



# WindEnergy

NETWORK

COMMUNICATION HUB FOR THE WIND ENERGY INDUSTRY

## Installation Vessels

SPOTLIGHT ON  
ABERDEEN

ROVs

Crew Transfer



# GENERATE YOUR OWN FUTURE

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To work in the wind industry you need essential skills and knowledge. At Maersk Training we deliver a range of unique qualifications to help you gain employment on a wind farm.

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**MAERSK**  
TRAINING

# Spotlight on Aberdeen

A city made famous throughout the world Aberdeen is accepted as a leader in the management of offshore oil & gas. This feature looks at the city and its aims and aspirations for the future in the offshore renewables' sector and is introduced by Councillor Jenny Laing, Leader of Aberdeen City Council.

## INDUSTRY LEAD ARTICLE – COMMERCIAL STUDY LAUNCHED BY MEC INTELLIGENCE

New innovative foundation designs could prove to be more cost effective than conventional foundation for projects with increasing depth and turbine sizes. This is the result of a commercial study launched by MEC Intelligence. The study compares various offshore wind foundation designs on multiple cost parameters.

## OPERATIONS & MAINTENANCE

As always our regular O & M feature is extensive and proves that the industry continues to grow to record levels throughout Europe and beyond.

## POET'S CORNER

We continue our 'Poet's Corner' feature which has been well received by our readership – this can be found opposite the inside back cover.

Please feel free to send in your poetry or prose if you feel so inclined – anything relevant to the industry will suffice.

## EAST OF ENGLAND SPECIAL EDITION – ISSUE 27

Please have a look at our East of England Special Edition detail scheduled for the next edition and remember you don't have to be based there to feature – as long as you are involved in the area we would like to hear your story.

## FORTHCOMING FEATURES – GET INVOLVED

Please feel free to contact us if there is any subject area which you think may be of interest to our readership and we will do the rest – there is never any charge for genuine editorial.

### MAY 2015 – ISSUE 27

*(Editorial deadline 15th April)*

East of England Special Edition

- 1 **Oil & Lubricants**  
*Sponsored by Chemical Corporation*
- 2 **Specialist Lighting**
- 3 **O & M**  
*Sponsored by Green Marine Solutions*
- 4 **Risk Management**
- 5 **Trenching**  
*Sponsored by DeepOcean*
- 6 **Diving Services**  
*Sponsored by Hughes Sub Surface Engineering*
- 7 **Spotlight on East of England** which will consist of the following sections...
  - **Ports & Port Services**  
*Sponsored by EastPort UK*
  - **Logistics**  
*Sponsored by Tidal Transit*
  - **Training**
  - **Professional Services**  
*Sponsored by Nautilus*
  - **Research & Innovation**  
*Sponsored by Eco-Winds*
  - **Market Opportunities**  
*Sponsored by Orbis Energy*
  - **Operation & Maintenance**  
*Sponsored by 3sun Ltd*
  - **Support Services**  
*Sponsored by Cooper Lomaz*

NB:

Also included within the magazine: a pull-out and keep supply chain matrix for the East of England – listing 100 companies by their specialism.

Regular updates can be found on the 'Forthcoming Features' tab on our website in the magazine section.



Duncan McGilvray  
Editor | **Wind Energy Network**

[www.windenergynetwork.co.uk](http://www.windenergynetwork.co.uk)

[Click to view more info](#)

Scan/click this link to find out how to get involved in this magazine

# Installation Vessels

**The cover image from Fred. Olsen Windcarrier we felt encapsulates the vastness of the seas in which wind turbine installation vessels operate. Our sponsor Fred. Olsen Windcarrier leads our feature within this edition.**

## **ABERDEEN SPOTLIGHT**

A city made famous throughout the world, Aberdeen is accepted as a leader in the management of offshore oil & gas. This feature looks at the city's foresight in not keeping your eggs in one basket as they look to the offshore renewables sector.

## **ROVS**

A substantial feature on this necessary operation delivering solutions to the rigours of deep water intervention and support which offer a wide range of data communications protocols facilitating efficient integration of add-on tools and sensors. ROV support vessels operated by skilled and experienced ROV pilots ensure the safety of personnel in reducing risk.

## **CREW TRANSFER**

Industry offshore O & M requirements continue to grow in line with the considerable expansion of offshore wind farms. Crew transfer vessels serve this growing need and the feature highlights the companies involved in both providing and operating them.

**Duncan McGilvray**  
Editor | Wind Energy Network

Cover image courtesy of Michael Lenvig Olsen  
on behalf of Fred. Olsen Wind Carrier

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## GET IN TOUCH

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# New study reveals The most competitive foundations For offshore wind turbines



## New innovative foundation designs could prove to be more cost effective than conventional foundation for projects with increasing depth and turbine sizes. This is the result of a commercial study launched by MEC Intelligence. The study compares various offshore wind foundation designs on multiple cost parameters.

### COMMERCIAL STUDY

MEC Intelligence, provider of cleantech and maritime market insight and analysis, has launched a commercial study comparing the cost of a range of offshore wind foundation designs.

The study concludes that while CraneFree Gravity foundation is suitable for 6 MW and 8 MW in medium to high depths, Mono Suction Bucket is cost effective for projects with turbine sizes around 4 MW and 6 MW in lower to medium depths.

### COST EFFECTIVE DESIGNS

*“The need for turbine installation deeper into the sea will create demand for larger and heavier foundations and therefore, for cost effective designs. The aim of the study has been to compare the cost of foundation technologies in offshore wind by looking at the conventional foundation types and new innovative foundation designs,”* says Jacob Jensen, Partner at MEC Intelligence.

Conventional foundation designs, monopiles and jackets, have been compared with new innovative designs – gravity based and suction based foundation designs. The results of the study are that the innovative foundation designs could prove to be more cost effective than conventional foundations for projects with increasing depths and turbine sizes.

### CONCLUSIONS

The conclusions are built on MEC Intelligence’s wide sources and internal database of actual offshore wind projects. The costing assumptions are based on actual values witnessed on the offshore wind projects and inputs from various industry experts. The study does not include risk and premium costs in the analysis.

### COMPREHENSIVE RISK AND SENSITIVITY ANALYSIS

The study also includes a comprehensive risk and sensitivity analysis where the conclusions of the analysis is that CraneFree Gravity appears to be least sensitive to changes in market conditions when assessed on future uncertainty factors and risks such as, steel price fluctuation and vessel availability.

The design is largely made of concrete and does not require heavy lift vessels for installation.

### NO MAJOR SUPPLY RISKS

*“With the CraneFree Gravity foundation designs most of the fabrication takes place on the port and therefore there is not a high dependence on production facilities. Only tugboats or platform support vessels are needed for its installation, which faces no major supply risks,”* says Jacob Jensen, Partner at MEC Intelligence.

### MEC Intelligence



# Successful commissioning of BorWin2 and HelWin1 HVDC grid connections

**PRYSMIAN GROUP**, world leader in the energy and telecom cable systems industry, recently announced the successful commissioning of the High Voltage Direct Current (HVDC) offshore grid connection projects BorWin2 and HelWin1 which have both been realised off the North Sea coast of Germany.



Cablesip Giulio Verne operating by the HelWin converters platforms



The group secured these two projects in mid-2010 as part of overall contracts awarded to consortia between the Group and Siemens Energy by the Dutch-German transmission system operator TenneT for the grid connection of offshore wind farms to the mainland.

### IMPORTANT PROJECT

BorWin2 now links the Global Tech 1 offshore wind farm in the North Sea to mainland Germany and has the same grid connection capacity available for further offshore wind farm connections. This important project marks a series of significant milestones, being the first large-category offshore grid connection worldwide to take up commercial operation with HVDC technology, employing an extruded cable connection along a 200 km route (125 km offshore and 75 km onshore) with the highest power transmission capacity (800 MW) and the highest DC voltage level ( $\pm 300$  kV DC) worldwide, a record previously also held by Prysmian with the  $\pm 200$  kV DC Transbay Project in San Francisco (California).

HelWin1 is the second HVDC grid connection to be handed over to TenneT in the first weeks of this year and links the offshore wind farms Nord See Ost and MeerWind to mainland Germany with a  $\pm 250$  kV DC, 576 MW cable connection along a total route of 130 km (85 km submarine and 45 km land).

### CABLE TECHNOLOGY

Both BorWin2 and HelWin1 use extruded HVDC cable technology from Prysmian together with Siemens HVDC Plus® converter technology at the offshore platform and onshore stations. Prysmian Group has also installed the multiple 155 kV HVAC submarine cables which connect the converter platforms to the respective individual offshore wind farm transformer platforms.

### CONTINUED SUCCESSFUL RELATIONSHIP

The completion and hand-over of these important projects re-affirms the Group's continued successful relationship with TenneT who have awarded Prysmian the submarine and land cable systems for a total of six HVDC grid connection projects in recent years.

BorWin2 and HelWin1 are the first and second grid connections to be handed over; a further two DC offshore grid connection projects, SylWin1 and HelWin2, near completion and are scheduled to take up commercial operation within the first half of 2015. Prysmian is currently implementing also the HVDC cable systems for the DolWin3 and BorWin3 projects.

### STATE-OF-THE-ART PRODUCTS AND TECHNOLOGIES

Over the last years the Group has continued to develop a wide range of state-of-the-art products and technologies for the renewable energies sector.

These latest achievements underline the Group's pre-eminent role in the development of HVDC cable transmission systems and its leading position in the commercial application of HVDC cable technology.

### Prysmian Group

## SURVIVAL TRAINING FIRM LIFTS CHARITY WITH FUNDRAISING EVENTS

**A leading offshore survival training firm has completed its fundraising year with a significant amount of money raised to help a local air ambulance service run its vital services.**

Falck Safety Services (Falck), which has 32 training centres across the world, including two UK centres in Teesside and Aberdeen, has raised more than £5000 to its chosen charity of the year, The Children's Air Ambulance (TCAA).

The team at Teesside, which handed over the cheque to TCAA last week, managed to more than double the original target of £2000 by hosting bake sales, a race night, football and Christmas raffles, dress-down days, individual challenges and received donations from training delegates and clients.

### ONE AND ONLY

TCAA is the first and only dedicated national helicopter emergency transfer service for critically ill children and babies across the whole of the UK.

**Sophie Burt and Niel Rennie**



*"It has also been a fantastic way to bring the team together and boost staff morale as most events were completed as a group."*

### A PERSONAL THANK YOU

TCAA National Partnerships Manager for the north, Sophie Burt, said: *"It was great to meet the team at Falck and thank them in person for all their hard work raising such a fantastic sum of money. As we receive no government funding and each transfer costs approximately £2,800, generous donations like these really do keep hope alive for our young patients."*

### FOCUS ON LOCAL COMMUNITY

Falck Safety Services, has a strong focus on the local community regularly working with the local food banks and mobile kitchens in the area, as well as the Billingham Legacy Foundation on various initiatives including back to work schemes.

### Falck Safety Services

[Click to view more info](#)

[Click to view video](#)

### HUET (HELICOPTER UNDERWATER ESCAPE TRAINING)

The firm, which globally delivers over 200 safety and survival training courses to more than 340,000 people each year, participated in various fundraising initiatives throughout the year, including a sponsored HUET dunk in its state-of-the-art helicopter simulator facilities, which challenged 14 clients and employees from Falck to switch roles and undertake two escape runs in the helicopter.

Finance Director at Falck Safety Services UK, Niel Rennie, said: *"At the start of 2014, Falck selected the air ambulance as our nominated charity and over the year we have participated in various fundraising activities to raise as much as we can. TCAA is the only dedicated helicopter transfer to cover the whole of the UK and does not receive any government funding so it is reliant on public donations and support from the local community and it is great that Falck can support this vital service."*

# AIS EXPANDS TO CREATE £1M RENEWABLE ENERGY CAMPUS

**Offshore industry expert, AIS Training is expanding its world-class training village on North Tyneside to create a new state-of-the-art renewable energy centre which is expected to attract thousands of potential workers for the fast-growing wind sector.**

## CENTRE OF EXCELLENCE

The new £1 million Renewable Energy Centre of Excellence, which is accredited by leading wind industry bodies such as the Global Wind Organisation (GWO) and Renewable UK (RUK), will deliver the full suite of technical skills and competency training required by the wind and renewables sectors. Courses will include combined GWO/RUK Working at Height and Rescue, Manual Handling, Fire Awareness, First Aid and Sea Survival qualifications.



## JOBS AND SKILLS

12 new jobs will be created at AIS as a result of the project and the centre sits within AIS Training's existing 150,000sqft offshore training complex which delivers more than 90 industry accredited courses. This will enable delegates to get all the mandatory skills required by the wind sector in one location, as well as giving them access to AIS's new hotel and restaurant.

*"Working in the wind sector requires very specific skills such as inspecting and repairing wind turbine blades at eye-watering heights. Our training puts industry-skills such as working at height in context for wind professionals so that when they go into the field they are well equipped to cope with any eventuality."*

## COST CONSIDERATIONS

*"We've listened carefully to our customers who tell us that cost is the number one consideration when training staff. By building the renewable energy campus within our existing offshore training village - just around the corner from our onsite hotel - we can bring the overall training cost down for delegates. We significantly reduce their travel and accommodation costs. They can stay in our low-cost hotel at the same time as getting all the skills and competency training they would ever need in one location. We believe this creates an unbeatable offer and we are anticipating high demand for places at our centre."*

## FACILITIES

Purpose-built within a 6,000 sq ft industrial unit, the new centre will feature a 15 metre high climbing and rescue platform which has 12 stations incorporating vertical fall-arrest safety systems, as well as a mock nacelle and three technical engineering areas.

These facilities will re-create the field conditions found on 'real-life' wind turbines enabling AIS to deliver realistic skills training and ultimately 'work-ready' personnel. The centre also includes three state-of-the-art classrooms equipped with the latest Wi-Fi enabled IT systems and a central relaxation area.

## RIVALLING THE BEST IN THE WORLD

Paul Stonebanks, Managing Director at AIS said: *"Our new renewable energy facility will rival the very best in the world and will put the North East at the forefront of skills and competency training for the global wind energy sector."*

*"At AIS we are seeing massive customer demand for well-qualified wind industry professionals as a result of new offshore wind projects such as Dogger Bank and East Anglia One. Our new custom-made facility will enable us to accommodate this increased demand and help plug industry skills shortages."*

## AIS Training

[Click to view more info](#)

# Extending Global Services support for EnBW Baltic 2 Offshore Wind Farm

JDR has extended its service support operations for the EnBW Baltic 2 offshore wind farm. Under a contract awarded by Siem Offshore Contractors GmbH, JDR is providing pre-commissioning, test and termination services for the 80 turbine project in the Baltic Sea, off the coast of Rostock (Germany).

## PROJECT SCOPE

JDR's offshore wind test and termination team was commissioned to deliver a scope of work that included onshore planning and procedures, project management, mechanical installation, cable containment, termination, test, modification and reporting. The project scope – for people and equipment involved – continues to grow.

## CAPABILITY

Günther Bakker, Chief Operating Officer at Siem Offshore commented: *“We brought JDR into the EnBW Baltic 2 project due to their full support team capability and extensive experience in offshore power cable operations. In field, their work has been professional with on time delivery. We are delighted to extend their role in the project.”*

## SPECIALIST OFFSHORE AND ONSHORE SUPPORT

Charlie Backhouse (pictured), JDR's Global Services Director, commented: *“JDR provides specialist offshore teams with full onshore and logistics support. A JDR offshore wind services team is typically made up of three operatives, rather than the industry standard five, without any compromises in quality or safety standards. This is another important contribution to the delivery of cost-effective renewable energy.”*

Charlie Backhouse




## RENEWABLES SECTOR

Renewables Services is a fast growing area for JDR's Global Services operations. The team supports the renewables industry; from project installation consultancy, to equipment hire and pre-commissioning, with ongoing full product life cycle support including repair and maintenance. JDR's approach is designed to maximise product investment and lower the total cost of equipment ownership.

## JDR

[Click to view more info](#)

 = [Click to view video](#)



# MARINA MOVE MAKES MORE OF CONFINED SPACE

**Marlin Environmental Services Ltd, marine and industrial specialist contractors announce commissioning of their new ‘Confined Space and Confined Space Refresher’ training facility attached to their Head Office complex within beautiful Chichester Marina.**

## ADDITION

The location adds a further South Coast training site alongside Marlin’s existing Portsmouth Dockyard facility for IOSH-accredited ‘Confined Space’ (and related ‘Refresher’) training courses. The dual classroom/practical training vessel is unique to the area, built in response to increasing demand locally for Open Courses to suit maritime business, SME’s and owner/operators.

## 1997 REGULATIONS AND COMPLIANCE

Confined Space Regulations 1997 cover all chambers, tanks, vat, silo, pit, pipe, sewer, flue, well or other similar spaces in which, by virtue of its enclosed nature there is foreseeable risk of a ‘specified occurrence’.

Simon Evans, Marlin Marketing & Sales Manager explains: *“Compliance for those working in such conditions is mandatory, steadily increasing qualification and refresher courses, while the 3-year accreditation cycle puts increasing pressure on trainers and facilities across the region.*

*“Locating a second unit in Chichester means we now offer marine, construction, catering, industrial and individuals with open courses to suit busy working schedules or short-notice requirements, while our mobile unit remains available for on-site customers.”*

## TRAINING TEAM

Marlin’s IOSH-licenced training team is kept busy providing no fewer than 13 courses for managers and operatives in: Fire; Confined Space; COSSH; Work at Height; Manual Handling; Environmental and other mandatory skills for H&S compliance and best practice. Marlin also provides individuals and small companies with approved & bespoke training on and off-site.

**Marlin Environmental Services Ltd**



**orga**  
Aviation

With 40 years' experience in the design and manufacture of smart and high quality aviation lighting solutions, we are experts in:

- Obstruction light systems for onshore projects worldwide
- Obstruction light and navigation systems for offshore projects worldwide

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# SEAPLANNER GOES LIVE AT VATTENFALL KENTISH FLATS EXTENSION

SeaPlanner, an industry leading web-based marine monitoring and management system, is pleased to announce that it has been selected by Vattenfall as their marine co-ordination and management tool for the Kentish Flats Extension offshore wind farm.

This extends SeaPlanner's presence on Vattenfall sites, which already includes the construction site, Dan Tysk and generation projects, Thanet and Kentish Flats.

### COST EFFECTIVE SYSTEM

The SeaPlanner system provides the construction team with a complete management and tracking solution for project data and information. This includes personnel and vessel tracking, certification management, document management and also the new ground breaking, online induction module.

Dominic Stratton, SeaPlanner Manager  
*"SeaPlanner is proud to provide the Vattenfall team with a cost effective way of managing their offshore construction activities, helping the team ensure safety and optimise efficiency of the project."*

### INDUCTION MANAGER

The Vattenfall team is also using SeaPlanner's new 'Induction Manager' module which helps minimise administration time with personnel completing inductions online and ensuring all personnel are fully inducted and suitably certified prior to arrival onsite.

Toby Rayner, Marine Co-ordinator at Kentish Flats Extension added *"The SeaPlanner software will limit the amount of vessel downtime by ensuring personnel are ready to go the moment they arrive onsite. It was important to us that inductions could be carried out on a pc or mobile device making it accessible to all, especially when working within the offshore sector where desk based PC access is limited."*

### CONTINUOUS DEVELOPMENT

SeaPlanner is a leading offshore marine management and co-ordination system, which has currently been used on 728 of the UK's offshore wind turbines, two thirds of all those deployed in UK waters.

The system is constantly being developed with innovative systems to further benefit the offshore construction industry.

### SeaRoc Group



# AN INNOVATIVE NEW CABLE SEAL FOR WIND INDUSTRY SECTOR

**Safety seal manufacturer Roxtec has extended its range of cable seals with an innovative new seal specifically for underground power cables serving structures including wind turbines and electricity substations.**

Roxtec UK Managing Director Graham O'Hare said the new Roxtec UG sealing system is ideal for power cables entering foundations or basements because it protects against flooding, humidity and continuous water pressure.

*being built on flood plains and areas with high water tables. The Roxtec UG system can be used wherever there are underground cables being served by a cable trench. It has been developed as a specialist water-tight seal."*

*They eliminate flooding in substation basements. Water ingress in substations can create humidity, leading to partial discharge, switchgear failure and power outage. The seals are also resistant to corrosion and rodents. They can be installed in running water applications.*

*"Importantly, UG seals are easy to cast into foundations and require no drying or curing, thus saving time and reducing costs. A knock-out sleeve is available and designed to be cast into the foundation structure. It is available in three different industry-standard sizes and designed to fit Roxtec seals and frames. A knock-out plate in the sleeve ensures a water-tight seal before cables are routed, meaning there is no water ingress during construction.*



## SPECIALIST PRODUCT

*"This specialist product has been developed by our experts in the field,"* said Graham. *"It has an innovative, specially-formulated high elastic EPDM rubber to seal cable ducts below ground.*

*"Power transmission and distribution is a fast-growing area of work for Roxtec in the UK, due to the number of substations*

## SPECIFICATIONS

The UG seal is IP68-rated, 1 bar for catastrophic water pressure and 0.3 bar for constant water pressure. It can be used on trefoil single core cables. The system has been tested in Roxtec's specialist test laboratory with retention tests of 1400N and 3300N depending on the product selected, meaning the system can handle the weight of many cables which is often the cause of failure in traditional sealants.

Graham added: *"The seals are easy to install and can be used on different-sized cables thanks to removable layers.*

## DELIVERING SOLUTIONS

*"This new product is a classic example of Roxtec's overall design mantra to deliver sealing solutions which are easy to fit, maintain and adapt. This makes them ideal for retrofit and new-build applications."*

**Roxtec**

## Issue 27 Forthcoming Features...

### EAST OF ENGLAND SPECIAL EDITION.

*Hurry to be included!*

East of England - special edition over approx 60 pages. We are including a unique pull out supplement which takes the format of an 8 page foldout matrix containing a grid of the services offered by 100 companies in the area.

Inclusion in the feature and on the matrix gives an unparalleled opportunity for companies in the area to showcase their services to 5400 senior decision makers in the wind energy industry throughout Europe. We want to show the industry just how diverse and comprehensive the supply chain in the area is.

**EDITORIAL – FREE 350 WORD EDITORIAL**

**MATRIX OF COMPANIES – FREE ENTRY**

**COMMERCIAL OPPORTUNITIES**

*limited number left*

We have had a great response already to the East of England feature, with many editorials coming in from lots of companies, entries for inclusion on the matrix as well as the commercial packages being snapped up. Don't leave it too late to be part of this special edition.

Follow the link for more information or call Carly on:  
**01765 644224**

[Click to view more info](#)

## Other features in Issue 27

Oil & Lubricants  
Specialist Lighting  
O & M  
Risk Management  
Trenching  
Diving Services

Please contribute your editorial to any of the features above by April 15th

## Events and What's New...

### SR ANNUAL CONFERENCE, EXHIBITION & DINNER 2015

**WHEN** 24 Mar 2015 & 25 Mar 2015  
**WHERE** Edinburgh International Conference Centre  
**CONTACT** [www.scottishrenewables.com/events](http://www.scottishrenewables.com/events)

### INTERCONTINENTAL WIND POWER CONGRESS

**WHEN** Tue 31 Mar 2015 - Thu 2 Apr 2015  
**WHERE** Istanbul, Turkey  
**CONTACT** [www.iwpc2015.org](http://www.iwpc2015.org)

### AWEA 2015

**WHEN** Mon 18 May 2015 - Thu 21 May 2015  
**WHERE** Orlando, FL, USA  
**CONTACT** [www.windpowerexpo.org](http://www.windpowerexpo.org)

### RENEWABLE WALES 2015

**WHEN** Thu 21 May 2015  
**WHERE** Cardiff, UK  
**CONTACT** [www.renewableuk.com/en/events/events](http://www.renewableuk.com/en/events/events)

### WINDFORCE 2015

**WHEN** Tue 9 Jun 2015 - Thu 11 Jun 2015  
**WHERE** Bremenhaven, Germany  
**CONTACT** [www.wab.net](http://www.wab.net)

### GLOBAL OFFSHORE WIND 2015

**WHEN** Wed 24 Jun 2015 - Thu 25 Jun 2015  
**WHERE** London, UK  
**CONTACT** [www.renewableuk.com/GOW2015](http://www.renewableuk.com/GOW2015)

### HUSUM WIND 2015

**WHEN** Tue 15 Sep 2015 - Fri 18 Sep 2015  
**WHERE** Husum, Germany  
**CONTACT** [www.husumwind.com](http://www.husumwind.com)

**FOR MORE INFO ON FORTHCOMING FEATURES**

**NEXT EDITION - ISSUE 27**

[Click to view more info](#)

### LOOKING FOR A SPECIALIST SERVICE PROVIDER IN THE WIND ENERGY INDUSTRY?

Visit our extensive online Supply Chain Register where circa 1300 companies specific to the wind energy industry are listed

**W** [www.windenergynetwork.co.uk](http://www.windenergynetwork.co.uk)

**T** **01765 644224**

**E** [duncan@greenenergypublishing.co.uk](mailto:duncan@greenenergypublishing.co.uk)



# Courses tailored to top-levels...

**MAXIMISING SKILL SETS FOR SENIOR PERSONNEL IN THE OFFSHORE ENERGY INDUSTRIES IS ESSENTIAL – ESPECIALLY AS THE HIGHLY COMPETITIVE AND CONSTANTLY EVOLVING SECTOR GROWS.**

At Offshore Marine Academy (OMA), a training provider for the offshore energy industries, courses are tailored to ensure businesses have the skilled workforce required to perform optimally, helping them to stay ahead of competition.

With operational and technical courses aimed at those with a broad range of responsibilities, OMA provides support to both experienced and inexperienced legal staff as well as senior personnel who are involved in all aspects of commercial contracting for offshore energy projects.

With a typically complex, multi-contractor structure within the offshore wind supply chain, it's important to have a clear understanding of the contract and tendering process and where responsibilities lie.

## COURSES INCLUDE...

- **Contract Management** – the course promotes an understanding of the key principles, current issues and legal requirements concerning professional purchasing. With a focus on the structure of commercial law, it provides delegates with an understanding of the key components and their application in a number of purchasing contexts
- **Engineering, procurement and construction (EPC)** – the use of Engineering, Procurement and Construction contracts in the energy industry has become more and more widespread and projects are increasingly constructed under the terms and conditions of EPC. The course focuses on construction agreements such as scope, schedules and budgets including considerations of project structure, arranging finance and insurance as well as commercial agreements
- **Practical Contracting and Offshore Installation** – the course provides an overview of the complexities of construction contracts, focusing on understanding key critical terms in contracts as well as the details of the tendering process and best practices to ensure optimal results. Delegates gain an understanding of the various parts of a contract and how they interface and are given clear understanding of the pitfalls which can occur if the various parts of a contract are not compatible. It also looks at time and resource management as well as understanding negotiation techniques

## GENERAL INFORMATION

All courses at Offshore Marine Academy are developed by seasoned professionals with first-hand experiences within the industry. Courses range from introductory, for those looking to enter the industry, to the more operational and technical-based courses aimed at experienced professionals looking to apply for more senior roles within offshore industries or looking to develop their current skill set.

Offshore Marine Academy

[Click to view more info](#)

## Upcoming Courses...

### STCW95 COURSE

**WHEN** 18 – 22 May 2015  
**WHERE** Whitby, UK  
**CONTACT** [www.whitbyfishingschool.co.uk](http://www.whitbyfishingschool.co.uk)

[Click to view more info](#)

### STCW95 COURSE

**WHEN** 6 – 10 July 2015  
**WHERE** Whitby, UK  
**CONTACT** [www.whitbyfishingschool.co.uk](http://www.whitbyfishingschool.co.uk)

[Click to view more info](#)

# Opportunities &

***“While it is always exciting to stand at the dawn of new technologies and industries, there are both opportunities and challenges. However, in my experience much can be achieved over time by a concerted effort from committed individuals and organisations. We must continue that effort into the future to win a significant environmental and industrial prize for Scotland and the UK.”***

Councillor Jenny Laing, Leader Aberdeen City Council

Offshore wind is a promising new industry and one that can be transformational in reducing carbon emissions, increasing energy security and creating new employment. The opportunities may be very significant but there are longstanding development issues and these must be addressed and overcome. The challenges include consistency of policy and legislation, consenting, financial support mechanisms, engineering and technology, financing, grid and development timescales.

## **A LONG WAY TO GO**

Securing planning consent for all major commercial offshore wind projects in Scottish waters has certainly given the sector a real boost, however there is still a long way to go to turn enormous potential into tangible economic and environmental benefits.

The opportunities for Scotland opened up by the granting of consent for the Near Na Gaoithe, Inch Cape and Seagreen Alpha and Bravo projects off the coast of Fife and Angus are immense. The Scottish Government estimates these projects alone could generate up to £1.2 billion for the Scottish economy over their lifetime and support up to 13,600 jobs during their construction phases.

Two other wind farms in the Moray Firth – Beatrice Offshore Wind Ltd (BOWL) and Moray Offshore Renewables Ltd (MORL) – were consented in March last year.

In total, the six projects could deliver more than 4GW of offshore wind capacity and power almost 1.5 million homes if they go ahead.

## **EUROPEAN OFFSHORE WIND DEPLOYMENT CENTRE (EOWDC)**

2014 also saw full consent awarded for the EOWDC off Aberdeen – a project of European importance which is intended to significantly reduce the costs of offshore wind.



# Challenges

## CONTRACTS FOR DIFFERENCE (CFDS)

More recently, the award of CfDs in the round one allocation to Mainstream Renewable Power's Nearth na Gaoithe project and further from home Scottish Power Renewables' East Anglia One offshore windfarm demonstrate the achievement of significant economies of scale, the mainstreaming of offshore wind and projects moving forward through the development cycle.

The highly competitive prices achieved by these offshore projects in this auction (up to 18% lower than previously) is also encouraging as cost reduction is one of the major challenges for the sector.

## ECONOMIC AND ENVIRONMENTAL BENEFITS

To win the very significant economic and environmental prize that the offshore wind industry offers the UK, efforts to address and overcome the challenges must continue. Aberdeen as a global energy capital has a unique role to play in making offshore wind work – the city is renowned for its problem solving capabilities and the development, commercialisation and deployment of new technology.

## CENTRE OF EXCELLENCE

As a world class energy centre of excellence, Aberdeen has over forty years' experience and many strengths. There are approximately 1,000 local energy companies employing over 40,000 people and these companies between them are active in sixty-five global markets.

The work force in the North East of Scotland is highly skilled and their skills are excellent for the development of offshore renewables both at home and around the world. In fact, the capability of the people of Aberdeen City and Shire spans the whole energy project life cycle from inception to decommissioning.

The North East of Scotland is now the largest employer in offshore wind in Scotland by some margin. This is a significant achievement and one the city and its industry can be proud of.

## LEARNING FROM OIL & GAS

Much can be learned from the North Sea oil and gas industry's cyclical cost reduction activities. This experience suggests that key activities for cost reduction are the removal of duplication and supply chain development, streamlining of contract structures, share of experience and data, economies of scale, the development and deployment of technology and communication of problem solving and best practice.

## COST REDUCTION, CO-OPERATION AND INNOVATION

Summed up, the way to a successful, industrial scale offshore wind industry will be cost reduction, co-operation and innovation.

**Councillor Jenny Laing**  
**Leader**  
**Aberdeen City Council**

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# Triodos Renewables put even more wind in Scottish sails

**Major turbines enter development in Aberdeenshire as Scotland continues to go with the wind.**

Foundations have been laid for two new wind turbines in Aberdeenshire. The turbines will be generating electricity by the summer of 2015, bolstering Scotland's recent surge in creating clean, green wind energy.

## LOCATION

The two turbines are being constructed in Auchtygills and Clayfords, both close to Strichen and will have a total capacity of 1.6 MW. All electricity generated by the pair of Enercon E-48 turbines will be delivered to the local electricity distribution network and Triodos Renewables PLC is funding the developments.

## GREEN ENERGY GROWTH

Development gets underway just as impressive new figures reveal Scotland's on-going purple patch of green energy capacity growth. Data released in December 2014 by the UK Energy Minister Amber Rudd shows that renewable energy in Scotland offset a whopping 12 million tonnes of CO2 in 2013

– the highest emission offset ever recorded in Scotland and a 14% increase on figures from 2012.

Scottish turbines generated around 812,890 MWh of electricity for the National Grid in November 2014, according to figures from WWF Scotland. That's enough to meet the demands of 107% of Scotland's households. Relatively it's almost five times higher than the equivalent wind power generated in the rest of the UK during the same period (where wind energy only met 22% of total household energy demand).

## VITAL STATISTIC

Incredibly Scotland's wind turbines generated enough energy to supply energy to every home in Scotland on 11 out of 30 days during November 2014. The new turbines in Aberdeenshire will add further security to Scotland's energy supply and reinforce the nation's talked about reputation in the media and by WWF Scotland as being ambitious for wind energy production. Like they say, hoist your sail when the wind is fair.

## OTHER SITES

Renewable energy specialists Triodos



Renewables own eleven other renewable energy sites across the UK (a selection of wind farms and a hydroelectric site) with a total capacity of 54.56 MW. Together they produce enough green energy to meet the demands of 34,000 homes.

**Triodos Renewables**



At DeepOcean we have spirit and passion for innovation and technology. In the challenging offshore environment, our world-class expertise is depended upon for the successful development and reliable servicing of the renewables market.

Bridging present and future energy needs is essential, and it is DeepOcean that provides the vital connection between new energy systems and existing grids.

DeepOcean plays a leading role in the global supply of offshore wind power, providing a range of reliable and proven solutions under its core service areas.

- SURVEY AND SEABED-MAPPING
- SUBSEA INSTALLATION
- SEABED INTERVENTION (TRENCHING)
- SURF (Subsea Umbilicals, Risers, and Flowline Installation)
- INSPECTION, MAINTENANCE AND REPAIR
- DECOMMISSIONING



**DEEPOCEAN**  
www.deeпоceangroup.com

DeepOcean is a global provider of safe, high quality, innovative solutions for the subsea industry. A fleet of owned and chartered subsea support vessels are available to serve clients requirements, in addition, a newbuild interconnector vessel will join the fleet in 2016.

THE NETHERLANDS NORWAY UNITED KINGDOM MEXICO BRAZIL SINGAPORE

# A first for North East firm in adopting new safety process

**MOTIVE OFFSHORE GROUP, THE LEADING MARINE EQUIPMENT SPECIALISTS IN THE NORTH-EAST OF SCOTLAND, HAS BECOME ONE OF THE FIRST COMPANIES TO ADOPT A NEW SAFETY SCHEME, FOLLOWING A SIX-FIGURE INVESTMENT AFTER ANOTHER SUCCESSFUL YEAR OF BUSINESS.**

## **STRONG SAFETY CULTURE**

Chief Operating Officer of Motive Offshore Group, Dave Acton said: *“As a company, we have grown significantly throughout the last four years and as such it has been vital to promote and develop a strong safety culture to protect the welfare of our employees and clients. We have been very focused on helping our employees*



**Dave Acton**



## **6S LEAN MANUFACTURING PROCESS**

The firm, which was established in 2010 has implemented a new safety and lean production scheme called 6S, to improve efficiency and safety in the work environment.

The Japanese developed lean manufacturing process will improve standard operational practices and ensure efficient and safe ways of working throughout the organisation. The 6S programme comprises of six different phases including, sort, straighten, sweep, standardise, sustain and the new element safety, which is currently being deployed across the company’s three bases in Boyndie, Aberdeen and Stavanger in Norway, through comprehensive on-site training for employees.

*to work responsibly and in the safest possible manner and the 6S programme will play a key role in this.*

*“The process will essentially assist our employees to think more seriously about safety and about the steps they take when working in the factory, whilst also allowing us to develop new practices that add value and help to standardise our work process to reduce risk for employees.*

*“Since day one we have been focused on our people and as we continue to expand and employ further staff, lean techniques like 6S will be key to our continuous improvement efforts and overall infrastructure to deliver clients the best possible service whilst working towards being a company recognised for its safety standards.”*

## **SERVICES**

Motive Offshore Group, which specialises in the manufacture and rental of high capacity winches, umbilical deployment equipment and specialised subsea equipment, including subsea winches and

baskets, is committed to providing the industry with a new generation of high quality marine products and equipment that is safe, reliable and up-to-date to meet appropriate standards and deliver exceptional performance worldwide.

## **PLANNED EXPANSION**

The group now employs over 100 members of staff across its three locations and has future plans for additional staff and further investment in rental equipment.

## **Motive Offshore Services Ltd**

# DEEPOCEAN'S NEW ABERDEEN OPERATION

**DEEPOCEAN GROUP IS AN INTEGRATED PROVIDER OF SAFE, HIGH QUALITY, INNOVATIVE SERVICES AND TECHNOLOGIES FOR THE SUBSEA INDUSTRY. DEMONSTRATING AN EXTENSIVE TRACK RECORD, THE GRIP OFFERS A BREADTH OF SUBSEA SERVICES, INCLUDING SURVEY AND SEABED-MAPPING, SUBSEA INSTALLATION (SURF), SEABED INTERVENTION, INSPECTION, MAINTENANCE AND REPAIR (IMR) AND DE-COMMISSIONING.**

This strong portfolio of services, coupled with a fleet of owned and controlled specialised equipment and multi-purpose support spreads, enables them to bundle its subsea services to deliver cost-effective, tailored solutions to meet individual client needs.

## GLOBAL TEAM

The group strives for relentless customer focus and operational excellence, which is supported by a global team of highly professional and experienced project teams. The company delivers innovative engineering solutions and turnkey project management for complex offshore operations.

The company is a leading IMR Contractor and trenching operator in the Greater North Sea and has a global presence with offices in Norway, UK, the Netherlands, Brazil, Mexico and Singapore. DeepOcean have recently opened a new office in Westhill, Aberdeen, to better support its expanding business into the SURF (Subsea Umbilicals, Risers and Flowline Installation) market.

## NEW VESSEL

Early 2016 will see the addition of a new vessel, the Edda Freya, to the DeepOcean fleet, allowing them to enter the SURF Market as a lead contractor. The company has chartered the vessel for a period of 7 years starting in Q1 2016, the vessel will be fully equipped with all the latest assets and technology offering the most up-to-date and innovative solutions.

## ABERDEEN OFFICE

The new office in Aberdeen adds to company's existing UK presence in Darlington, North East England. The team in Aberdeen and across the wider GNS area will work to expand their presence in the SURF market while continuing the ongoing commitment towards providing clients with cutting-edge technology solutions, securing more renewables, interconnector and de-commissioning projects.

## NEXT GENERATION CABLE LAY VESSEL

To assist with this and as well as the new SURF vessel, DeepOcean will be welcoming a newbuild, state-of-the-art next generation cable lay vessel to its fleet next year. The vessel has been specifically designed to transport and install large volumes of HVAC and HVDC power cable via its on-board 7000te capacity carousel. The vessel will be available for the offshore interconnector and export cable markets, but will also work to the high standards demanded by the North Sea oil and gas industry.





**SUBSTANTIAL INVESTMENT**

These substantial investments will help the business be in a stronger position to keep providing technical solutions in subsea inspection, repair and maintenance as well as light construction, construction support and survey services, using a portfolio of high-specification assets to meet and exceed the needs of the industry.

**DeepOcean Group**

[Click to view more info](#)

[▶ = Click to view video](#)

# NEW APPOINTMENT DRIVES MAERSK TRAINING FORWARD IN ABERDEEN

The Aberdeen training centre of Maersk Training (UK), has announced the appointment of John Abate as its new General Manager.

## EXPERIENCE AND BUSINESS SUCCESS

John, originally from Devon, is an experienced Manager and Director with extensive commercial and operational skills and has held senior management posts for high street retailer, John Lewis and most recently was Senior Manager for Strategy, Planning and Change Management at internet and software giant, Amazon.

John also has both SME and entrepreneurial business success, most notably having managed multiple businesses for Shaf Rasul, panellist in an online version of the BBC's Dragons' Den.

## KEY FOCUS

John, said: "Developing the customer base on the back of a strong brand reputation and excellent service solutions is my key focus. Our operation here in Aberdeen has been growing steadily and we have a very keen awareness as to what the market is looking for in terms of our providing an added value service. I am looking forward to getting out into the business community and developing long term relationships."

## WORLD-CLASS TRAINING

"At Maersk Training Aberdeen, we have purpose-built training facilities that provide world-class training to the oil and gas and renewables industries in Scotland. From our emergency response training centre in Portlethen, we provide offshore survival, firefighting training, major emergency management and other specialist training courses."

"To complement these courses, in conjunction with our partners Survival Craft Inspectorate (SCI), we provide Emergency Response and Rescue Vessel (ERRV) training from the marine academy facility in Stonehaven. Including fast rescue craft and lifeboat courses."

John Abate



## CONTINUOUS IMPROVEMENT

John added: "My role will also involve driving training standards forward and continuously improving and enhancing the quality of training."

## WELCOME ON-BOARD

Stuart Cameron, UK Managing Director at Maersk Training, said: "John will be a great addition to Maersk Training. His experience and expertise with the commercial sector is very impressive and I am delighted to have him on board to promote our solutions into a wider market place."

## Maersk Training

[Click to view more info](#)



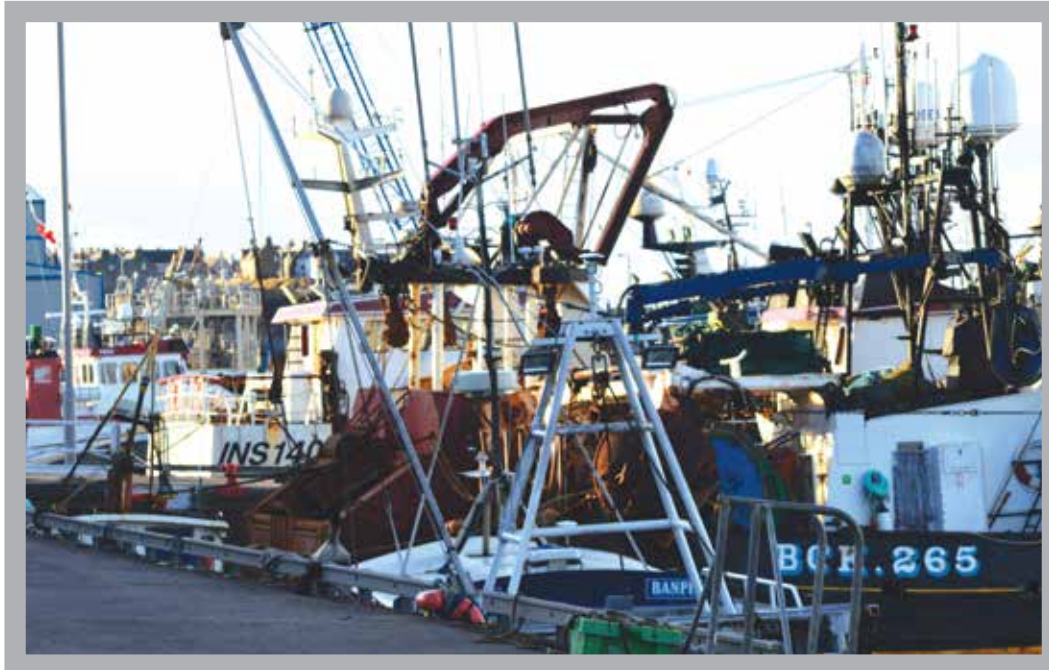
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# Aberdeen

## SO MUCH MORE THAN JUST OIL & GAS



The Iannetta family settled in Buckie, from a small village in Italy in the late 1800's and it is archived that *"Louis Iannetta came to Scotland from Italy in March 1897 and served his time in Dundee before going into business for himself, first in Montrose, later Forfar and then Huntly before coming to Buckie in 1909. He set up in business in Buckie first at Bridgend, where he made the first chips in Buckie."* Andy explained (Louis was Andy's Grandfather!) Not only is Buckie an excellent location for vessels, but it is a beautiful place, with a largely unspoilt coastline.

### MONTROSE & DUNDEE

To the south of Aberdeen is Montrose with a small port and of course, Dundee. Both ideally situated for vessels operating on several wind farms in the Firth of Forth, including, Neart Na Gaoithe (consented), Seagreen Alpha (consented), Seagreen Bravo (consented), Seagreen Charlie (early planning), Seagreen Delta (early planning), Seagreen Echo (early planning), Seagreen Foxtrot (early planning), and Seagreen Golf to name but a few.

**When you think of Aberdeen and offshore, most people automatically think of oil and gas, however, move a short distance round the coast, in either direction and you will find a whole host of other harbours and towns, ideally situated and already operating, which can support many other facets of the offshore industry as a whole.**

### PETERHEAD & MCDUFF

For example, Peterhead – approximately 25 miles to the NE of Aberdeen. Historically, a fishing port but when you consider that the quotas imposed on the fishing industry mean that fishing vessels can only operate for a certain number of days per year, they

are available for other work for the rest of the year and most make ideal guard vessels, especially as their crews are used to remaining at sea for several days at a time.

A little further North and you reach McDuff where there is a large repair facility which is long established and very reputable.

### BUCKIE AND A FAMILY HISTORY

Another 15 miles West and you will reach Buckie which will most likely be the O&M hub for the recently consented Beatrice Offshore Wind Farm. Offshore Marine Support has relocated its main operation centre to Buckie, due to its MD, Andy Iannetta's longstanding family history in the town.

### ACCESSIBILITY

Aberdeen airport, to the north side of the city, is easily accessible from all areas of the UK and mainland Europe and is central to the area as a whole with reasonable transport links.

So, when you focus on Aberdeen, just take a look a few miles either side and you will be surprised with what you may find!

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# Aberdeen event was litmus test of state of industry

## 'GIVE USCERTAINTY TO ENSURE GROWTH'

### Offshore wind leaders conference statement

Talk of long-term funding certainty dominated the agenda item at Scottish Renewables' Offshore Wind and Supply Chain Conference recently, as the sector stood poised for the results of CfD deliberations.

### AMBITION

With six consented projects totalling up to 4.15GW, the scale of ambition for Scottish waters is undeniable.

But discussions about the future of the sector were prompted in part by the upcoming decision on the first CfD allocation round and in part by the spectre of a judicial review of planning consents requested by RSPB Scotland.

The conference was attended by all major European offshore wind players, including: Repsol Nuevas Energias, EDPR, DONG, Mainstream Renewable Power, Siemens, EWEA, ScottishPower Renewables, AREVA and SSE.



### ROLLERCOASTER

Jonathan Cole, ScottishPower Renewables' MD, summed up the zeitgeist on day one, saying: *"Working in this industry is a rollercoaster: one day optimism, the next day despair."*

*"It feels like now as if we are an industry in retreat – that our hopes have been raised and very rapidly confounded. But we must remind ourselves that we are an industry which is growing and creating jobs."*

*"There are a lot of reasons for us all to be optimistic about this sector, but we need a much more stable political environment in which to operate."*

### OPTIMISM

That optimism carried through to a debate on the readiness of Scotland's supply chain, where BVG Associates' Alan Duncan hailed the UK as the focus of the world's offshore renewables industry, but warned: *"There are potentially a lot of jobs for us, but they are not going to be easy wins – we must look at what we can do to displace existing supply chains in Denmark and Germany."*

*"Be assured, though: the UK will continue to lead the world in offshore wind to 2030 and there is no other industry which gives us the chance to do that."*

### KEEPING COSTS DOWN

Cost reduction in the industry – led in part by the Offshore Renewable Energy Catapult, headquartered in Glasgow – was also a hot topic at the event, held at the Aberdeen Exhibition and Conference Centre.

Benj Sykes, Country Manager for DONG Energy's UK wind power business, told how keeping costs down would mean a larger industry and hinted that future certainty from government would be the single thing most likely to drive success.

He said: *"If we get costs down quickly then the scale of deployment will increase and if we do not then it will slow."*



*"But to ensure we have a competitive and sustainable long term industry we need the next government to be ambitious and speedy about deploying the remaining funds in the levy control framework. We need to see what the runway looks like post 2020 – essentially, we need some sense of direction and scale."*

### SECTOR CONFIDENCE

Industry body Scottish Renewables organised the conference, which is the largest of its kind in the country.

Lindsay Leask, Senior Policy Manager for Offshore Renewables at the organisation, said: *“The end of 2014 was a turbulent time for offshore wind in Scotland and 2015 looks to be continuing in the same vein.*

*“However, our ambition for the sector hasn’t been diminished and the sense of commitment and perseverance at this year’s conference leaves me in no doubt we will overcome the challenges ahead of us.”*

**Scottish Renewables**




# OFFSHORE WIND & SUPPLY CHAIN CONFERENCE EXHIBITION & DINNER

**ABERDEEN  
2015**

# Phoenix rises from the ashes

## New subsea business

Stephen Cochrane



**The Rotech Group recently announced the launch of their new subsea business. Having previously built up and operated the globally successful Rotech Subsea mass flow excavation business from 1999, Rotech Subsea's equipment was subsequently sold to Reef Subsea UK in 2011.**

### RS RANGE

Rotech Subsea are now re-entering the subsea market with the innovative 'RS' range of subsea excavation equipment, offering a range of new capabilities from Controlled Flow Excavation and Dredging with the RS1 through to Cable Burial & Backfilling with the RS9. The Rotech systems are purpose built for multiple applications, meeting new challenges in subsea whilst offering clients more cost effective solutions.

### FOCUS

The Group's engineering & fabrication companies will again be responsible for the design and manufacturing of the new Subsea assets. Their focus will be the subsea commissioning, inspection, repair, maintenance and decommissioning markets.

The Rotech Group is an Aberdeen based company, expert in fluid dynamics, turbo-machinery, subsea engineering and fabrication, particularly focussed on downhole and subsea tools for the Oil & Gas and Renewable Energy sectors.

### APPOINTMENT

Rotech has announced the appointment of Stephen Cochrane as Director of Subsea. Stephen has over 15 years of combined topside and subsea experience in the offshore oil and gas, renewable energy and power industries where he has held senior

positions in design, project management, business development and director roles. Stephen was instrumental in the building of the pre-2011 excavation business.

Director of Engineering Dr Don Stewart said, *"We are delighted to be bringing our new generation of excavation equipment to the market. The RS tools build on our knowledge and experience of subsea excavation, and will take us into markets and opportunities not available to traditional Mass Flow tools, with the new RS tools delivering higher jet speeds and combining jetting, suction and reburial capabilities."*

### Rotech Group

# New SES offshore service vessel installation

**Ships Electronic Services (SES) are working with the Humber's premier shipyard, MMS Ship Repair, to supply and install comprehensive electronics systems on the yards new OSV "MMS Crusader" which has been designed to service offshore wind farms in the North Sea and other European waters.**

## MMS OFFSHORE RENEWABLES

MMS has also launched a new company, MMS Offshore Renewables, which will operate up to 6 of the new catamarans which will all be built under DNV classification to R1 notation, which enables the vessels to work up to 150 miles from a safe haven. The MMS Crusader has been developed to service a multitude of roles within the renewable energy sector and can support development and construction, operation and maintenance at greater range than many other vessels currently available.



## NAVIGATION AND COMMUNICATIONS SYSTEM

To facilitate the long-range effectiveness of the MMS Crusader, SES is supplying and installing a complete navigation and communications system including Navmaster ECDIS; Raymarine Glass Bridge and Super HD Open Ray Scanner; Furuno Radar and Echo Sounder; KVH VSAT; FLIR Thermal Camera, Comnav Satellite Compass; Sailor VHF Radios and a Raytheon Anschutz Autopilot. SES will maintain and service the equipment during the vessels operational role.

## EXCEPTIONAL EXPERIENCE

SES has supplied and installed navigational electronics and communication systems to the maritime industry for almost 40 years and has exceptional experience in developing systems for vessels such as MMS Crusader, this has been the first destined for the offshore wind farm market.

## OPERATIONAL FUTURE

Managing Director of SES, Stephen Roper commented, *"We are sure this will be the first of many vessels we will be working on for this sector in the future. Our experience in the type of electronics needed to keep these vessels working reliably and continuously is second to none."*

*"We are one of very few electronics companies working to ISO 9001 and it is no surprise that MMS themselves work to the same certifications. The offshore renewables market continues to develop and we are delighted to be part of this expansion."*

**Ships Electronics Services Ltd (SES)**



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As well as having two supreme and flexible installation vessels in Brave Tern and Bold Tern, we have specialist project management and engineering expertise, some of the industry's most experienced technicians, a fleet of high performance service vessels and a reputation for getting the job done safely, efficiently and reliably.

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# Winter Summit 2015

## PROTECTING OUR PEOPLE AND OUR PLANET – A SHARED INITIATIVE



**What do you get when you gather ordinary people from the entire supply chain who do extraordinary things in their working lives – Sharing of collective knowledge? An educational exchange of ideas? A productive think-in?**

**The answer is all of the above.**

### JOINT INITIATIVE

That was the aim of the January Winter Summit 2015 in Dublin, a joint initiative of access specialists Easi UpLifts and manufacturers Bronto Skylift, where they gathered valued customers across various sectors who face the challenges of working at height and the use of truck-mounted access machinery. It was the first joint event organised by both Easi UpLifts and Bronto Skylift who are working in partnership to develop the truck-mounted industry.

The two-day event was an open and honest sharing of pain points and a celebration of shared core values and a vision for the future. It included presentations and representations across the gamut of stakeholders from the manufacturers, to the suppliers, the planners, the buyers, the operators, the technicians, right through to the end user.

“We all want to do the right thing. We need to work together to make working at height safe and easy for people while protecting the planet.”



### WIND ENERGY SECTOR CASE STUDIES

Representatives from the wind energy sector raised many interesting discussions such as how rope access specialists can work alongside access companies. By adopting a blended work approach and acknowledging each other's specialist skills, both teams will provide a more efficient and safer service for their customers.

They shared some interesting case studies whereby the attachment of a winch to the truck-mounted machine avoided the difficulty of transporting two separate pieces of plant to a remote location.

Other topics included how the manufacturer might improve the shape of the baskets to allow technicians to get closer to the blades.

### INCLEMENT WEATHER CONDITIONS

Wind sector customers shared the frustrations of downtime due to inclement weather and discussed various solutions that might allow technicians to battle the elements and work through the problems caused by rain, humidity and low temperatures.

### SAFETY

There were also some lively debates about legislation and the use of descenders in emergency situations. And some serious discussions about keeping everyone on the job safe. Emergencies may be rare, but emergency planning is essential.

### ON THE SAME WAVELENGTH

By the end of the two days, it was obvious everyone was on the same page. “*We are bringing efficiency and quality standards to the next level so that you can work safely and efficiently*” said Antti Rauhala, Deputy Managing Director at Bronto Skylift.

In the words of Fergus Mc Ardle, Managing Director at the Easi UpLifts Group: “*We all want to do the right thing. We need to work together to make working at height safe and easy for people while protecting the planet.*”

### Height for Hire

**Lorraine McArdle (Author)**  
Easi UpLifts

# Flexible and adaptable to suit clients' offshore needs

**FRED. OLSEN WINDCARRIER IS RAPIDLY BUILDING A REPUTATION FOR FORWARD-THINKING, RESPONSIVE AND FLEXIBLE APPROACHES TO THE FAST-EVOLVING OFFSHORE WIND SECTOR.**

As a leading turbine installer, with extensive experience of some of the largest wind turbines in Europe, its record for devising clever and cost-effective tailored services for its clients is spreading worldwide.

## RESPONDING TO INDUSTRY DEMANDS

Responding to industry demands to drive down costs and installation time without sacrificing efficiency and flexibility is key to meeting clients' needs with best-value projects.

The adaptability of its high performance class-leading installation sister vessels, Brave Tern and Bold Tern, has shaped its response to the market's changing needs on North Sea wind farm projects, where it has consistently delivered efficient, time-saving and reliable projects.

## AMERICAN WIND MARKET

This performance has attracted the attention of the American wind market. Next year, the Bold Tern will embark on a project for US developer Deepwater Wind on the 30-MW Block Island wind farm, off Rhode Island, New England, to install Alstom Haliade 150-6 MW wind turbines. It will be the first offshore wind farm installed in the U.S.

Fred. Olsen Windcarrier has unprecedented experience installing Alstom's huge Haliade 150-6 MW having installed the offshore demonstrator turbine in Belgium last autumn.

## SIGNIFICANT PROJECT

Ketil Arvesen, of Fred. Olsen Windcarrier, said: *"We are truly delighted to be installing this significant project, which is driving forward the offshore wind industry in the United States. We have already established a very good relationship with the people in the project team at Deepwater Wind and we will once again be working with Alstom to install their impressive 6MW turbine."*

Its experience also led to Fred. Olsen Windcarrier being named as installation partner for the Icebreaker in Ohio with LEEDCo Team to help develop an installation strategy for Lake Erie and the Great Lakes using existing regional barges, port infrastructure and local manufacturing companies.

## GOLD STANDARD

Lorry Wagner, president of LEEDCo, said: *"Fred. Olsen Windcarrier is the gold standard when it comes to offshore wind installation, and we are proud to have them join our team."*

Deepwater CEO Jeffrey Grybowski said: *"We are very pleased to add Fred. Olsen Windcarrier to our world-class team for the Block Island Wind Farm. The Bold Tern is a class-leading vessel for offshore installation and Fred. Olsen Windcarrier brings deep experience in offshore construction and high standards of excellence to the work they do."*

Last year, the vessels successfully installed 75 of the 80 Areva 5MW turbines on the Global Tech 1 Offshore wind farm within eight months and on schedule.

The wind farm was one of the first to feature the AREVA M500-116 turbines and the first to utilise both Bold Tern and Brave Tern.

Cover image courtesy of Michael Lenvig Olsen on behalf of Fred. Olsen Wind Carrier



**FLEXIBILITY**

The flexibility of the 3200m<sup>2</sup> deck meant the vessels – built in Dubai 2012 by Gusto MCS and customised by Fred. Olsen Windcarrier using its extensive market knowledge – could transport four towers and nacelles each trip to the wind farm and install them there.

Carl McGrath, lifting supervisor, said: *“This project has perfectly demonstrated the flexibility and efficiency of our vessels.”*

Fred. Olsen Windcarrier remains on the Global Tech I project, providing support to AREVA during the commissioning phase.

**VESSEL SPECIFICATIONS**

Brave and Bold Tern have DP2-class type dynamic positioning systems and are fitted with a Voith Schneider propulsion system enabling superior and secure positioning capabilities.

They are equipped with a state-of-the-art GustoMSC 9000C continuous hydraulic positive engagement jacking system that is easy, fast and secure where frequent repositioning is needed, with a maximum jacking capacity of 5300t/leg and max holding capacity of 9000t/leg.

**CURRENT PROJECT – BUTENDIEK WIND FARM**

Currently, the Bold Tern is installing turbines on the €1.3 billion Butendiek wind farm in the German Bight, west of Sylt. In March, it had installed nearly half of the 80 3.5MW turbines on the 288 MW farm due to be commissioned later this year to provide renewable energy for 360,000 homes.

To adapt to new challenges of offshore transport, installation and maintenance projects, Fred. Olsen Windcarrier constantly reviews operations, looking at how to evolve its existing fleet and future vessel requirements to suit changing market needs.

Fred. Olsen Windcarrier

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 = [Click to view video](#)



# MPI RESOLUTION RECEIVES HIGH PERFORMANCE RE-INFORCEMENT

**Effective operation of wind turbine maintenance vessels is critical to the efficient running of offshore wind farms. An important aspect of this is the ability of these jack-up vessels to move between locations quickly and safely.**

to withstand loads from large boulders, the site clearance becomes faster, safety is increased and operational costs reduced.

## RAPID INSTALLATION

MV Resolution's operators MPI had a limited window of opportunity for carrying out the strengthening. Conventional crop-and-

These provide an increased bearing area on the sea bed to spread the load and prevent the legs from penetrating the soil when located on site. The base of each spudcan is generally constructed using 40mm steel plate. However, even with this heavy design the risk of damage from boulders was considered to be unacceptably high. The SPS Overlay solution uses a new high-strength steel top plate 40mm thick, combined with a polyurethane core of 40mm.



A significant risk to safe and reliable operation is the presence of large granite boulders deposited on the sea bed after the last ice age. According to geotechnical experts, boulders more than 1m in diameter can cause concentrated loads greater than 390t on the base of the spudcan.

Without appropriate reinforcement these concentrated loads can cause major indentations and serious damage to the internal structure of the spudcans.

## MPI RESOLUTION

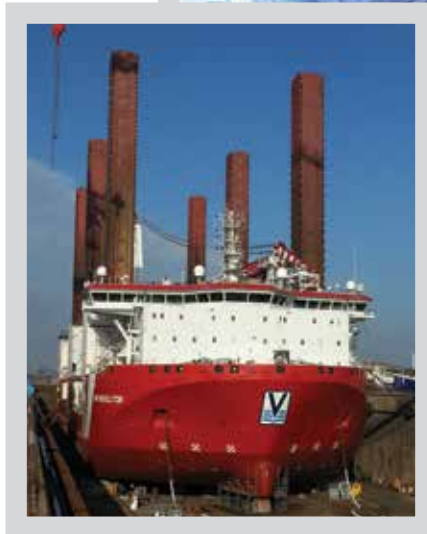
The jack-up wind turbine installation and maintenance vessel MPI Resolution has therefore recently gone through this re-inforcement process by Intelligent Engineering's Sandwich Plate System (SPS).

## THE IMPORTANT ADVANTAGES CAN BE SUMMARISED IN DELIVERING...

- Increased structural protection from highly concentrated loads caused by contact with large rocks on the sea bed
- Reduced operational risk and extended ship service capability

## BACKGROUND

To reduce operational risk it is routine practice to survey site locations and clear any over-sized boulders before the vessel 'spuds in'. This minimises the risk of damage, but is an expensive and time consuming process. However by strengthening the underside of the spudcan



replace with thicker steel was not an option. Only SPS Overlay could fulfil the strength requirements and be fitted within the docking schedule of less than four weeks. After completion of the steelwork by the shipyard, the SPS injection process took only four days for all six legs.

## DETAILS

Built in 2003, MPI Resolution is 130.5m long, 38m wide, 14310 gross tonnes and a deadweight of 7000 tonnes. Six legs are used to jack the ship's hull clear of the water when on station, providing a stable platform for wind turbine maintenance and installation. Each leg has a wide hollow tank at the base called a 'spudcan'.

This results in an extremely strong composite sandwich panel structure with a total thickness of 120mm, capable of resisting concentrated loads from boulders up to 1m in diameter.

## VERIFICATION AND TESTING

The enhanced strength of the SPS reinforcement was demonstrated by IE using full non-linear Finite Element Analysis to replicate the maximum loads and their effect on the structure. The design calculations were examined and verified by DNVGL using their recently published classification note 30.11.

On site the SPS installation was witnessed by the local DNV-GL survey team, who verified that the installation process was carried out in accordance with DNV's guidelines for SPS construction.

## Intelligent Engineering's Sandwich Plate System

# MASSIVE FUTURE DEMAND FOR WIND TURBINE AND FOUNDATION INSTALLATION VESSELS

**The global market value for offshore wind turbine and foundation installation vessels is set to rise from \$0.56 billion in 2014 to \$2.93 billion by 2020.**

*“Future vessels will allow developers to shorten installation times with increased vessel crane capacity and additional deck space,”* says Global Data

## FIVEFOLD INCREASE

The global market value for offshore wind turbine and foundation installation vessels will increase more than fivefold, from an estimated \$0.56 billion in 2014 to approximately \$2.93 billion by 2020, representing an impressive Compound Annual Growth Rate (CAGR) of 30% says research and consulting firm GlobalData.

Offshore Vessels and Cables Market – Market Size, Competitive Landscape and Key Country Analysis to 2020 report

The company's latest report states that increasing installations will be the primary driver of market growth, as annual global offshore wind power capacity is forecast to rise rapidly from 1.78 Gigawatts (GW) in 2014 to approximately 7.85 GW by 2020.

This report provides analysis on the global demand and market size for turbine and foundation installation vessels and cable laying vessels and for offshore wind power cables, including inter-array cables. It features annualised forecasts for the respective global markets from 2013 to 2020.

The report was built using data and information sourced from proprietary databases, primary and secondary research and in-house analysis conducted by GlobalData's team of industry experts.

Prasad Tanikella, GlobalData's Senior Analyst covering Power, says: *“Offshore wind projects are more expensive than their onshore counterparts because the structures are larger, the logistics involved in tower installation are more complex and costs associated with foundations, construction, installation and grid connection are higher.*

*“Despite the higher project costs, offshore winds are more powerful and consistent, producing higher energy yields. Moreover, high offshore wind power potential and the unavailability of onshore wind power sites are forcing some countries to explore offshore options.”*

## LARGEST MARKET

Europe is by far the biggest market for offshore wind power, estimated to account for over 90% of global turbine installation vessel revenue in 2013 and GlobalData expects this market to see substantial future growth.

Despite the many projects currently planned or under construction in Europe, a limited number of offshore wind-specific installation vessels are operating at present, although this number will have increased from just two in 2005 to more than 40 by the end of 2014.

## MORE EFFICIENT INSTALLATIONS

Furthermore, new vessels are increasingly making installations more efficient. Tanikella continues: *“Future vessels will allow developers to shorten installation times with increased vessel crane capacity and additional deck space, enabling them to carry more turbines and reduce the number of trips from the onshore port to the offshore site.*

*“The new-build vessels are also expected to reduce weather downtime, as their design will allow them to operate in harsher conditions,”* the analyst concludes.

GlobalData





# Burbo Bank Extension Contract

**DONG Energy has recently awarded multiple offshore substations transportation and installation contracts for Burbo Bank Extension, Race Bank and Walney Extension to Seaway Heavy Lifting.**

## SHL CONSOLIDATION

These awards, combined with the recent awards of the substations for Sandbank and Wikingen in the German sector, consolidates SHL's position as a leader in this segment of the offshore wind market.

## CONTRACT DETAIL

The award consists of three contracts covering the transportation and installation 5 platforms in total. The offshore substations will support the power transmission of Burbo Bank extension, Race Bank and Walney extension offshore wind farms.

For the execution of the projects Seaway Heavy Lifting will utilise both the Stanislav Yudin (2500Mt lift capacity) and the Oleg Strashnov (5000Mt lift capacity) crane vessels.

## PREVIOUS CONTRACT SUCCESS

These awards follow on from the successful installation of the Westernmost Rough offshore substation in 2014 for developer Westernmost Rough Ltd. of which DONG Energy owns the majority shares.

Commenting on these awards, Bob Dunsmore - Senior Vice President Renewable Energy for SHL said; *"We are very pleased to have this opportunity to continue to work with DONG Energy on their portfolio of new projects in the UK sector. These combined awards contribute to the pursuit of lower cost solutions in our industry by providing the opportunity for standardisation and operational efficiencies."*

## EXPERIENCE

SHL has now executed or has a backlog of a total of 25 offshore wind farm substations as well as over 150 platform installations in the offshore oil and gas industry.

## Seaway Heavy Lifting

# SIX YEAR PORT DEAL

**MPI OFFSHORE HAS SIGNED A SIX YEAR LEASE AGREEMENT WITH PD PORTS TO SECURE TEESPORT COMMERCE PARK IN MIDDLESBROUGH AS ITS UK BASE.**

The agreement anchors Teesport Commerce Park as home for MPI Offshore's expanding fleet of installation vessels, which includes the MPI Adventure, Resolution, Discovery and Enterprise.

## PERMANENT BASE

Peter Robinson, MPI's Managing Director, commented: *"Establishing a permanent base at PD Ports facility provides us with 54,000 sq ft of warehousing. It has been acquired as part of our strategic business development and will strengthen the case to establish the Tees as an offshore renewables base."*

## SUPPORT

*"Along with this commitment we can look forward to developing further links we have with local suppliers who have supported MPI's growth to date."*

## PROVEN TRACK RECORD

Establishing a permanent base at Teesport Commerce Park further strengthens PD Ports' proven track record in supporting the ongoing activities in the marine and offshore sectors.

Jerry Hopkinson, PD Ports' Managing Director Bulks and Ports, commented: *"Offshore expertise is second to none in the Tees Valley region and this expertise is being used to drive expansion in the UK offshore and wind power sector."*

## ATTRACTIVE FACILITIES

*"We are seeing this more and more within our business and the arrival of MPI is further evidence of the attractiveness of facilities on the River Tees to the offshore industry. By anchoring a base at Teesport Commerce Park we are confident this will be a catalyst for further growth and investment in the near future."*

**PD Ports**

**MPI Offshore**



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# UK Tax Incentives for Innovation

**As the wind industry continues to strive for greater efficiency and reduced deployment costs, Kate Mitchell of PwC looks at the recent changes to the UK's tax incentives for innovation.**

Governments around the world are aware that innovation operates in a competitive global marketplace and are increasingly introducing incentives to attract skills-based investment and boost economic recovery. This is no doubt at least partly behind the UK government's recent changes to the R&D tax credit regime (although pressure to change the UK's other main form of tax relief for innovation, the Patent Box, has come from a different source).

## GOOD NEWS

For the Wind Energy industry these developments are good news. The scale of wind energy and constant drive for greater efficiency mean innovation and development qualifying for R&D incentives are ever present.

Recent changes to the R&D regime seek to encourage companies to undertake more R&D activities in the UK. The 'large' company R&D regime now offers a 10% expenditure credit that is more akin to a grant than the historic 'super' tax deduction, giving the incentive more visibility and making it easier to evaluate the reduced cost of locating development in the UK compared to other territories.



Furthermore, there's no need for intellectual property ("IP") to be owned in the UK and it's no longer necessary to have profits in the UK in order to get a cash benefit from the new R&D expenditure credit, making this new regime far more attractive to some businesses.



### SMES

There is also a beneficial UK R&D incentive available for small and medium-sized ('SME') businesses. These companies can claim a deduction of 230% of the qualifying spend on R&D, with loss-making companies able to turn 33.35% of the qualifying expenditure into a cash payment (based on rates from 1 April 2015) giving a significant boost to such companies investing in new technologies. With increased SME size limits for the purposes of the R&D legislation (500 employees and either turnover of €100m or gross assets of €86m) many businesses can fall within this R&D regime.

### UK PATENT BOX REGIME

Tax relief is also available via the UK's Patent Box regime. Under current rules, where taxable profits can be attributed to the exploitation of patents, a lower effective rate of corporation tax applies. For 2014/15, the rate is 13.3%, reducing to 10% from 1 April 2017. Profits can include a significant part of the trading profit from the sales of a product that includes a patent, not just income from patent royalties.

However, international pressure from the G20/OECD is forcing the UK government to make changes to the regime.

The new regime will run in parallel with the existing regime for the next few years although new IP and products will not be admissible to the old regime after 2016.

However, going forwards, claimant companies will need to have good UK substance and qualifying IP income that can benefit from the patent box will be restricted by reference to the total R&D and IP acquisition expenditure of the worldwide group.

### FROM THE OUTSET

In our view, early consideration at a project's outset is needed to ensure that businesses structure innovative activities to efficiently retain a competitive edge in today's marketplace.

And in a world where the detailed form of the tax incentives for innovation often changes, as illustrated above, it also pays for businesses to regularly review existing activities to ensure that they are getting the most out of the reliefs available.

**Kate Mitchell**  
**PwC**

[Click to view more info](#)

# Unexploded Ordnance

As we mark 100 years since the start of WW1, it seems Britain's involvement in conflict continues to have an impact on commercial activities to this day, with Unexploded Ordnance (UXO) discoveries on offshore wind farms no longer coming as a surprise.

The National Archive suggests that in excess of 60,000 munitions remain unaccounted for in the North Sea alone. Other reports suggest that 1 in 10 of the bombs dropped on the UK and its surrounding waters failed to detonate. The ever increasing growth in exploration and construction within the maritime environment, especially with the continued expansion of wind energy projects, undoubtedly impacts on the rise of ordnance discovery. As such, bomb disposal has become a common addition to the average day's work at wind farm sites in the UK and around the world.

## PRIORITISING UXO RISK

The only question remaining for operators is how they prioritise the UXO risk during the early stages of projects. Historically, those who choose to save early on, by neglecting risk management, invariably encounter significant elevated costs and risk throughout the project. Whereas those companies who initially invest wisely and entirely in a UXO solution will reap financial reward during the project.

The project manager of one of the largest European wind farm construction projects sensibly chose the latter option by instructing Ramora UK, which proved to be hugely beneficial when three potential UXOs were identified in the initial survey.

The company has been working with the oil and gas sector to fill the gap left by the Ministry of Defence since 2004 and have undertaken more UXO disposals in the past few years than their military counterparts using various technology based solutions.

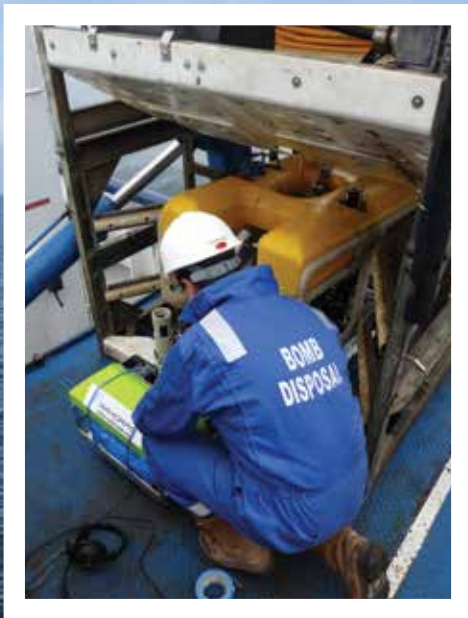
## CASE STUDY – WIND FARM CONSTRUCTION ZONE

On completion of a UXO survey of the wind farm construction zone, three UXO items were located on the site following a series of severe storms which had disturbed the seabed, Ramora UK later identified these to be three live World War Two bombs.

Due to the company's robust environmental monitoring system, which complies with DECC and JNCC guidelines as well as compiling a marine mammal mitigation plan in order to address potential impacts on marine mammals, the required licenses for disposal were acquired with no delay.

## MOBILISATION

Ramora UK mobilised their full Remote Explosive Ordnance Disposal System (REODS) with vessel, Explosive Ordnance Disposal (EOD) Team and ROV (remotely operated vehicle). Utilising the skills and experience of former Royal Navy Clearance Divers and under the direction of the Mine Warfare and Clearance Diving Officer, the team were well versed in such operations.



## DEPLOYMENT

The EOD team established a 1000m cordon area before deploying the ROV with the explosive charge, in this instance 5kg of Semtex fitted with an acoustic firing system. The ROV was deployed down to the target and the arm manoeuvred and placed the charge next to the ordnance. The team then retired to a safe distance before using the acoustic transmitter which sends a unique coded signal initiating the inbuilt firing system. The detonation shook the surface of the sea but safely destroyed the munition without damaging nearby assets or injuring wildlife.

## DETONATION

Once detonated the ROV was deployed once more to carry out EOD confirmation and recover any debris in accordance with clients requirement and consent licence. All items recovered were checked by the company and certified as free from explosives (FFE). Any residue explosives were disposed of on site. This process was then carried out for the remaining two targets in quick succession to ensure the safety and commercial continuity remained paramount.

## ASK THE EXPERTS

The explosive detritus of previous conflicts will continue to impact developments within the offshore energy sector for some time to come, continuing the ever increasing pressure on companies to find ways of dealing with these hazards and minimise the risks to human life and capital infrastructure.


Ramora UK have been providing successful solutions to this problem since 2004 using a double pronged approach, training of offshore industry personnel to ensure procedures are in place when a UXO is found as well as providing reactive expertise through their highly trained disposal experts.

## NATIONAL EXPLOSIVE SAFETY SCHEME (NESS)

The most expedient and cost effective method for this is provided through membership to Ramora UK's NESS, a way companies can ensure they are complying with industry best practice through implementing official procedures which were developed by the company and are now accepted as best practice throughout the industry.

## Ramora UK

[Click to view more info](#)

 = [Click to view video](#)

## Do offshore wind developers underestimate the long-term migratory impact of UXO?

**Developers, utilities and asset owners are failing to take account of the risks posed by munitions moving from their recorded positions during the operations and maintenance phases of their projects. That is according to specialist offshore risk consultancy, 6 Alpha Associates.**

### SPECIALIST GEOPHYSICAL SURVEYS

Prior to installation work, where there is a high risk of encountering unexploded ordnance (UXO), it is common to undertake a specialist geophysical survey to detect it. Unfortunately, the seabed is often littered with debris, much of which can be confused with UXO.

### INVESTIGATIONS

The costs of investigating each and every geophysical survey anomaly that resembles UXO (some of which might be, but the vast majority of which will not), is prohibitively expensive. Therefore, only those anomalies that resemble UXO and that are in the way of installation operations are usually investigated (typically by diver or ROV) and if they are proven to be UXO they are subsequently rendered safe.

Whilst such practices enable the installation of infrastructure in safety and at best value for money, inevitably a significant number of anomalies with known UXO signatures (but which have not been verified as such through investigation) remain on site, often within engineering working space and sometimes in quite close proximity of installed infrastructure.

### ONGOING PROBLEMS

Not only should such known anomalies be avoided throughout the O&M period, but over time, as a direct result of wave and tidal processes and in some cases human activities (eg fishing), such items may continue to shift on the seabed, causing them to move to within dangerous proximity of offshore wind turbine or platform foundations and cables, that may themselves be the subject of on-going Operations and Maintenance (O&M) activities.

In the short term this presents a demonstrable risk to the safety of personnel, vessels and the installed infrastructure that is in close proximity of such prospective hazards, while in the medium to long term, verification of such anomalies as UXO can lead at best to expensive operational downtime and the possibility of long delays and at worst to an accident.

### SHARING KEY UXO INFORMATION

*“Unfortunately, while the UXO risk threat is commonly well managed and monitored throughout the development phase, it is our experience that some project construction teams are failing to handover and share key UXO information to inbound operations and maintenance teams,”* said Simon Cooke, Managing Director, 6 Alpha Associates.

*“Despite an excellent approach to continuous learning, health and safety and cost reduction in the construction phase, as projects become operational and the personnel teams change, there is a risk of failure to pass on some of the most important risk management data.”*

### SPECIALIST EXPERTISE

*“This is certainly the case in our specialist area of expertise, offshore UXO risk management, where once development teams have often reduced the UXO risk to as low as reasonably practicable (ALARP), the issue is widely regarded as having been dealt with for the remainder of the project lifecycle.”*

*“Of course, with the tendency of some types of UXO to move around the seabed, this certainly isn’t the case and project managers should ensure that UXO risks are not only registered and mitigated throughout the O&M phases of work but also that their assets remain clear of UXO in order to reduce the risks to personnel on site and to avoid expensive delays and down-time.”* Added Simon.

### ACCURATE FORECASTING

Through the use of specialist geophysical survey techniques, enhanced UXO munitions mapping and appropriately applied UXO risk management procedures, it is increasingly possible to accurately plot the approximate UXO drift direction and distance likely to be travelled with time, typically on a per annum basis.

This specialist work, which has been successfully undertaken by 6 Alpha Associates for a number of developer clients, not only enhances the longevity of UXO safety sign-off certificates, but also enables operations and management teams to better understand and quantify the true scale and costs associated with managing long-term offshore UXO risks.

### BETTER UNDERSTANDING

To date, development cycles have enabled offshore wind farm construction teams to better understand the first three years of a typical 25-year project. As the focus for offshore wind moves towards cutting the cost of electricity generation, enhancing the understanding of Munitions Migration is imperative for future project success.

**6 Alpha Associates**



# UXO CASE STUDY

**Hughes Sub Surface Engineering have safely completed a number of UXO contracts around the UK & Europe. A typical job will start with a survey of the work site using a vessel which tracks the seabed using a sidescan sonar. The readings returned are searched thoroughly for anomalies. The specialist team will then study the readings and highlight possible targets in the surveyed area.**

the surface team will then perform a hand search to locate the target. If the target cannot be located and identified due to the depth of burial, the diver will request an airlift to uncover and identify the target.

The Hughes SSE EOD team will assess footage taken from the divers helmet mounted camera and photographs taken,

## SECOND PHASE OPERATION

The highly skilled EOD team prepare charges on the surface. When the charges are prepared, a diver is deployed to the water and the charges are attached to the target to ensure a positive detonation. A final inspection will take place using the video link from the diver to ensure that the charges are in position to gain maximum effect against the target.

The diver is recovered from the water, carefully ensuring the detcord remains attached to the charge. The target is now ready for detonation. The specialist EOD/



## POTENTIAL TARGETS AND TEAM RESPONSE

If contacts are classified as potential UXO targets, the specialist UXO dive team comprising of a minimum of five men is mobilised to the target area and prepares to dive.

The EOD dive team are predominantly made up of ex Royal Navy Clearance Divers. The diver is deployed to the target area along with a magnetometer to begin the search. The preferred method is a circular search pattern. As the diver completes the search he is looking for positive reading from the magnetometer which has an audible alarm direct to the diver when a positive reading is detected. The diver who is in constant contact with

to positively identify the target as UXO or non UXO. If the target is positively identified as UXO, general operations in the area around the target are immediately ceased and the EOD team issues warnings of the imminent danger, placing cordons throughout the vicinity.

## COLLABORATION

A meeting between the EOD team and site owner (Client) will determine what action will be taken. The site will be assessed by the MMO to ensure the safety of marine life in the surrounding the area and a safe zone to detonate and destroy the target established.

It will be assessed if the target can be destroyed in situ, or if it will need to be removed to a safe area for destruction – this will be done using underwater lift bags and UXO towing techniques. Once the demolition area is agreed, the second phase of the operation will begin.

UXO team set a safe time on the fuses connected to the detonators, to allow the team time to retreat and safely clear the blast site. A countdown is kept once the time fuse has been set.

## PROJECT COMPLETION

After detonation, a standard soak time is observed prior to the dive team returning to the target area and beginning a survey to ensure a positive detonation of the target has taken place and the target has been destroyed.

## Hughes Sub Surface Engineering (HSSE)

[Click to view more info](#)

 = [Click to view video](#)

# SEABED SAFETY REDUCING RISK

Ensuring the seabed is safe for development is an essential part of the site assessment process. In addition to avoiding hazards such as wrecks, boulders and shallow gas accumulations, the presence of unexploded ordnance (UXO) is another significant threat to consider. The process of reducing risks to development on the site involves a number of stages undertaken by specialists in their fields, including desk studies, site surveys and if items are discovered, the clearance of ordnance from the seabed using methods including ROV removal.

## UXO SURVEY EXPERIENCE

Osiris Projects are experienced in UXO surveys utilising towed magnetometer arrays, which typically comprise of a number of caesium vapour magnetometers towed in an array with very small offsets between sensors of only a few metres.

These multiple magnetometer towing arrangements allow for very dense coverage of the seabed and sub-seabed in the endeavour to detect ferrous metals that are often present in UXO's. One or more side scan sonar systems also form part of the array to allow for the detection of objects on the seabed.

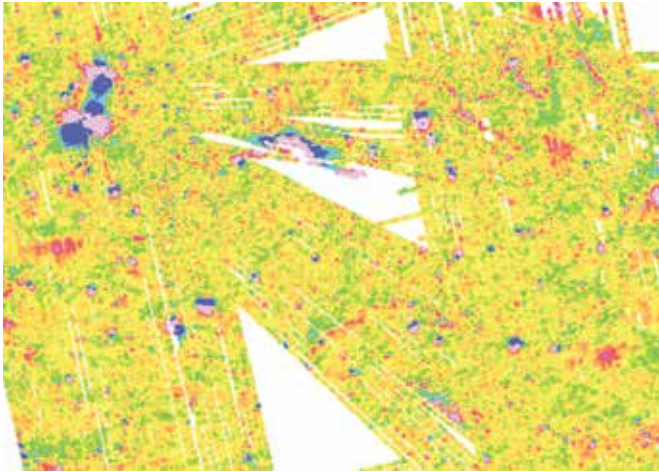
## ACCURATE CONTROL

Accurate control of the towed magnetometer's position and altitude above the bed are key to maintaining the highest possible detectability of UXO's. For this reason, in addition to the accurate subsea positioning of the towed sensors via USBL positioning, the altitude of the sensors is also maintained at a minimal height above the seabed by exploiting the magnetometers on-board altimeter. The position and altitude of each of the individual sensors is constantly monitored and adjusted by the on-board survey crew.

## COLLABORATION

Osiris Projects have worked closely with both developers and specialist UXO consultants to ensure that the highest possible tolerances of detectability are achieved and the company is currently developing a 4 magnetometer array to be towed from the latest addition to the survey fleet, Bibby Athena.





**DEVELOPED SOFTWARE**

UXO survey data is processed and interpreted using the industry standard 'Oasis Montaj' software developed by Geosoft whom Osiris Projects work closely with to develop bespoke tools for UXO target analysis. Despite the availability of automated UXO target analysis packages, the company prefers to apply the 'First Principle' technique of anomaly assessment whereby every possible magnetic anomaly is assessed and analysed by a number of UXO specialist geophysicists rather than automated algorithms. All targets are also cross referenced with side scan sonar and sub-bottom profiler records where appropriate.

**INCREASED INTEREST**

The company has experienced a significant increase in the amount and value of enquiries for UXO surveying in the past year, particularly from the offshore wind industry within the UK and Northern Europe.

To maximise project efficiency while optimising data quality the company combines innovative new technology with accepted industry techniques.

**Osiris Projects**



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# FIRST CONTRACT FOR DIFFERENCE AUCTIONS (CFDS)

### The long awaited CfD auction results were made known during RenewableUK's Wave & Tidal Event held recently in Edinburgh.

We have accumulated some of the industry's leading organisations' comments to give you a flavour of how the results were received by the industry generally – in short I would suggest the results are a big positive which has already curtailed some of the negative media coverage experienced recently regarding renewable energy costs/subsidies etc.

So a big well done to all of the companies/organisations who have developed projects and programmes designed to not only reduce overall renewable energy costs now but will ensure costs continue to fall in the future.

### RENEWABLEUK

The leading professional membership for the renewable energy industry in the UK comments on the results of the first auctions for renewable power held under the Contract for Difference regime...

The regime, instituted by the 2013 Energy Act, gives renewable power developers contracts detailing a set amount – or 'strike price' for each megawatt hour (MWh) of power they produce. Developers are given a guarantee that they will receive this price for each megawatt hour for fifteen years of operation.

### CONTRACT AWARDS

Contracts were awarded to two offshore wind farms, one in England and one in Scotland: East Anglia Phase 1 and Nearn na Gaoithe, a total of 1162 MW capacity, with strike prices varying between £114.39 and £119.89 per MWh. Contracts were also awarded to fifteen onshore wind farms, across England, Scotland and Wales. The onshore wind farms awarded contracts equated to a total of 748.55 MW capacity, with average strike prices for each year varying between £79.23 per MWh and £82.50 per MWh.

Commenting on the results of the auctions, RenewableUK Chief Executive Maria McCaffery said: *"We are pleased to see these projects, which between them could power over 1.2 million homes and create substantial numbers of jobs and much needed investment in our communities, moving forward."*





*“The highly competitive prices achieved during this Auction, highlight the fact that the industry has been working hard to bring costs down, both onshore and offshore. The prices achieved by the onshore industry show what utter folly it would be to choke off this low cost form of low carbon power and the results also demonstrate that the offshore industry, provided the conditions are maintained, is well on the path to achieving its stated aim of £100/MWh by 2020.*”

*“However, there remains a lot of work to be done to ensure that developers remain committed to the UK market, bringing forward much needed power and economic benefits.”*

## **GOING FORWARD**

The next round of auctions is due to take place in the autumn of 2015 and Ms McCaffery warned that all political parties aiming to be in Government needed to consider how these should function. “It is vital that the new Government moves quickly to clarify process around the next awards. A level of certainty about both immediate future allocation rounds, but also the long term vision of de-carbonised electricity and the support needed for it, will ensure projects keep coming forward, at the right price.

*“The industry has really extended itself today on the cost reduction agenda and Government needs to respond positively with a clear signal about future rounds and long term support, to enable the continued development of low carbon power at a good price.”*

## **RenewableUK**

Opening of offshore windfarm  
West of Duddon Sands

# EAST ANGLIA ONE OFFSHORE WINDFARM SECURES 714MW CONTRACT

**ScottishPower Renewables has hailed a major breakthrough in efforts to reduce the costs of offshore wind after the East Anglia ONE project successfully secured a Contract for Difference (CfD) in the complete competitive auction process run by the UK Government.**

The successful bid was announced as the shareholders work towards ScottishPower Renewables' purchase of Vattenfall's 50% share in East Anglia ONE.

## BEST VALUE

SPR will take the project forward initially as a 714 megawatt (MW) development after winning the auction with a price of £119/MWh, ensuring that East Anglia ONE will be the best value offshore windfarm ever developed in the UK.

The company, which led East Anglia ONE's participation in the auction, has been able to bid at a price that is lower than anything previously seen in large scale offshore wind thanks to the engineering, procurement and operational efficiencies that have been introduced in to the project.

## INVESTMENT

The development will see around 100 wind turbines installed in the southern North Sea. The overall investment will be in the region of £2 billion and the project could meet the annual electricity demands of around 500,000 homes. East Anglia ONE has planning consent for up to 1,200MW and ScottishPower Renewables may still seek to build out the full project by securing further capacity in future CfD auctions.

The East Anglia ONE project will now be developed solely by ScottishPower Renewables. Vattenfall and ScottishPower Renewables will continue to develop the rest of the East Anglia Zone.

## MAJOR INDUSTRY BREAKTHROUGH

Keith Anderson, CEO of ScottishPower Renewables, said: *"We are delighted to have secured a contract to take East Anglia ONE forward, which will be one of the best value offshore windfarms ever developed anywhere in the world. It signals a major industry breakthrough in efforts to reduce the costs of offshore wind. ScottishPower Renewables has been leading efforts to drive down costs for many years and we delivered considerable efficiencies in the recent construction of West of Duddon Sands. With East Anglia ONE, we are driving the industry towards its cost reduction targets and demonstrating the long term sustainability of offshore wind.*

*"Final negotiations will now commence with the wider supply chain and in the coming months we will look to secure local port facilities to support the project, as well as agreeing contracts for the major components. Overall investment to deliver the project will be in the region of £2bn, representing an opportunity to create significant UK economic benefit and creating employment opportunities for up to 3,000 people.*

*"We would also like to thank Vattenfall and the efforts of their team in helping to secure planning consent for the project. We will continue to work with Vattenfall on potential future projects in the East Anglia Zone."*

## WELCOME NEWS

Gunnar Groebler, Head of BU Renewables at Vattenfall, said: *"This is welcome news for East Anglia ONE. It has taken five years to reach this point since The Crown Estate awarded the lease to Vattenfall and SPR and almost nine months since being awarded development consent. Now SPR*

*will take on sole responsibility for delivering EA1 after completing the purchase of Vattenfall's 50% share in EA1.*

## COMMITMENT

*"Vattenfall is committed to growing its wind business across the European markets it operates in. The divestment of our 50% shareholding in EA1 to SPR means that we can prioritise investment in the UK and the rest of our European wind portfolio. We still see a promising future for the rest of the East Anglia Development Zone – and UK offshore wind generally and we will continue to work with SPR to deliver the remaining five projects."*

The company is now seeking to start construction in 2017, with the first turbines installed by 2019 and hopes that the project will be fully operational during 2020.

## UK PROJECT FOCUS

More than 90% of all expenditure on the project to date has been incurred in the UK and during the planning process alone for East Anglia ONE, more than £15m of contracts have been awarded to local companies working on the project. A separate £17m contract was also awarded to Wood Group of Aberdeen for the construction and installation of weather monitoring masts.

ScottishPower Renewables recently completed the 389 MW West of Duddon Sands Offshore Windfarm, a joint venture with DONG Energy and is developing the 350MW Wikinger Offshore Windfarm in Germany. Vattenfall is the world's second largest operator of offshore wind and in the UK operates 540MW from three offshore schemes.

## SCOTTISHPOWER RENEWABLES

Boost for Scotland's renewables industry from first UK green power auction

Scotland's renewables industry received a welcome boost with one of the country's offshore wind projects allocated funding for the next 15 years and support announced for a number of onshore wind farms.

Near na Gaoithe, a wind farm in the Firth of Forth, has been awarded a contract to sell the power it will generate in the Department of Energy and Climate Change's first ever green power auction.

Two-thirds of the UK onshore wind projects successful in this auction round will be constructed in Scotland, with the technology now around 10% cheaper than new nuclear power.

## OFFSHORE WIND

The Neart na Gaoithe wind farm is expected to create hundreds of direct and indirect jobs during its construction as well as throughout its operational life.

Scottish Renewables Chief Executive Naill Stuart commented: *"We are pleased to see one Scottish project offered a contract in this process. With Neart na Gaoithe and the Beatrice development in the Moray Firth, we now have just over 1GW of offshore wind in Scottish waters with funding secured and moving towards a final investment decision.*

*"This represents a significant volume of projects with the potential to really kick-start offshore wind in Scotland. The success of the East Anglia ONE scheme is also good news for Glasgow-based ScottishPower Renewables.*

*"Scotland's offshore wind ambitions, however, go far beyond this. There remain almost 3GW of projects with planning permission which will still be looking to secure contracts in the future. Together they could create over 10,000 jobs during construction and over £2 billion in GVA. For them, the focus is now on the next auction, which is likely to start within the next 12 months.*

*"Yet we still have no indication of the size of the budget that will be available and competition for support could be even tighter. It is essential DECC gives some clarity on this as quickly as possible so that the projects and the supply chain, can plan their future."*

Mr Stuart also highlighted that the successful bids were lower than previous levels of support for the industry:

*"With this one auction we have seen costs come down for offshore wind significantly and the industry on the way to its target of a 30% reduction in cost by 2020."*

## ONSHORE WIND

The price of onshore wind has fallen in this auction round, the first of a number of auctions which will be held over the next five years.

Mr Stuart continued: *"Today's result outlines the increasing competitiveness of onshore wind in Scotland, where two thirds of today's successful projects are located.*

*"This means onshore wind is now around 10% cheaper than new nuclear and is fast becoming competitive with gas. Each unit of power from onshore wind and solar is now around 10% cheaper than the agreed cost of electricity from the proposed nuclear plant at Hinckley Point.*

*"What the renewables industry needs now is to know what the budget for the next auction rounds will be. That information – coupled with an extension of the government's commitment to renewables out to 2030 – would give developers the certainty to secure private finance to build their projects."*

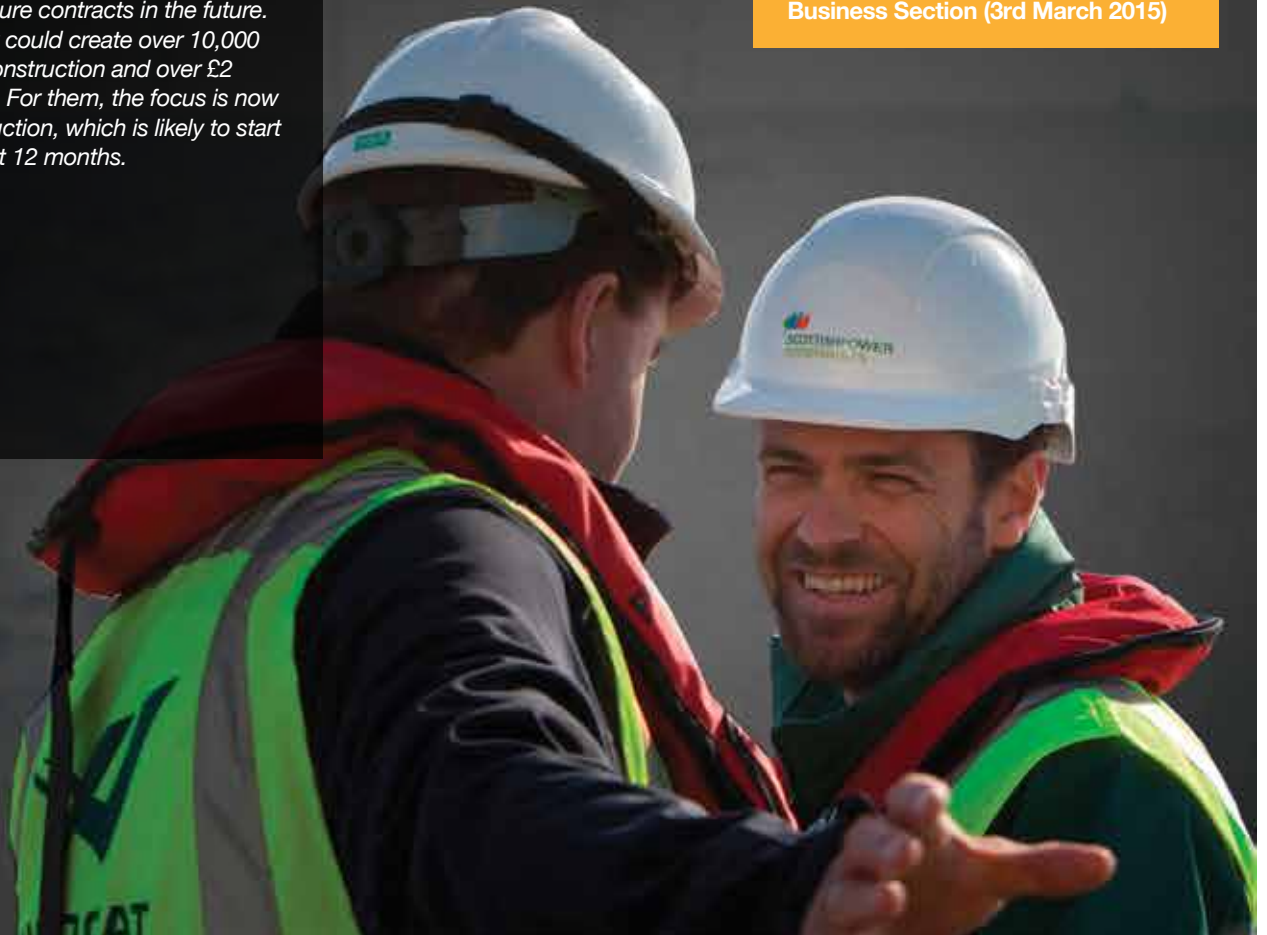
**Scottish Renewables**

**RenewableUK**

[Click to view more info](#)

## ED'S NOTE

Follow the QR Code/Link to read Keith Anderson (Chief Corporate Officer, ScottishPower) article published in the Daily Telegraph Business Section (3rd March 2015)



# Two for One

## A floating bargain!

Everyone loves a bargain and now a small Scottish company can offer the offshore wind industry game changing technical innovation designed to substantially reduce the cost of building offshore wind farms, essentially, a floating turbine within a floating foundation!

### REDUCING COST

For many years CMS have argued that the only way to substantially reduce the cost of constructing offshore wind farms is to deliver and install complete units including the turbine, without using heavy lift ships/jack-up barges.

In order to deliver complete units the turbine tower must be stowed within the foundation and raised to its working height on site. The ability to raise and lower the turbine by 60 / 80mts offers the wind industry the fundamental innovation it continually seeks. The simplicity of the operation and the subsequent additional benefits which can be introduced, have yet to be fully appreciated by the industry.

If fully adopted, the technical innovation incorporated in both DTI 50 and DTI 80F would directly improve the logistical complications of offshore construction, address scour protection, access from small craft, the interface between turbine tower and foundation, a novel method of installing the power cables and much more.

### MODULAR FOUNDATION DESIGNS

Furthermore, if we are to develop a UK supply chain, foundation designs



**DTI-50 Deepwater Turbine Installation 50 - concrete base**

### HISTORY AND DETAIL

In 2009 Statoil installed its Hywind prototype floating turbine off the south coast of Norway and although the project was successful, it identified key issues to be addressed if the concept is to be commercially viable.

Hywind is essentially a spar buoy supporting a wind turbine and with a draft of around 100mts, only suitable for construction in deep Norwegian fjords and constrained by the draft during delivery, additionally, servicing floating turbines with the nacelle 120mts above sea level is a formidable challenge.

In July last year Statoil invited selected companies to participate in their Hywind Challenge, an invitation to submit ideas

designed to address three major problems, construction, delivery and maintenance.

### A WAY FORWARD

Concrete Marine Solutions Ltd an Inverness based engineering consultancy having designed its own concrete gravity base foundation, DTI 50, immediately recognised the challenges facing Statoil and were quickly able to offer a way forward.

Working with QED Naval, an Edinburgh firm of naval architects, the new design DTI 80F incorporates the patented technology which makes DTI 50 unique, whilst retaining the design philosophy which underpins the Hywind concept.

must be modular, with components built nationally at ports with minimal facilities and delivered to dedicated assembly yards close to the proposed wind farm site.

Both DTI 50 and DTI 80F are specifically designed to substantially reduce construction, installation and maintenance costs, address at a fundamental level Health and Safety and improve risk management.

### FURTHER RESEARCH & DEVELOPMENT

CMS/QED Naval are confident further R&D will reduce the draft of DTI 80F to around 50mts, making it competitive for Round Three sites and seek fabricators, installers, investors, developers with vision, capable of developing this game changing technology to its full potential.

## 2015 OFFSHORE EXCELLENCE AWARDS

Concrete Marine Solutions has recently won the 'Award for Innovation in Marine Engineering'.

The 2015 Offshore Excellence Awards highlight and promote the most deserving companies across the world that have, over the past 12 months, demonstrated an unwavering commitment to outstanding performance, integrity, and innovation.

Concrete Marine Solutions, along with other winners, has been recognised for forward-thinking leadership and exceptional commitment to client support.

**Concrete Marine Solutions Ltd**



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# REDUCING COSTS THROUGH INNOVATION

Utility ROV's background in commercial cargo recovery has led to an innovative approach to subsea operations.

Patrick Crawford, Managing Director commented; *"All of our cargo recovery projects have been self-financed and carried out on a 'no cure no pay' basis. When you combine this with the inherent risk of the salvage operations, one poorly managed project could easily put you out of business."*

## EFFICIENT AND COST EFFECTIVE SYSTEM

UTROV has focused on developing an efficient and cost effective system that is capable of carrying out multiple operations in the offshore sector. This system eliminates the requirement to mobilise multiple sets of equipment for a single project, instead utilising the Utility ROV multifunction tool carrier and a versatile range of tools.

The operating platform is the greatest expense in most offshore projects, so a key requirement of the system is the ability to be installed on vessels of opportunity. This allows UTROV to utilise the most cost effective vessel for the project.

## STREAMLINED TO INCREASE PRODUCTIVITY

All components of the system have been streamlined to increase productivity. High lifting capacity coupled with fast deployment and recovery times are crucial especially when working in deep water. The UTROV is capable of recovering a payload of 10t from 500mwd in under 16 minutes.

## AMPLE REDUNDANCY

A high voltage electrical system is used to reduce losses in the 1000m umbilical and increase the subsea power output of the UTROV. Two 3.3 kV electric motors drive variable displacement load sensing hydraulic pumps offering 100% redundancy in the event of a failure.

The exception to this is the MFE (Mass Flow Excavator) as it requires the combined output from the pumps. As this power is at source it is capable of operating in up to 1000mwd with no power loss as depth increases.

The UTROV uses the same instrumentation as conventional ROV's, 4 single mode fibres provide ample redundancy for any additional instrumentation to be easily installed. This high value equipment is protected within the robust frame enabling the UTROV to work in the most hostile of environments.

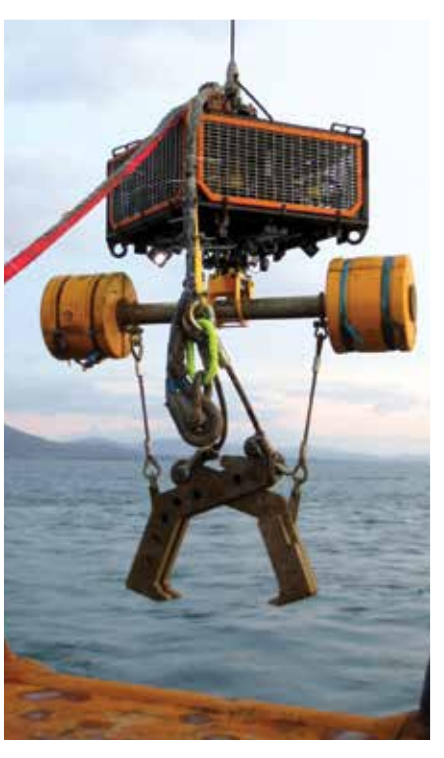
As with any business the key to the development of the system has been getting the right people. UTROV have a core team of multi-disciplinary staff that are able to look at the system as a whole rather than individual components. This understanding gained from involvement with the design, manufacture and operation of the UTROV system ensures that we can deliver safe, reliable and efficient solutions to subsea operations.



**TOOLKIT**

The culmination of this ongoing development that has spanned 15 years is UTROV's Generation 4 System. This tool kit includes a MFE, clamshell bucket, tined grab, shear grab, timber grab, sampling grab and mattress laying frame; all of which can be changed out on deck quickly to ensure the UTROV can handle a range of tasks.

The UTROV provides a subsea platform and means to operate and control hydraulic systems, existing tooling from the construction industry can be easily adapted to work subsea or new tooling can be developed to carry out specific tasks.



**CASE STUDY**

Late in 2014 UTROV were employed by Briggs Marine to provide subsea support for the recovery of a 29t tool that was partially buried in 105 metres of water. Approximately 110 meters of tow wire and umbilical were still attached to the tool potentially hindering ROV operations.

The remit was to dredge around the tool, lift it clear of the sea bed and move it to a site approximately 3 miles away with a water depth of 20 metres. Here it would be positioned on the sea bed for Briggs divers to replace the lifting harness prior to recovery.

**THE KEY OPERATIONAL STAGES WERE IDENTIFIED AS...**

- Survey
- Possible removal of tow wire & umbilical obstructing access
- Excavation around the tool
- Attaching a hoist wire
- Lift the tool clear of sea bed
- Move the tool to a pre-identified site
- Lower and uncouple the tool

**THE CONVENTIONAL APPROACH**

Use a combination of an ROV and a MFE to carry out the operation. The vessel used would have needed sufficient deck space for the 2 systems, berths for the operators and a winch or crane to support the operation.

**THE UTROV APPROACH**

The adaptability of the UTROV made it possible to quickly engineer solutions for the various problems associated with the project...

- 1 A timber grab was purchased and modified to interface with the UTROV. This was fitted whilst carrying out the survey of the tool to allow the immediate removal of the tow wire and umbilical
- 2 On completion of the survey the MFE was attached and deployed. Two acoustic cameras were fitted onto the UTROV allowing the operator to closely monitor the excavation site at all times

- 3 A two wire grab was designed for latching onto the stranded tool and lifting it without damaging it. This was designed, manufactured, tested and delivered in 10 days. Key factors in the design of the two wire grab were that it would grip hold of the tool without causing damage and that it would be able to release the grab from the tool should the need arise due to deteriorating weather

- 4 The two wire grab (weighing 2.5t) was suspended in the open position from the UTROV using the timber grab to hold a buoyant spreader bar (See inset picture). Once in position the timber grab was released transferring the load onto the main winch wire of the vessel. An additional buoy provided a constant tension on the winch wire preventing the grab from being unintentionally released with the vessel movement in the swell

- 5 The UTROV was recovered to the surface and the tool was successfully lifted and repositioned using the vessels main winch. The UTROV was deployed again to grip the spreader bar releasing it from the tool

**A SUCCESSFUL AND COST EFFECTIVE SOLUTION**

This was a successful operation all carried out from Briggs Marine's capable 61.2m x 13.5m vessel with a crew of 11 and a 4 man UTROV team providing a cost effective solution to the client.

**Utility ROV Services**

[Click to view more info](#)



# Flexible Trenching

Subsea contractors trenching for offshore wind farm cable burial encounter a wide range of seabed morphology ranging from loose granular soils to hard clay with boulders, demanding different techniques and equipment.

## COLLABORATION

In 2011 Aberdeen-based Fugro Subsea Services Limited (FSSL) and Soil Machine Dynamics Limited (SMD) collaborated over the design of a radically new, all-purpose trenching system, the Q1400. Conventional trenchers use either water jetting or chain cutting. Uniquely, the Q1400 provides interchangeable water jet and chain cutting skids which can be switched, onboard the vessel while at sea, in under 16 hours.

## LINCS PROJECT

In mid-2012 the Q1400 performed its first assignment on Centrica's LINCS project which involved post-trenching 16 x 120mm diameter array cables over a distance of around 16 km to a trench depth of 1.2m. The work involved mechanical cutting through cobbles, flints and chalk with boulder clay, at speeds between 100/150 m/hr.

Subsequently the Q1400 switched to jetting mode to entrench several turbine cable ends. Since then Fugro has successfully trenched power cable arrays on three wind farms and four oil projects.

## GWYNT Y MÔR WIND FARM

In September 2014 Fugro successfully completed the trenching and burial of inter-array cables for CT Offshore at the Gwynt y Môr wind farm off the North Wales coast, currently the largest offshore wind farm under construction in Europe.

Altogether 37 cables were trenched into very hard seabed with a mixture of seabed soils comprising hard clays interspersed with boulders and cobbles, gravels and sand. Despite these demanding conditions the Q1400 was successful in burying all the cables, which would have been beyond the capabilities of standard jet trenching systems.

## COST SAVING

*"The Q1400 has the manoeuvrability and compact size to be able to trench right up to the cable protection system, minimising the need for rock dumping or matting, potentially saving costs,"* said Mike Daniel, Trenching Business Line Manager at FSSL.

## OVERCOMING CHALLENGES THROUGH CO-OPERATION

*"We experienced outstanding co-operation with the Fugro team throughout the Gwynt y Môr project"* said Jimmy Laursen, Project Manager at CT Offshore A/S. *"We faced many challenges, especially with the demanding soil conditions on the project. With Fugro as our trenching partner, we were able to overcome these challenges and accomplished the installation and burial of the inter-array cables in the safest and most efficient way."*

One of the two Fugro Q1400 trenchers is fully integrated into the Fugro Saltire providing both jet and mechanical chain cutting from a single vessel. Fugro plans to deploy the second Q1400 in 2015.

**Soil Machine Dynamics Limited (SMD)**

**Fugro Subsea Services Limited (FSSL)**



# New ECA Robotics exclusive distributor agreement

Leading international subsea equipment specialist, Ashtead Technology, has increased its product portfolio with an exclusive sales agreement with ECA Robotics for its range of specialist underwater inspection equipment.

The agreement with the French company is for the rights to sell the ECA Hytec range of advanced underwater inspection equipment including ROVs, manipulator arms, cameras and lights.

## DEDICATED SALES SUPPORT

As part of the agreement, Ashtead Technology will deliver dedicated sales support and product training on the equipment from its facility in Aberdeen.

Ashtead Technology's Product Sales Manager, Kevin Murray-Taylor said: "This latest prestigious agreement further enhances our ability to supply customers with a wide range of the latest, high functioning inspection and monitoring equipment. In addition our dedicated and highly skilled technical team is available to offer customers a superior service before, during and after sale."

## INCREASING DEMAND

Pierre-Emmanuel Gaillard, Director from ECA Robotics Montpellier said: "We foresee increasing demand for our underwater equipment due to its technological superiority and we are delighted to be partnering with Ashtead Technology to provide an enhanced customer support solution."



Headquartered in Aberdeen with bases in Singapore and Houston, Ashtead Technology is a fully integrated international equipment solutions specialist, offering equipment sales, rental equipment, calibration, repair and maintenance, asset management, cable moulding, offshore personnel and custom engineered solutions.

## GLOBAL RENTAL FLEET

Ashtead Technology's global rental fleet comprises over 10,000 items, encompassing the latest technology, including positioning, geophysical, hydrographic and metocean equipment, ROV sensors and tooling, visual inspection, diving, NDT and environmental, health and safety equipment.

**Ashtead Technology**



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## Hi-Traq Trencher

The four track Subsea Vehicle specifically developed for operations in shallow water environments.



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# Totally New Trenching System

**Hi-Traq, the world's first tracked trenching Remotely Operated Vehicle specifically designed for power cable burial in offshore wind farms, is about to be introduced to the market.**

## TWO YEAR PROJECT

IHC Engineering Business, part of IHC Merwede, based in Stocksfield Northumberland, is in the final stages of a two year project to develop its latest subsea vehicle which has been part financed by the European Regional Development Fund.

The project has brought together the company's incredible wealth of in-house experience, market research and key customer information. The team are very proud of their achievement in creating a revolutionary, class leading innovation for the Offshore Wind Energy sector.

*"Hi-Traq is a highly versatile tooling platform capable of unequalled steering and traction for trenching operations,"* says Chris Jones, Product Manager of the Subsea Vehicle Team at IHC Engineering Business.

## REDUCED OPERATING COSTS

Chris also points out that Hi-Traq has been developed for shallow water environments. *"It's here – that resistance to seabed drag and lift forces becomes a key requirement sometimes overlooked by other equipment manufacturers. Hi-Traq increases the availability to work in harsh weather environments which crucially reduces operating costs."*

Its unique four track undercarriage means Hi-Traq can cope with the uneven seabed terrain found in offshore wind farms. It also allows it to maintain a flat bottomed trench. With its ability to turn tight radii, it can offer total product burial as close to the base of the wind turbine as needed.

## CHOICE OF TOOLING

There is also a choice of tooling allowing an operator to configure the vehicle specifically for the job in hand. The tooling packages available consist of jet swords for softer soil conditions and cutter chains for trenching through harder sea beds. Capable of trenching to depths of 3m, Hi-Traq offers complete product protection in line with industry regulations.

## STATE-OF-THE-ART

The IHC Engineering Business control system engineers have also developed a state-of-the-art hi-tech control suite. This gives the Hi-Traq user complete control of the vehicle

as it carries out its seabed work. A myriad of surveillance and locating technology means the operations can be viewed clearly from the seabed even at depths up to 500 metres.

## TOTAL PACKAGE

IHC Engineering Business is part of IHC Merwede, who offer an extensive portfolio of vessels, equipment and services to the Dredging, Mining and Offshore markets.

Hi-Traq is just one important component of a total package of equipment. This includes the launch and recovery system, comprising of a specially designed a-frame, winch and HPU all supplied by IHC Merwede and specifically tailored to the operational requirements of individual customers.

## HI-TRAQ KEY FEATURES...

- 1 Multiple tooling options
- 2 Unmatched product grading
- 3 Automatic tool platform levelling ensuring flat bottomed trench
- 4 Up to 3m trench depth
- 5 Ability to traverse sand waves
- 6 No 'break over' point eliminating sudden pitching
- 7 Small turning circle whilst trenching
- 8 No loss of traction whilst turning
- 9 Crab and wagon steering modes
- 10 Comprehensive surveillance equipment provided
- 11 Positive product engagement low friction system
- 12 High sea state launch and recovery system
- 13 Ground shear strength equivalent >10kPa
- 14 Operating environment >6 knots (combined wave and current velocity in any direction)

## IHC Engineering Business

[Click to view more info](#)



= [Click to view video](#)



# ROV Focus

**The target for the Offshore Wind Sector in the years to come is clear and simple, drive down the cost of energy, while maintaining a high level of safety in every operation.**

Progress is being made not only in the UK but across Europe. As part of this drive, companies are working more collaboratively and jointly focusing on cost and efficiency improvements, investing in new technology in order to speed the pace of cost reduction. SubC Partner has been working in the offshore sector for many years, carrying out subsea operations across the entire North Sea for major operators.

**EXPANSION – PAST, PRESENT AND FUTURE**

With the aim of maximising operational efficiency and delivering stronger business cases to its clients, reducing projects costs and optimising capital returns, the company has steadily strengthened its fleet of state-of-the-art Remote Operated Vehicles (ROVs) in terms of units and subsea capability and plans further expansion in the years ahead.

The strategy has brought early successes and the company has been carrying out various ROV campaigns in UK, Denmark and Germany.

**INTEGRATED APPLICATIONS**

With ingenuity and a significant engineering effort, a wide variety of tools and applications have been integrated in the ROV platforms, expanding the possibilities for diverless intervention. Recent examples being NDT applications as ACFM , ultrasonic gauges, cathodic protection probes, blue view sonars and tools for cavitation cleaning, drilling and cutting to name a few.

Operators have welcomed the deployment in the field of ROV cost effective spreads and are now more actively seeking suitable subsea application areas for their deployment.

**CASE STUDIES**

Recent case studies would include...

- Surveys/general inspections
- Non-destructive testing (ACFM, Ultra Sound, Eddy Currents)
- Anode inspection and replacement
- CP measurement
- Marine growth removal
- Airlifting
- Cutting and welding
- Lost objects recovery
- Cables free span measurement

This list is not exhaustive and will undoubtedly grow with accelerated ROV deployments.

**CLIENT-SUPPLIER RELATIONSHIP IMPORTANCE**

The nature of future subsea engineering challenges necessitates a close and collaborative client-supplier relationship, thus enabling early stakeholder engagement, application simulation/ onshore trialing and the development/ deployment of smart ROV solutions.

Through such relationships SubC is and other suppliers shall be, able to further improve the cost effectiveness of offshore wind and together contribute to making wind a dominant energy source alongside oil and gas.

SubC





# NEW COURSE ON ROV AUDITING

**An industry-first ROV System Auditing and Assurance course was recently launched by National Hyperbaric Centre at their new facility in Singapore.**

The course aims to provide technical and operational ROV personnel with knowledge to become aware of auditing processes, enabling technical progression in the industry as part of development of competence.

## AUDIT BENEFITS

Companies and offshore operators realise the benefits and importance of audits in this rapidly expanding field and with this comes the requirement for trained and qualified personnel, of which there is currently a shortage.

The three-day course combines practical and theoretical elements enabling delegates to become conversant with IMCA guidelines such as IMCA R006, 011, 018, 009, 005 and industry requirements surrounding auditing techniques, procedures and technical reporting on contractor's equipment.

## THOROUGH GROUNDING

NHC are confident that this course gives candidates a thorough grounding of auditing processes and technical aspects of offshore ROV systems and will improve the quality of audits, resulting in safer and more efficient systems.

## POSITIVE FEEDBACK

Positive feedback was received from candidates who attended the first course at the new Singapore centre and further dates are currently being planned both in Singapore and Aberdeen.

**National Hyperbaric Centre**

# ENERGY YIELD PREDICTIONS

## UNLOCKING VALUE THROUGH INDUSTRY COLLABORATION

### **'How much energy will this wind farm generate if I invest in it?'**

Peter Stuart, Head of Technical Innovation at RES (Renewable Energy Systems) and co-ordinator of the Power Curve Working Group industry collaboration shares his views...

Like many good questions this is simple to ask, difficult to answer and it matters. It matters to investors as it underpins their decisions. How accurately it is answered matters because it will influence how much risk investors perceive their investment holds.

### **INVESTMENT BASIS**

Investments are performed on the basis of exceeding a minimum level of return for a given level of risk, often described as 'hurdle rate'. The risk is partly quantified by the predicted energy yield and associated uncertainty and further influenced by the perception as to whether these predictions are accurate, realistic and unbiased.

As wind energy matures and subsidies are reduced, wind farm revenues are under enormous pressure. To gain investment, new projects must increase the accuracy of their predictions and once built, they must then demonstrate achieving those predictions in a consistent, reliable way.

In order to accomplish this, two things must happen, both involving many challenges...

- Costs must fall to increase/maintain investor returns
- Accuracy of energy yield predictions must increase, thereby improving investor confidence by reducing their risk

### **COLLABORATION**

Industry collaboration is the single most important tool we have in meeting these challenges. Reducing costs will involve vertical collaboration throughout the wind energy supply chain. Reducing energy yield risk will require collaboration focused on the following three pillars...

- Correctly identifying the input wind conditions to a wind turbine
- Accurately defining a wind turbine's power curve: its power generation response to wind conditions
- Comprehensive and transparent validation of these methods

### **INDUSTRY FOCUS**

Potentially innovative technical collaboration between manufacturers, developers and consultants far too often has fallen foul of organisational boundaries and contractual wrangles. The industry needs to focus on reducing the total energy risk, for all players, rather than on how best to contractually divide the existing level of risk. Similarly, all players need to understand the greater benefit of improved industry consensus, relative to the development of proprietary methodologies kept within the boundaries of a single organisation.

### **SO, HOW MUCH ENERGY WILL THIS WIND FARM GENERATE IF I INVEST IN IT?**

Collaboration holds the answer to unlocking value, for the benefit of both our industry and the environment which it serves to protect.

**Peter Stuart**  
**Head of Technical Innovation**  
**RES**

[Click to view more info](#)

# GROUND-BREAKING OF SIEMENS HULL DEVELOPMENT

MILESTONE FOR WORLD-CLASS OFFSHORE  
WIND MANUFACTURING AND  
ASSEMBLY FACILITY

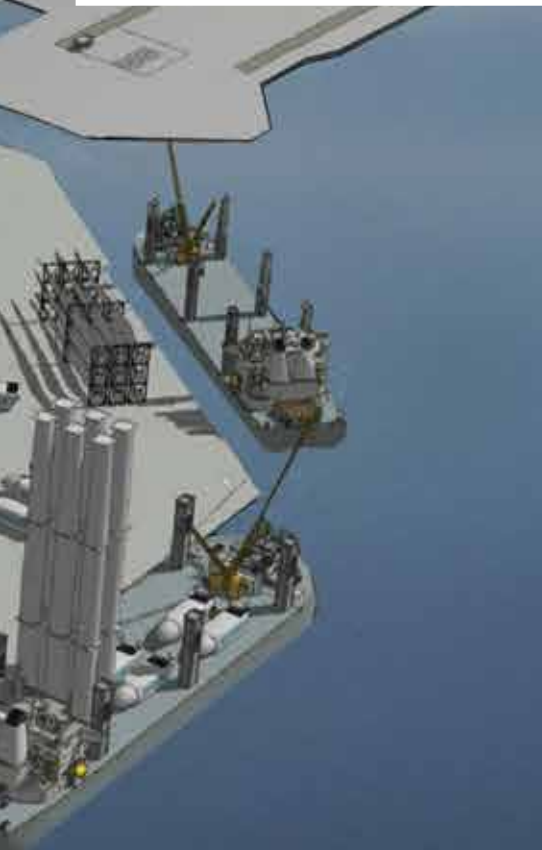




**Secretary of State for Energy & Climate Change recently joined Siemens global executives to mark the ground-breaking on wind turbine manufacturing and assembly facilities in Hull.**



**L/R - Finbarr Dowling, Michael Hannibal, Ed Davey, Juergen Maier, Clark Macfarlane.**



## INVESTMENT

Mr Davey visited Hull's Alexandra Dock to celebrate the beginning of construction on the site where Siemens will operate blade manufacturing, assembly and servicing facilities. With its partner, Associated British Ports, Siemens is investing £310m in the development. The Siemens facilities will create 1,000 direct jobs and many more during the construction phase and in the supply chain.

The Secretary of State and Siemens executives were also joined by leaders from the European renewables industry to record an important milestone in the Hull project, at today's event which had the theme "Engineering the Future."

## FIRST CONTRACT

As work begins at Alexandra Dock it was announced that the first wind farm that would benefit from Hull is Dudgeon, off the Norfolk coast, which it is planned, will be able to use the facility and quayside for part of its installation. Siemens has been selected as the supplier to Dudgeon, which is owned by Norwegian energy companies Statoil and Statkraft and Abu Dhabi's renewable energy company, Masdar, and is operated by Statoil.

The Dudgeon wind farm will comprise 67 of Siemens' 6 MW offshore wind turbines, which have the world's longest blade in commercial operation, at 75 metres in length. With an overall capacity of 402 MW Dudgeon will provide clean power to more than 410,000 UK households.

## LANDMARK DEVELOPMENT

Michael Hannibal, CEO Offshore of the Siemens Wind Power and Renewables Division said: *"The start of construction on the Hull site is a landmark in the development of what will be world-class offshore wind manufacturing and assembly facilities.*

*"We are delighted the Secretary of State has joined us today to mark this occasion and that we have been joined by partners and customers who are driving forward the offshore wind industry in the UK and Europe. We are also pleased to be able to announce so far in advance the destination of the first turbines to be shipped from Hull.*

*"The UK offshore wind market has seen strong growth, with even greater future potential. By 2020 14 gigawatts of wind power capacity is to be installed in UK waters, to achieve environmental objectives and security of power supply. Our Hull facilities will contribute significantly to the growth of the offshore wind industry in the UK and to the shared objective of Siemens, the industry and the Government of driving down the costs of renewable energy."*

## WORKING TOGETHER

Mr Davey said: *"The work started here in Hull is thanks to Siemens, its partners and the Government working closely together to invest in UK offshore wind for the long term. The £310 million investment will benefit the UK economy by creating green jobs and growth as well as providing secure, sustainable and low-carbon energy. The development will also help to drive down the costs of offshore wind. It marks the beginning of a new industry based here and exporting worldwide."*

## JOINT VENTURE CONTRACTORS

ABP has appointed the GRAHAM Lagan Construction Group Joint Venture to develop the Alexandra Dock site for the Siemens facilities and significant enabling work has now begun. Work to be carried out by the joint venture contractors will include building three new berths and a roll-on, roll-off ramp.

## CONSTRUCTION SCHEDULE

Dependent on planning consent, construction of buildings for the blade manufacturing and wind turbine assembly facilities is due to begin in summer 2015, with production of the first blades scheduled for winter 2016. Siemens has already begun hiring for jobs based in Hull, with recruitment continuing through 2015 and 2016.

Siemens is a significant UK employer with 13,760 employees, including around 2,000 employees in its renewable businesses.

**Siemens plc**



**= Click to view video**

# ABLE MARINE ENERGY PARK THE OFFICIAL GO AHEAD

**WE FEATURE ABLE UK AND WELCOME THE LONG AWAITED DECISION TO BE GIVEN THE GO AHEAD TO OFFICIALLY COMMENCE THEIR AMEP (ABLE MARINE ENERGY PARK) PROJECT.**

As a magazine we fully support this project and the benefits which it will bring to the people of Hull and surrounding area and quickly follows the decision that Siemens is to build not only a blade manufacturing plant in the area but also a wind turbine assembly base.

## **GOVERNMENT MINISTER SEES IMMEDIATE PROGRESS**

A Government Minister recently visited to see for herself that development of the £450million Able Marine Energy Park on the south bank of the Humber has been moving ahead at full speed over recent months – supported by funding from her department.

## **£15MILLION GRANT**

Penny Mordaunt, the Under Secretary of State at the Department of Communities and Local Government, was at the AMEP site where enabling works have been under way since the Communities and Local Government Secretary Eric Pickles visited last August and confirmed a £15million grant provided through the Enterprise Foundations for Growth Capital Grant Fund.

During her visit the Minister was told of the scale of the preparation work at the AMEP site which covers over 900 acres and will provide 1,289metres of new heavy duty deep water quays designed specifically for the marine renewables energy sector.

## **PROJECT SO FAR**

The work so far has included importing well over a million tonnes of stone over a 150-day period and laying 590,000 squares metres of specially designed membrane over an area equivalent to more than a hundred football pitches.





Said Able UK Executive Chairman Peter Stephenson *“We are delighted that the Minister has had the opportunity to see for herself how we have progressed since Mr Pickles marked the start of the work last August.*

*“The awarding of the grant for the infrastructure programme was a huge vote of confidence in our ambitions to provide at AMEP the full range of facilities needed by the renewable energy industries, not only creating over 4,000 direct jobs but acting as a catalyst for establishing the Humber as the ‘Energy Estuary’ of the UK.”*

**TIMESCALE EXPECTATIONS**

Work on the site preparation will continue over the coming months, with construction of the quays expected to get underway by summer of next year—before which Able aim to confirm a first tenant for the site.

**FANTASTIC OPPORTUNITY**

Cllr Liz Redfern, Leader of North Lincolnshire Council, said *“The Under Secretary of State’s visit today is a fantastic opportunity to highlight the development happening in the Humber. With work already well underway on site, the Able Marine Energy Park will play a major role in transforming the economy of the South Humber Bank and will see North Lincolnshire become the centre for UK offshore wind.*

*“The project will initially create over 4,000 direct jobs, as well as attract brand new industry into the South Humber Bank and new growth opportunities for our manufacturing and engineering sectors.*

**HUMBER CONFIDENCE**

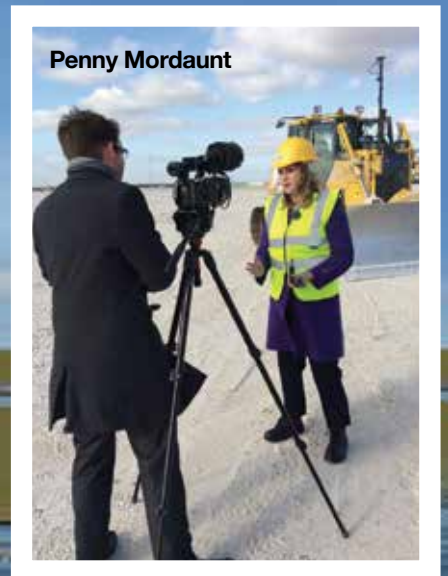
*“The Government’s support is clear having already invested £15m through the Enterprise Zone Grant on this project and a further £132m in the improvements of A160 and a further £22.7m in Local Growth Fund monies. This shows their confidence in the Humber leading the way in offshore wind and renewables, and their recognition for the council’s and Able UK’s vision for the area.”*

**REACHABLE AMBITIONS**

Local Growth Minister Penny Mordaunt said *“The Humber Enterprise Zone has an ambition to become a world-class centre for renewable energy. The work I’ve seen here today convinces me that ambition is well within reach.*

*“The Able Marine Energy Park will deliver a massive boost to the local economy, attracting top-class businesses and creating thousands of jobs for hard-working people. It’s why we invested £15 million to get this development off the ground and I’m extremely pleased to see the impact that funding has had. It’s yet another example that our long-term economic plan is on track, delivering benefits to local communities.”*

**Able UK**



**Penny Mordaunt**



# Dogger Bank Creyke Beck pushes Royal HaskoningDHV's offshore wind track record to over 5.5GW

**INTERNATIONAL ENGINEERING AND ENVIRONMENTAL CONSULTANCY ROYAL HASKONINGDHV HAS MAINTAINED ITS POSITION AS A WORLD LEADER IN SUPPORTING THE CONSENTING OF OFFSHORE WIND FARMS FOLLOWING THE SECRETARY OF STATE FOR ENERGY AND CLIMATE CHANGE'S DECISION TO GRANT CONSENT TO DOGGER BANK CREYKE BECK.**

**TAKING THE LEAD**

Royal HaskoningDHV has now taken the lead in, or provided key input to the environmental impact assessment process for over 5.5GW of successful offshore wind farm applications in the UK, with more to come.

Dogger Bank Creyke Beck comprises of two up to 1.2GW offshore wind farms, developed by Forewind, a consortium comprising SSE, RWE, Statoil and Statkraft and represents the world's largest offshore wind farm development.

**DOGGER BANK HISTORY**

Royal HaskoningDHV has worked on the Dogger Bank projects since 2008 and was involved in the successful bid that saw the development rights awarded to Forewind. The company has since been retained under a framework agreement covering each of Forewind's Environmental Impact Assessments, enabling the company to provide its expertise across a range of onshore and offshore consenting disciplines, including advice on key issues such as ecology, transport planning, marine mammals and Habitats Regulations Assessment.

**ADDITIONAL SUPPORT**

The company has also provided support, expert input, and oral representation to the examination phases of both Dogger Bank Creyke Beck and Dogger Bank Teesside A & B, the latter of which closed on the 5th of February 2015; Royal HaskoningDHV's sixth involvement in Nationally Significant Infrastructure Project Examinations under the Planning Act 2008.

**PIVOTAL ROLE**

Gareth Lewis, Head of Offshore Development, Forewind commented: *"Royal HaskoningDHV have been a vitally important partner for Forewind, playing a pivotal role in the development consent order application for Dogger Bank Creyke Beck, particularly in the production of the 15,000 page environmental statement submitted to the Planning Inspectorate.*

*"Their team members put in an enormous effort to ensure we had a world-class application and Forewind is extremely appreciative of their support over the past five years."*

**DOGGER BANK – 'A FLAG SHIP'**

Robert Staniland, Technical Director – Energy and Infrastructure Consenting, Royal HaskoningDHV added: *"The development of the Dogger Bank Zone is a flagship in our energy and infrastructure consenting portfolio and we are proud to stand as the longest serving consultancy to Forewind. The team has taken an innovative approach to research, assessment and problem solving and has developed excellent working relationships with contractors and stakeholders alike.*

*"The Secretary of State's announcement is a testament to this dedication and represents a significant contribution to achieving renewable energy targets, energy security and a boost to the UK economy."*

**Royal HaskoningDHV**

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# PLANNING CONSENT

## Rarely Straightforward!



**Obtaining a planning consent for a wind farm is rarely straightforward. An applicant may face several hurdles before consent is granted.**

Issues relating to Environmental Impact Assessment are a fertile area for discussion, disagreement and ultimately delay, obtaining consultee responses within a useful time frame and coaxing Council's to put the proposal before its planning committee are just a few of the issues that wind farm developers have become adept at facing. In many cases these developments attract vociferous and well-organised objector groups.

The groups choose a suitable acronym for a name, seek out sufficient funding and start raising an infinite variety of issues in order to prevent the development progressing.

### FRUSTRATING SCENARIO

Imagine then how frustrating it must be to have defeated each of these obstacles, to be holding your planning consent and still not be able to carry out your development.

This is a scenario we have encountered increasingly in the last year in relation to development on common land. One or more consents under Commons legislation must be obtained before development is permitted on common land irrespective of whether planning permission has been granted.

### PROCEDURE

The procedure for obtaining common land consent can be time-consuming and demanding, it can involve arcane statutes and require specialist agricultural knowledge.

Applications for consent to carry out work on common land or to de-register specific areas can easily be brought to inquiry and if you are lucky enough to have avoided a planning appeal for the permission you are likely to be assigned a planning inspector with no knowledge of planning background to the scheme which means the operation of s106 agreement and numerous other issues which have already been covered in obtaining the planning consent are raised again.

There is a very real risk that one consent may be obtained and the other refused and this will mean the development cannot proceed.



### JUDICIAL REVIEW

Also on the increase are the many and varied challenges brought under the banner of judicial review. Objector groups have always been alive to the fact that delay can be a very effective way of halting development and our current experiences certainly bear this out.

Projects are now being challenged at every turn from the scoping decision at the start to discharge a planning condition. Unfortunately these days obtaining your planning consent may be only half the battle...

### GOOD NEWS – HELP IS AT HAND

The good news is that Eversheds is just one of the law firms which is familiar with these issues and can help you with any aspect of the consenting regime in the UK for wind farms, on or offshore.

**Kee Evans**  
**Senior Associate**  
**Eversheds LLP**



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# PLANNING PERMISSION & RENEWABLES

**Planning is a complicated process – but one which is entirely necessary. You should therefore engage with advisers who are familiar with the process and can assist its progression to a successful conclusion, says Martin Collingwood.**

In England, The National Planning Policy Framework (NPPF) requires that Local Planning Authorities (LPAs) establish strategies to maximise the development of renewables and low carbon energy and support energy efficiency in buildings and reduce greenhouse gas emissions.

## PLANNING GUIDANCE

- In March 2014, the Government launched online streamlined planning practice guidance for England, which includes guidance on a range of environmental topics that are relevant to planning, including renewable and low carbon energy
- The guidance applies to renewable and low carbon energy developments with 50 megawatts or less of installed capacity, which are considered by LPAs under the Town and Country Planning Act 1990 (larger renewable and low carbon developments are considered by the Secretary of State for Energy under the Planning Act 2008. Some micro generation qualifies as permitted development and so will not require an application for planning permission)

## LEGISLATION

The Planning and Energy Act 2008 gives LPAs in England and Wales the power (not a duty) to include, in their development plan documents, policies that deal with renewable energy and other low carbon energy and require development in their areas to comply with energy efficiency standards.

## NATIONAL POLICY STATEMENT

In July 2011, the Government designated a package of NPSs on energy infrastructure. The Overarching Energy NPS sets out the high level objectives, policy and regulatory framework for Nationally Significant Infrastructure Projects (NSIPs).

The Renewable Energy NPS applies to applications for renewable energy NSIPs using one of a number of technologies including offshore wind over 100 megawatts.

## ENVIRONMENTAL ADVICE ON PLANNING APPLICATIONS FOR OFFSHORE RENEWABLES

In December 2013, Natural England announced that it was taking over sole responsibility for providing environmental advice on planning applications for offshore renewables (wind, wave and tidal projects) in English offshore waters.

When making a decision on a planning application the LPA must take into account a number of factors including material considerations; for offshore projects a planning application decision may take 18 months.



The LPA may grant planning permission unconditionally; it may be granted subject to certain conditions; or planning permission may be refused.

An LPA can impose planning conditions under two separate powers – either as it sees fit, or it may also impose conditions to regulate the development or use of any land under the control of the applicant.

**Martin Collingwood  
Andrew Jackson**

[Click to view more info](#)



# Wind industry award in record year

**Wetherby-based wind turbine specialist Earthmill, has been awarded a top industry accolade for 2014, a year when the firm installed 66 farm-scale turbines up and down the country from Aberdeenshire to Cornwall.**

## ENDURANCE WIND POWER

Endurance Wind Power, which presented the award to Earthmill, designs, manufactures and tests some of the most advanced wind turbines in the world and has more than 600 installed across the UK.

## POPULAR OPTION

Farm-scale turbines are becoming an increasingly popular option for farmers and landowners as the efficiency of turbines continues to improve. *“There is an army of farmers who have become small, independent power generators,”* said Steve. *“It’s a win-win situation because not only do strategically-located farm turbines help UK farmers lower their energy bills, reduce CO2 emissions and diversify their business income, but they are also making a significant contribution to decreasing our reliance on fossil fuels.”*

## YEAR ON YEAR BUSINESS GROWTH

Since starting out in 2009 from Steve Milner’s garage in Yorkshire, Earthmill has grown to employ 36 staff and has an annual turnover of £13m. The company relocated to a new head office in Wetherby last year.

L to R Ed Kenny-Levick, Steve Milner, Jamie Edgar



## HELPING CLIENTS RESOLVE PLANNING ISSUES

The business scooped the Endurance Wind Power ‘UK dealer of the year’ award for its outstanding customer service and expertise in helping clients resolve planning issues.

Steve Milner, Managing Director of Earthmill, said: *“Being named dealer of the year is a really big deal for us – and a testament to the hard work and dedication of the entire Earthmill team.”*

And added: *“We pride ourselves on our great customer service. There can be many challenges involved in the process of installing a wind turbine, from the planning stages to getting the turbine up, running and generating green energy, so it really pays to have an experienced and tenacious team on your side.”*

*“We always go the extra mile to overcome problems along the way, which has resulted in the 66 turbines we successfully installed last year alone!”*



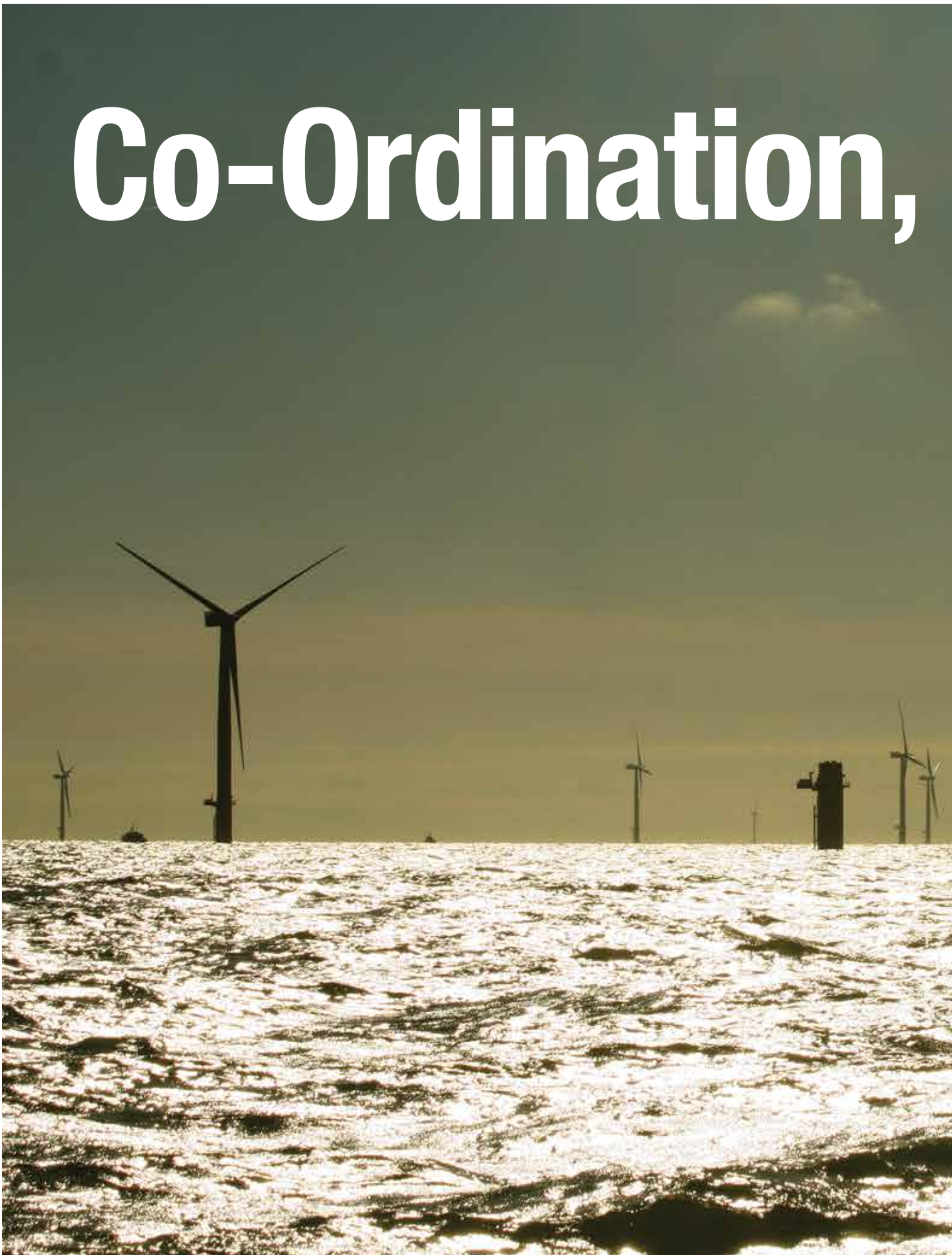
Steve Milner of Earthmill

Ed Kenny-Levick, European Sales Manager of Endurance Wind Power, said: *“Earthmill have really earned this award. Not only are they one of our largest dealers, but they also provide an excellent service, going the extra-mile to help their customer’s through the process from start to finish.”*

**Earthmill**

**Endurance Wind Power**

# Co-Ordination,





# Co-Operation and communication is key

**We have often highlighted the importance of Operations & Maintenance within the industry. As in all industries co-ordination, co-operation and communications are key to reliable and successful outcomes.**

## CO-ORDINATION HUB

Our sponsor Green Marine Solutions explains advanced marine co-ordination in some detail with the purpose of stimulating a wider debate on the concept of a regional, national and European marine co-ordination hub.

The offshore wind industry's increasing complexity means that advanced marine co-ordination (MC) is now both a necessity and a cost. If the adage is true that necessity leads to invention, you might be looking for options that take MC from the hands of traditional seafarer marine co-ordinators, who depend on a radio, computer link, experience and memory and into the instant real-time digital age.





In consequence, operators could soon be logging in for immediate co-ordination solutions in much the same way that they already refer routinely to the Met Office for detailed local weather forecasts.

**LOCATION IS NO PROBLEM**

The advantage of MCCs in general, but large central hubs in particular, is that they can handle and interpret high volumes of data which can be pooled profitably.

Clearly, centralised MCCs must accommodate a wide range of different systems and emergency response procedures reliably and flexibly.

However, with digital systems location is not a primary concern. Wherever based, costs and skills can be shared. The resource pool is larger. Options increase. Efficient decisions can be made quickly. Everyone wins.



Green Marine Solutions (GMS) has been exploring the potential for regional centres and even a national MC hub, that would optimise O&M resources reliably and robustly, while minimising costs and guaranteeing confidentiality. GMS proposes many answers but consensus views are important. Your comments, opinions and precautionary tales will be welcomed to help with the practical development of this concept.

**DIGITAL MARINE CO-ORDINATION FOR BETTER O&M**

Can digital technology slash marine co-ordination (MC) costs? Is sharing asset resource data instantly and securely online an attractive economic option?

Would a new generation of joint co-operative marine co-ordination centres (MCCs) serving whole UK and European regions revolutionise big offshore project logistical management?

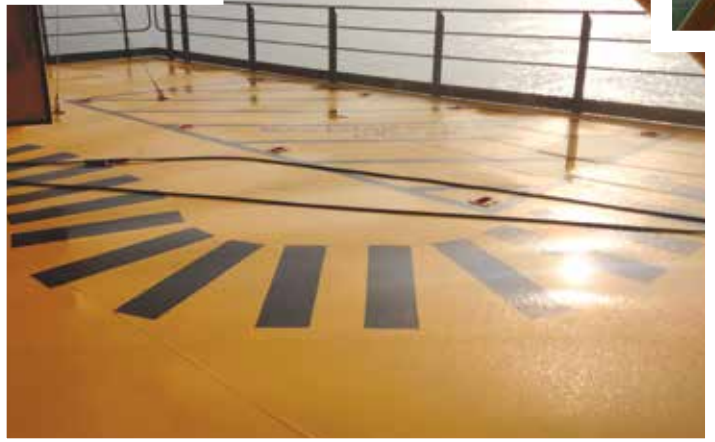
In the ultimate case, could one centralised and digitally-based national MCC accessible across the British Isles 24/7/365 minimise budgets while improving both safety and resource use?

We believe the answer in each case is yes, with strong precedents. Co-operating local companies can share a single extremely-efficient common MC resource, while still maintaining full confidentiality.

Here, we would like to look at the issues involved and invite inputs and views. Log in for instant co-operative answers.

First-class marine co-ordination (MC) which ensures that the right people, vessels, equipment - plus rescue and recovery assets - are in the correct position at the right time for the best price is now essential in all HSEQ-centric O&M activity.

But MC itself has a cost. This, we are confident can now be cut by a new co-operative approach which makes maximum use of modern high-speed information and communication technology.



**ANY ANSWERS?**

Green Marine Solutions is already working with offshore industry leaders keen to pioneer the advanced MCC concept. Key answers are already known. However, many operators will want to explain their own ideas and specific goals.

Exploring some of the issues involved we hope will encourage a useful discussion.

**CHANGING FACE OF MC**

To understand why change is necessary, it is important to recognise that the days of the time-served seafarer with a radio working as a pivotal point for MC are over because of complexity.

Information in general is being centralised. The Met Office is a hub for accurate weather information. Similarly the Highways Agency co-ordinates complex logistical projects. The offshore energy industry is an obvious candidate for further modernisation.



### HM COASTGUARD PRECEDENT

HM Coastguard set a precedent in September 2014 by opening a new state-of-the-art National Maritime Operations Centre (NMOC) near Fareham.

By the end of 2015, 96 separate Coastguards based at the Hampshire hub will work with 10 other centres nationally to create a much bigger, better and more responsive support network for the whole UK.

Responding to criticisms over data centralisation, the NMOC comments that a reliance on local knowledge in the past resulted in 'less than brilliant' outcomes.

### ROAM'S LEADING EDGE

To help MC achieve the digital leap, GMS has developed its ROAM (Real-time Offshore Asset Management) system.

The operative term is 'real-time' and ROAM now comes as standard with all GMS MC projects.

The system tracks changes to the working status of men, machinery and boats as they happen – with two implications.

Firstly asset management becomes much more efficient. Secondly and very importantly, management functions and physical operations can be separated. This paves the way for new super-MC hubs.

### GERMAN PROJECT IN SAXONY

In Germany, GMS is working closely with Offshore Marine Management (OMM) on its strategy for a new MCC facility at Cuxhaven near the mouth of the Elbe River.

The result is likely to be a digital hub that combines GMS with major OMM infrastructure developments on a 12,000 m<sup>3</sup> prime site offering direct water access, including a ro-ro ramp. This combination would link two cost-saving concepts.

The first is for 2nd and 3rd tier service companies to work together on critical offshore wind farm Inspection Maintenance and Repair (IMR) in a way that companies alone cannot achieve.

OMM would provide flexible space for goods handling, vessel requirements - including harbour master interface - customs and security needs.

Crucially, the second would be to operate a single MCC for all companies involved, explains OMM's CEO, Rob Grimmond: "Our aim is setting higher safety standards as a new base level for every company involved," he says. "We would expect GMS to play an advanced role here."

And adds, "The new onsite MCC is designed to control all vessel and personnel movements associated with partner companies. It will also co-ordinate other key tasks, such as a single point for people, equipment and vessel safety and competency verifications."

### WIND INDUSTRY STEP-CHANGE

"Working with GMS, we think this progressive approach is unique and a step-change for the offshore wind industry," he notes.

"It will provide an additional MCC prior to the wind farm MCC which we are confident will raise minimum HSE standards. Ultimately, we want to remove this duplication and deliver additional cost efficiencies beyond the immediate HSE improvements. We think GMS's approach will help us." Rob concluded.

### SUB-CONTRACTOR VIEW

Would offshore sub-contracting firms use a central MCC on a project-by-project in much the same way that they routinely refer to the Met office for weather?

GMS has asked Sgurr Energy if such a service would be of interest and under what conditions?

"Yes it would," says Project Manager, Allan Drewette. "For small, infrequent single vessel operations, for example met mast maintenance, marine co-ordination is not strictly necessary. However, safety is paramount and anything that improves safety offshore should be considered for a project."

And adds, "The difficulty comes in finding an existing marine co-ordinator (perhaps for a wind farm) who is happy to accommodate another vessel that may have completely different emergency response procedures, or attempting to setup a temporary marine co-ordinator for the duration of the works."

### CHALLENGES?

We also asked what the MCC challenges might be from a Sgurr Energy viewpoint? "Presumably there would need to be some level of commonality to the emergency response for the various vessels - which may be from various operators - controlled by the co-ordinator," Drewette suggests.

"Each operator would need to agree to the form of the emergency response and disseminate that effectively to their crews. One of the biggest challenges we have encountered is the communications difficulties associated with far offshore work."

"When working beyond normal VHF range, an alternative communication method is required. Not all vessels will be equipped with long range comms (such as MF-SSB), so other systems such as satellite comms may need to be utilised. However, they come with their own challenges," Allan concluded.

These points are crucial but have established technical solutions.

### Green Marine Solutions

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## Who's looking out for offshore wind?



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- Port and harbour design and studies



[royalhaskoningdhv.com/renewables](http://royalhaskoningdhv.com/renewables)

# Certification of Gamesa's G47 wind turbine lifetime extension programme

**The programme aims to extend operational life of Gamesa's G47 wind turbine model to up to 30 years and is a vital step for the global renewable energy market to maximise efficiency and reduce operation and maintenance costs of aging wind farms.**

The need to extend the lifetime of existing turbines is increasing as overall fleet age increases and operation strategies evolve.

## INDEPENDENT ENERGY EXPERTS

DNV GL, the world's largest resource of independent energy experts, has been chosen by Gamesa, to certify its wind turbine lifetime extension programme for the design of its G47 wind turbine, extending the lifetime to up to 30 years. The turbine lifetime extension programme aims to maximise the profitability of ageing wind farms by reducing the lifecycle-based costs of energy of existing turbines and keeping them operational for a longer period of time.

Although a lot of wind farms are still less than 20 years old, many owners anticipate that their assets will be affected by rising operation and maintenance costs. While existing turbines were certified by the standards in force at the time they were designed, greater technical knowledge and practical experience have led to more accurate models and new design standards.

## IN-DEPTH UNDERSTANDING

Upgrading the turbines to extend their design lifetime requires an in-depth understanding of all disciplines involved, in order to ensure a safe operation of the turbines after they have exceeded their original design lifetime.

## MAXIMISING WIND TURBINE LIFETIME

Sergio Vélez, Director of Gamesa's Life Extension programme, commented: *"Extending wind turbine operation beyond the original design life without additional risks for health, safety, environment and grid integration, is of huge benefit to the renewable energy industry. DNV GL's certification supports our efforts in maximising the lifetime of our turbines and optimise its continuous operation."*

Andreas Schroeter, Executive Vice President-Renewables Certification of DNV GL added: *"Wind turbine lifetime extension is a vital step for the global renewable energy market to maximise efficiency and reducing costs. One of the largest benefits of lifetime extensions for owners and operators is driving down the lifecycle-based costs of energy."*

## OPERATIONAL CONSIDERATIONS

Many wind farm owners in Europe and the US are starting to consider operational strategies for turbines approaching the later stages of their design life. This provides them with the option to either replace their turbines or seek to extend their operational lives.

In order to find suitable solutions from a technical point of view, DNV GL has published a guideline on the continued operation of wind turbines. This guideline has been the basis for the lifetime extension programme of Gamesa's G47 wind turbine from a technical point of view.

## DNV GL

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# Let's Torque Calibration

The requirement for accurately applied torque in wind turbines is very broad; from as low as 100 N·m, e.g. for fibreglass body assembly in the nacelle during manufacturing, to circa 6000 N·m plus for sections of body tube assembly.

## REGULAR AND RELIABLE CALIBRATION PARAMOUNT

Regular and reliable calibration of any torque tool is paramount in order to keep the tool functioning as expected and to maintain the production, assembly, performance and maintenance of wind turbines at their optimum. Calibration assures the accuracy of tools and provides traceability for monitoring and audit purposes.

## OPERATION & MAINTENANCE

O&M teams can address this need through standard torque measurement instruments. However a significant concern of introducing a torque tester into an environment, where people are not calibration specialists, is that incorrect test parameters could be selected which would result in tool inaccuracies and consequently joint failure.



Whether Operations & Maintenance (O&M) teams are using pneumatic multipliers, electric multipliers, such as EvoTorque (see page 28, issue 24), manual multipliers (with digital or click wrenches) or hydraulic wrenches; they all need to be properly and reliably calibrated.

## TESTING AND CALIBRATION NEEDS

Norbar offer instruments that cater for all testing and calibration needs. Where torque wrenches are used, typically in applications with torques ranging from 0.1 N·m to 2000 N·m, the TruCheck range offers a simple to use entry level product for testing tools. Employed together with a power test fixture, the TruCheck also provides a means of checking and testing pneumatic and electric tools.

## SUPERIOR ACCURACY

When superior accuracy, selectable parameters and a UKAS certificate are required the Pro-Test range (1.2 N·m – 1500 N·m) offers a straightforward alternative for measuring and testing of torque wrenches and has a five reading memory capability.

## DEDICATED HYDRAULIC MODE

For hydraulic wrenches the T-Box XL has a dedicated hydraulic mode. Used in conjunction with our hydraulic wrench calibration fixture, T-Box XL can test and calibrate hydraulic tools. The T-Box XL and TDMS (Torque Data Management System) software are the complete solution for torque tool calibration, data management and archiving results on a PC.

## COMPREHENSIVE RANGE

Norbar offers a comprehensive range of torque tightening and measuring devices and calibration services to the relevant standards. Accredited by UKAS and the equivalent bodies around the globe, laboratories are accredited for torque measurements between 0.005 N·m and 108,500 N·m or the imperial equivalents.

## Norbar Torque Tools Ltd

<a href="#">Click to view more info</a>	<a href="#">Click to view more info</a>	<a href="#">Click to view more info</a>
TORQUE MEASUREMENT	CALIBRATION EQUIPMENT	CALIBRATION SERVICES

# New state-of-the-art system for remote wind farm operation

**THE SYSTEM KNOWN AS WINDCORE AND WINDONE WILL ALLOW CLIENTS TO MANAGE TURBINES BY ANY MANUFACTURER INSTALLED IN ANY PART OF THE WORLD.**

## CRUCIAL ROLE

This tool now plays a crucial role in enabling operators (to supervise in real time and from the same control centre) the many variables that can affect a windfarm, ranging from the wind speed at each wind turbine to the temperature, current and output of the machines. The results of these variables enable the development of

*with the know-how accumulated by IBERDROLA, we are eager to offer this high added-value tool to our customers so that they can ensure excellent performance at their wind farms and optimised operation.*" explained Fernando Valdeperes, Director of Services Sales and Marketing at Gamesa.



The IBERDROLA Group, via its engineering and construction subsidiary, and Gamesa launched the pioneering system in the wind power sector that will allow operators the use of a single interface to remotely manage any wind turbine model installed anywhere in the world.

## JOINT COMPANY EXPERIENCE

Based on the know-how and experience of both companies in the wind power sector, this new system will allow to remotely control and monitor these types of renewable facilities, as well as analyse their operating data and generate reports with a view to optimising their electrical output.

forecasting models, which in turn facilitate operation and maintenance tasks.

## SINGLE INTERFACE

The system is also capable of using a single interface to operate machines by any manufacturer, instead of having to use a different programme for each technology, which is the case in the majority of systems of this kind employed to date.

## ENSURING EXCELLENT PERFORMANCE

*"Gamesa operates over 400 wind farms all over the world from its control centre in Sarriguren (Navarre). With an operating capacity of over 10,000 MW and together*

## COLLABORATION

*"The versatility of WindCORE + WindOne, which is based on the collaboration between two world leaders in the sector, means it can be rolled out in any setting, while respecting the infrastructure of the communication networks and management applications that are particular to each customer."* emphasised Javier Ontañon Ruiz, Head of Remote Control at IBERDROLA INGENIERÍA.

**Iberdrola**

**Gamesa**



# Strong growth in O&M servicing

**Availon, the leading independent wind turbine O&M service provider announced recently the addition of over 100 MW of Vestas turbine generators to its O&M service portfolio. These strong results underpin the success of the company's technology diversification strategy, which has been deployed internationally over the last few years.**

## WIDER SPECIALISM

Although the company is often regarded mainly as the independent expert of GE wind turbines, those machines are not the only technology that Availon specialises in. Turbines by manufacturers Vestas and Gamesa feature at the top of Availon's service portfolio. These technologies have effectively become key drivers of growth for Availon. The company had already reached the 1,000 MW milestone for Vestas turbines under its care in the third quarter of 2014.



## WIDER REACH

Availon has not only greatly expanded the quota of Vestas generators under its care in Germany, but has also managed to extend its Italian portfolio to include the 2MW class Vestas V90 wind turbines. *"We are very pleased that Availon is considered as a reliable partner for Vestas technology on an international level. Many customers who are already familiar with us in Germany through our GE technology servicing, are also placing their trust in us abroad, to service both Vestas and Gamesa technologies."* explained Michael Richter, Global Sales Manager at Availon.

## INTERNATIONAL MARKETS

Availon's international success story continues unabated. Outside Germany, Availon looks after more than 2,000 MW covered by comprehensive servicing contracts. *"The German market will always be Availon's home market, but international markets such as the US and Italy are also becoming increasingly more important. It is very satisfying to see our business enjoying consistent strong growth."* concluded Richter.

**Availon**

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# BORKUM RIFFGRUND 1 OWF

## COMPLETION OF CABLE INSTALLATION

Yet another project was completed by CT Offshore recently. In total 44 inter-array cables have successfully been installed and buried at the DONG Energy wind farm Borkum Riffgrund 1.

### TERRIFIC PERFORMANCE

The cable laying vessel SIA and crew achieved a terrific performance. *“The valuable experience gained from the West of Duddon Sands and Gwynt y Môr projects earlier this year has played an important role to secure a smooth running project,”* says Hans Peter Johannsen, Director of Project Management.

### SUCCESSFUL OUTCOME

*“It has been our first large project in German waters and our ROV and trenching team has in the best and fastest way possible managed to bury the cables, using the VOS SYMPATHY vessel followed by our survey vessel MV SANDER 2,”* he concluded.

### RAPID DEVELOPMENT

CT Offshore is a subsea cabling installer, which was founded in 2003 as a privately-owned company, offering consultancy services to the offshore wind farm installation industry and considerable expertise in offshore power cable installations.

The company has developed rapidly over the years and transformed itself from a minor consultancy into a highly-rated installation company with A2SEA as a majority shareholder.

**CT Offshore**



## FALL ARREST EQUIPMENT FOR SAFETY AT HEIGHTS

Image: Skylotec



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May  
ISSUE 27

WindEnergy  
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# First Wireless Remote Monitoring System for Bolted Joints



The first system in the world to offer true remote, wireless monitoring of bolted joint integrity has been launched by James Walker RotaBolt in partnership with Transmission Dynamics.

### CONTINUOUS MONITORING

The RotaBolt-TD system continuously monitors and wirelessly reports in-service bolt tension and can even issue 'tension-loss alarms' via email or SMS direct to stakeholders. It has the potential to revolutionise maintenance regimes particularly where important bolted joints are difficult to access because of location or operational environment.

*"With the RotaBolt-TD System, you will be able to monitor all the important bolted joints in an offshore wind farm from your mobile phone,"* commented Rod Corbett from James Walker RotaBolt, *"it is going to have a major impact on maintenance costs across many different industries and applications."*

### STATE-OF-THE-ART INSTRUMENTATION AND DATA AUTOMATION

Jarek Rosinski from Transmission Dynamics added, *"RotaBolt-TD is supported with state-of-the-art instrumentation and data automation and can be deployed with a full data management and reporting package. We know that it is a system that many have been waiting for."*



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Each bolt in the system contains micro instrumentation and a wireless transmitter. It periodically reads bolt tension, critical to the integrity of the joint and then wirelessly transfers the information to a local transceiver which collects the data from any number of bolts and then transmits the report via the internet, or GSM network to a secure server.

**FIVE YEARS RESEARCH & DEVELOPMENT**

The system, which has taken over five years to research and develop, allows for continuous monitoring of bolt tension and automatic report generation. It can deploy an alarm in case of a sudden loss of bolt tension below a pre-defined level, notifying authorised stakeholders globally by either email or SMS. Each bolt contains a coin-cell battery which ensures 5 years continuous unattended operation.

**TRANSMISSION DYNAMICS**

The company provides services to blue-chip technology companies around the world and have clients in the renewable energy, mining, marine, defence, automotive and rail sectors. They design and manufacture their own range of wireless telemetry and data acquisition systems for recovering in-service load information from the most demanding of environments.

**JAMES WALKER ROTABOLT**

The company has been at the forefront of bolted joint reliability since the 1980s, championing their bolt tension technology across a wide range of industries. Today their fasteners are used to assure bolted joint reliability in environments where pressure containment, vibration, fatigue and structural slippage are present.

**James Walker RotaBolt**

**Transmission Dynamics**

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# First cut steel for Dudgeon Offshore substation platform contract

**Sembmarine SLP base in Lowestoft, Suffolk, UK was recently awarded the EPC contract for the Dudgeon Offshore Wind Farm's offshore substation platform by Siemens Transmission & Distribution Limited.**

### CELEBRATION

The company celebrated the project's first steel cutting ceremony, marking the move from detailed design phase, to the construction program.

Matthew Wooltorton, SLP Project Manager said *"Today's event sees the project achieving a key milestone – right on schedule! I am grateful for the hard work of the SLP team and the close cooperation of Siemens that have made this possible."*

### DUDGEON WINDFARM

The Dudgeon topside and jacket is due for completion at SLP's yard in 2016 and will be installed at its final location approximately 32km North of Cromer, off the North Norfolk coast. The 1800 ton substation and 1500 ton jacket structure, will be centrally located within Dudgeon's 402MW, 55 km<sup>2</sup> array of 67 offshore wind turbines.

### JOINT VENTURE

The wind farm's developer is Dudgeon Offshore Wind Limited, a joint venture between Norwegian Energy firms Statoil and Statkraft, and Abu Dhabi based renewable energy company, Masdar.

SLP's Managing Director Paul Thomson said *"Today marks a special day in SLP's Hamilton Yard diary; not only are we celebrating the first major step in the construction of the Dudgeon Project, but we are also delighted to welcome representatives from Statoil, Statkraft and Siemens."*

### RESPONSIBILITY

*"It is SLP's responsibility to design, and build their equipment efficiently and safely and to deliver it on schedule, but it is the continued collaboration of all the parties concerned that will ensure that today's milestone is one of many that we will meet in the future, leading to the projects ultimate success."*

*"The Dudgeon offshore wind project is very important not only for the SLP team, but also for the local and UK economy, and we are extremely pleased to be an integral part of this wind farm's development."* concluded Paul.

### OPPORTUNITIES AND BENEFITS

Member of Parliament for Waveney, Peter Aldous commented, *"It is excellent news that Sembmarine SLP secured this contract and have quickly reached this important milestone. Offshore wind presents significant opportunities, not only to provide the UK with a secure supply of low carbon energy, but also to bring jobs to ports such as Lowestoft."*

### STRATEGIC LOCATION

*"Sembmarine SLP are well placed to carry out such projects, due to both Lowestoft's strategic location close to many of the large wind farms that will be developed in the southern North Sea in the next few years, but also due to the expertise that they have built up over a long time in the oil and gas sector."*

## GROWING WORKFORCE

Peter concluded *"It is especially welcome that the company will be increasing their workforce to carry out this work and this will mean that they will be well placed to secure more work, building on Lowestoft's growing reputation as a centre for the offshore renewables industry."*

## UK INDUSTRY FIRST

Sembmarine SLP has awarded a contract to SPT Offshore based in Holland, to provide the design, fabrication and installation of Suction Pile Technology for use on the Statoil Siemens Dudgeon Transformer Substation Jacket. The 4-leg jacket will support the topsides weighing approx. 1,850 ton.

## PROVEN TECHNOLOGY FROM OIL & GAS

This is a UK Wind Industry first, and is a prime example of proven technology transfer from Oil & Gas to Renewables. The use of suction piles has the advantage of potentially reducing installation time and cost, and is an ecologically, environmentally, and comparatively silent method of securing Jackets, substructures and monopiles, as there is no use of percussion or hydraulic hammers, thus having negligible impact on marine life during the operation.

Sembmarine SLP

[Click to view more info](#)



# The meat on the bones

Working out of Docking in North Norfolk, over the last four years Tidal Transit has risen to the challenge and opportunity offered by the rapidly expanding offshore wind industry by raising the capital finance to support the purchase of a fleet of four state-of-the-art, purpose designed offshore wind Personnel Transfer Vessels (PTVs).

## JUSTIFIED FAITH

The faith of Adam Wright and his fellow Director Leo Hambro has been more than justified as the vessels have been on almost continuous charter since each arrived from the Spanish boat builder Mercurio Plastics. They have been in service at Greater Gabbard, Gwynt y Mor, Hornsea and Westermost Rough wind farms during the construction phases and at Sheringham Shoal during both the construction and Operations and Maintenance (O&M) phases.

## FUNDING SUPPORT

With Tidal Transit developing funding plans to support further vessel purchases, Leo Hambro remains confident about the future for PTVs, saying: *“As the offshore wind industry continues to expand and wind farms are located further from shore, the range of vessel options available to developers and contractors will increase.*

*“A number of developers have already committed to using Service Operation Vessels (SOVs), but I believe that the flexibility offered by purpose-designed PTVs means they will continue to feature in the majority of financial/operational offshore wind business models.”*

Kitty Petra in service



## DEMAND

Leo Hambro believes the demand for crew transfer vessels during 2015 will be rather different to anything experienced so far, saying: *“The intense offshore construction phase which has been on-going since 2010 is now quietening down, as a number of developments move into the O & M phase. This will provide a number of new charter opportunities this year for which Tidal Transit is likely to have some vessel availability.*

*“However, 2015 will also be a year to get ready for the next intensive offshore construction phase with sites such as Dudgeon, East Anglia, Race Bank and Triton Knoll expected to move into construction during 2016/17.*

*“Add Dogger Bank into that mix and I can see a huge demand for PTVs in the years leading up to 2020.”*

## VESSEL SPECIFICATIONS

The specification of these vessels greatly exceeds the current fleet being used for the same purpose in the UK. The vessels MCA Cat 1 coding and 10,000 litre fuel tanks allow them to work up to 150 miles offshore, well within the range of the UK’s forthcoming Round 3 offshore wind farms.

## “Purpose-designed PTVs for crew transfer are here to stay”

Leo Hambro of Tidal Transit

Each vessel provides four crew members and twelve passengers with comfortable beds, bathrooms, galley, internet access and entertainment facilities, allowing wind farm engineers and support technicians to live and work offshore for up to several days at a time.

## CONSTRUCTION FACILITIES

Being of rugged GRP construction enables Tidal Transit’s vessels to operate in rough seas – a major advantage when working in the North Sea. Twin V12 MAN engines facilitate speeds of up to 27 knots when carrying twelve passengers, the crew and their on-board cargo.

Massive cargo decks fore and aft can accommodate up to 10,000kg of tools, equipment and spares and the Guerra crane on the fore deck has a lifting capacity of 1,025kg at 6.9m, which caters for long reach loading and unloading. Cranes can also be deployed for camera surveys and grab sampling.

## Tidal Transit

[Click to view more info](#)



= [Click to view video 1](#)



= [Click to view video 2](#)



# Considerations for Crew Transfer

When a vessel comes into port there are a number of things to consider. One of which is the safe disembarkation of the crew. DAN Shipping & Chartering offer a range of services for vessel owners – including husbandry services – to ensuring the smooth arrival of your ship to its port of destination.

*Vessel owners' piece of mind is an important part of the process and the transfer and wellbeing of their crew is vital. We offer a personalised service and always meet and greet the crew upon arrival at the port.*

*"We arrange all documentation and travel/ accommodation to ensure the crew can relax during the vessels discharge in order for them to be refreshed for the long journey ahead."*



### TRUSTED AGENTS

Ship owners need a reliable and trusted agent in port to take care of any husbandry matters. They need agents that have strong connections to local service providers and the ability to deliver a cost effective and prompt service. As a husbandry agent for over 30 years, DAN can look after principals' interests at all times - including a range of husbandry services.

The need to deliver a fast and co-ordinated delivery of husbandry services during a ships stay in port is paramount to ensure efficient vessel turn-around, minimising time spent at port – and effectively cost.

### CREW ROTATION

DAN know how vital the crew is to your operations. Their wellbeing and getting them safely on-and-off the vessel is an important process that you can only leave in the hands of an experienced agent.

As part of the John Good Group, DAN have access to one of the UK's leading business travel management companies, Good Travel Management. Through their network, they can offer competitive rates for your flights, hotels and rail travel.

### SOME OF DAN'S HUSBANDRY SERVICES INCLUDE...

- Crew handling: meet & greet, hotel bookings, shore passes, travel arrangements etc.
- Crew welfare: provisions, doctor, dentist, mail and prepaid telephone calling cards
- Cash to Master
- Spares clearance and delivery
- Supplies of bunker fuels, lubricants and chemicals
- Inward / outward clearance of ships
- Liaison with local authorities and communications assistance

### ONE-STOP-SHOP

Managing Director, Steve Pullen said: "We offer our customers a one-stop shop and take the hassle out of the supply chain."

### HISTORY

As part of the wider John Good Group, DAN can trace its roots in the ship agency business back to 1833. The John Good Group is proud to represent a portfolio of some of the world's leading shipping lines with an enviable reputation as one of the UK's largest and most experienced independent ship agents.

With its head office in Hull, DAN Shipping & Chartering is ideally positioned to develop its activities in the wind energy sector on the Humber but also handles vessels on a regular basis in Immingham, Port of Tyne, Sunderland, Blyth, Hunterston and Ayr through its own office network.

### DAN Shipping

[Click to view more info](#)

# New 23m Vessel to set new standards in class

South Boats IOW, the UK's foremost manufacturer of state-of-the-art Wind Farm Service Vessels (WFSV), has launched its first of class South Cat 23m named 'Iceni Venture' for Iceni Marine Services Ltd.

## EXTENSIVE TESTING PROGRAMME

The all new South Cat 23m has benefited from the extensive testing programme carried out to understand the benefits and limitations to various hull forms and how they perform differently specifically as offshore wind farm crew transfer vessels.

The demands from this industry are unique, vessels need to perform well in high sea states providing high levels of technician comfort as well as crew comfort whilst loitering coupled to flexible cargo payloads, fuel efficiency and of course provide higher sea state technician transfers.

Many of the hull forms that demonstrated peaks of performance in one area tended to have dramatic limitations in another. The all new South Cat 23m addresses this and promises to deliver a new benchmark for CTV performance. In addition, this design has been fully tank tested to optimise its sea-keeping, running trim and performance.

## SPECIFICATIONS

'Iceni Venture' measures 23.1m LOA, has a beam of 8m and an operational displacement of circa. 68 tonnes. The most noticeable feature of the 23m is the height of the bow and definition of the wet deck along with the depth of the hulls coupled to reduced height of the technician saloon. Model testing results are showing dramatic improvements to ride comfort in higher sea states, significantly better WTG access performance and lower fuel burn rates.

## LONG STANDING RELATIONSHIP

*"We are delighted to launch this first of class vessel to Iceni Marine Services, who have a long standing relationship with South Boats IOW and our co-operation over eight CTV's has assisted the development of the South Catamaran product range."* said Ben Colman, South Boats IOW.

*"This new class of vessel has proved immensely popular with a further three in build alongside two 26m vessels."*

## South Boats IOW



# Innovative Crew Transfer Systems

Osbit Power's reputation for innovative crew transfer systems has helped it record its most successful year.

The company developed MaXccess to provide safe transfer from small crew transfer vessels to offshore turbines. It is still the only system to be successfully deployed commercially for industry-leading customers such as Marubeni's Fukushima offshore wind farm.

### COUNTRY'S FIRST FLOATING WIND FARM

Fukushima began operating 20 km off the Japanese coast in November 2013 as the country's first floating offshore wind farm.

Consisting of one 2MW floating turbine supplied by Hitachi and a 66kV floating sub-station, the project is located in deep waters where harsh wave conditions regularly restrict safe access.



### SELECTION PROCESS

OP's MaXccess-T18 crew transfer system was chosen for the project's vessel J-Cat One because it provides safer transfers in higher wave conditions than can be achieved by the vessel alone. Osbit's engineers had designed it around the principle of passive compensation of vessel motions, with unique linkage arrangements allowing the vessel to freely roll, pitch and yaw without the need for active compensation.

Dr Tony Trapp, Managing Director of OP, based in Riding Mill in Northumberland, said: "Our huge success in 2014 - led by our innovative engineers working on products like MaXccess - is reflected in the results we published last year, with turnover up 450%.

"UK offshore wind power generation started in 2000 with a small project just a few miles from us in Blyth and has now grown to be the most productive in the world.

## Company sets sights on European offshore wind boom

Offshore energy support vessel (OESV) operator places £6 million, two-boat order and prepares to launch second tank-tested 26m catamaran ahead of 2017 construction boom.

### £6 MILLION ORDER

Class-leading offshore energy crew transfer vessel operator Seacat Services has placed an order worth £6 million with local boat builder South Boats IOW for two DNV-GL class-certified next generation 24m catamarans as it looks to bolster its fleet ahead of the next phase of European offshore wind construction.

### STEADY INDUSTRY GROWTH

While new construction is set to slow during 2015 as a number of sites reach completion, throughout 2016 installation activity is projected to steadily increase and in 2017, a significant uptick is anticipated as numerous large projects get underway.

Concurrently, demand for larger, more versatile crew transfer vessels to service deep water developments in Germany, Denmark the Netherlands, Belgium and soon France will continue to grow steadily as the industry expands.

### DEMAND

In order to cater for this expected spike in demand for high-quality

support vessels, Seacat Services has committed to extending an ambitious build programme with South Boats that has already seen the launch of eight state-of-the-art catamarans, each building on the unparalleled quality, reliability and safety standards set by the last.

With Seacat Courageous - the firm's second 26m tank-tested OESV - currently in build and due for launch in mid-February this year, the two new 24m catamarans, named Seacat Mischieff and Seacat Magic, are scheduled for launch in October 2015 and January 2016 respectively.

### CUSTOM DESIGN

Once complete, the vessels, built to a custom design specification, will expand the Seacat Services operational fleet to 11 and will be available for charter in both the domestic and wider European markets.

### FORWARD-THINKING AND TIMELY INVESTMENT

"As the offshore wind market prepares to enter by far its most significant and challenging phase of development to date, firms throughout the supply chain must start gearing up to support that expansion," said Ian Baylis, Managing Director, Seacat Services. "As ever, this will require forward-thinking and timely investment.

### CO-OPERATION AND SUPPORT

"It's also going to depend on the ability of those firms to co-operate and support each other. That's one of the reasons why our ongoing relationship with South Boats Isle of Wight has always been so beneficial, not only to us, but also to the clients we serve and the industry at large.

## DRIVING FORCE

*"We are proud that our access systems have brought a new standard of safety to the sector worldwide and help ensure the North East continues to be a driving force, putting personnel protection at the forefront of everything we do."*

*"Our company name is derived from our commitment to On Spec, Budget and In Time, three targets that have driven us since I founded OP in 2010."*

*"I knew then that the key to its growth was introducing clever new designs and concepts to the market. We had to lead in the way we approached projects and provided solutions for clients. Our crew transfer systems are a prime example of how this has worked in the offshore wind sector."*

## EXCEPTIONAL YEAR

Osbit's exceptional year has led to an increase in staff from 19 to 35 and the company has been able to pay off all of its start-up debts. The high level of performance is particularly good news for OP's staff, as 20% of the value of the business is allocated to a share options scheme for the entire workforce.

## CLIENT NEEDS

Its MaXcess product range covers all client needs, with the T12 and T18 for crew transfer vessels; the P-Series for semi-submersible, large DP vessels and accommodation barges; HBS for mid-sized DP vessels and HBS-Midi for small DP vessels and multcats.

## Osbit Power



*"While these new 24m vessels are being built with the imminent construction rounds in mind, they are, as ever, the product of a hugely productive development relationship and years of experience at sea, accrued not just in the domestic market, but in the wider European offshore wind industry."*

## LOCAL SUPPLY CHAIN HUBS

Steve Thacker, Managing Director, South Boats IOW, added: *"Local supply chain hubs, such as the one we have built with Seacat Services on the Isle of Wight, have been instrumental in driving standards in European offshore wind to date and will undoubtedly prove invaluable as the industry enters a critical phase of construction."*

## Seacat Services

## South Boats

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Tilt up tubular Met. masts 10m - 90m

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Pre-installation site surveys and installations

O&M and decommissioning of Met. masts

Remote data logging

*Kintech EOL Zenith and Campbell Scientific range of data loggers*

Large range of wind measurement sensors

*Vector, Thies and Riso Class1 anemometers*

Bat monitoring

*Wildlife Acoustics SM2Bat+ song meter*

Remote sensing for lease or purchase

*SoDAR and LIDAR technology*



# £2.1m vessel supply within 2 months

**Alicat Workboats Ltd., one the UK's foremost manufacturers of state-of-the-art Wind Farm Crew Transfer Vessels (CTV's), received a £2.1 million order from local company, Icen Marine Services Ltd. of Lowestoft for a Global Marine designed Alicat 21m Catamaran.**

### BUSY START TO 2015

The new vessel is to be delivered to Icen Marine Services during Q1, 2015 from Great Yarmouth. Early 2015 is very busy for both Alicat Workboats, sister company South Boats IOW and Icen Marine Services with delivery of the Alicat 21m in February along with "Icen Venture", a South Boats Catamaran 22m from Cowes at the end of February and "Icen Vengeance", a South Boats Catamaran 22m also from Great Yarmouth at the end of March, both of which have already been contracted to O&M direct by utility companies.

### THIRD OF CLASS DESIGN

The Alicat 21m vessel, yet to be named, is a third of class design already in service on two UK projects and features a resiliently mounted centre twin deck superstructure with forward and after cargo decks capable of carrying 7 tonnes of equipment. Fitted with twin MAN V12-1400 main engines and Rolls Royce FF550 water jets the vessel returns 30 knot performance and excellent fuel efficiency at normal operational speeds. The vessel carries up to 12 technicians alongside up to 3 crew under UK MCA Category 2 (MGN280M) code of practice.

### SUCCESSFUL RELATIONSHIP

*"Our companies have enjoyed a long and successful relationship with Icen Marine Services Ltd. and have seen them grow their fleet by eight vessels including this milestone order, their first vessel from Alicat Workboats. Our philosophy of continuing to build vessels to stock, when order book permits, means that we can deliver this 21m vessel within 2 months to meet Icen's requirement"* said Ben Colman of Alicat Workboats & South Boats IOW.

### TAILOR-MADE VESSELS

*"It's no secret that CTV operators are looking for reliable, high quality vessels that are tailor-made to cope with the increasingly demanding requirements of working on offshore projects worldwide – that's why the on-going, retained client relationship with Icen is so significant."*

*"We are getting increasing demand for vessels of this size that we do not currently have in our fleet. With the support of the Turner Group board we are able to add not only this vessel but also the two new build South Boats we currently have under construction in Cowes and Great Yarmouth. The fact that the vessel is already in build to stock, with a very short lead time, is very attractive and enables us to fulfil current demand from Q1, 2015."*

*"We have built up excellent relations with both South Boats IOW and now Alicat Workboats - the commercial strength and location of the two ship yards in the UK gives us and our parent company every confidence in the yard's capabilities and we look forward to extending this relationship and making further announcement shortly."* said Richard Thurlow of Icen Marine Services.

### IMMENSE PRIDE

*"As a former apprentice at Richards Dry Dock & Engineering, I am immensely proud to be in a position to order our first vessel from Alicat Workboats (part of the RDDE group) and to support shipbuilding in Great Yarmouth."* said Guy Gibson of Icen Marine Services.

### Alicat Workboats/South Boats IOW

### Icen Marine Services



# Fleet expansion as contracts sail in

**Crew transfer vessel operator Rix Sea Shuttle is planning to expand its fleet after landing a string of contracts in Europe and the UK. The company, part of J.R. & Rix & Sons Ltd, currently owns four boats – the Rix Cheetah, Rix Panther, Rix Tiger and the Rix Lion – but as the contracts sail in it is drawing up plans for further investment.**

## VESSEL SPECIFICATION

According to managing director James Doyle, the new vessel will be similar to the company's most recent purchase, the Rix Lion. At 26m, the £3m Fast Crew Supplier (FSC) 2610 from Dutch ship builder Damen, which was delivered in July last year, is seven metres longer than the company's other boats, providing a deck area of 90m<sup>2</sup>.

James commented: *"The Rix Lion is proving to be precisely the vessel that the market is demanding and is working regularly in Denmark and Germany now, as well as the UK.*

*"Our outlook for the business is increasingly global so the versatility of the larger boat means it can work in more places, therefore it makes sense for us to invest in another, similar vessel.*

*"With more work in the pipeline we will need extra resources soon because our current boats are getting very busy."*

## FLEET GROWTH

James said Rix Sea Shuttle was in the early stages of drawing up plans for the new vessel and would be looking to place an order later this year and added that with a string of contracts under the company's belt at Gwynt y Mor, LID, Lincs, Walney and others, the fleet will need to grow sooner rather than later.

James continued *"There will come a time fairly soon when four boats are not enough. The smaller vessels, the Panther, Tiger and Cheetah, will most likely work at windfarms off the UK coast and the Lion, which is certified and the new vessel, which will also be certified, will work abroad where there is a lot of call for larger boats. That is how we see the fleet developing.*

## EXCITING TIMES AHEAD

*"We are currently tendering for a lot of work, much of it we are confident of getting and with the existing contracts in place we are looking at a very exciting and busy year ahead."* James concluded.

## Rix Sea Shuttle



The Rix Lion, the largest boat in Rix Sea Shuttle's crew transfer fleet.

# FALL PREVENTION & ARREST THE KEY TO CORRECT EQUIPMENT SELECTION AND USE

**In 2014 working at heights was classed as one of the highest risk areas for workers in the United Kingdom, with falls from height being the most common cause of fatalities accounting for nearly three in ten fatal injuries to workers (RIDDOR). As we enter 2015 not much has changed and work that requires individuals to operate at heights still remains very dangerous.**

In an industry such as Wind Energy where working at heights cannot be avoided, the onus has to be placed on the fall prevention and arrest strategies put in place by companies and individuals operating within the sector to avoid injuries and fatalities. According to the Health and Safety Executive (HSE) the key to fall prevention when working at heights lies in the selection of appropriate safety equipment.

Leading provider of fall arrest safety equipment and work at height safety training provider Safety Technology Ltd looks at the selection and use of safety equipment designed to prevent falls and injuries when working at heights.

### SELECTION OF SAFETY EQUIPMENT

Selecting the necessary equipment needed to do such an important job, preventing and arresting falls from height, can be a daunting task. By considering both measures that protect everyone at risk (collective protection) and measures that protect only the individual (personal protection), this process can be made much more manageable. In accordance with the Work at Height Regulations 2005, it is essential to first address collective fall protection measures.

### COLLECTIVE FALL PROTECTION

Collective fall protection refers to equipment that does not require the person working at height to act for it to effectively prevent falls. Examples of collective fall prevention includes the installation of guardrails, such equipment would eliminate the fall hazard by restricting access of individuals to the hazardous area.

When installing such systems it is important to communicate with clients and designers to ensure that the system chosen will integrate with the structure and construction process.

However, it is not always possible to eliminate the risk of falls, often the case in Wind Turbine Generators. It is therefore important to also focus on protecting the individual from risk by providing suitable Personal Fall Protection equipment.





## PERSONAL FALL PROTECTION

Personal fall protection refers to equipment that requires the individuals to act for the equipment to be effective, for example putting on a harness correctly and connecting to a fixed system, or suitable anchor point.

Examples of personal fall prevention equipment suitable for use when working on Wind Turbine Generators (WTG) includes fixed Wire and Rail Systems. With fixed systems the worker is able to climb whilst the system works in the background to ensure safety as intermediate supports are passed without adjustment. A fall arrester is integrated into the top of the system to ensure falls are arrested automatically.

Further examples of personal fall protection equipment include fall restraint and fall arrest systems. Fall restraint systems allow individuals to operate at heights, but restrict them from reaching a point at which a fall can occur. Fall arrest systems on the other hand provide a freedom of movement, but in the case of a fall the arrest system will activate in the event of a fall to prevent serious injury.

It is important to note that all of the examples provided need to be used in conjunction with a key piece of personal fall protection, an appropriately selected and fitted safety harness.

Companies such as Safety Technology Ltd offer training in the appropriate selection of PPE for individuals working specifically on wind turbines.

## INSPECTION/MAINTENANCE OF EQUIPMENT

Fall prevention and arrest does not stop however, at the selection of equipment, in order to ensure that the safety of the workers is guaranteed by these systems it is essential to factor in a maintenance programme. Regular inspections and necessary maintenance of both collective and personal fall protection equipment is essential in ensuring that it remains in good, safe, functional order.

## RESCUE OF A FALLER

Another important consideration to take into account when selecting and using fall prevention and arrest systems is the rescue of a faller from the equipment in the event of a fall. It is essential that rescue plans are drawn up to ensure the safety of the rescuer, covering speed of rescue, rescue method, additional equipment needed, co-operation with emergency services, first aid and training, as recommended by HSE.

## TRAINING

It is vital when planning for fall prevention and arrest that all individuals working at heights are adequately trained in work at height safe practices and evacuation, as well as selection, inspection and use of the safety systems they are relying on. Individuals working on WTGs are required by the industry to be certified in the RenewableUK and Global Wind Organisation (GWO) accredited Work at Height and Rescue training.

This 2 day course covers safe practices for working at heights on WTGs, along with modules such as PPE selection and inspection. This industry recognised training can only be delivered by accredited providers such as Safety Technology Ltd.

## A HELPING HAND

As a specialist in fall prevention and arrest when working in WTGs, Safety Technology Ltd supply an extensive range of protective equipment needed to safeguard workers.

The Welsh headquartered company are able to assist in all aspects of fall prevention and arrest, from advising in the selection and installation of systems and equipment, to providing equipment inspections and maintenance services and delivering industry required safety training in working at heights and equipment use.

**Katie Dawes**  
**Safety Technology Ltd**

[Click to view more info](#)

# THE BALLAD OF FURTHER DOWN THE LINE

## PART 2



We'd said that we would mend our ways  
- a promise made, a promise kept –  
and squeeze the juice from all the days.  
Adjust, adapt, accept.

We learned in time to simmer down,  
to slow the mad, relentless burn.  
Now on the edge of every town  
the turbines turn.

The patch-up process has begun,  
we came to tolerate and trust  
their quiet cartwheels' steady hum.  
Adjust, adapt, accept.

We felt the heat, we felt the pinch  
and seized the opportunity –  
we shuffled inch by grudging inch  
towards community.

We shuffled till we overcame  
innate inertia that had grown  
within our ranks and gained a strange  
momentum of its own.

We turned to face the damage done,  
address the mess and seal the cracks,  
returned to earth and wind and sun.  
Adjust, adapt, accept.

**By Matt Harvey from his book  
The Element in the Room  
Poems inspired by Renewable Energy**





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