK we provide a consultative approach to your packing requirements in the early stages of discussion and provide quality right through to delivery. We understand the dynamics and demands of the oil and gas industry and work with our customers to provide them with a timely solution to their deadlines. Our forwarding department also enables us to offer an integrated solution. We look forward to working with you.

MULTI-WING

Multi-Wing is the world leader in the manufacture of bespoke axial impellers serving the radiator and engine cooling segment. For over 50 years Multi-Wing has grown its series of industrial axial impellers into the most extensive product range with diameters extending from 200mm to 2500mm. State-of-the-art engineering and outstanding service levels mean Multi-Wing's customers receive the best support and delivery time in the industry. It is this level of support and delivery that has made Multi-Wing UK the preferred supplier of impellers for Bearward Engineering.
For the oil and gas sector Multi-Wing offers an Anti-Static Polyamide blade material providing the ideal solution for explosion proof environments, with fully certified impellers for use with the ATEX Directive 94/9/EC and Machinery Directive 2006/42/EC.



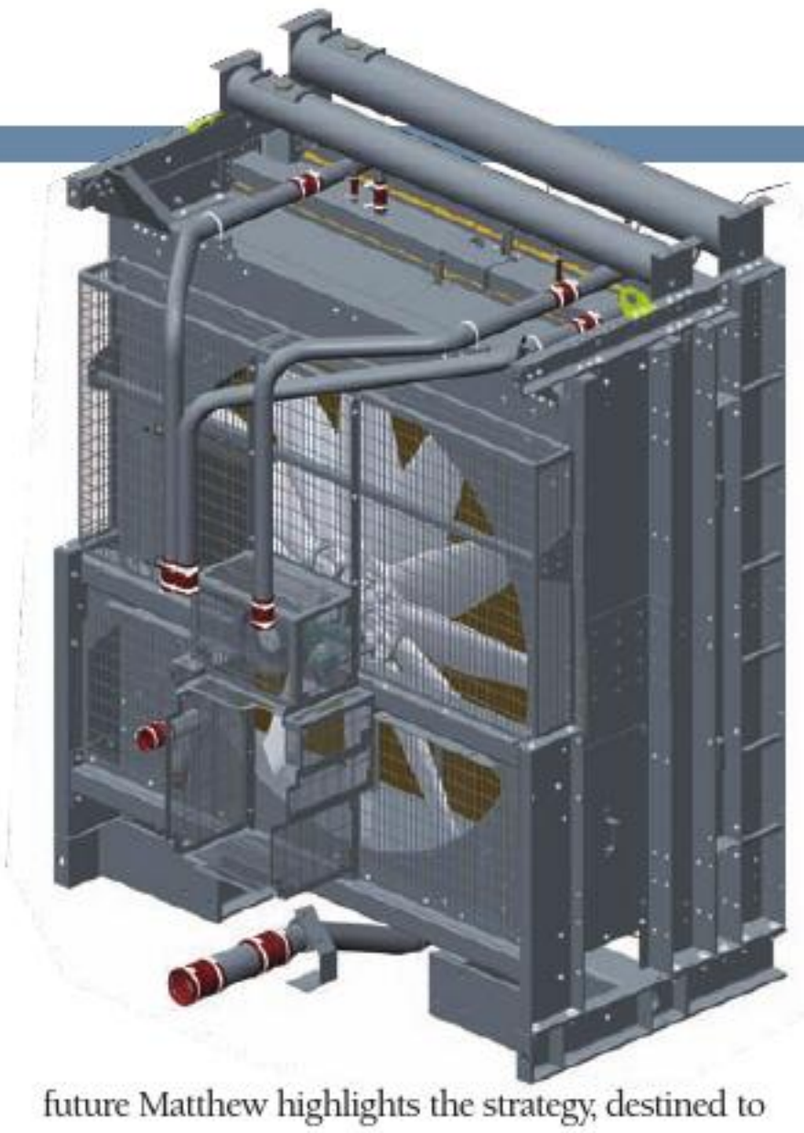
end users for all markets. The sectional cores principally split one large cooling surface into many smaller modules, and the sectional product is designed in such a way that they can be individually removed whilst the cooling system is in situ for maintenance or replacement. Ultimately, a cooling system that is maintained will provide superior cooling performance against one that is not. Section removal can be completed by hand without the need for heavy lifting equipment and for critical applications and sites, spare sections can be kept on site for quick changes. "We use the analogy that it is similar to a spare wheel in a car," points out Matthew, continuing: "The sectional core removes all gasket joints associated with traditional cooling systems. The section is designed to float within rubber seals removing the thermal stress to the cooling surface and isolating from heavy vibration." If a radiator is damaged, sections can be replaced on site making repairs much quicker and easier, additionally assisting cleaning if the radiator is operating in dirty conditions.

Belonging to the Wabtec Group, the business benefits from the ability to expand globally, setting up facilities in the local regions as it does. "Enabling local serviceability and manufacture reduces the total cost of the product. As part of the cooling group within Wabtec we have the ability to share technology and resources with sister organisations such as Young Touchstone and Unifin," explains Matthew. "One of the biggest threats to Bearward are the many lower cost producers of cooling systems, which are popping up globally. However, it is our trusted sectional

product and global manufacturing ability that ensures we can keep these threats at bay," he adds.

Renowned worldwide for its customer service, Bearward remains focused on its clients beyond the point of purchase, offering its comprehensive world-wide aftercare service. As part of its fast and efficient response to all service and repair issues on a global level, all parts are supplied with full warranty promoting the quality and reputation the company has worked hard to build. "We have state-of-the-art R&D facilities that are continually sharing data within the group, which ultimately supports new developments," says Matthew. The most recent introductions are aluminium sectional radiators that have a direct cooling performance and dimensions to the copper brass sectional product.

Manufactured with the aid of the latest automated processes, quality is absolutely consistent, and Bearward's sectional radiators give the highest levels of process control. Beyond the continuous and targeted developments of the product line, as the company looks towards the future Matthew highlights the strategy, destined to ensure that the next five years will be as positive as the last few decades: "Our aim is to keep a heavy focus on pushing our global presence, setting up local sub assembly and service locations, effectively complementing and supporting our continually improving portfolio." OGC



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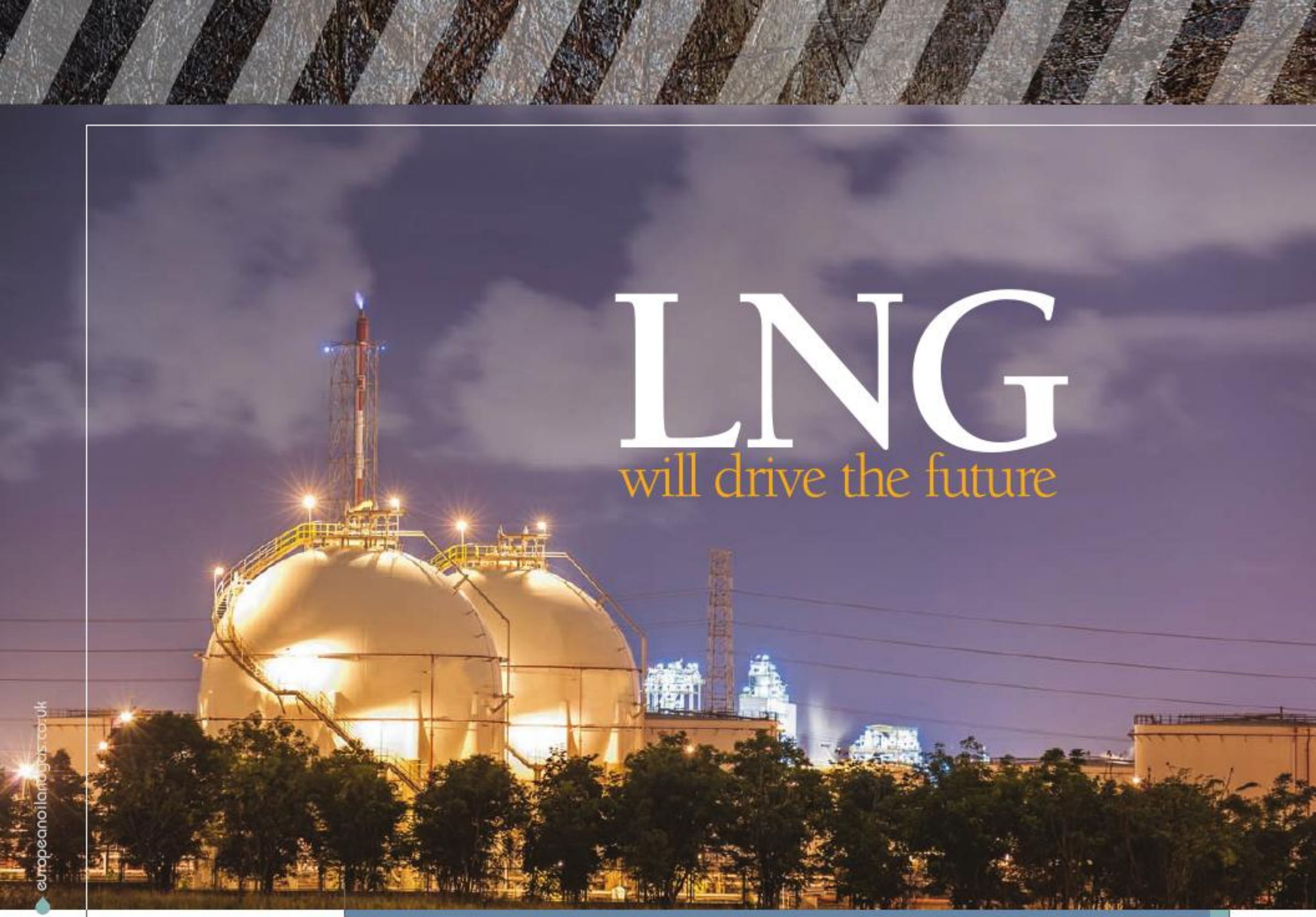


LNG will drive the future

Cryogenic LNG-valves from HEROSE are tight even under extreme conditions according to EN ISO 10497. From 1st January 2015, drastically reduced emission limits will apply for shipping in certain special zones. For example, in the entire Baltic, parts of the North Sea including the English Channel, as well as in front of the coasts of North America, the proportion of sulphur in marine fuels must not exceed 0.1 per cent - which corresponds to a tenth of the limit that applies at present.

One way to comply with these limits is to operate ships with LNG (Liquefied Natural Gas). LNG contains neither sulphur nor heavy metals and reduces the CO emissions by 20 to 30 per cent and the NOX emissions (nitrogen monoxide and nitrogen dioxide) by approx. 90 per cent compared to fuel oil.

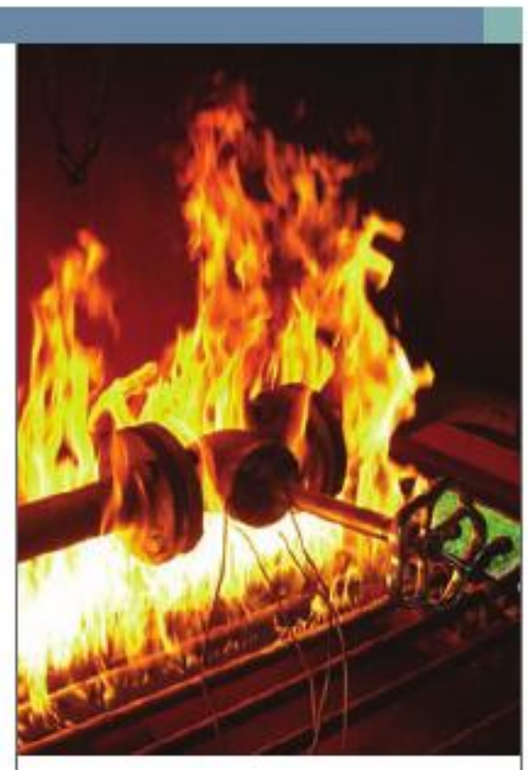
Although there are still gaps in the development of an LNG infrastructure with full coverage and there is not yet a sufficient number of bunkering points for ships, the future belongs to the construction of LNG-operated ships. For example, two major car ferries were launched by the Norwegian Fjordline shipping company on the route Bergen-Hirtshals in 2013. In the

design of these new constructions safety topped the agenda - after all, every ship carries up to 600,000 cubic metres of fuel gas.

A major contribution was provided by the valves of the HEROSE company in Bad Oldesloe. With its safety and globe valves HEROSE is a globally leading supplier in the field of LNG. Pneumatically actuated valves fitted with an additional hand wheel for emergency control, for example, the filling of the tanks in the new ships of Fjordline, and HEROSE safety valves are fitted to all gas pipes, one between every two globe valves. The HEROSE globe and control valves are also available in a firesafe design.

As a leading manufacturer of fittings for cryogenic technology and pressure vessel construction, for more than more than 140 years HEROSE has dealt with the safe handling of technical gases, vapours and liquids. Certificates from classification societies such as 'Det Norske Veritas', for example, confirm the adherence to the most stringent standards. Already in 2007, TÜV approval in accordance with EN 12567 was obtained for the stainless steel cryogenic valves. This standard defines the general requirements for the suitability of globe valves used in the manufacture, storage and transportation of liquid natural gas. Special attention was paid to the standard reference to the fire resistance test in accordance with EN ISO 10497, which must be performed upon customer request. This international standard defines the requirements and methods for the evaluation of the functionality of valves exposed to a fire under defined conditions. The fire duration was defined as the maximum time required for extinguishing most fires.

HEROSE currently views the market as divided into two sections. On the one hand, fittings with fireproof approval are generally required for ships and LNG terminals, i.e. the valves must have been approved in accordance with EN 12567 and EN ISO 10497. On the other hand, the fittings need only have EN12567 approval for the remaining onshore installations. Dependent on the operator's safety concept, isolating valves with fireproof approval are, however, also used. As a consequence there must be a smooth transition between the two requirements (EN 12567 approval or EN ISO 10497 approval) and a clear separation is not possible!



Worldwide focus

The family owned business

Van Aalst Group began in the 1950's, and is today fronted by the third generation of the family. Today the company specialises in the pneumatic cargo handling of machinery, equipment and its development for transport and distribution to the marine, offshore and construction industry. Initially in the market of cement handling from its location in Holland it subsequently became involved in the import of cement, working at shipyards. Recognising that the concepts behind the products it developed to move the cement from ship to shore could be used in other industries, its scope of work began to diversify.

In a period of restructuring and focus the business entered the offshore industry, developing products for installation on supply vessels and expanding its capabilities. "The cement industry is a relatively small market in comparison with the scale of the offshore industry. We wanted to develop a different type of product, which can handle multiple cargos. It was in 2007 that we developed the CargoMaxx division, which has ultimately led to more than 50 orders in supply vessels, witnessing a growing demand from the drilling market, picking up orders for large drilling rigs," says Jeroen Van Lakerveld, commercial director.

The core business is the engineering and enhancement of cargo handling systems aiming for ultimate operational safety, maximised availability and efficiency, at minimum cost. Driven to achieving a more effective use of vessel and cargo capacity, reduced berthing times, plus faster, easier and safer cargo loading/discharging procedures it has saved operators time and money while performing substantially more environmental-friendly procedures. The demand for its products has grown from the requirement to move waste products with a higher degree of safety and flexibility.

Research and development (R&D) is the backbone of CargoMaxx and Van Aalst's continuous growth and success. Its highly skilled, field experienced engineers have tailored the products to the specific demands of clients. From the R&D centre, based at Van Aalst's headquarters in the Netherlands, it works on a variety of products and innovations, including state-of-the-art sustainable machinery and equipment that requires less complicated maintenance cycles. With this in focus, the business constantly monitors the machineries and liquid and dry cargo systems, striving to optimise the performance and endurance in harsh or even arctic environmental conditions.

"We have been able to utilise our knowledge to develop innovative products for different markets. Our focus is on providing solutions

to oil companies and ship owners, offering a product that is environmentally friendly and safe," points out Jeroen. Through an operational history that has encompassed Europe, Asia, the US and Brazil, the business has seen varying trends. "The thriving market in China is currently pushing cost down, and as a European company labour expenses are higher than those competitors so we have to remain very cost efficient whilst ensuring that the products we supply are of a higher quality.

"In 2012 we established an office in Houston, which resulted in picking up contracts from the large oil companies and rig owners with offices located in the region. These companies also have technical offices in Singapore, China and Korea. On the back of the contracts we had won in the Asian region we took the decision to open up an office in Singapore," he adds. For several years the business has traded in Singapore, recognising the important position in serving the offshore market. As a hub for many supply vessels, ship owners and shipyards, it is a base from which a lot of engineering work is carried out. As well as these benefits the move brings ease of communication, and brings the shipyards into direct contact with the trade that enters the region, complementing the service it provides from its office in Shanghai.

Continuing the global growth of the business, Van Aalst has expanded its agency network into Turkey on the back of a very good relationship with Norwegian ship owners undertaking fabrication work in Turkey. "The Turkish market is upcoming and we need to be there on the front line. We expect that in the next couple of years Turkey will begin manufacturing its own vessels," says Jeroen. The Korean market too is very important for the business with fabrication of large vessels, FPSOs and drilling rigs in the region particularly high. "We see a lot of potential in the area, but it takes time to establish good relationships and develop enquiries into orders. We are operating in a very niche market, but our strength comes from being an innovative company, delivering products that the client requires. Our latest development is the drill cutting system and this is picking up particularly well. In 2007 we were asked by Statoil and Petrobras to come up with a solution for moving and transporting waste material such as drill cuttings from the rig back to shore," he points out.

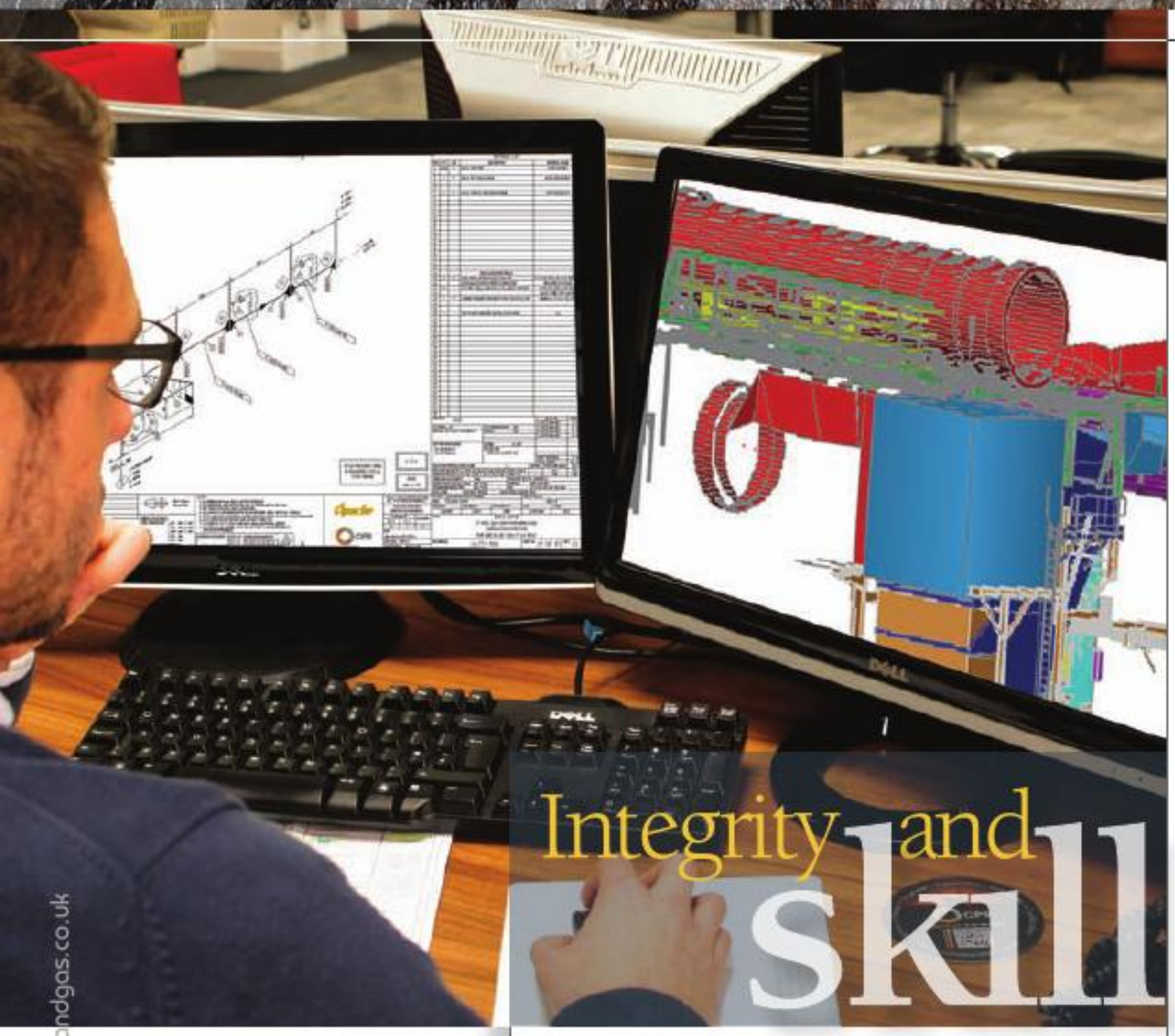
Drill cuttings are a waste product that needs to be recycled within strict guidelines. The material contains different chemicals and materials and as such it is a very difficult material to pump. In normal operation this would be emptied into a skip and hoisted from the rig to a supply vessel. With safety implications relating to the use of the crane, Van Aalst developed its new solution. The pumped solution removes material quickly and in a safe manner. Eliminating manual handling and the use of the crane not only significantly improves the safety aspect, but the speed of the operation means the supply vessel does not have to stay on location for as long.

Promoting its innovative approach to the demands of the industry, the business will later this year be at ONS in Norway highlighting the benefits of it products, capable of storing and pumping high-density solids. Looking ahead to the future, the business is set to maintain its worldwide focus, and continue to develop an array of products. "Our focus remains on driving innovation, developing new technologies and establishing ways of implementing these into new markets. Additionally we are looking to diversify with our existing clients and addressing demands of the continuously growing Asian market. However, the market in Europe is also picking up, and as a result for the next two years we expect to be very busy on a global scale," concludes Jeroen.

> The core business is the engineering and enhancement of cargo handling systems aiming for ultimate operational safety, maximised availability and efficiency, at minimum cost

Van Aalst Group
vanaalstmarine.com

Services
Pneumatic cargo handling services



Integrity and skill

Celebrating its 25th year in operation during 2014, Caledonian Petroleum Services (CPS) has developed a highly trusted reputation as a leading supplier of support services relating to fabrication, project management and manpower services for the offshore industry. The company has performed strongly since its inception and was acquired and became part of the Global Energy Group (GEG) during 2010. The CPS brand was retained and has continued to strengthen its fabrication service with the acquisition of A&B Welding in 2012, and its most recent acquisition of S&D Fabrication as of 2014. Today CPS is able to offer full turnkey solutions in structural fabrication, pipework, site services, offshore services, dimensional control, 3D laser scanning, and design services from three facilities in Aberdeen and a further base in Dunfermline, which specialises in vessel design and fabrication.

Integrity service

CPS differentiates itself from other companies in that it has developed a niche service that targets, support and delivers service operations for older, mature assets. As discussed in Sir Ian Wood's report under the Asset Stewardship Strategy, asset integrity is a primary objective. "The biggest challenge in the UK is in supplying a service in a mature market at a lower cost," explains CPS's Raff Celentano. "We can not keep doing the same thing over and over again and expecting different results."

Trying to apply the usual tools is not cost-effective on mature assets so this becomes the challenge, how you provide support to mature, and lower production assets? "This is where we fit in, we provide a level of support appropriate for that asset. We provide practical solutions to the mature asset market, which has been recognised by Apache. We have worked with them since 2005 and in 2012 we were awarded a contract for a further three years delivered to the company."

By focusing its efforts on meeting the needs of clients managing mature assets that require a 'lighter touch' and a more specialised approach to maintain, CPS has positioned itself as a vital part of the support network within the offshore industry. Raff likens the company's role to that of a mechanic in the automotive industry, saying: "CPS are the mechanics supporting our clients' MOT rather than designing and building the car from scratch, which the larger engineering companies perform excellently. It's about doing what you need to do to maintain integrity."

Through a combination of steady, organic growth and expertise added by its recent acquisitions, CPS is uniquely placed to provide an 'Integrity Service' to ensure that these mature assets remain productive and profitable. For example, during 2012 Global Energy Group amalgamated its specialist survey company, Global Dimensional Controls Ltd (GDC) with CPS, optimising its existing design capability by bringing outstanding dimensional control and 3D laser scanning services under the same umbrella as the company's already comprehensive service portfolio. This was an important development for CPS as it brought several services vital to maintaining mature asset integrity into the company, significantly bolstering its ability to deliver a fully turnkey service.

Dimensional control for example is predominantly used in spool replacement and routing of new piping systems, where an extremely reliable feed of data, coupled with the development of CPS' own software, provides precise lengths for piping as well as flange deviations and bolt hole rotations. For the client dimensional control delivers a host of benefits including accurate tie point information to guarantee first time fit, clash free routing of new piping and structural systems, the elimination of 'hot work, the ability to be carried out while the plant is live and the prefabrication of replacement parts greatly reducing shutdown times. Furthermore, the 3D laser scanning technology brought into CPS by GDC Z+F HD Scanners, can survey 50.5 million points, with a range of up to 80m, in less than seven minutes. Scans can be co-ordinated and stitched together to form a 360° master cloud point database

that can be used alongside existing software to provide comparison between design and as-built, making the technology useful in both design and diagnostic roles. It can also be integrated with AutoCAD to facilitate modeling alongside the scan information.

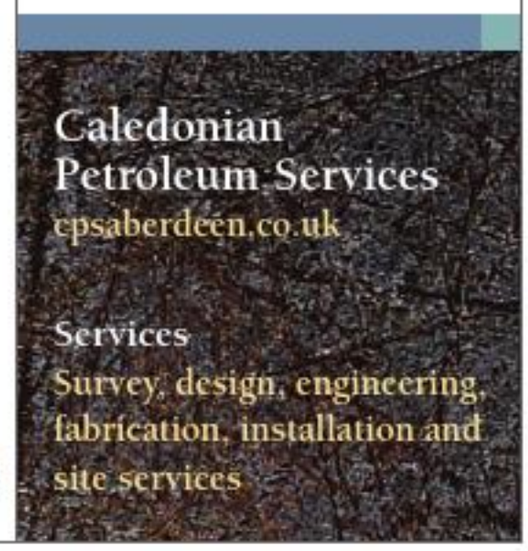
Building the skills

At the core of the business is a strong belief in the investment in the technical skill of its staff, both for today and of tomorrow. "As we have grown we have always made a strong point of ensuring that we have the right resources," says Raff. "We have always had a very strong fabrication apprenticeship scheme and take on around six fabrication apprentices each year in what is a very robust programme. Additionally, we have a strong relationship with the Prince's Trust and became heavily involved in its 'Get into Oil and Gas' programme. We first became involved around a year and a half ago in helping disadvantaged people through the programme and a number of them are now going through our apprenticeship scheme."

In an industry first, CPS in partnership with Scottish Credit and Qualification Framework (SCQF) has also established the CPS Academy, which is notable in that it is the first and currently only organisation to have a training programme accredited by a university as a third-party partner. "We have recently looked into one of the key elements of integrity, which is survey," Raff elaborates. "With the support of SCQF we have developed a qualification for offshore oil and gas survey sector, which has been accredited by the Robert Gordon University in Aberdeen. This is the first time they have accredited a third party course and we are very proud of that."

As CPS moves forward into the future it will continue to develop the academy and its services and ensure that it has the right skill-sets to carry the business well into the future. The company's progressive attitude towards training and career development has earned it a retention rate of 92 per cent amongst its staff, and the CPS Academy is an industry defining first that is sure to influence the direction of offshore training in the future. With such a forward thinking philosophy engrained into the business, it is unsurprising to think that CPS has a very bright future indeed. OEG

> Through a combination of steady, organic growth and expertise added by its recent acquisitions, CPS is uniquely placed to provide an 'Integrity Service' to ensure that these mature assets remain productive and profitable



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Quality delivery

Established during the economic crisis in 2007 and beginning operations in 2008, Marine Delivery Pte Ltd (MDPL) has developed an impressive portfolio of clients within the shipping and offshore industries over the last six years. Indeed, by combining strengths such as the professional competency and long-term experience of its employees with a diverse fleet of high quality, new generation vessels, the company has gained a reputation for excellence and a core customer base within the Asia Pacific as well other strategic regions around the world.

Discussing the inception of MDPL, CEO & managing director Amandeep Singh begins: "Marine Delivery was established in Singapore in 2007 and laid its foundation on ship chartering, thus building an impressive portfolio of clientele from within the Asia Pacific and other regions across the globe. Despite the global downturn from the time of inception, having competent and focused hands over its helm since the beginning has enabled the company to stand tall amongst the well-established organisations in the industry as an owner and operator of a diverse range of new generation vessels/ships."

With a globally recognised team of experts capable of operating in all maritime disciplines, MDPL has offered a diverse range of offshore marine assets, either from its own fleet or its managed/chartered assets to oil majors. As a provider of a 24/7 high-quality, global service, the company possesses the in-depth knowledge of critical business areas such as commercial, legal, offshore logistics, health and safety, offshore standards and the requirement/technical aspects surrounding mobile equipment use for exploration, development and production of offshore oil and gas reserves to ensure all challenges are met.

"Chartering had remained a core strength for the company and West Africa has been a key focus area where, alongside associate companies, we achieved optimal performance of operations and continuous/multiple long-term contracts since 2009. We have explored the region extensively, with a notable amount of activity in Nigeria, through our associated company CS-Offshore.com. Furthermore, one of our new vessels has commenced operations in Angola with the State Oil Co of Angola, so we are looking into establishing a base there as well."

Having gained a proven track record for the operation of vessels on long-term charter for accommodation service/subsea construction support units, AHTS, ASDs harbour tugs, PSVs and MPSVs, the company has further strengthened its superior service endorsing two 4000 DWT PSVs: MDPL Randeep and MDPL Anjali. Delivered in June and August respectively, the two vessels were designed and built specifically to ensure the safety of all personnel working on an oil field or offshore installation; to ensure safe and successful operations, these multi-role vessels surpass the stringent emergency response/safety requirements of the oil and gas industry while providing innovative

solutions to clients. For example, the SPS 2008 and MLC 2006 compliant MDPL Randeep is the first safety, standby, rescue (SSR) multi-role vessel with class approved survivor rescue facilities. Already operating in Angola, the vessel is proving highly advantageous to oil majors, who can not only be confident of their ability to rescue personnel should an incident occur, but also benefit from the protection of a high wall deck, which protects cargo and other equipment from harsh offshore environments.

Elaborating further on the success of MDPL Randeep, Amandeep highlights: "Having arrived in West Africa recently, MDPL Randeep was very well received by oil companies, and has been welcomed with much appreciation of the modern and versatile design of the vessel with her enhanced features and multi-role/ flexible capabilities – for PSV supply roles, accommodation support (SPS), undertaking ROV/deepwater inspection duties and complete SSR. The multi-functional vessels are innovatively designed and operated to fulfill the performance requirements of the oil majors and to meet the much-emphasised safety aspects of offshore operations - by offering one full deck dedicated to its SSR/ERRV capabilities with special features for evacuation and receiving personnel working on offshore installations."

Sister vessel MDPL Anjali, meanwhile, is on her maiden voyage to Singapore, where it is anticipated she will generate as much attention as MDPL Randeep. "Built for care and performance, these vessels with their cutting-edge designs have set high standards for the industry, exceedingly meeting the diverse demands of the OSV market," enthuses Amandeep. "Having undergone major modifications and upgrades to the basic/original design on the duo, the vessels stand out to be highly sophisticated vessels as we see today, and the pair are proving to be incredible competition for many of our competitors in the market." Indeed, by enhancing safety and care levels for the personnel on offshore and oil fields, MDPL's groundbreaking new vessels are certain to be a catalyst in the way current operations are being conducted in oil fields, particularly in South East Asia and Africa.

Despite being a relatively young company within the shipping industry, the self-sustaining and independent firm's decision to begin operations during the economic crisis has left it wholly prepared to face challenges through the delivery of competent, effective solutions and high quality vessels. "We laid the foundation of MDPL in a fallen market environment for a brighter future, which meant we had nothing to lose as the market had already fallen; however it also meant we had the burden of establishing ourselves and raising the company under such circumstances. Thus the company straight from inception has learnt to be self-sustaining and to grow independently. The company has continued to rise in a fallen market and is in a good position to grow," says Amandeep

Having grown year-on-year, the company is looking to strategically develop a stronger presence in booming oil and gas areas; it will also continue growing its fleet with high quality vessels that can contribute to the safety of personnel while adding value to operations, as Amandeep concludes: "Headquartered in Singapore, we are at a disadvantage to competitors who are established in such countries and are therefore enjoying first right of refusal. We need to step out with new establishments in strategic countries with local partners in order to have both long-term and firm business expansions. We will also be spending some time with various shipyards and naval architects to ensure our future vessels are well suited as much as possible to absorb the downturns should there be any in the future." O&G

> The multi-functional vessels are innovatively designed and operated to fulfill the performance requirements of the oil majors and to meet the much-emphasised safety aspects of offshore operations

Marine Delivery Pte Ltd (MDPL)
marinedelivery.com.sg

Services
Niche support to the infrastructure sector

Grand designs

Above
Laggan Tormore, MEG package; pre-treatment unit

Below
Quad 204, sand clean up package being loaded onto transport at Buckie. Complete package of 19 tonnes designed, built, fully assembled and packed for shipping

With a history dating as far back as the 1890's, the Forsyths Group has diversified and expanded its services to retain its renowned reputation as a designer and manufacturer of tanks, pressure vessels, skid units and pipework for the oil and gas industry. Officially established by tradesman and foreman Alexander Forsyth in 1933 under the name A. Forsyth and Son, the family operated group today is now in its fourth generation and boasts a broad portfolio of experience in the Scotch whisky, paper, oil and gas, and the pharmaceutical industries; moreover, it developed its expertise in carbon and stainless steels, progressing into exotic metals such as titanium and super duplex. This constant drive for diversification and reinvestment has resulted in ongoing success for the company as well as a strong reputation within the industry for delivering a superior service.

As a trusted supplier of steelwork and piping solutions to the beverage and oil and gas industries, Forsyths benefits from state-of-the-art load out facilities at its dockyard in Buckie as well as its dedicated clean room facility in Rothes, North East Scotland. To strengthen its capabilities and meet the future demands of the buoyant oil and gas market, the company invested in a £3.3 million manufacturing expansion project in 2012. This development means it can now successfully meet the needs of its existing customer base, while also being fully prepared for increasing significant international interest. Indeed, with strong demand growing in areas such as Canada, the US, Brazil, Japan, Thailand, Korea, Singapore and South Africa, the company has spurned complacency and continued the momentum it has gained, with investments reaching more than £5 million in total over the last five years.

Notwithstanding these notable developments, Forsyths has been keen to further expand its operations in its Buckie facility, which will thus enable it to remain competitive in the future North Sea renewable and offshore markets. Discussing the ongoing enhancements of the company and its facilities since it was previously featured in *European Oil & Gas Magazine* in September 2013, chairman Richard Forsyth senior begins: "Forsyths continues to reinvest in several areas; we aim to purchase further property in Rothes and more significantly in Buckie where a further fabrication unit is planned for quayside enhancements. There is also a focus on the continued recruitment and training of staff; this will involve the establishment of an in-house welding and pipe fabrication school. Meanwhile, we will also modernise our existing workshops and plant, which will include the addition of state-of-the-art cutting and welding machines. On top of this, we will of course remain committed to exceptional health and safety standards in the workplace."

Boasting an enviable roster of blue chip customers in the oil and gas industry, Forsyths' most recent projects include its biggest to date, supplying Petrofac and Cameron on the Laggan Tormore field. Discussing this major project, Richard states: "The skid packages produced for the Laggan Tormore project in Shetland has been, by far, Forsyths' biggest single contract to date." The scope of the project grew substantially through the contract's duration in areas such as the physical size of the packages and commercial value; this created a number of challenges for Forsyths. For example, we had to accommodate for the extra space that was required and also had

to resource the appropriate skilled tradesmen. Despite these issues, these requirements were achieved and reports from the site commented on the high quality of workmanship; many lessons were learned through this contract and we now have a much stronger and more efficient base, particularly in the quality control and documentation department."

Proud to provide satisfaction through the utilisation of long-term experience, quality workmanship and punctual delivery, the company has recently successfully fabricated equipment and structures for the BP-operated Quad 204 project on the Schiehallion field and is currently in the finishing stages of a major contract for repeat customer MI Swaco on the Hebron Field, Norway. "Our contracts for BP's Quad 204 and Norway's Hebron Field, much via MI Swaco, were made up of similar type skid package work, but also included a huge pressure vessel for Hebron; this was manufactured in duplex material and fabricated in our modern, 'clean', workshop in Rothes. It weighed approximately 40 tonnes and was ideal for our new facility, which has a capacity of 80 tonnes."

Just one example of how the ISO 9001:2008 certified company's major investment into facilities has proven worthwhile, the successful MI Swaco project required the use of Forsyths' 900 square metre dedicated clean shop, which is used for exotic materials such as titanium, duplex and super duplex; it is set up as a carbon free environment with dedicated welding plant.

As the oil and gas segment of the business continues to witness steady growth with a new contract from Siemens Norway for the construction of three skid packages, the distillation segment has also witnessed noticeable demand from Asia and North America due to growth and major investments in the industry. Moreover, with the development of the West Coast fields and the emergence of fracking in the US and potentially the UK, the future looks positive for Forsyths as it continues to adapt itself to the demands of its customers. O&G

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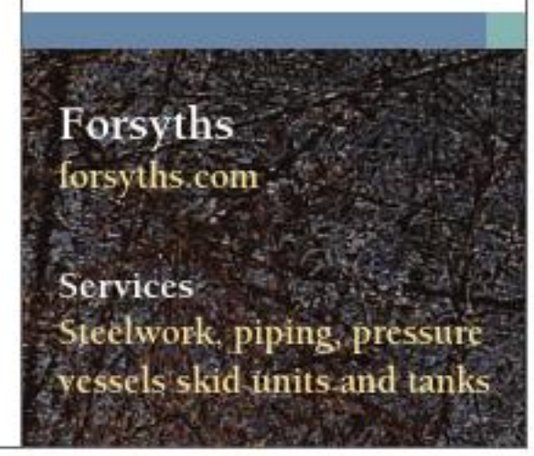

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From Immediate Stock...

NEW STOCK RANGE

Condition H1025
ASTM A564 GR.630-H1025
AMS 5643-H1025 EN10088-3 P1070

Round Bar

Metric	Imperial
15.88	0.625
19.05	0.750
22.00	0.866
22.23	0.875
25.40	1.000
28.58	1.125
31.75	1.250
34.93	1.375
40.00	1.575
44.45	1.750
50.80	2.000
57.15	2.250
63.50	2.500
70.00	2.756
76.20	3.000
80.00	3.150
82.55	3.250
88.90	3.500
101.60	4.000
114.30	4.500
127.00	5.000
139.70	5.500
152.40	6.000
165.10	6.500
177.80	7.000
190.50	7.500
203.20	8.000
228.60	9.000
254.00	10.000
279.40	11.000
304.80	12.000

Condition H1150 + 1150
ASTM A564
GR.630-H1150D

Round Bar

Ø12.7 (½")	To	22.23 (7/8")	h9
Ø25.4 (1")	To	120.65 (4¾")	k11
Ø127 (5")	To	304.8 (12")	-0/+1mm
Ø330.2 (13")	To	510 (20.1")	-0/+2mm

Condition A
Solution Annealed
AMS 5643 & A564 GR.630

Round Bar

Ø12.7 (½")	To	22.23 (7/8")	h9
Ø25.4 (1")	To	120.65 (4¾")	k11
Ø127 (5")	To	304.8 (12")	-0/+1mm
Ø360 (14.2")	To	460 (18.1")	-0/+2mm

Using our high quality heat-treatment facility, we can have our solution annealed bar & plate precipitation hardened to any of the below mentioned conditions. We then conduct tests for the mechanical requirements of the specification and issue full heat-treatment & testing certification.

Plate
Hot/Cross Rolled, Solution Annealed, Descaled, Pickled ASTM A693 & AMS 5604. Cold-sawn or water-jet cut to size.

Thickness

Metric	Imperial
4.0	0.157
6.0	0.236
8.5	0.335
10.5	0.413
13.0	0.512
16.0	0.630
20.0	0.787
26.0	1.024
32.0	1.260
40.0	1.575
60.0	2.362
80.0	3.150

Mechanical Properties

Heat-treated Condition	Rp0.2 (min.) Yield strength Proof stress	Rm (min.) Tensile strength UTS	Hardness HRc	BHN
H1150D (H1150+1150)	725MPa/105KSI	860MPa/125KSI	24 to 33	255 to 311
	Note: Our material is tested to 930MPa/135KSI min. on tensile strength requirements.			
H1150M (H1400+1150)	520MPa/75KSI	795MPa/115KSI	24 min.	255 min.
H1150	725MPa/105KSI	930MPa/135KSI	28 min.	277 min.
H1100	795MPa/115KSI	965MPa/140KSI	31 min.	302 min.
H1075	860MPa/125KSI	1000MPa/145KSI	32 min.	311 min.
H1025	1000MPa/145KSI	1070MPa/155KSI	35 min.	331 min.
H925	1070MPa/155KSI	1170MPa/170KSI	38 min.	375 min.
H900	1170MPa/170KSI	1310MPa/190KSI	40 min.	388 min.
Condition A	n/a	n/a	n/a	363 max.

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Inspector calls

Imes is an international engineering company providing integrity management services, which enables its customers to maintain the capability and availability of cranes, lifting equipment and specialised structures. As part of a group of companies working throughout the world within the oil and gas, marine and shipping, defence, nuclear, petrochemical and construction industries, it is responsible for the provision of a whole range of integrity management products and services.

The business developed out of the establishment of Water Weights, the originator of the water-filled proof load bag used to proof load testing cranes and other lifting equipment. Since its birth in 1979 a host of other companies have joined the group, complementing the provision of the full range of solutions. The services extend from bespoke offshore engineering services, through to providing a broad range of waterfront engineering support services. The dominance of the organisation has grown to a worldwide position, with offices in the UK, the US, and a network of agents operating across the globe.

Holding a competitive edge in the market place, the business offers four essential services, that when pulled together provide its clients with a one-stop service. It offers lifting and crane inspection, professional engineers to assist with integrity issues and solutions, manufacturing capacity to design and produce world class load cells and load pins to fully integrated load monitoring and measuring systems. Peter Smith, product sales manager previously explained: "Our integrity engineering has allowed us to develop tools for riser inspections and for subsea electrical testing, which is like no other in the world. Our independence means that clients will get a balanced view on assets and they respect our advice."

Delivery of the inspection of cranes and other lifting equipment, carrying out examinations, certification, inspections, tests, repairs and maintenance for fixed and loose lifting equipment ensures compliance with Lifting Operations and Lifting Equipment Regulations (LOLER) and other statutory regulations. In addition to lifting certification, Imes also O&G

develops written schemes of examination to support risk-based inspections for cranes and other lifting equipment, investigate accidents and resolve any anomalies that arise.

Much of Imes' work is carried out using Non-Destructive Testing (NDT) and Non-Destructive Examination (NDE) techniques, such as the acoustic emission, condition monitoring magnetic particle inspection and dye penetrant inspection, eddy current inspection and ultrasonic testing. The business has a large team of qualified inspection engineers capable of mobilising internationally to provide its services. Providing specialist advice on lifting equipment regulatory compliance is second nature to the business, and by conducting examination of fixed and loose lifting equipment it can ensure its clients are in keeping with LOLER and other statutory regulations. The inspection service provided includes offshore capability drawn from Buchan Inspection, a subsidiary company, renowned within the oil and gas market.

Testing is an important tool in asset assurance, and the ability to accurately advise its clients in safety and extending the working life of their assets has proved the company's success. Investing time and money training its technicians from its six UK offices ensures the business has the right mix of experts. Combined with other disciplines such as rope access its clients benefit from the substantial offering. The company also has an NDT system that detects internal flaws in wire rope. When used in conjunction with the wire rope pressure lubricator, Viper, it delivers a complete wire rope management service.

Operating in a potentially dangerous environment, the lifting equipment industry requires the supply chain, from users to suppliers, to ensure crane and lifting apparatus is compliant with the most relevant and up-to-date legislation for the region of the world or industry. The business prides itself on its awareness of current and impending legislation and aims to be the trusted source for its clients, and has designated Technical Authorities within the company that provide internal and external points of contact on regulatory matters to help guide inspectors and clients towards compliance. Using its own certification management database, SmartCert, the company records all examinations, inspections, tests, repairs and maintenance programmes, and also provides notification of when further work is required to ensure continued compliance. The SmartCert system has full web access, enabling clients to access inventory, defect reports, location data and overall equipment status.

Imes has a wealth of project experience gained from many different industry sectors across the world and its team can bring together this experience to deliver the very best solution for its clients' problems, from cranes to lifting equipment to structural problems. With a projects portfolio ranging from Naval aircraft carriers through to offshore oil and gas platforms, the business has a competence and capability to deliver, which is well recognised by both present and future clients. Within the oil and gas industry the company has worked with customers such as AMEC, Petrobras, Petrofac, Shell, Statoil and Subsea 7, with experience in winch testing, riser in haul instrumentation, lifting equipment inspection, design verification of cranes, subsea meggering, electrical integrity testing and load monitoring systems. As a major player in its field, it has also gained a wealth of experience building and developing instrumentation systems to support the integrity of offshore wind towers with a service capability that extends beyond its renowned provision.

An impressive 14 per cent increase in turnover year-on-year has been achieved as a result of a series of contract wins, which included projects in Southampton and Plymouth. For one of the projects, Imes provided consultancy services relating to the design, production, installation and testing phases for four ship-to-shore cranes at Port of Southampton, which is owned by Associated British Ports (ABP). In addition, the company supported engineering provider Houlder in completing an overhaul of landing craft vehicle personnel (LCVP) and seaboat davits on HMS Ocean, the Royal Navy's largest warship, at Babcock's Devonport Royal Dockyard at HM Naval Base, Plymouth. The raft of contract wins helped the business report a rise in turnover from £7 million in 2013 to £8 million for its April 2014 year-end. Commenting, Farrell Mossop, head of defence and marine reportedly said: "We've had extremely positive feedback from clients about the standard of our work and level of expertise applied to all of the projects," concluding: "These projects and others have served to highlight the skills and experience of our people, and we're confident of securing additional work on the back of these successes."

Testing is an important tool in asset assurance, and the ability to accurately advise its clients in safety and extending the working life of their assets has proved the company's success

Imes Group
imes-group.com

Services
Inspection, wire rope management and engineering services

Sharing experience

With a mission to be the global market leader in the provision of inspection, repair and maintenance (IRM) services to the oil and gas industry, K2 Specialist Services Pte Ltd (K2) has evolved into a leading supplier of inspection, repair and maintenance services throughout the sector.

The company was incorporated in 1997 and a decade later in 2007 became part of the Velosi group of companies. Today K2 operates from its headquarters in Singapore and several support offices in key locations such as the UAE, Korea, Africa, Brazil and the US, employing some 450 members of staff. Presently its service portfolio is divided into four targeted categories comprised of engineering and construction; inspection and survey; repairs and maintenance and training, from where the company delivers premier solutions to its clients. Commenting on its current operations K2 managing director, David Griffin says: "We describe ourselves as being a provider of lifecycle services. We work with a number of regional shipyards in Singapore, China and Korea partnering in newbuilds construction and the conversion of assets, particularly drilling rigs. We also establish baseline surveys, which are important in getting the inspection and survey criteria for the rigs as they enter the operating phase of their lifecycle."

K2 differentiates itself from other companies by also providing periodic inspection services. K2 delivers inspection and maintenance services for the full lifecycle of its customers' assets supported by an in-house engineering capacity that generates further added value to its overall service package. As such, the company is able to remain strong through the shifting nature of the oil and gas market. "Most of our revenue comes from drilling and what we are seeing this year compared to last year is a drop off in what I would call 'voluntary spending' by the drilling companies," David says.

"Projects for repairs and upgrades seem to have been suspended or postponed and we get the impression that this is in response to the perception of the softening of day-rates for rigs. This is something that we feel will hold until we see the stabilisation of these rates." However, while the demand for drill-related repair and maintenance may presently appear on hold, the diverse service portfolio of K2 has allowed the company to expand in other areas in response to the overall demand of the market. "In particular we have seen a lot of growth in our electrical sectors and in fact last year our electrical services sector saw growth of 400 per cent," David elaborates. "Today there is a lot more emphasis on ensuring that the right, explosion-proof equipment is installed on rigs and tested on a regular basis, so there has been an increase in demand for this kind O&G

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of equipment on both new and old rigs as well as an increase in inspection duties."

A further vital component in the company's make up is its dedicated training division, which K2 uses to train its own personnel and third party staff, as David explains: "Since we were incorporated we have provided training services and this was certainly partly to meet our own training requirements for personnel to ensure that we had internal competency and certification to send our staff out to do the work we want them to do. All of that training has always been internationally certified and we have now extended that into a commercial endeavour as well. In 2013 alone, over 5500 people were trained at K2's fixed and mobile training centres."

An interesting area of development within this market for K2 has been the development of its DROPS Training Simulator, representing an industry first in training solutions. The DROPS Training Simulator is a self-contained training container that gives trainees hands-on experience in the expertly designed equipment that they will encounter during their duties. As such DROPS represents an effective way to deliver training at a client's base or offshore, removing the need for clients to travel to a traditional training centre. "The DROPS initiative is a response by the offshore industry to address issues with falling objects, particularly in drilling where there is a lot of vibration and movement contributing to high number of HSE accidents and incidents. As a response the industry got together and developed offshore DROPS survey and inspection standards. Subsequently, training and awareness has been required by the industry for both people working on the assets and those carrying out inspection. This is where we use our new system to provide on-site training."

As part of the Velosi Group, which is itself owned by Applus, K2 benefits from a strong global presence as well as the added efficiencies and financial support that might not otherwise be afforded to an independent organisation. A vital part of the company's strategy over the coming years will be to increase its market presence in the Americas and Africa, while retaining its focus within the oil and gas market, as David concludes: "We are looking outside Europe which we view as a more mature market, but we will be remaining within the oil and gas industry. Many of our European competitors have diversified into wind and alternative services, but given our geographic footprint, there is less opportunity there so I do not see us diversifying outside of the oil and gas sector, but rather moving into new areas within the industry." O&G

> K2 delivers inspection and maintenance services for the full lifecycle of its customers' assets supported by an in-house engineering capacity that generates further added value to its overall service package

Smooth running

PONTICELLI FRÈRES

PONTICELLI Frères is an independent family-owned company.
Our development of technique and materials has allowed us to play a major role in services to industry in energy, petroleum, petrochemical and gas production.
Combining activities and trades has enabled us to gain significant experience in general contracting.
Our customer GRTgaz trusts our company to guarantee the success of its projects in general contracting and takes advantage of our experimented methods and capacity to quickly mobilise resources adapted to its needs.

Established in January 2005

in line with the European directives on the European electricity and gas market, and operating with a similar structure to a public limited company, GRTgaz is 75 per cent owned by GDF Suez, with the remaining 25 per cent stake retained by Société d'Infrastructures Gazières, a public consortium comprised of CNP Assurances, CDC Infrastructure and Caisse des Dépôts. As a public utility, the company ensures the smooth running of the natural gas market in France while focusing on the interests of all consumers. These include industrial sites, and gas industrial sites and gas-fired power plants that benefit from a direct connection to the transmission network as well as households, businesses and local authorities that are supplied via distribution networks that in turn utilise the transmission network.

Able to provide access to diverse supply sources through its connection to LNG terminals on the Atlantic and Mediterranean coasts, as well as neighbouring European networks and underground storage facilities, the company not only contributes to both France and Europe's energy security, but also transmits natural gas in a safe and economical manner. Indeed, by transporting vast amounts of energy via underground pipelines, GRTgaz can protect local landscape and biodiversity while also operating as a driver of future energy solutions such as renewable gas.

Today renowned as one of the leading European operators in natural gas transmission, GRTgaz's natural gas transmission network covers 32,246 km; this includes the main transmission network, 25 compressor stations (with an installed capacity of 525 MW), six interconnections with adjacent networks and three LNG terminal interface points. In addition, the company has complete shares over GRTgaz Deutschland GmbH, which is one of the major pipeline systems in Germany. The system, known as MEGAL, connects the Czech Republic, Germany, Austria and France and comprises of the MEGAL Nord (North) pipeline and MEGAL Sūd (South) pipeline; these are interconnected by a pipeline at Rothenstadt. GRTgaz Deutschland operates the MEGAL pipeline as part of a joint venture with Open Grid Europe GmbH.

With more than 100 shipping organisations using the GRTgaz network and services for the transportation of their gas, the company serves 4475 delivery stations and supplies 16 distribution network operators, 828 industrial customers and 12 electricity power plants that are connected to the transmission network. Focused on the delivery of commercial and operational excellence, GRTgaz offers exceptional support to its customers through tailor-made, flexible services.

Indeed, by pursuing a policy of active dialogue the company can assess the needs of customers using the natural gas transmission network and make the necessary improvements. For example, having become aware of the demand for the guaranteed optimum use of existing infrastructures, the company is increasing network capacity to improve the competitiveness and security of gas supplies. In fact, GRTgaz invests over 800 million euros annually in the modernisation and development of its network, thus ensuring regional stakeholders reap the local benefits. Meanwhile, for its industrial customer base, it is developing services to enable access to the gas market, which will thus allow consumers to optimise their sourcing.

To meet future market demand, the company has a ten year development and investment plan

in place, with billions of euros anticipated to be invested in securing the French gas market (between the North and South) through the construction of a new gas pipeline. Due for completion and to begin operations in 2018, the new pipeline will enable access to new supply routes, strengthen the security of natural gas supply and allow new transit capacities to develop and improve the operation of the natural gas transmission network.

As part of a plan to merge the northern and southern France market areas, GRTgaz currently has two major projects underway, one of which being the Arc de dierrey pipeline that will enable gas from other European countries to flow into the network. Work began on the approximately 310 km long, 1.20 m diameter pipeline on 17th March and is scheduled for completion in 2016. Beginning in Dierrey-Saint-Julien, the pipeline will proceed north to Cuvilly (Oise) before progressing to Voisnes (Haute Marne); it will run across three regions (Picardie, lle-de-France and Champagne-Ardenne) and five departments (Oise, Seine-et-Marne, Marne, Aube and Haute-Marne). Estimated to cost around 619 million euros, the Arc de Dierrey project is part of a major transport development programme in North and East France, which aims to enhance network flexibility and bring gas from the Dunkirk LNG terminal from 2015.

In relation to the Arc de Dierrey project, the Hauts de France II project will result in the connection of the Dunkirk methane terminal to the grid, which will thus guarantee the fluidity of natural gas flows in the northern half of France. Work began on the Hauts de France II pipeline in 2012; it will connect the future LNG terminal in Dunkirk to Cuvilly and will cover a distance of 191 km. The project is due for completion in 2015.

Ever prepared for future market demands and challenges, GRTgaz will continue to utilise its existing infrasturctures as optimally and efficiently as possible, while also expanding its transmission capacity to remain a robust, reliable and flexible option for its consumers.

> Today renowned as one of the leading European operators in natural gas transmission, GRTgaz's natural gas transmission network covers 32,246 km

One culture

existing entities of Technip in India under one umbrella, the task was executed successfully in April 2014. Steered by one single country management team, the 3000 strong workforce is present in the operating centres of Delhi, Mumbai and Chennai. The aim of the merger is to leverage the expertise of three different entities to increase the net worth of interests in India and to deliver bigger, more challenging projects in the subsea, onshore and offshore segments in India.

"There were strong drivers for the restructure, both internally and externally. The merger brings together core strengths with consistency of all resources across three operating centres. The strengthened financial benefits of operating as one organisation are very important for qualification and delivery of larger projects," points out Samik. India is a large and strategic hub for Technip, and it was felt within the business that as one unit the company would be able to support the mega projects of the group. "By having the three centres together we are able to balance the work load efficiently and provide better support to the group," he adds.

With an operational capacity of close to five million man-hours the need to have an organised and sustainable business model complete with several channels feeding the organisation is essential for growth within the markets of onshore, offshore and subsea. Commenting, Samik says: "It is also very important to increase the high value added services in our portfolio. We have invested in a fabrication facility, which will accelerate and enhance our products, proprietary technology and supply both in India and outside. With a combined focus on the market, services and products, the development of the portfolio will ensure that we have a sustainable future."

To complement the strong market, the company has worked towards developing skills to ensure a skilled workforce as it moves forward. As engineering moves into a higher value service, such as project management consulting, and front end engineering as well as conceptual work, procurement services and

KIRLOSKAR PNEUMATIC CO. LTD. (KPCL)

Founded in 1958, KPCL is part of a large engineering conglomerate in India. It has specialised in providing world-class refrigeration systems and gas compression packages to the oil and gas industry for the past 25 years. KPCL has been associated with Technip for the past ten years as a major supplier of refrigeration and gas compression packages, as well as assisting Technip in its pre-sales activities for proposals in Indian and overseas projects.

One such project was the refrigeration package supplied to M/s Cairn Energy Pty Limited at its Suvali works in 2004 for the Gas Dew Point reduction project. Technip was the project management consultant to the client.

Presently KPCL is involved in the execution of a refrigeration package for a petrochemical complex for M/s JBF Petrochemicals. The complete LSTK contract is done by Technip Italy for a petrochemical complex at Mangalore, India.

KPCL enjoys a very warm working bond with Technip and the relationship is getting stronger each day.

Technip is a world leader in project management, engineering and construction for the energy industry. The company's operations began in 1958 in Paris, with just 100 people and in a little over 50 years it has grown into a worldwide organisation employing a workforce totalling 40,000 across 48 countries in five continents. Over five decades Technip has demonstrated its ability to anticipate and adapt to changing market trends and customer expectations in the energy industry.

Technip is listed on Euronext Paris (EURONEXT: FR0000131708) and traded in the US on the OTCQX marketplace (OTCQX: TKPPY). Technip in India is established as a wholly owned entity of Technip France and brings a strong expertise into the field of onshore refining, petrochemical, LNG, fertilisers, offshore process platforms and subsea engineering within India. "We offer a wide spectrum of services from licensing, PMC services, FEED, basic engineering to full EPC projects – 'Concept to Commissioning'. Our clients are provided with a degree of assurance when they work with Technip due to our project delivery capability as a strong EPC player with huge experience, a large talent base and white skill sets," says Samik Mukherjee, country head and managing director.

Challenged with merging and integrating three

construction management services, these skill sets need to be developed through training. "The workforce is very good in terms of the traditional engineering segment, but as we move into larger, more complex projects, the need for specific training increases. Project management is a very international platform and additional skills are becoming important with exposure to work on a multi-national environment," says Samik.

Currently Technip India is working on a number of prestigious projects, including the Reliance Off Gas Cracker project in Jamnagar. Working for Reliance Industries, one of the largest private sector players in India, Technip is offering technology in ethylene, design and procurement services. "Secondly, together with our worldwide alliance partner BP, we are building the largest PTA plant in the world for a client JBF Mangalore in India using BP Technology," points out Samik. Recognised for its ability to successfully complete unique projects, the company is also busy in the delivery of the first over the fence gas supply project with its global alliance partner Air Products for BPCL Kochi Refinery. Through its alliance with the US based business, Technip is contracted to supply and build gas supply plants for hydrogen, nitrogen and CO. Business activity is also strong in the offshore segment where it is providing engineering, supply of key equipment and proprietary float over technology for Heera Redevelopment Process Platform (HRD) project for ONGC, which will enhance the oil and gas production off the West Coast of India.

"Future opportunities in India are immense, with growth and a lot of investment into upstream exploration, downstream refining, LNG and petrochemicals. This is driven by strong domestic needs and with the new government we expect more stabilisation in terms of policies and framework, which will bring more opportunity to both the private and public sectors. With oil and gas driving the economy, upstream exploration will ultimately be another area where investment will increase," concludes Samik. O&G

Technip India
technip.com

Services
Project management, engineering and construction

Strong roots

The roots of MSL Engineering Ltd date back to 1979 and through its 34 years of trading experience, the company has built up gradually from an initial small scale to its position today as a large and skilled contractor with a turnover of €20 million and an average workforce of 160. "We specialise in the provision of pipe work installation and process equipment installation, utilising our fabrication facilities to produce piping spools and modules for site installation," says Maurice McGrath, managing director.

With the majority of its work undertaken in Southern Ireland, in 2012 the business invested in a brand new 20,000 sq ft premises from which it fabricates all types of pipe work from carbon steel to stainless steel and chrome-moly, and other exotic materials. "The increased space allows us to undertake modular builds. The reduction in the amount of man hours required on site has a lot of advantages from a safety perspective, as the work is undertaken in a controlled environment," points out Maurice.

In 1990, it received recognition of its capabilities, winning a series of significant contracts that ultimately positioned it as an automatic choice on the tender lists for consultants working with multi-national clients, as Maurice explains: "We received the contract for the maintenance work on the offshore production platforms for Marathon Petroleum on the Kinsale Head gasfield. We held that contract for five years during the peak production period, undertaking a great deal of work and establishing relationships with clients that would last decades." Under exclusive contracts, highlighting the confidence in the business, MSL Engineering executed numerous projects for a range of oil and gas clients including ongoing pipe work maintenance contracts.

Subsequent projects included maintenance and capital works at Whitegate Refinery, which is currently Ireland's only refinery, owned and operated by Phillips 66. Crude oil processed by the refinery is light, low-sulfur crude oil sourced mostly from the North Sea, North Africa and West Africa. The refined products are distributed mostly inland, with some exported to international markets and the site operates a crude oil and products terminal with over seven million barrels of storage facilitated by an offshore mooring buoy in nearby Bantry Bay. "Under this contract we do all of their maintenance work and have also undertaken several major contracts for Phillips 66. The site was originally owned by ConocoPhillips and we had a very similar arrangement with them and a long working history together," says Maurice.

Today, the majority of the company's work is with pharmaceutical companies as well as in the power generation, and agri/dairy industries, which is a growing indigineous sector in Ireland. It has also undertaken a number of large distillery projects such as that with Irish Distillers, worth nine million euros, in which it fabricated and installed over 18,000 metres of pipe over an 18-month period. "As far as our clients are

As far as our clients are concerned the two most important factors are safety and quality. We work in industries that are inherently hazardous and any slip up on safety is very serious, so no shortcuts can be taken on safety

concerned the two most important factors are safety and quality. We work in industries that are inherently hazardous and any slip up on safety is very serious, so no shortcuts can be taken on safety. One of the reasons we have been successful is that we don't compromise on safety, which is reflected in our high standards and safety record. In our business quality is something that can be very easily measured, with our welding and fabrication subject to thorough NDT testing. The work is also very labour intensive and the personnel that we employ and depend on have a lot of industry specific knowledge and an excellent skill set," highlights Maurice.

With the industry in general feeling the skills shortage, Maurice comments on the impact that this has on the future of the business and industry: "As many of the older generations leave the industry they are not being replaced by new entrants. This seems to be down to a reluctance to get into the industry and a shortage of relevant training and courses." On a global scale, there is a great demand for people in all trades across the industry, particularly in countries such as Canada and Australia, which have several ongoing major mechanical projects. Considerable numbers of skilled tradesmen have emigrated as they search for lucrative opportunities. In response, MSL Engineering has an apprenticeship training programme which takes on youngsters every year.

"This is a very competitive business, particularly in Ireland where there are a number of companies operating in this niche market, which makes it more difficult to compete. In recent times, some of our competitors have moved into bigger markets such as the UK, Holland and Belgium as well as the Middle East. As we look ahead we see the UK as a market we would be able to compete in," explains Maurice. The Cork site benefits from a long tradition in developing the skills required in this industry, leading to a core of valuable experience. "Such resources are required in the UK and Europe where the oil and gas industry and pharmaceutical companies continue to expand. We see many future opportunities developing from this and through leveraging off our experience in Ireland we hope that we can build on opportunities in new markets," he concludes. O&G

MSL Engineering Ltd
mslengineering.ie

Services
Mechanical engineering contractor specialising in pipe work, fabrication and installation

Safety first

A world-leader in the manufacture of emergency safety showers, eye/face wash and decontamination equipment, Hughes Safety Showers has supplied its innovative product range to a broad range of industries across the globe for more than 45 years. Having built a reputation for excellence in engineering design, adhering to stringent quality standards, regulatory compliance and delivering an unrivalled level of customer service and support, the company has become a major global force in industrial safety.

"We are Europe's largest supplier and we have won the Queen's Award for Enterprise – International Trade in both 2006 and 2012, marking our achievements in export. We often set the benchmark to which most heavy industry, (oil, gas, petrochemical etc.) customers, contractors and specifiers rely upon when considering new or updated health and safety installations for onshore and offshore plants," says group sales director Paul Darlington.

"Our key customers include the major oil and gas companies such as BP, Petronas, Shell and Petrobras, while our customers in the Middle East include the Adnoc group of companies and Saudi Aramco, plus many of the downstream and ancillary businesses related to oil and gas. The company and its products also serve many industry sectors where there is a risk of damage to the eye or body with contaminants or products that may burn. These industry sectors include emergency services, CBRN, brewing, food, automotive, education, laboratories, pharmaceuticals and emerging markets such as renewable energy and waste management."

Hughes is proud to provide solutions in the most challenging of environments; products are even found in regions such as Kazakhstan, where cycle temperatures fluctuate from below freezing to desert heat in a 24-hour period.

"Compared with competitor companies who are additionally involved in general bathroom supplies or water filtration, we remain exclusively highly specialised in the emergency safety shower, eye/face wash market, and have been for over 45 years," says Steve Willock, marketing director at Hughes Safety Showers. "As a result we are close to the challenges faced by our customers as their markets expand and regulations change. With our focus on continuous product improvement, we can meet their needs as their demands evolve."

Indeed, as the oil and gas industry expands into deeper waters and more extreme environments, Hughes Safety Showers has had to evolve its product range to meet the needs of its clients. No stranger to innovation, it has revolutionised tank showers and today boasts a range of heavy-duty emergency polar tank showers that provide warm water in Arctic conditions, as well as outdoor emergency drench showers for environments where the water supply is at risk of freezing or overheating due to extreme temperatures.

In addition, it has significantly cut the cost of installing emergency safety showers in zone 1 hazardous areas by the design and installation of large capacity centralised chillers. Situated outside the zone 1 area, the chillers distribute cooled water to self-draining showers via a ring main. Typically, solutions include a centralised chiller with three high temperature potable water chillers that are suitable for operation in temperatures up to 50 degrees Celsius, a stainless steel water tank and associated pumps, control equipment and pipe work. Two pumps are included, one of which is operational and the other on standby; each can provide water at the required pressure for several showers operating simultaneously while also maintaining water circulation throughout the system.

"An example of how this product has evolved to meet new challenges can be seen in a recent contract that involved 76 showers spread across three kilometres of pipework. The showers were served by a centralised chiller unit that kept the water between 16 degrees and 36 degrees centigrade, which meets the ANSI standard; the water is maintained within this temperature on demand to all 76 showers, 24/7, 365 days a year. This is a bespoke solution where our technology has evolved not into a single shower solution, but a whole estate of showers via the central refrigerated unit," says Steve.

Elaborating on the project further, Paul says: "The principle of our operations is relatively simple: we need to get water to hazardous areas. However, three kilometres is not an average site, it's pretty massive, and making sure that the system maintains its temperature so the showers don't scald is a challenge when temperatures in Saudi Arabia can rise to 68 degrees Celsius."

He continues: "Moreover, because showers are

often distributed over large sites where levels of supervision are relatively limited and workers regularly work alone, we needed to not only ensure the showers work every time, but also that information gets back to a control room or a supervisor's room to alert someone that an employee is in need of medical attention. To meet this requirement, we have now developed the Sentinel control system, which can monitor and control the activity and status of the showers wirelessly; it is one of our most exciting developments in recent years and is being very well received by the health and safety sector as a major step forward."

Providing increased safety from its automated monitoring and data logging of each shower's status, usage and servicing, the Sentinel Electrical Control Unit (ECU) provides customers with a range of monitoring options that can be tailored to each client's individual requirements. Sending this extensive information to a specified centralised location as part of a SCADA system, the data is transmitted using MODBUS protocol via either a wireless mesh network or direct wiring from the shower to the control room. Launched at the 2014 NSC Congress & Expo in San Diego in September, it is anticipated that the Hughes Sentinel ECU will generate huge amounts of interest from the oil and gas, petrochemical and chemical industries.

Keen to continue growing and improving as an organisation, the company will open an office and factory in China, thus enabling it to take advantage of the booming Chinese market while also developing a regional base to increase business throughout the Asian region, which the company currently serves through a network of approved distributors. "We have aspirations to grow activity and further support our partners in Asia Pacific and particularly China, where we will open a new office early in 2015. We also look to expand in South America, building on our success in Chile, where we are the main suppliers to the gold and minerals mining industry, with further expansion in Columbia, Venezuela and Brazil," concludes Paul. O&G

Hughes Safety Showers
hughes-safety.com

Services
Designs and manufactures emergency safety showers, eye/face wash and decontamination equipment

A vibrant service

DSM FABRICATIONS

DSM Fabrications has been supplying Fabricom with pipe support and secondary steelwork for various projects in the North Sea. In this time we have devoloped a close working relationship, which has enabled us to respond quickly and effiecently to their needs whilst maintaining rigourous quality standards. As part of our planned growth we have recently increased our workshop area by 30,000 sq ft and added four overhead cranes rated up to 15 Ton.

Established in 2007, Fabricom Offshore Services was founded with a mission to provide premier engineering, procurement, construction and project management services to the oil and gas industry. The company predominantly provides services to the brownfield offshore oil and gas sector from its base in Tyneside, where it is able to draw on the area's rich engineering heritage and skilled workforce to build long-lasting relationships with both its handpicked personnel and clients.

Fabricom Offshore Services operates as part of Cofely Fabricom Oil, Gas and Power, which in turn is part of the GDF Suez Group. This enables Fabricom Offshore Services to offer targeted, local services to clients operating within the UKCS, while retaining the benefit of a globally recognised brand with a strong international footprint. "Our territory is the UK North Sea although Cofely Fabricom Oil, Gas and Power also has a Norwegian company, which operates in Norway and we also have a sister company in the Netherlands who operate mainly in the Dutch sector," says business development manager Simon Roberts. "The Cofely Fabricom group is based in Belgium and is an international operator acting in a global market, not just in oil and gas but in power and petrochemical as well. So we are part of a larger group."

By focusing on high quality service and sustainable operation, Fabricom Offshore Services has fostered long-term relationships with several blue chip customers including EnQuest Britain Limited, Maersk Oil North Sea UK Limited, Talisman Sinopec Energy (UK) Limited and GDF Suez E&P Ltd. To better reach its clients and widen its resource pool, the company opened new offices in Teesside and Aberdeen in 2012 and now boasts more than 200 staff across three locations.

When Fabricom Offshore Services was last featured in *European Oil & Gas Magazine* during April 2013, it had recently enjoyed a period of growth with an increase in turnover of approximately 130 per cent. During 2011 the company had a turnover of £15 million, which swelled to around £33 million in 2012. This allowed Fabricom Offshore Services to expand to its present size and although the market has slowed in recent months the company has continued to win a strong portfolio of orders and remains ready to embrace the challenges of a cyclical market. "We had a good year in 2013, which was almost comparable with 2012, but

things are certainly slower at the moment," Simon observes. "I think the Scottish independence referendum is playing a part and with the oil cost remaining so high, inner costs have crept up. This involves every company within the oil and gas market, including our own and everyone who provides services and products to the operators. As a result operators are balancing their capital expenditures (capex) and portfolios around the world and obviously the UK, Norway and Netherlands are not the only regions. Drilling O&G

seems to be slowing down as well, which has a knock on affect with new developments and the expansion of existing assets."

The ability to remain flexible and to adapt to the changing focus of the oil and gas market as it transitions from exploration to drill and then to extending the life of infrastructure has enabled Fabricom Offshore Services to continue to nurture ongoing relationships with existing clients. "Our Maersk services contract has gone very well," Simon explains. "We had a three-year engineering services contract with Maersk, which has been extended now for a further year. The initial three years are up and Maersk has chosen to extend the contract. We also won a contract with EnQuest for late-life engineering extension services on their Thistle, Heather and Northern Producer assets, which has been successfully performing since mid-2012. Things have really developed, in the case of both EnQuest and Maersk they are both giving us more work and as an offshoot of Maersk we now have a separate consultancy service that we offer as a specialist engineering capability."

The diverse scope of projects currently under contract for Fabricom Offshore Services is allowing the company to increase its service offering across the oil and gas market. With many operators currently balancing their capex in the face of increasing costs, Fabricom is increasingly able to provide consultancy services to clients trying to lower costs.

As the company continues through the remainder of 2014, Fabricom Offshore Services is confident that it will continue to win further contracts and gradually begin to look at new market sectors outside of the UK as Simon concludes: "There are certainly a number of service contracts coming around and there seems to be a lot of growth in the Southern North Sea. Of course some areas are experiencing some slow-down but there is a good pipeline of work for us. An important strategy for us will be to expand our presence in Aberdeen, that's where our business is, so that is where we need to be. The other thing is that with our skill sets we may be looking at work further afield rather than just in the UK. We are also looking to expand into integrated services work, which I think will bring about alliances with other companies." O&G

A broad portfolio

Newly formed in January 2014, Drilling Service Center is a company that has evolved out of the Deep Drill Supply Group and incorporates over 30 years of experience in supplying drill services and equipment to clients throughout Europe and beyond. B.G.H van Amsterdam founded Deep Drill during 1980 before the second generation of Amsterdam entrepreneurs identified the need for an experience centre in Europe combining supply, storage and handling services. This led to formation of Drilling Service Center as a central hub for Deep Drill and several partners forming a cohesive, customer facing umbrella company that provides an all-in-one shop for specialist requirements.

Presently Drilling Service Center is comprised of four partners, with each company focusing on a highly specialised part of the drilling process. Deep Drill Supply Group provides a wide range of drilling equipment through direct sales and on a rental basis. As an OEM distributor and service provider, Deep Drill Supply Group supplies pressure control, flow line and drill string equipment as well as well equipment including oil country tubular goods (OCTG), cement and float and wellhead assemblies. Other partners include Equipment Trading International (ETI), which operates as a global company trading surplus and downgraded equipment; SMFR, specialising in the fabrication and repair of tubulars, equipment and accessories and TD Well Solutions, a Tercel dealer that supplies high quality drill bits, reamers and stabilizers and innovative equipment to ensure tubulars reach TD through sales and rentals providing Total Depth Solutions

Although Drilling Service Center and its partners already encompasses a broad base of products and services, it continues to grow and incorporate new services into its portfolio. "What the centre does is focus on the synergies between all of the partners in the Drilling Service Center," says managing director Jochem van Amsterdam. "What is really interesting is that besides the four partners, there is another partner joining us soon. This is an inspection company and it will take care of the centre's third party inspections. In addition with this new partner we will start developing pipe cleaning storage and handling and conservation services, so in this respect the Drilling Service Center will be able to give a full service package so that contractors and operators will be able to drill a well but also to maintain the well most efficient and effective."

Drilling Service Center is ideally located in Middenmeer, the Netherlands from where the main Dutch offshore ports in Amsterdam, Den Helder, Harlingen and Ijmuiden can all be reached within 45 minutes. Through the use of the Netherland's efficient transport infrastructure the company has excellent access to the rest of Europe and its major international harbours. Drilling Service Center's Middenmeer headquarters employs around 70 staff and includes warehouse facilities of around 4100 square metres, yard space of 19,500 metres, a 1500 square metre workshop, 1500 square metres of cleaning and inspection area and offices, meeting and training rooms comprising 27,000 square metres. In addition to its strong presence in Western Europe, through its partners, Drilling Service Center has branch offices in Algeria, Egypt and Romania providing support to its customers around the world at a local level.

Presently Drilling Service Center and its associated companies remain focused on European projects, where it has developed a clear and targeted business strategy. "Our current target is the North Sea and we are only 40 kilometres from Europe's main North Sea ports," Jochem explains. "We focus mainly on the smaller, independent manufacturers so the equipment that we sell is at the same quality or ever better than that of the majors, while

remaining cost effective. Because we focus on the synergy between all of the partners in the group, there is no competition as all of the companies focus on different areas so they are very complimentary. So for a customer to come to buy or rent equipment or to use services, they can come to one centre and only need to deal with a few people and this greatly simplifies logistics, invoicing and quality control. It's an all-in-one service centre and we provide all of the stock and services under one roof.

"We have long standing experience throughout Deep Drill Center, so the only real change was to move to the Drilling Service Center and to make it one specific entity. Operationally things have not changed much, however customers now see Drilling Service Center as an umbrella company and this makes everything much more accessible for clients and offshore/onshore drilling contractors."

Drilling Service Center is firmly established on the European mainland and the region's oil and gas market, however, the company anticipates that over the next ten to 20 years production will be entered in the emerging markets within Northern Africa and the Middle East. As part of its strategy to establish itself in expanding markets its main partner, Deep Drill, has opened a sales office in Algeria in association with agents with which the company has had a successful relationship for several years. Over the coming years the business will look to opportunities in Libya, Egypt, Tunisia, Romania and surrounding countries as possible regions for expansion.

Now that Drilling Service Center has been established as the customer facing umbrella for Deep Drill and its associated partners, the firm will look to focus its efforts on delivering targeted services that differentiate it from of market players, as Jochem concludes: "Business growth is mainly in specialist services rather than diversifying. Previously the companies at the service centre could do all brands and products, but during the past three years they have been much more focused on specific core businesses and brands and developing those. We are also focused on supplying very cost-effective but high quality products compared to what the majors are supplying. Recently through Deep Drill we have worked with RAG in Austria, NAM in the Netherlands, Chevron and Noble – these are customers that are much bigger then we normally focus on, but over the past years it has been noticed that Deep Drill makes a difference so we are able to supply these larger companies. This is something we are very proud of. We are also proud to announce the co-operation between TSP and Deep Drill, developing drill collars and heavy weight drill pipe under API 7 and NS 1 license. Come and check us out on the SPE ATCE in Amsterdam, booth 3022." O&G

Pioneering spirit

Headquartered in the

Philippines, the Atlantic Gulf & Pacific Company (AG&P) was established in 1900 and is today recognised as a pioneer of breakthrough design, engineering, fabrication and construction services. Synonymous with the country's construction industry, the company built the first steel bridge in the Philippines as well as other major infrastructure, such as Manila's water and sewage system, which still exists today. Following decades of steady growth, the company honed its skills for ingenuity and reliability and became renowned as one of the leading modularisation and infrastructure services in the world.

Purchased by its current investors in 2011, AG&P has since witnessed a period of aggressive growth and modernisation, which has thus resulted in it becoming the only Philippines headquartered, multi-national organisation. Elaborating on these rapid developments, AG&P's executive general manager David Northall begins: "AG&P offers industrial process outsourcing services to some of the world's most critical resource and infrastructure projects. As part of its recent expansion, AG&P grew its module fabrication yard capacity from one million square metres to 1.5 million square metres. AG&P's Bauan Yard is one of the largest fabrication and assembly yards in Southeast Asia, and features 900 metres of waterfront in a protected harbour. The newly opened Batangas City yard is located just ten kilometres from the Bauan yard, and is adjacent to a major container port, as well as a general and heavy cargo berth area.

"The yards are located next to easily accessible deep water jetties, enabling seamless module delivery," says David. "The Bauan yard is currently being upgraded to allow for multiple and much larger projects. Currently, the yard can handle individual modules of up to 6500 tonnes, and this capacity will grow to 10,000 tonnes by the time the upgrade is complete around the end of 2015."

He continues: "AG&P's second yard is located in Batangas City, fewer than ten kilometres from its Bauan yard. The yard measures over 500,000 square metres, and is able to support two major projects at any time, with up to 25 modules being worked-on simultaneously. It is adjacent to a major port, as well as a general

and heavy cargo berth area, with port depths up to 14 metres. In addition to growing its yard capabilities, AG&P has also grown its workforce, and has brought in international expertise to manage multiple projects for international blue chip organisations. The company currently employs more than 7500 staff across its two fabrication yards, with another 1500 employees working overseas as part of AG&P's FieldCOM division. Moreover, as a multinational company, we offer globally recognised qualifications, including SMAW, 3G, 4G, 6G/FCAW, and GTAW, thus ensuring that AG&P professionals are accredited to American, Japanese, Australian and European standards."

With a mission to change the way companies within the infrastructure and construction industries do business, AG&P's core aims are to accelerate construction through the delivery of its purpose-designed Modstruction solutions for complex projects, while also providing holistic, competent personnel to job sites around the world. Furthermore, by working with the best global partners, the company can provide cost-effective services across the whole infrastructure lifecycle; this includes phases such as planning, design, construction and operation. Indeed, through providing its expertise from the early planning stages of a project, all the way through the commercial operations, AG&P optimises cost, quality and safety through delivery its mission-ready modules that also enhance ease of construction, versatility, and reusability during critical infrastructure projects.

Currently working with a number of blue chip companies within the oil and gas industry, AG&P's competitive advantage not only stems from its unique Modstruction approach and large, state-of-the-art fabrication yards; its highly trained Filipino workforce execute services to the highest level of quality and exhibit an unrivalled passion and commitment to their work. Indeed, it is these strengths, as per press reports in 2012, that have led to the company being awarded a $152 million contract in October 2012 to provide the 'electrical backbone' of the Inpex Corp led Ichthys LNG project in Australia's Northern territory.

As per the 2012 press report, a vital project that will provide critical LNG to countries such as Japan, AG&P will modularise 26 local electrical rooms (LER), in addition to local instrumentation rooms (LIR), to support the second largest private investment in Australia's history. AG&P's work involves the design, construction and delivery of highly engineered modules. The modules, called 'e-houses', contain

sophisticated electrical control and monitoring systems that will govern all power distribution for the project. With construction beginning in the first quarter of 2013, the LER/LIR fabrication and assembly will be wholly constructed and integrated in Batangas before it is shipped back to Australia in 2015.

In addition to this major contract, AG&P in partnership with ALE through Australian-based consortium, AG&P ALE Ventures Pty Ltd., has unveiled the Hydro Deck, a world-first mobile port solution capable of enabling delivery of combined loads of up to 22000 metric tonnes, regardless of tidal conditions.

Elaborating on the groundbreaking mobile port solution, David highlights: "After extensive research, AG&P, in partnership with ALE, an international heavy transportation and lifting company, developed and constructed the Hydro Deck. The Hydro Deck uses a proprietary water ballast and air tank system to provide buoyancy control, which allows it to compensate for both rapid tidal variations and load balancing as massive modules move across its deck. The Hydro Deck allows for significantly wider roll-on, roll-off (Ro-Ro) module delivery windows, and enables efficient, cost-effective and timely module delivery, which in turn helps to keep the construction timeline for projects on-schedule and within budget. Its leasing arrangement also reduced capital expenditure, as project owners are not burdened with an expensive asset that must be dealt with after project completion."

Measuring 140 metres x 40 metres x 12 metres, the now complete Hydro Deck has been delivered to its first project, where it is being used as a gateway through which large-scale modules from across the globe will be delivered. A world-first, the mobile port solution can ensure 24/7 delivery of combined loads up to 22000 metric tonnes in all weather.

AG&P also recently worked on the world's

"The Hydro Deck uses a proprietary water ballast and air tank system to provide buoyancy control, which allows it to compensate for both rapid tidal variations and load balancing as massive modules move across its deck

largest modularised complex coker unit for BP's refinery modernisation project in Indiana, which involved the fabrication of the world's first modularised complex coker unit. "AG&P managed the fabrication, assembly, packaging and delivery of more than 70 modules and 20 large vessels. All of the modules were completely fireproofed on delivery. The project received an 'Award of Excellence' from the Safety Organisation of the Philippines for exceeding seven million safe hours worked in AG&P facilities without Lost Time Incident (LTI). AG&P's ability to deliver infrastructure on-schedule was pivotal to the project's success, with access to the project site via the Great Lakes freezing over during winter each year," says David.

With a stringent commitment to operational excellence, quality and safety - the company recently passed 32 million man hours without a Lost Time Incident (LTI)- as well as its highly advantageous Modstruction process, the future looks positive for AG&P as it continues with the execution of its major projects and plans further investments, as David concludes: "In 2014 we aim to provide some of the largest and most highly engineered modules in the world, and delivering the world's first mobile port solution capable of overcoming even the most extreme tidal variations. Furthermore, we will be upgrading the Bauan yard, bringing its capacity to over 100,000 metric tonnes while also continuing to provide world-class training to its workforce, which will further establish AG&P and the Philippines as a leader in advanced industrial process outsourcing services to the world's most complex and essential infrastructure projects." OGC

> With a stringent commitment to operational excellence, quality and safety - the company recently passed 32 million man hours without a Lost Time Incident (LTI)

Hub of activity

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A little more than a decade after entering the North Sea, Apache Corporation is opening a new chapter with first oil from the Forties Alpha Satellite Platform (FASP) expected in the second half of 2014.

Commissioning of the newest platform at Forties comes as Apache celebrates its 60th anniversary. Since it was established in 1954 with $250,000 of investor capital and a goal to become a profitable oil corporation, Apache has developed its capabilities to become one of the most successful independent oil and gas exploration firms in the world. A member of the Fortune 500, Apache's market capitalisation is approximately $37 billion on the New York Stock Exchange; this incredible growth over the last 60 years stems from strategic expansion into burgeoning oil and gas areas as well as acquisitions. Today the company has nine operating regions across the globe and presently has a global production of over 635,000 barrels of oil equivalent per day (boepd).

Since entering the North Sea through a strategic $680 million acquisition of the Forties field from BP in 2003, Apache has invested in drilling activity, facility upgrades and an intensive re-evaluation of the field to find a significant increase in the proven reserves originally purchased. At the time of the acquisition there were 140 million barrels of oil equivalent (boe) of proven reserves, yet Apache has since produced more than 200 million barrels from the Forties field, and anticipates many millions of barrels are still be to found.

Following the success of the Forties field, Apache expanded its foothold in the North Sea with its acquired ownership of the Beryl complex, which included the subsea fields of Ness, Nevis, Skene and Buckland from ExxonMobil in January 2012. This agreement also included the SAGE gas plant and its pipeline as well as non-operated interests in the Maclure, Scott and Telford fields.

Apache's North Sea average annual production presently sits at 71,000 boepd and their lifting cost per barrel is below $18 per barrel. This high level of performance is being driven by; the maintenance of a great safety record, acquiring new seismic, significant drilling activity, major project investment and the best operational efficiency in the North Sea.

With under 500 personnel onshore managing the fields, the relatively small workforce has further strengthened its collaboration and communication capabilities by moving into the new Caledonia House on the state-of-the-art business park at Prime Four in Kingswell, close to Aberdeen, a world-class hub of activity for the energy industry.

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drilled in 2014 in the North Sea in Apache's portfolio, the subsurface teams have been busy and very successful in finding new targets and continuing to focus on producing new oil opportunities from its hubs. This year saw a total of seven operational drill strings across the two fields, with drilling being undertaken from every platform at some point during the year.

FASP, the new platform, was constructed by British manufacturer OGN on Tyneside. It is linked to the existing Forties Alpha platform via a 90 metre bridge and includes a 12 pile jacket and deck weighing a total of 18,000 tonnes that stands in a water depth of 106 metres.
The FASP has added 18 new well slots to accommodate further drilling opportunities with a processing capacity for 25,000 barrels of oil per day, production and deep gas lift gas compression and 25 megawatts of additional power for all the field through the Forties Power Ring Main.

At press time, the Rowan Gorilla VII was on location, drilling the first well at FASP. "The facility is best in class when it comes to the delivery of projects," highlights Mark Richardson, Apache Projects Group Manager. "It won the Oil and Gas UK award for business efficiency; it was built at significantly lower cost than most North Sea platforms, demonstrating that we can still build platforms in the UK." The award recognises the tireless work of both Apache and OGN over the last three years of planning and construction, and the efficiency, innovation and sustainability in the delivery of enhanced performance, streamlining and cost effectiveness.

Meanwhile, in line with its constant commitment to safety, Apache recently installed a new Subsea Isolation Valve in the 36 inch Forties Pipeline System to improve safety on the Forties Charlie platform. From concept, through fabrication to completion of the installed the valve onto the BP export pipeline, took four years. The final tie-in was completed during the 2014 Forties Field maintenance shut down and was commissioned two days ahead of plan, while the Turnaround (TAR) overall was completed one day ahead of plan; it was a highly successful project. An investment of £60 million to ensure the safety of their people and assets is a significant marker of how important major accident prevention is for Apache.

With a turnover of approximately $2.7 billion dollars in 2013, Apache North Sea has generated significant cash flow to Apache's global capital programme due to its prolific subsurface, drilling and project activity and its ability to maximise

and monetise opportunities for production. Apache doesn't have any special technology, vendors, equipment or systems that aren't available to other companies operating in the North Sea; the Apache success as one of the best producers in the region stems from their attitude and approach towards doing business. Apache have achieved a very high rate of return on their assets, which has been achieved through clear leadership and very competent teams with the will to undertake active campaigns.

Within Apache there is a culture of open accountability, where personnel are given the responsibility and authority to make the right decisions for the business, where the best answers win. To aide this approach Apache has a very flat management structure with a solid management team that have worked together for a long time. They understand progression and success is about taking managed commercial and technical risks to deliver results. If Apache sees a good opportunity that will move the bottom line they implement an action plan.

Looking ahead, Apache will continue with its focus on operational efficiency; this includes an ongoing focus on production through the utilisation of a very competent and capable operations and maintenance team. Apache has an impressive portfolio of opportunities around the Forties and Beryl fields that will start to be exploited with two additional semi-submersible drilling assets, with 20 new wells drilled this year and even more planned next year. Apache is continuing to look to invest in the ideas of the personnel who are in the best position of ensuring that the company moves from strength to strength, and it will continue to explore what's possible. O&G

> Apache's North Sea average annual production presently sits at 71,000 boepd and their lifting cost per barrel is below $18 per barrel. This high level of performance is being driven by; the maintenance of a great safety record, acquiring new seismic, significant drilling activity, major project investment and the best operational efficiency in the North Sea

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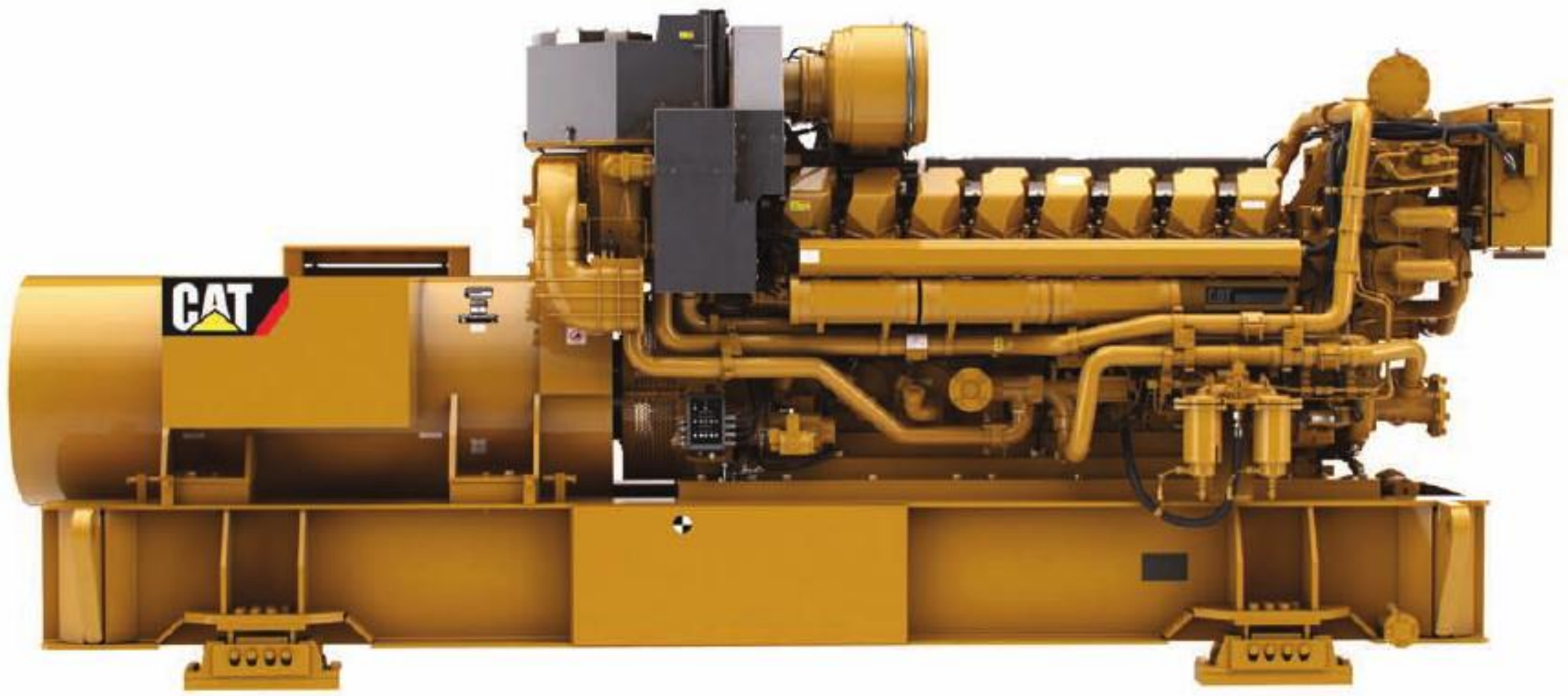

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Crude awakening

PON POWER

Part of the Dutch-owned Pon Group, Pon Power and its offshore operations, Pon Power Oil & Gas, supplies Caterpillar engines for propulsion and power generation. In 2008, Pon Power supplied special generators for the first generation HiLoad DP developed by Remora in Norway.

"We have delivered a system with three Cat 3516 engines (with a shaft power of 2350kW@1800 rpm) that propels this unit to the tanker, and holds its place while the oil is transferred - a period of up to 24 hours – using dynamic positioning based on data from satellites," explains Niels Groenendijk, commercial director of Pon Power Oil & Gas. On the front they run a 550 ekW generator, to supply electricity from driving pumps and moving pipes and hoses.

The next generation HiLoad units will most likely be powered by the new Cat 175-16 generator (2800 ekW@1800 rpm) as its high power density provides a significant weight advantage when compared to medium speed engines.

"We are proud to be part of these exciting projects of Remora HiLoads and together with our knowhow, delivery assurance and certified offshore service technicians working worldwide, we can contribute to the success of the next HiLoad generation," ends Niels Groenendijk.

Remora is an oil technology and service company, focusing on providing the international market with innovative solutions for offshore loading of crude oil. Established in 2002, the business is operational worldwide, trading from its headquarters in Stavanger, Norway. In 2012, Remora agreed to sell the HiLoad dynamic positioning (DP) no.1, together with a ten-year contract with Petrobras, to Teekay Offshore Partners L.P with the return injection of equity by Teekay Corporation into Remora, becoming the main shareholder. The HiLoad DP had proven its capabilities in performing sea trials in a North Sea operation project in 2011.

The HiLoad DP was developed to revolutionise the offshore loading industry by providing DP capabilities to any tanker and reforming the crude export value chain. The core technology is built around Remora's patented attachment system and the patented way of transferring fluid between two vessels at sea. All HiLoad products are equipped with suction cups and friction elements that are capable of transferring several thousand tons between the HiLoad and the connected object. The range of applications spans from offshore loading of crude oil, turret mooring of FSOs and FPSOs, to mobile propulsion or DP system for seagoing vessels, such as barges and floating rigs.

Following the commencement of a modification project in first half of 2013, the HiLoad DP no.1 was transported to Rio later that year. "Since early 2014, the vessel has undergone field testing in Campos and Espirito Santos with the test programme now coming to an end. Upon positive conclusion, the HiLoad DP no.1 will then commence on the time charter party with Petrobras. Significantly, in the past two years we have also finalised our research and development for the moored version for drillship (MVD) in the arctic area and concluded a conceptual design for the Arctic HiLoad MVD," says Yngve Kloster, managing director. In 2013 Remora entered into an agreement where it gave Stena Drilling Ltd an exclusive right to use the HiLoad MVD technology for drilling units.

The company's focus is on targeting the oil companies providing optimum solutions for exporting the oil directly from the field offshore to the market. "We have a unique and patented technology which provides a safe, flexible, cost effective and environmentally friendly solution for offshore loading directly to conventional oil tankers," says Yngve. The technology is set to be a total game changer, facilitating direct offshore loading to conventional tankers without any modification. The specialised equipment to facilitate oil transfer and position keeping will be kept at the field and effectively utilised for offshore loading operations only.

The development of the technology began in 2000 with an idea of how to provide dynamic positioning and offshore loading capabilities to conventional tankers at the offshore fields without doing any modifications to the vessels

themselves. After seven years of development and design Remora was ready to start the fabrication at Aibel Yard in Haugesund, Norway. One year later Remora became a finalist for the ONS 2008 SME Innovation Award, signifying the strengths of its design and engineering team. Without hesitation the HiLoad DP no.1 was launched to sea in 2009 before undertaking sea trials and a North Sea Operation project in 2011. With the HiLoad DP no.1 modified for Brazil operations, and transportation to Rio de Janeiro by tanker, the business began the immediate development of the basic design for the next generation HiLoad DP.

"We have noticed a firm interest for the HiLoad DP, also experiencing increased attention to the other concepts," says Yngve. Remora is currently offering solutions for a broad range of vessels, systems and terminals within the oil and gas industry, including the HiLoad DP, HiLoad MV and HiLoad APU. The HiLoad MV is essentially a moored version of the HiLoad DP with the HiLoad APU providing an auxiliary propulsion unit by use of the basic HiLoad technology. BG Group awarded a FEED study for a new generation HiLoad DP, the HiLoad DP BR, in 2013. "The study has now been completed and the HiLoad DP BR unit will be able to handle VLCCs in 97-98 per cent of the weather conditions in Santos basin," he adds. Basic design approval was granted by ABS in July 2014. Highly trained crew from TK and advanced on-board technology, such as the dynamic positioning loading systems, ensure safe and reliable offloading of oil from offshore installations in both deepwater and harsh weather environment, which makes the HiLoad a safe and cost effective offshore loading solution.

The generic features incorporate common design criteria for all tanker vessels of the world: flat bottom and straight sides. This creates a flexibility for the standardised HiLoad units: the ability to operate in any water depth, with any tanker of opportunity and on any oil field or terminal with no modifications required to the tanker. "The HiLoad DP concept offers the industry a safe, reliable and environmentally friendly offshore loading solution. Direct loading to export tankers means that only one loading operation is needed. Other alternatives will involve re-loading from shuttle tankers to FSOs/onshore terminals or from shuttle tankers to conventional tankers. For each loading operation, a considerable amount of the cargo will be lost due to emission of cargo vapour to the atmosphere.

"For oil to be exported over longer distances it is also an economically competitive solution on a cent per barrel basis. The HiLoad DP no.1 is currently testing the position keeping capabilities, emergency operations, oil transfer and logistic arrangements, technically performing full scale operations," explains Yngve. Through the co-operation agreement between Teekay and Remora, the intention is that Remora will focus on technology development, marketing and project development while Teekay will own and operate the units.

"The agreement with Teekay gives us access to extended competence, operational excellence and project financing. The co-operation with Teekay Corporation also gives the ability to provide the market with complete solutions, not only the hardware. This will ultimately help as we focus on business opportunities in Brazil, specifically the Santos Basin. Further ahead, opportunities for growth in the near future exist in Brazil, West Africa and the Gulf of Mexico," announces Yngve. Looking beyond to the next five years Yngve concludes on the vision that drives the company forward: "We aim to have established the HiLoad DP concept as the preferred solution for direct oil export from the offshore fields in Santos Basin, and to have developed opportunities in the regions of targeted growth." O&G

MAS FLUID CONTROL AS, HiLoad DP no. 1 PROJECT

MAS Fluid Control AS is an engineering company with knowledge and experience in design, development and implementation of technology to the marine and offshore industry. MAS supplies cost effective and high quality components, systems and solutions.
MAS Fluid Control AS was given the confidence to supply the systems engineering and the instrumentation for some of the most critical systems on HiLoad DP no. 1 Its knowledge both with regards to equipment selections and how to integrate equipment into safe and reliable systems was challenged for this project. Engineers and service engineers were, in periods, an integrated part of the project, both receiving and sharing knowledge. Many good solutions were found through this close and open co-operation. Furthermore, in the test and verification period for this first time new concept, MAS Fluid Control contributed to improvements and adaptations based on operational experience.
MAS Fluid Control AS' contribution to HiLoad DP no. 1 was for remote operation of the valves systems including the valves and actuators (ballasting system, systems for operation of or for, fuel, vacuum, fire and other).
All systems are hydraulic remote operated with integration on BUS level to IAS.

COMPONENTS - ENGINEERING - SYSTEMS INTEGRATION - SYSTEMS SUPPLIER

MAS

MAS Fluid Control AS

MAS Fluid Control AS was given the confidence to supply the systems engineering and the instrumentation for some of the most critical systems on the HiLoad DP no 1.

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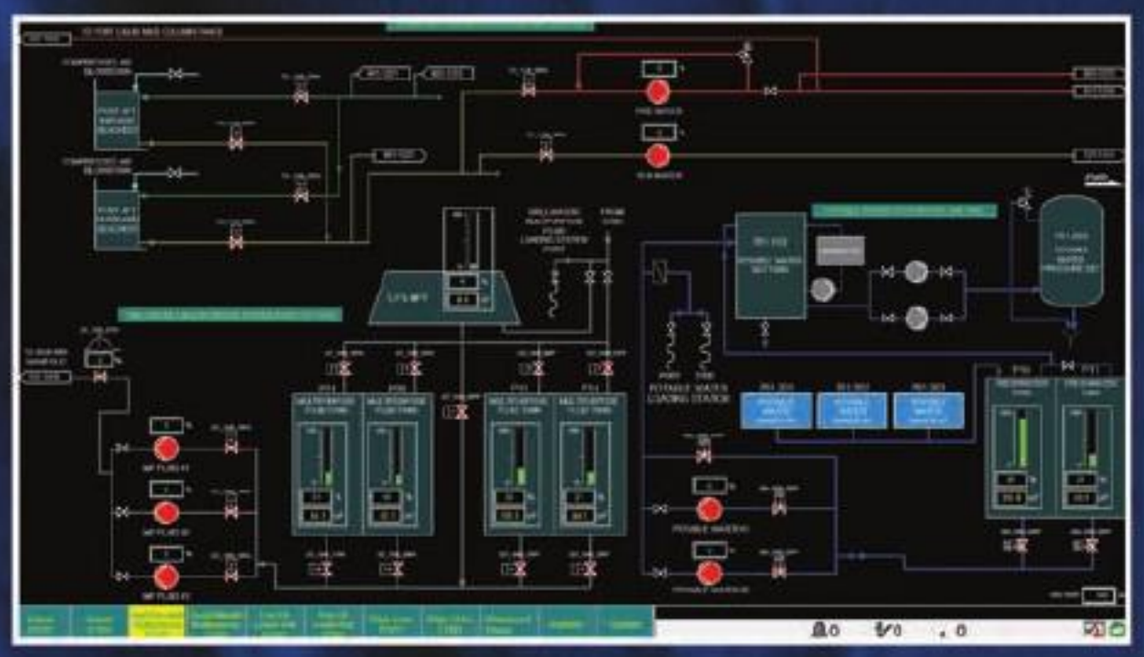
MAS Fluid Control AS supply to HiLoad DP no 1 was for remote operation of the valves systems including the valves and actuators. (Ballasting system, systems for operation of fuel, vacuum, fire and other).
All systems are hydraulic remote operated with integration on BUS level to IAS.
Separate free standing emergency control system allowing safe operation of critical units at an IAS failure.


HI LOAD DP NO.1 IN OPERATION



MAS Fluid Control AS is an engineering company with knowledge and experience in design, development and implementation of technology to the marine and offshore industry. MAS supplies cost effective and high quality components, systems and solutions.

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- Viscometers
- Level transmitters
- Shaft torque meters
- Shaft Thrust meters

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- Service engineers for service, supervising & site management.
- Personal for on board systems installation, refit on ships also during voyage.

MAS

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Robust construction

With a history dating back to 1982, Byelkamit has a proud tradition of complex fabrication and robust design born of the company's Soviet roots. Byelkamit began its journey as the 'Gidromash' factory, which was originally commissioned as a facility focused on the production of 'Squall' and 'Eagle' rocket torpedoes. Following the fall of the Soviet Union, the factory began a programme of reorientation in 1995 to the manufacture of civil commodities. Through a joint collaboration between the New York firm Byelocorp Scientific, Inc and financial support of the US government, the Byelkamit brand was born out of a joint Kazakhstan-American-Italian enterprise and by 1996 the factory's first batch of products was completed. This batch was comprised of cryogenic vessels for the storage of liquefied argon, nitrogen and oxygen with 300 units delivered throughout Western Europe.

During September 2011 LLP Byelkamit, LLP Atyrau NefteMash and First Montana Technology formed a single holding company named SGT Group. Today the SGT Group employs 1000 staff across three locations in Kazakhstan, Slovakia and the Czech Republic, manufacturing standard and bespoke components for the oil and gas; mining, metallurgical and nuclear; energy; construction and infrastructure; food and water treatment sectors. "We produce non-standard technological equipment in accordance with domestic and international standards," explains Pavel Beklemishev, general director at Byelkamit.

"All construction documentation is designed in accordance with the client's requirements and we have our own qualified design department to design engineering documentation, which are prepared according to the technical requests of local and international customers in the Kazakh, Russian and English languages. Our plant is certified in accordance with the requirements of American Society of Mechanical Engineers (ASME) codes in design, manufacturing and repair of vessels working under pressure, which allows us to market our products with ASME 'U', 'U2' and 'R' stamps. Our quality management system is certified by Bureau Veritas (BVQI) and complies with international standard ISO: 9001-2008 from 1997 year."

Since the company was last featured in *European Oil & Gas Magazine* during January 2014, Byelkamit has won a number of significant contracts with several well-known international companies. "2014 has progressed very positively for Byelkamit," Pavel begins. "The first big news is that we have signed a contract with company, the project aimed at modernising the Pavlodar refinery to increase production with new non-standard equipment, specifically three columns with total weight of 556,000 kg, which are currently in the final stage of manufacturing.

For the Chinarevskoe oil field we have signed a contract on production of 23 bullets and four receivers. Furthermore, we have signed a contract with KazStroyService for production of 24 cyclone separators and 24 horizontal filter separators with a working pressure of 9,81 MPa for the Kazakhstan-China Gas Pipeline project."

Byelkamit's success in gaining new contracts is bolstered by its membership of the wider SGT Group. SGT is able to utilise the strategically located manufacturing facilities of Byelkamit, Atyrau NefteMash and First Montana Technology to form joint ventures that allow it to remain flexible in providing complicated or large equipment orders as well as aftersales services, and the group continuously seeks to expand its manufacturing capability. "Growth and development projects within the SGT group are an ongoing working process," Pavel says. "The construction of a large scale and heavy workshop will give us a competitive advantage over other companies by producing over-sized items for the petrochemical and refining industries. Further project implementation will allow the company to satisfy the demand of industrial companies within the oil and gas sector to develop large-scaled projects such as the Tengizchevroil (TCO) Future Growth Project; works for a chemical complex in the Atyrau region for Kazakhstan Petrochemical Industries (KPI) and KLPE; the second phase of reconstruction for Karachaganak Petroleum Operating (KPO); adaptation of Kashagan field; project CMOC for the development of offshore fields for Zhemchuzhina and Kalamkas and other projects in the Caspian region."

Presently Byelkamit is focused on expanding its presence within its native Kazakhstan and has started working with a number of new customers including Zhaikmunai, however in the near future the company plans to begin exports to Russia, Uzbekistan and Turkmenistan with the aide of a new production facility in Atyrau. "We plan to finish construction of our large size and heavy construction workshop by the end of 2014. New technological equipment is already on the way for new projects that will help us to expand our product range," Pavel explains.

"The market challenge for domestic producers in Kazakhstan is that international companies working within the oil and gas sector in the region do not believe in the possibilities of local producers. Our goal is to change their opinions and to prove that we can make heavy, complex and high-quality equipment in accordance with international standards. In order to do this we need to introduce new technology and continue to develop our staff. We have a good location, which can reduce the cost of transportation and we plan to modernise our technology and equipment, which will offer an increase in quality and decrease delivery rates. SGT Group should occupy a leading position in the production of oil and gas equipment in Kazakhstan. Byelkamit should become a company that will engage in engineering activities, production of new technologies and education of employees for the needs of the group," he concludes. OGG

Byelkamit
byelkamit.kz

Services
Equipment fabrication

Prestigious service

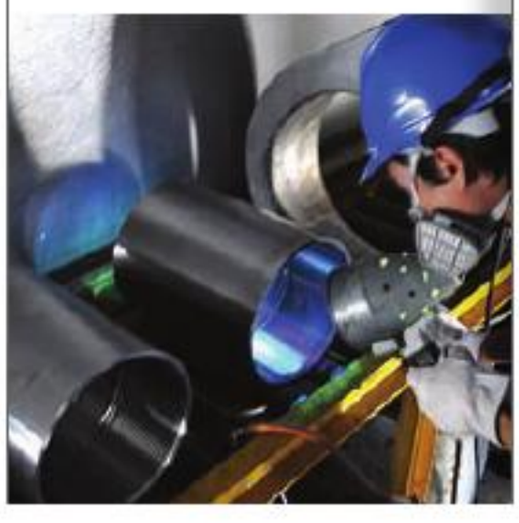
Established in 2001, PV Drilling has developed its services significantly over the last 13 years to become one of Vietnam Oil and Gas Group's leading subsidiaries. Operating as a member of the International Association of Drilling Contractors, the company is a well-reputed provider of drilling rigs and drilling-related services, while also supplying manpower for onshore and offshore drilling projects.

Formed with a clear strategy of becoming the leading drilling contractor in Vietnam, as well as serving the global market, the ISO 9001:2008, OHSAS 18001: 2007, ISO 14001: 2006 certified company has diversified its portfolio to provide customers with a wide range of services that are divided into two main areas. The first of these is the management and operation of onshore and offshore drilling rigs, which plays a critical role in yielding revenue and profit for the firm and contributes to 60 per cent of its total revenue as well as 70 per cent of its net profit. Meanwhile, the second strand for PV Drilling is the delivery of both traditional and high tech well and drilling related services such as well testing, mud logging, MWD, LWD and directional drilling. To ensure the delivery of integrated, optimum solutions, PV Drilling acts either independently or via its reputable partners such as Baker Hughes and BJ Services.

Accompanying the company's services is its fleet of three high quality jack-up rigs, one land rig in operation in Algeria and one semi-submersible tender assist-drilling (TAD) rig. All of these rigs are the latest generation of their kind, including the jack-up rigs that are all Keppel Fels MOD V B class models, capable of operating at up to 400 feet water depth and drilling at a depth of up to 30,000 feet. Built in 2007, the PV Drilling I is an ABS/A1 self-elevating drilling unit, with an overall dimension of 234 ft x 208 ft x 25.5 ft; can accommodate 110 persons and is currently drilling for the next discovered oil and gas field, known as Ca Ngu Vang. The remaining two jack-ups were delivered in the first and final quarter of 2009 respectively.

Meanwhile, its land rig, PV Drilling 11 is a 2700 HP design VFD type rig that is capable of operating under ambient temperature conditions from 0 degrees Celsius to 50 degrees Celsius; able to drill to a maximum depth of 23,000 ft, the land rig is currently drilling for the developed oil and gas field MOM-3 of PVEP in Algeria. The last rig in the company's fleet is its semi-submersible rig, PV Drilling V-TAD, the eighth tender assist-drilling rig in the world and the latest generation of its kind.

Boasting state-of-the-art technology, the PV Drilling V is considered the most modern TAD rig to use Keppel Fels' revolutionary SSDT 3600E HP design; developed by Keppel O&M's deepwater technology group (DTG), the ground-breaking design enables the rig to be deployed alongside deepwater floating platforms for the first time. Furthermore, the enhanced design enables the rig to work in harsher environments and work on high pressure high temperature wells via its BOP control system, which has a working pressure of up to 15.000 psi; the PV Drilling V is also the first TAD rig to be capable



of operating at 30,000 feet maximum drill depth, at a water depth of up to 4000 ft.

Through providing five of its assets on hire to international drillers in offshore Vietnam, PV Drilling currently occupies more than 50 per cent of the local drilling market; this percentage is likely to grow in the coming years as the company looks to add several advanced jack-up rigs to its fleet, as well as an additional semi-submersible rig. The acquisition of further assets reflects an ongoing response to the rapidly moving market and the company's intention to realise a strategy of expansion in the near future. Included within this strategy is the delivery of a new 400 ft jack-up rig from Keppel Fels, which is due for completion in February 2015. A prime example of the company's commitment to continuous investment and improvement of its assets, the rig, named PV Drilling VI, will be furnished with the most advanced technology in its field and primarily serve the global market operating from Southeast Asia, the Middle East and the Gulf of Mexico.

Held in high prestige, PV Drilling believes its success stems from the commitment and quality of its human resources, who constantly strive to enhance their knowledge and skills in mastering the technology and services within the drilling sector, which thus adds value to clients. It will therefore come as no surprise that the company views the development of personnel as a top priority in its strategy for growth and is dedicated to the development of its highly skilled personnel through a suitable recruitment policy, a systematic career development plan and competitive compensation and benefits scheme.

Having earned over $330 million (total revenue of $480 million) in revenue from its own rigs by the third quarter of 2013, PV Drilling looks set to continue flourishing in a market with strong exploration and production (E&P) activities. Furthermore, as older-generation rigs are gradually replaced following stricter safety regulations coming into effect, the quality conscious company is in an enviable position as the market searches for high-spec rigs. O&G

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Drilling Services Ltd is proud to have been associated with PV Drilling and Well Services Corporation for over ten years, procuring and distributing a wide range of essential equipment and consumables, from OEM and alternate sources of the highest quality.

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Setting standards

Founded on innovation and the POS-GRIP® friction grip method of engineering, Plexus Holdings plc is known for challenging the wellhead market through the delivery of ground-breaking equipment that significantly enhances safety and minimises cost. Admitted to trade on the London Stock Exchange AIM market in the final quarter of 2005, the Aberdeen based operating subsidiary Plexus Ocean Systems Ltd has developed an impressive customer base both in the vibrant North Sea and globally with its exploration jack-up rental wellhead systems.

First patented in 1997, the POS-GRIP wellhead system was designed, developed and commercialised by founder and CEO Ben van Bilderbeek, an accomplished engineer with more than 42 years industry expertise; it has since been used on more than 350 wells worldwide and has become an industry leading solution in surface wellhead design. Safer, more reliable and cost-effective than conventional wellhead equipment, POS-GRIP proprietary technology was originally used as an adjustable rental wellhead system for standard pressure jack-up exploration drilling. Subsequent technological developments led to Plexus supplying specialised high pressure and high temperature ('HPHT') wellhead systems to the market; a product that has proven vital to the oil and gas industry, where HPHT drilling conditions demand the best and safest technology, which has become particularly relevant after a number of high profile incidents in the field, such as the 2010 blowout in the Gulf of Mexico.

The advantages of the POS-GRIP wellhead design include enhanced safety such as avoiding the need to lift the blow out preventer to terminate casing, virtual elimination of movement between the seal parts, larger metal-to-metal seal contact areas, fewer components and much greater corrosion resistance. In addition, the technology is easier to manufacture, has a reduced installation cost, and increased and long-term integrity.

As the need and demand for enhanced solutions and technology continues to grow, Plexus was invited by the industry post the Gulf of Mexico incident to take its technology from the surface to subsea, and to design and develop a new subsea wellhead which could address and solve shortcomings of conventional subsea wellheads subsequently identified as contributing factors to the incident.

In response to this request, and committed to changing global drilling standards, Plexus launched a joint industry project ('JIP') in collaboration with a number of major oil and gas operators for the development and commercialisation of a new, safer subsea wellhead ('HGSS') through the utilisation of Plexus' POS-GRIP technology. Key planned features of the HGSS wellhead include an 18 ¾-inch full-bore system, rated to 15,000 psi and 350 degrees Fahrenheit, upgradeable to 20,000 psi and 450 degrees Fahrenheit; four million

Above
POS-GRIP 15ksi HPHT Exploration Wellhead System

Below
Ben van Bilderbeek, CEO

pounds of instant casing hanger lockdown capacity, annulus monitoring and bleed-off capability, which enables it to address sustained casing pressure, with diagnostic and remedial capability as well as the ability to open and reseal the casing to enable remedial cement jobs. The integration of such features and capabilities will be a first in the industry; furthermore, the monitoring of casing annuli capability is currently not considered feasible due to a number of technical and cost reasons.

In September 2014 Plexus announced BG International Ltd (BG), a subsidiary of BG Group, was the sixth major oil and gas consulting partner to sign up for the ongoing JIP; the JIP is extremely well supported by a number of major international oil companies and members now include Total E&P Recherche Development SAS, Maersk Oil North Sea UK Ltd, BG, Shell International Exploration and Production BV, Wintershall Noordzee BV, Tullow Oil, Senergy Holdings Limited, Eni SpA Oil States Industries Inc. and the UK entity of the world's largest offshore drilling firm. Continuing to contribute to the design and engineering process, the JIP members will be focused on upcoming milestones such as the completion of the HGSS testing programme and the construction of a prototype, which the JIP aims to have installed in the field for the first time in the second half of 2015.

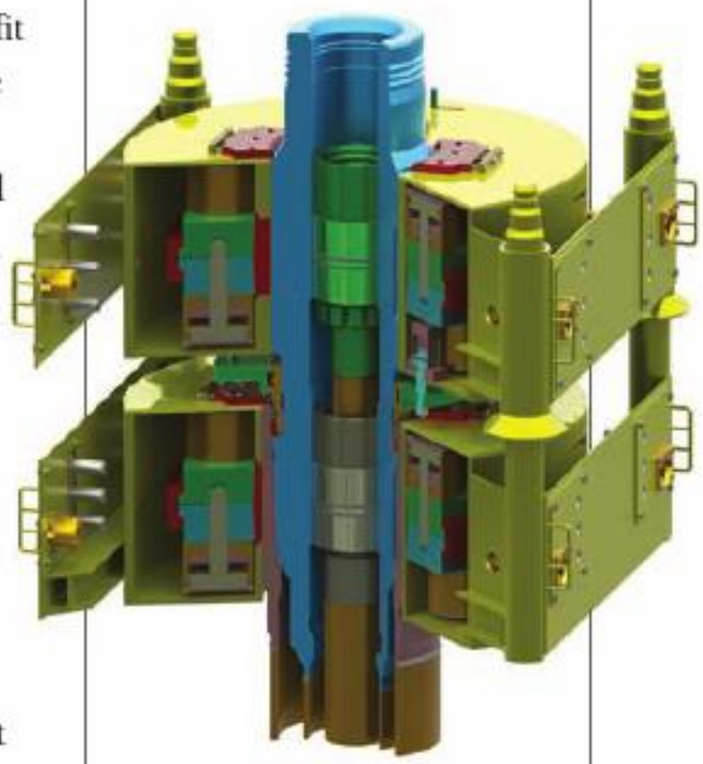
This commitment to continuous technological improvements has led to the company being shortlisted for two Northern Star Business Awards: 'outstanding contribution to the energy sector' and 'commitment to innovative use of research and development'. These shortlisted nominations focus on Plexus' two current R&D projects, the HGSS wellhead and the HPHT tieback connector; the results will be announced at the 11th Annual Northern Star Business Awards ceremony on September 25th.

As well as Plexus developing and expanding its range of POS-GRIP applications it continues to pursue initiatives that will increase sales and expand its customer base. The company recently announced that its subsidiary, Plexus Ocean Systems (Singapore) PTE LTD, has completed the formation of a new Malaysian joint venture company (Plexus Products (Asia) Sdn Bhd – 'PPA'), which will enable it to pursue opportunities in the Asian region. A major milestone in Plexus' strategy to develop a wholly operational business hub in Asia, PPA was established in conjunction with local Malaysian oil and gas partner Integrated Petroleum Services Sdn Bhd (IPS); a renowned upstream support services firm with in-house manufacturing capabilities and a strong presence in the Malaysian and Asian Pacific region's oil and gas industry, IPS will provide PPA with an already established regional network of positive working relationships, and has an immediate goal of securing a Petronas Licence.

In addition to developing a high quality joint venture in Malaysia, Plexus has also recently invested £2.4 million in expanding its operational headquarters in Dyce, Aberdeen, through the acquisition of an extra workshop and office facility. The purchase of a 36,000 square foot workshop and office facility, which lies adjacent to Plexus' existing 36,500 square foot site, will double the size of the company's Aberdeen base as it continues to strengthen its offering to the oil and gas industry. Furthermore, the new facility will enable Plexus to consolidate its work facilities, which will improve logistical efficiencies as well as create additional workshop, warehouse and service bay capacity.

These exciting developments and ongoing market penetration for its innovative POS-GRIP wellhead equipment has led to the board at Plexus anticipating full year results in line with market expectations at revenue level, while profit after tax is expected to be materially ahead. The board's trading update announcement of its expectations follows the end of Plexus' financial year on 30th June 2014 and also confirmed that Plexus has a strong order book in place, with demand for its POS-GRIP wellhead equipment spanning the globe from both new and existing customers. To help with its global ambitions, particularly in relation to the Gulf of Mexico, Plexus has just announced the appointment of Charles Edward Jones as a non-executive director of the board on 18th September 2014. With more than 30 years of senior management and board experience, in addition to a proven track record in the oil and gas equipment and services sector within the US and Gulf of Mexico, Charles will provide strategic direction to the board as Plexus identifies ways of delivering POS-GRIP to the American markets. Moreover, with the company's Asian expansion strategy progressing well, and its JIP at an advanced stage, Plexus looks set to flourish as it continues to achieve strong revenue growth and increased profitability. OFG

> features of the HGSS wellhead include an 18 ¾-inch full-bore system, rated to 15,000 psi and 350 degrees Fahrenheit, upgradeable to 20,000 psi and 450 degrees Fahrenheit; four million pounds of instant casing hanger lockdown capacity, annulus monitoring and bleed-off capability, which enables it to address sustained casing pressure, with diagnostic and remedial capability as well as the ability to open and reseal the casing to enable remedial cement jobs



Above
HGSS Subsea Wellhead

Top of the class

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MACHINEFABRIEK J. POOT BV

Machinefabriek Poot has been a reliable partner of Applus RTD for more than 20 years. The relationship intensified when Poot started the production of calibration blocks for Applus RTD ten years ago. Today these high precision blocks for AUT are used all over the world.
Besides calibration blocks Poot is a supplier to many other clients in the offshore industry for all kinds of specialised equipment, construction and machine parts. Machinefabriek Poot is ISO 9001 certified.

Specialising in non-destructive testing (NDT) since 1937, when founder Lambertus van Ouwerkerk realised x-ray inspection techniques could be used to check welds on ship hulls, Applus RTD boasts nearly 80 years of experience in the evaluation of materials, components or systems in the shipping, construction and oil and gas industries. Remaining at the forefront of new techniques and customised solutions, Applus RTD has been a pioneer in the use of non-destructive examination methods such as magnetic flux leakage, radiography and ultrasonics. Today a global leader in NDT, the company sets standards through the delivery of unrivalled high quality services and individually tailored solutions that help meet construction project timelines or maintain productivity and cost-effectiveness for every installation.

Previously featured in sister publication *Shipping & Marine Magazine* in August 2011, the company has continued to grow and develop over the last three years as part of Applus+ Group, a global leader in inspection and testing for the oil and gas industry, vehicle inspection, engineering and testing for the automotive sector and laboratories targeting industry, and construction and payment methods.

Martin Pot, director of global project services of Applus+ RTD discusses: "We are a truly global company. This is the result of all Applus RTD acquisitions joining forces internationally to become the one organisation we are today. Also we have recently gone from being a privately owned company to stock listed, fuelling further growth. Meanwhile, our main developments have been in the growing economies and large oil and gas projects across the world; these opportunities are predominantly North America, where we have established substantial businesses. In addition, the Middle East West and East Africa offer great opportunities at the moment."

Consistently adaptable to market demands, Applus RTD is able to deliver a comprehensive range of services to its global customer base, 90 per cent of which is within the oil and gas industry. The company unveiled the latest inspection application in its ground-breaking NDT range in June 2014; developed in partnership with Delta SubSea, the RTD INCOTEST (Insulated Component TESTing) deepwater system utilises state-of-the-art pulsed eddy current technology, which ensures the reliable detection of surface and subsurface corrosion in pipelines with both thin and thick walls.

"The external inspection of pipelines is already an integral part of our business, but, because there is an increasing need for subsea inspection and because our clients asked us to do so, we have tapped into this business through the formation of a strategic alliance with an ROV operator. Our technology, INCOTEST, is now deployed on their ROVs, which means we can jointly perform inspections on subsea pipelines. RTD INCOTEST enables us to perform corrosion assessments through marine growth or other materials that tend to prohibit seeing the condition of a pipeline; this, in combination with our internal inspection capabilities, allows us to deliver a full portfolio to our customers," highlights Martin.

Indeed, it is this drive to bring new technological solutions to the market that is a key strength for Applus RTD, as NDT technical authority Niels Pörtzgen notes: "Our company is technology driven; we have a good communication network with our clients and

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therefore know what kind of inspection challenges they are facing; based on these issues we built our development programme. Furthermore, we also see there is a lot of technology in other application fields, which we then scout for their technology and see if it can add value to our services in advance of our clients requesting it. It is important to us to not only respond to our client's demands, but to also anticipate issues by having new technology available."

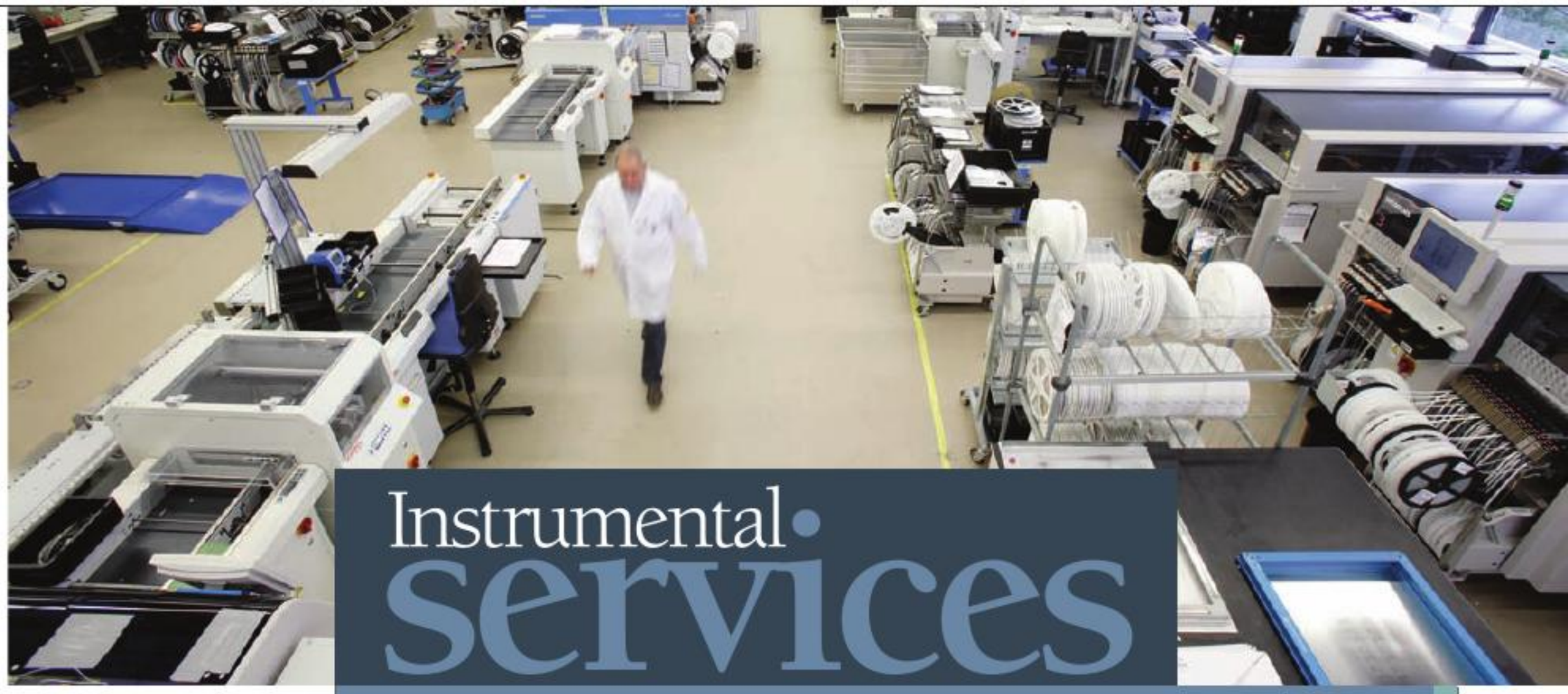
An example of this adaptability to the market is the company's DTI (Difficult To Inspect) tools that will be presented at the International Pipeline Conference & Exposition in October 2014, as pipeline inspection authority at Applus RTD, Jan Pols states: "We have been performing internal pipeline inspections with our broad range of tools, but are now entering the free swimming market, which requires technology of a higher resolution. Our state-of-the-art tool will collect much more information from the pipeline than any other tool that is currently on the market, and can thus provide an enhanced service through astounding performance and resolution. There is a lot of demand in refineries and storage areas, while the current applications that can be utilised in these challenging situations are very limited; this is why our customers came to us for a solution."

This competitive edge is complemented by the company's strong global presence, as Martin adds: "We have a good network of offices based around the world, where we can not only deliver NDT services locally, but can also transfer knowledge from one part of the world to another."

An associate member of the International Pipe Line & Offshore Contractors Association (IPLOCA), Applus RTD helps to set standards within the industry through discussing the NDT perspective and presenting improved plans that will benefit end clients. It is this commitment and passion for delivering the best possible solutions that has cemented the future growth of the company over the coming years, as Martin concludes: "We have been involved in the most complex inspection and pipeline construction projects over the last decades, which will also be the case over the next two to three years. In most projects, we will be involved one way or another." OGG

COMET INDUSTRIAL X-RAY

COMET Industrial X-Ray, based in Switzerland, develops and manufactures customised high-power, high-energy x-ray sources for the non-destructive examination of materials and components in the pipeline, automotive, aviation and casting industries. COMET also has a complete line of x-ray sources for the inspection of baggage and cargo at airports and borders.



Instrumental services

Endress+Hauser is a global leader in measurement instrumentation, services and solutions for industrial process engineering. Such solutions encompass measurement of level, flow, pressure, analysis, temperature, and for data acquisition, optimising processes in terms of economic efficiency, safety and environmental impact. These are utilised in process automation for all industry sectors, including oil and gas, assisting customers in the optimisation of production, logistics and maintenance processes.

Founded in 1953 Endress+Hauser was a true pioneer in electronic measuring technology and over the last six decades it has continued to convince its customers with trailblazing products and solutions. Long industrial expertise and detailed application knowhow leads time and again to pioneering developments. To ensure that its instruments can be integrated into control and asset management systems with minimum effort, they are tested in a multi-vendor environment and have the appropriate certification before putting them on the market.

The business incorporates five production centers with headquarters in Germany and Switzerland, from where it focuses on research and development, product management and logistics, as well as manufacturing core components for its worldwide production. It employs 12,000 personnel across the globe, generating net sales of 1.8 billion euros in 2013. Plants in Brazil, China, France, India, Italy, Japan, South Africa, the UK and the US assemble, test and calibrate instruments for regional markets, which helps Endress+Hauser to serve customers quickly, flexibly and individually anywhere in the world.

Quality and continuous improvement are priorities within the business as it strives for both exemplary products and services. In the procurement of goods and services, its management looks toward establishing partnerships with suppliers that apply the same principles of quality assurance that has led to its stringent certifications. The product range is in high demand, and offering one of the most comprehensive collections of industrial sensors available on the market, the company provides customers with hundreds of thousands of measuring points every year. Virtually every device is unique, selected from a catalogue with 2000 different products and one billion design variants. The business continues to develop innovative products that generate additional benefits for the customer. With ongoing patent applications for new products, this approach remains a crucial aspect of the company's success.

To handle this wealth of variation the production plants are modern and highly automated, and constantly updated to meet the latest state-of-the-art standard. With a reliance on qualified and highly motivated staff, it offers a broad range of training and further education opportunities, and as the business has expanded globally the workforce has grown to over 9400 employees with subsidiaries on all six continents. This includes three regional support centres, such as Endress+Hauser Instruments International Dubai Branch, which is the company's support centre in the region. Alongside growth in the US, South America, China and the Far East, the Middle East market has expanded significantly, and over the past three years the company has achieved above average growth rates, accelerating across its worldwide business. Endress+Hauser started operations in the Middle East in 2006 as a branch of Endress+Hauser Instruments International, focused on regional

Below
Prasanth Sreekumar, head of marketing – Middle East

support and development. Over the past years it has grown and now has dedicated resources for sales, service, marketing and project support for the region.

"We fulfilled our primary goal to support the region from the region," says Prasanth Sreekumar, head of marketing – Middle East. Its Qatar office in Doha has been operational since 2009, Saudi Arabia office since 2012, with head office in Al Khobar and branch offices in Riyadh and Jeddah. This year it started direct operations in the UAE with offices in Dubai and Abu Dhabi.

Endress+Hauser has always been the technology leader with best-in-class products and solutions to critical and challenging applications in the process industry. The large range of products and services, designed to meet clients' application requirements and to exceed all expectations ensure that whether the requirement is a single instrument or a complete automation system, Endress+Hauser positions itself as the single-source supplier. Its instruments reliably gather all of the information from the industrial engineering processes that enable the customers to operate their plants economically and safely, to obtain optimum product quality and to protect human beings as well as the environment. Its competences however, go beyond pure field instrumentation.

"The number of patents and patent applications explains the technology superiority attached to us," Prasanth adds. Over the past years the company has come out with a number of product innovations like digital sensor technology, the world's first 14-inch diameter, 4-tube high accuracy Coriolis flowmeter, asset information tool (W@M), and others.

The business remains committed to customer needs and support, as well as innovation and developing best in class products. Industrial processes present risks and have potential to cause incidents with serious consequences for people or the environment. Process manufacturers must anticipate potential incidents and set risk control measures in place. Any process management system, from basic process control to safety-instrumented systems, only works reliably with reliable instrumentation. As such, safety is the first consideration in all its activities, ultimately setting the basis for the safe processes of its customers.

A multitude of services are available to complement or accompany customers' existing staff and to provide the expertise that matches requirements, from one-off jobs to a long-term partnership. Through its global team of experts the business supplies knowledge, skills, ingenuity, hard work and commitment for all process automation projects ensuring clients reach maintenance costs objectives. Whilst taking into consideration reliability, safety, economic efficiency and environmental protection, clients benefit from optimised process engineering procedures.

Through subsidiaries it has been able to position itself closer to customers, supporting them with its expertise and ability to better understand their needs. Endress+Hauser is continuing to invest capital into key countries such as Saudi Arabia, and the UAE in order to reap the benefits of the lucrative Middle Eastern market and its opportunities as growth continues. Instability in certain markets can be overcome through diversity, not only through locations, but also industries and products, and as the company targets these areas, pursuit is undertaken in a three-pronged strategy of innovation, commitment to core values, and investment into emerging markets. OGC

Security blanket

Above
OXIFREE protecting flanges on an oil platform

Below
Well head being coated with OXIFREE

Committed to providing

environmentally friendly anti-corrosion solutions to the European industrial market, Zero Corrosion B.V. was formed in 2012. "Our main focus was to bring to the market a product that would challenge traditional solutions," says Nicholas Kail, CEO. The company's core territories are the Benelux and Germany. "We cater to many industries including oil and gas, renewable energy, maritime and infrastructure and we pride ourselves on providing the latest innovative and cost effective solutions that are not harmful to the environment and environmentally friendly," he adds.

Zero Corrosion B.V. currently supplies and applies the unique and revolutionary anti-corrosion coating OXIFREE TM198 to the Benelux; a product that provides long-term corrosion protection for complicated shapes such as valves, flanges, and wellheads.

Conventional paint often requires re-application every two years depending on the conditions of application and operation. The areas need to be prepared with sand blasting, resulting in a very time consuming process and in conditions of high humidity or low (weather) temperatures it is impossible to paint. In comparison, OXIFREE requires no sandblasting, is fast to apply, can be applied whatever the humidity or temperature and once applied will last over ten years. OXIFREE significantly reduces the cost of maintenance and downtime required both on and offshore.

OXIFREE is environmentally friendly, being an organic polymeric resin coating applied in fluid state with a VOC of 0.05 per cent. The flexible OXIFREE resin can be easily removed when required and is 100 per cent reusable. It contains anti-corrosion substances that inhibit corrosion and penetrate threaded fastenings to

stop seizures. The flexible polymeric resin coating allows for easy removal for inspection and re-application during scheduled maintenance.

The application process of OXIFREE involves the polymeric resin being heated to 170 degrees Celsius before being applied in liquid form around substrates that need protecting. As the product is cooled it contracts; the anti-corrosion substances within the material arrest any existing corrosion and act as a membrane preventing any oxygen getting in, ultimately eliminating the possibility of future corrosion.

"All of our clients are driving forwards with an environmental agenda by increasing their usage of biodegradable and organic products and therefore reducing their carbon footprints. As well as ticking the environmental boxes, OXIFREE saves the client time and money in the critical areas of maintenance," says Mr Kail.

External tests have demonstrated the effectiveness of OXIFREE in corrosion prevention (such as the ASTM B117 Sea Salt Spray Test, to over four times industry standards) and importantly its ecological safety. "It is really through testing and comparing our solutions with traditional systems of protection that it becomes increasingly noticeable that we are moving in the right direction," points out Mr Kail. Although the concept of the application is simple, it has taken many years to perfect such a material that can be used on both static and moving parts, such as bearing houses and valves. "One customer had been suffering from bearing failure as a result of oil, dust and debris ingress. Since coating the bearings with OXIFREE, no downtime has been incurred, saving the client maintenance costs and reducing expensive downtime," he adds.

Working with corporate clients such as RWE, BP, Talisman, Total, ConocoPhillips, Chevron, Interconnector, Air Products and PEMEX since the product was first launched into the European market the demand has continued to grow, as Mr Kail explains: "The jobs that we have been doing have been getting bigger and bigger as these organisations have started to realise that we can provide a solution to their problems, particularly in the offshore environment where corrosion is a common issue and where maintenance costs are extremely high.

"Our clients trust us; a relationship that has been developed through our professional approach. We only provide final job specifications to areas that are specific to the material, so although at times we turn work away, we are building long-term relationships with large corporate companies that communicate internationally with one another. It is very important for us to be professional in every single area - all the advice we give feeds back to our clients, through our clients and ultimately to the personnel working within these organisations, who tend to migrate from one company to the other. In addition to working directly with our clients we are also working in conjunction with fabric maintenance companies such as Bilfinger, and with supply companies such as EMS SevenSeas and IOT-Dosco."

Offshore maintenance windows for coating solutions can be in the region of days and this is a concern for oil and gas companies, as maintenance programmes using traditional systems such as paint are often incomplete at the end of this window due to weather conditions. The speed of the service offered

> Zero Corrosion B.V. currently supplies and applies the unique and revolutionary anti-corrosion coating OXIFREE TM198 to the Benelux; a product that provides long-term corrosion protection for complicated shapes such as valves, flanges, and wellheads

Above
Dynamic Descaler before and after descaling

Left inset
Dynamic Descaler before and after descaling

Below
OXIFREE Polymelt 50 Atex Machine

by Zero Corrosion B.V. (which has specially trained teams for on and offshore OXIFREE applications) ensures that such a window is sufficient, driving down the cost of maintenance. This is further supported by the ecological advantages that are beneficial to its clients' reputation with the public and shareholders.

Additionally Zero Corrosion B.V. offers the biodegradable descaling products, Dynamic Descaler and Aqua Safe, which have the lowest corrosion rates of any descaler worldwide. On an economic level these products provide a cost-reducing alternative to manual dismantling and cleaning of equipment and they fit perfectly into the ethos of Zero Corrosion by being the least corrosive descalers available. The equipment that they clean is expensive so clients want the best products available. Aqua Safe is also special as it is safe on delicate metals such as titanium and is certified by the NSF to NSF/ANSI Standard 60 to be safe to use on potable water. This is why worldwide clients include Shell, the Royal Navy, Coca-Cola, Goodyear, AllSeas, British Royal

Navy, General Motors, Dow Chemical, the U.S. Army/Navy and Ford.

"We are always researching new products and aim to be the leading provider of ecological anti-corrosion solutions in the European region. The manufacturers that we work with are all focused on providing more effective solutions that work in harmony with nature and simultaneously reduce costs for the clients. The oil and gas industry will be with us for a long time so intelligent investment in the maintenance and the longevity of its assets is of prime importance for all concerned," concludes Mr Kail. O&G

> The oil and gas industry will be with us for a long time so intelligent investment in the maintenance and the longevity of its assets is of prime importance for all concerned

Above left
OXIFREE Bilfinger personnel being trained at Zero Corrosion's office in Haarlem in its worktent

Zero Corrosion B.V.
zerocorrosion.eu

Services
Ecological corrosion control

Subsea partners

Although DOF Subsea was officially founded during May 2005, when its parent company DOF ASA acquired GEO Group AS and its subsidiary Geoconsult AS, the company's roots can actually be traced back to 1981. Since that time working through the 1980s to the present day, DOF Subsea has established a dedicated capability within all of the major oil and gas production areas around the world. Today the company offers a full spectrum of subsea support services that cover the entire lifecycle of oil and gas fields. DOF Subsea currently maintains a strong presence in the North Atlantic, Gulf of Mexico, Brazil, Asia and West Africa, with a highly skilled workforce of over 1600 subsea personnel and marine crew.

DOF Subsea provides a growing portfolio of services to clients in its Atlantic Region from bases in Bergen and Aberdeen, as well as smaller offices in Luanda, Angola. "Obviously depending on each region we have different clients," says the business acquisition director for the DOF Subsea Atlantic region, Gert Juel Rasmussen. "However, in the North Sea we have worked extensively with Teekay, Statoil and ConocoPhillips, as well as with Shell, Saipem, and Maersk during 2014; we look forward to continuing to work with all of these companies. We offer tailored solutions to every client, because we know that every scope is different. We work with each client to understand the project, and set our key performance indicators (KPI) and deliverables based on their requirements. Our delivery is of a consistently high standard and we believe that this is demonstrated in the strength and longevity of the relationships with our clients."

Presently DOF Subsea divides its operations into direct services carried out on behalf of clients and the provision of vessels on long-term time charters to operators and service providers. "Within the business we have what we will call our project departments, where we carry out projects for clients ourselves and we also have quite a few vessels that we charter out on a TC basis to companies like Subsea 7 and Technip for example. Currently around two-thirds of our income is from our projects business and the other third comes from our charter business," Gert elaborates.

"I think our key strengths are that as a group we own and operate one of the largest fleets in the world for offshore business, and that we have two core business segments comprised of our long-term charter agreements and execution of subsea operations," he continues. "I think the combination of the two has given us a little more strength in pursuing opportunities." Presently the DOF Subsea fleet is comprised of 23 owned subsea vessels as well as a further five vessels that

are chartered to the company from third parties. It also maintains a growing fleet of 49 ROVs with a further 19 on order, as well as an AUV unit and several diving spreads located in Australia.

Additionally DOF Subsea currently has five vessels under construction in Norway and Brazil. Four of the ships are pipe lay vessels built in collaboration with Technip, two of which are under construction in Norway while the remaining two are being built in Brazil where all four vessels will eventually be deployed on long-term charters. The final vessel that DOF Subsea is currently building is a large construction ship, which is being built in Norway by Vard.

The bulk of the DOF Subsea fleet is dedicated to undertaking projects directly on behalf of the company's clients and its diverse service package is broadly divided into four areas comprised of subsea construction, inspection maintenance and repair (IMR), engineering, and survey. Its subsea construction capability incorporates an expanding fleet of state-of-the-art vessels, teams of dedicated engineers and project managers, and skilled offshore crews to ensure that its clients' projects run smoothly and to schedule. Within its engineering division DOF Subsea provides innovative engineering services and effective solutions. Its engineering capabilities include comprehensive front-end engineering, feasibility studies, concept development, design, installation and removal of subsea structures, flexible flowlines and umbilicals. Furthermore the company also routinely undertakes naval architecture, structural engineering, mechanical design, analysis and operations, and engineering across a broad range of applications including mooring installation, tow-out and hook up of FPSOs.

Since the DOF Subsea brand was first established, it has continued to employ and enhance the survey expertise that the company incorporated with its acquisition of Geoconsult. Today DOF Subsea specialises in providing positioning control in support of its clients' field installation projects, from near shore shallow fields to ultra-deep offshore developments. The company is also a major provider of detailed bathymetric and geophysical data to the oil industry with a track record spanning more than 25 years. "Services include seabed mapping, geophysical survey, and the entire range of field positioning services associated with umbilical, riser and flowline installations and other subsea infrastructure," Gert explains. "As part of this service, DOF Subsea leads the industry in providing deepwater subsea metrology using acoustics, photogrammetry and smart wire to measure and position spool pieces, jumpers and all subsea structures. We always utilise the most technically suitable package to suit the requirements of each scope of work."

The final facet of the DOF Subsea project division's operation portfolio is its range of IMR services. The company has specialists in place, across all disciplines in both onshore and offshore applications. Its onshore project teams work with the planning and engineering of IMR operations, and the company's vessels have dedicated and experienced crews well accustomed to executing IMR work including pipeline and structure inspection, module handling, commissioning, ROV and intervention services and diving services and intervention.

"Its subsea construction capability incorporates an expanding fleet of state-of-the-art vessels, teams of dedicated engineers and project managers and skilled offshore crews to ensure that its clients' projects run smoothly and to schedule

Through its wide global coverage and turnkey subsea services package DOF Subsea is able to deliver a strong and highly reliable solutions package to its clients. In terms of growth the company is diverse enough to concentrate on more energetic regions while others experience periods of slow down. "We think that the Norwegian sector will be challenging throughout 2015 because Statoil is decreasing its activity, but we also think that this is something that will only last a short time and that operations will pick up again later on 2016 or 2017," Gert says.

Commenting on the company's wider strategy within the Atlantic region specifically over the next three to five years Gert concludes: "Our focus on winning new work and excellent delivery will continue to strengthen DOF Subsea as a capable, solid supplier of subsea solutions with a strong project-proven track record behind us. With aging subsea structures in both Norwegian and UK sector we expect to see increased IMR spend, which will present an important opportunity for the DOF Subsea to capture a greater share of this segment in our region. With high exploration activity predicted, especially in Norway, opportunities also exist for survey and positioning services." OMG

Quay to success

NORSEA GROUP

The working partnership between Montrose Port Authority and NorSea Group, has the potential for growth and development for both organisations in Montrose. This is a key component of NorSea Group's long-term commitment to Scotland. NorSea Group recently acquired Danish logistics firm Danbor – including its Montrose facilities – from AP Moeller Maersk. NorSea Group has a 15-year agreement with Montrose, opening up future opportunities particularly in oil and gas, but also renewables and decommissioning sectors.

With a history dating back to the 12th century, Montrose has a long maritime tradition as a centre for international trade, which has further developed into a major commercial port for the oil and gas industry. Montrose is advantageously located in a sheltered haven on the river Esk, within a mile of open sea and between the key hubs of Dundee and Aberdeen on the east coast of Scotland. As such the port represents a cost-effective alternative for vessels in the region that is strategically situated close to the North Sea oil and gas market and its clients, which have included Shell, Hamilton Brothers, Brown & Root, Deminex, Marathon, Total AOCI, Amoco, Britoil, Chevron, Coflexip, Drexel, Merpro, Monsanto, Mobil, Occidental, Ranger, Texaco, BP, Viking Marine, GE Oil and Gas, Transocean and Schlumberger.

The port is operated by Montrose Port Authority (MPA), which works with partners within both the maritime and oil and gas industries to ensure that Montrose is able to deliver a complete service. "The full support package comes from our close relationship with local stevedores, crane operators and fuel suppliers and we all try to work together to make sure that the best services possible are present for the users of the port," says John Paterson, chief executive at MPA. "That is manifestly important because we are in competition with other ports, but it is also important in attracting new customers by demonstrating that we provide the best possible service with our partners."

Since the MPA was last featured in European *Oil & Gas Magazine* during 2012, it has continued to invest in the port and its facilities in line with the demands of increased North Sea oil and gas activity. Opened in August 2011,the authority invested £8.5 million in deepwater berths on the port's South Quay, which led to an increase of shipping gross tonnage to the port of 70 per cent. MPA has continued to maintain a high level of momentum in matching the increased demands of both the oil and gas and commercial shipping markets with further investments to berths six and seven, located at the eastern extent of the North Quay. "We are about to open an upgraded berth seven and new berth six as a major project due for completion at the end of September 2014 and this will give us superior berthing facilities, which is something that we had decided the port needed," John explains. "The project was carried out in two phases, the first phase was the upgrade of the east part of berth seven and this was linked to a new berth six at a new angle, meaning that we have good deepwater facilities with new quays for users of the port.

Following the completion of the deepwater quays located on the South Quay and the further £6 million investment into berths six and seven on the port's North Quay, MPA has continued to witness an increase of tonnage arriving at the port for 2014. "The number of ships arriving at the port continues to grow in 2014. As of August there is an increase of 20 per cent on last year, which is a very healthy picture because both oil

and gas and commercial shipping tonnage have increased. We expect this to continue to rise although perhaps not as dramatically as it has done, but with what is happening in the ports on the East of Scotland, which handle the oil and gas traffic, there is going to be a need for increased capacity at Montrose."

Coinciding with the development of berthing facilities at the port, several companies working in close proximity with the MPA have also invested in port infrastructure, which has contributed to the growth of traffic flowing in and out of the port. The first round of berthing upgrades on the South Quay were carried out simultaneously with the development of a new grain terminal operated by Angus Cereals Limited, which has increased the level of grain bulk traffic to the port. On the energy side, Highland Fuels Limited has invested in the port's marine gas oil services, which has led to an increase of the number of tankers arriving at the terminal trading in marine bunker fuel.

With improvements to the North Quay nearing completion MPA is currently focused on consolidating its current progress and exploring further opportunities for expansion. Presently in addition to oil and gas and bulk products, MPA handles onshore wind farm components and is currently gearing up to embrace future wind farm business as offshore wind farms continue to be developed. Also during the coming years MPA will look to operators within the oil and gas industry as potential new clients as the port continues to expand its service offering, as John concludes: "The strategic vision for the company over the next three to five years is to look at the oil and gas market to secure at least one supply ship contract, such as a multi-annual contract. The partnership we're offering through Montrose will certainly be of interest to the oil companies concerned, so again it is a question of us all working together." O&G

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Montrose Port Authority
montroseport.co.uk

Services
Port authority

Optimum performance

Since the company first appeared as Introl Limited in Brighouse, Yorkshire during 1967, Koso Kent Introl has evolved to become a leading name in the design and manufacture of specialist valve solutions across the global energy and offshore market.

Throughout its history the company has continued to expand and grow though a series of mergers and acquisitions. The Koso brand first appeared in 2005 when Nihon Koso Co Ltd of Japan acquired Kent Introl from Vetco Gray to form Koso Kent Introl Limited (KKI). Koso represents a strong family owned group with operations in India, the US, China, Korea and Japan with a total yearly turnover of around $400 million. While Koso owns Kent Introl the company retains a high level of operational freedom while enjoying the financial stability of its parent, as KKI managing director Denis Westcott elaborates: "Like Kent Introl, Koso is a valve producer, but while Kent Introl operates principally within the upstream and midstream oil and gas markets, Koso focuses more on downstream and other industry sectors. Hence KKI is allowed to operate autonomously. In simple terms we are free to operate effectively where we wish within the oil and gas market."

The KKI product range includes topside control valves, choke valves and subsea choke valves as well as a range of butterfly valves. The company specialises in providing engineered solutions for arduous services for both topside and subsea applications for oil and gas producers. Valves can be provided in a variety of sizes, pressure ratings and materials to suit a spectrum of applications and customer requirements. All KKI products and services are delivered in line with ISO 9001, TS 29001, OHSAS 18001 and ISO 14001 certification, allowing clients to order from the company with the greatest confidence.

When the company was last featured in O&G

European Oil & Gas Magazine during September 2013, Denis discussed the company's £2 million investment in a state-of-the-art Scharmann Ecoforce 1 HT2 as part of its strategy to increase production capacity at its Brighouse production facility. The Ecoforce allows KKI to deliver new angle style bodies, typically used for topside choke and subsea valves in a single efficient operation. Likewise, during 2013 Denis announced the company's plans to implement a new business system by early summer 2014. Today KKI is in a prime position with increased production capacity and a new management system that differentiates the company from other players in the market. "Customers who visit the Brighouse factory are always impressed by KKI personnel and facilities as well as its open style and visual management system. Clients can track orders through the business by looking at the visual system, which shows orders from the point of entry in sales right through to dispatch. In simple terms the company is defined by good people, good facilities as well as a strong track record and an open visual style."

From its current position KKI is presently gearing up to meet the challenges of the oil and gas market as it continues to evolve. "We see the future of oil and gas in two prime areas, which will become further linked as time passes," says Denis. "First are the ongoing developments in the subsea arena. As fields are developed in deeper waters and further from land, the need will grow for more complex subsea installations with the potential to carry out processes traditionally handled topside or onshore, on the seabed. Secondly more fields will fall into the high temperature/high pressure, or even ultra-high pressure/ultra-high temperature zones. This will not only increase the demands placed on the technical design of valves but also on materials technology. We are involved in various initiatives to place the company appropriately to meet these potential markets."

Traditionally KKI has enjoyed strong performance in the North Sea and in several other sectors around the world including the Caspian Sea and South America with an especially strong presence in Brazil. Furthermore, its sister company Koso India Pvt. Ltd. (KIPL) is well established in India, the Middle East and Far East. Today KKI continues to operate in diverse sectors throughout the world and in March 2014 the company won a contract to supply its 11 VeCTor velocity alloy steel control trims for a major offshore project in Africa. The VeCTor trim design has been developed by KKI over many years for use in severe service environments worldwide, including high temperatures or high pressure-drop applications. The valves on order are to be used for a high-pressure application off the west coast of Africa late in 2014. Furthermore KKI maintains a prestigious ongoing frame agreement with Statoil Petroleum in Norway. To date Statoil has made significant purchases of spares and valves from KKI for new-build projects, upgrades, modifications and replacement units.

From its current strong position KKI is well placed to embrace both the challenges and opportunities of the oil and gas market well into the future. Commenting on the company's future strategy Denis concludes: "KKI will focus on developing its products for floating and subsea systems, but the prime focus will most likely continue to be on subsea products. If this market follows predictions it is set to expand substantially over the next five to ten years. Presently KKI has 600 subsea chokes installed worldwide and this number is set to grow over the coming period." OSG

From its current strong position KKI is well placed to embrace both the challenges and opportunities of the oil and gas market well into the future

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