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COMMUNICATION HUB FOR THE WIND ENERGY INDUSTRY

ICE DETECTION

COLLABORATION

SPOTLIGHT ON
EAST
ANGLIA



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'SPOTLIGHT ON' EAST ANGLIA

Almost 2 years ago we visited East Anglia to feature our first 'Spotlight On'... as 'an area of excellence in the wind energy industry throughout Europe and beyond'. East Anglia was our ideal not least because of their political awareness and the realisation of the need to pull together for the good of the area and spot the opportunities available.

Personally I have a strong link with the area having lived in Caister-on-Sea, just north of Gt Yarmouth, in the late 1970s. At that time Scroby Sands windfarm was not even on the drawing board so as we neared the coast on our visit the sight of the wind turbines was quite a sight having not been there for some 35 years!

Things have moved on considerably since our visit and you will find our largest major feature yet within this edition.

COLLABORATION

Our industry lead article in this edition features the work of a Vessel Co-Operative with the objective of serving the industry's needs.

Having attended many conferences and seminars, it has often been suggested that smaller organisations should join forces and pool resources.

Offshore Marine Support Ltd (OMS) and Energy Marines Services (EMS) joined forces in September 2012 and the idea of a Vessel Co-Operative was born as the brainchild of Andy Iannetta and Richard Brookin.

Read more on this innovative initiative in our lead industry article on page ???.

MAGAZINE AND WEBSITE INTERACTION – QR CODES

You will have noticed that we changed our pink and green flashes indicating more information online in the last edition. QR codes have been substituted which means that you can scan the code with

your smart phone and it will direct you to the featured company/organisation micropage held within our website, so that can learn much more in all sorts of formats.

These have already become very popular as it links the printed magazine in a very interactive way – a great marketing tool for our decision making readership to find out about products and services immediately following the reading of an interesting article. Contact the commercial department to find out how to get involved.



WIND ENERGY NETWORK SKILLS GAP INITIATIVE

We continue in this edition with another 2 areas of interest...

- A general area where educational establishments are making considerable progress
- Our next target area – attracting individuals with transferable skills from other industries and the Forces



Duncan McGilvray
Editor | **Wind Energy Network**

www.windenergynetwork.co.uk

Seasonal IMPACTS

The cover image is just to remind us of the kind of conditions that we can expect in many parts of the world.

CONDITION MONITORING – ICE DETECTION

We have featured general condition monitoring in almost every edition and you will find a particularly interesting and helpful article by Bosch Rexroth on the subject of ice detection and monitoring.

SPOTLIGHT ON EAST ANGLIA

We covered East Anglia in an edition some 2 years ago and the region has moved on a considerable pace since then. This feature has eclipsed all of those Spotlights which have gone before by some margin.

A wide range of articles from small companies to multi-nationals as well as organisations, educational established and membership groups are featured.

SKILLS GAP

We again feature education and training in our regular skills gap initiative split into 2 separate areas – transferable skills from other industries/the Forces and a general area with an interesting article regarding a very successful Grammar School in the north of England.

Duncan McGilvray
Editor | **Wind Energy Network**

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COLLABORATION: THE NAME OF THE GAME

THE WIND ENERGY INDUSTRY HAS HIGHLIGHTED A SPECIAL REQUIREMENT, WHICH ULTIMATELY ENSURES ITS SUCCESS – NO MATTER WHAT SIZE THE ORGANISATION OR COMPANY, THE NEED TO COLLABORATE IS ESSENTIAL.

We have featured in every edition of our now nearly 3 year tenure, companies and organisations working together to ensure successful outcomes – pulling together skills, expertise and resources.

Co-operatives, alliances and associations have grown and evolved to ensure that services exist to support the industry in its entirety.

We list just a few which we have featured in earlier editions...

- Crown Estate
- Dundee Renewables
- East of England Energy group
- Enterprise Europe Initiative
- European Wind Energy Association
- Federation of Fishermen's Organisations
- Footprint Renewables
- Global Wind Alliance
- MPA Concrete Centre
- Mersey Maritime Group
- Newcastle Chambers of Engineering
- NAMTEC (The National Technology Centre)
- NOF Energy
- Renewplus
- Renewables East
- Renewables Network
- RenewableUK
- Renewable World (our chosen charity)
- Scottish Renewables
- Team Humber Marine Alliance
- Whitby & Scarborough Offshore Wind
- World Trade Centre Hull & Humber

Not forgetting of course all the local enterprises, chambers of commerce, etc., many of which are funded by local businesses/organisations, since the demise of the Regional Development Agencies.

All of the aforementioned bodies will be featured again in more detail with a view to updating progress. We also intend to spotlight those we have not covered before so please get in touch if you would like to get involved. As you should now know we do not charge for any editorial, whether written by individuals, or created by our team.

SERVING THE INDUSTRY

We are here to serve the industry and help it communicate. The wind energy industry is a very sophisticated and professional market place – we are therefore funded by sponsorships and website tools with limited advertising.

To start the ball rolling, so to speak, we would like to feature a vessel services co-operative we recently heard about.

We let Andy Iannetta and Richard Brookin, pick up the story...

COLLABORATION BETWEEN SMALLER ORGANISATIONS

Having attended many conferences and seminars, it has often been suggested that smaller organisations should join forces and pool resources.



OFFSHORE MARINE SUPPORT LTD AND ENERGY MARINES SERVICES

To this end, Offshore Marine Support Ltd (OMS) and Energy Marines Services (EMS) joined forces in September 2012 and the idea of a Vessel Co-Operative was born as the brainchild of Andy Iannetta and Richard Brookin, respectively.

VESSEL CO-OPERATIVE

This Co-Operative has brought together several small owner/operators with one or two vessels with the aim of presenting a more forceful presence in the Renewables Sector. OMS and EMS have built up many senior contacts within the industry which enables the smaller operator to gain access to people that they may not have been able to before by joining the Co-Operative. There is no charge to join.

LIMITED RISK

OMS and EMS market the vessel and submit tenders for appropriate jobs, taking a small percentage of the charter rate should the vessel be successful. Thus risk to the owner is minimal. The range of vessels, and related equipment, available within the Co-Operative is vast – from survey vessels to jack-up barges.

COST EFFICIENT

For the end user, the daily charter rates are kept to a reasonable level as OMS and EMS do not have the overheads of a larger organisation.

DIVERSIFICATION

The Co-Operative has enabled owner/operators of vessels to diversify their own businesses and work in an industry sector that still displays growth – i.e. many fishing companies have joined the Co-Operative to offer their vessels for guard duties. They have a number of fishermen who completely endorse the concept of the offshore wind industry which has gone a long way to change the mind-set of those who may previously have been against it.

Currently, there are offices in Gloucester, Preston and the Isle of Wight and vessels available are at various locations throughout the UK and Southern Ireland.

Offshore Marine Support Ltd
www.offshoremarinesupport.com

Energy Marine Services
www.energymarineservices.co.uk

IT'S ALL ABOUT

BMT NIGEL GEE EXPANDS TO MEET INCREASED WORKLOAD

BMT Nigel Gee, a subsidiary of BMT Group, has announced recent refurbishment and expansion activity at its offices in Southampton in order to meet a large increase in design work. Operating across four principal market sectors, the naval architectural practice delivers design and engineering services to specialised vessels in the commercial, yacht, defence and renewable energy markets.

different shipyards in Europe and Asia. Of particular note is the recent launch of our XSS design from the Sepers facility in Holland. This 24m vessel features a hullform based on SWATH technology and offers improved seakeeping capabilities over conventional windfarm support vessels, thereby making it particularly suitable for longer transits to those windfarms further from shore."

TURBINE ACCESS SYSTEM

Trials have also been successfully completed on three more conventional 20m vessels; one in Europe and two in Asia. In the same vein, the company's patented Turbine Access System, a motion compensated access gangway designed to increase safety for personnel transferring from support vessels on to turbines, developed in partnership with

engineering services for two 200+m naval auxiliary tankers for the Canadian and UK navies. The market for high speed patrol vessels has also been very active with a new order for six 17m high speed patrol boats in Turkey.

The fall in demand for high speed ferries, which for many years was the company's core business, has reversed and this year BMT Nigel Gee has been working on a number of new designs, including a 38m passenger ferry under construction in Eastern Europe.

RESEARCH & DEVELOPMENT INVESTMENT

Investment in R&D activities continues to underpin development of innovative engineering technologies such as the Turbine Access System. 2013 will see



RENEWABLE ENERGY MARKET AND WINDFARM SUPPORT

John Bonafoux, Managing Director of BMT Nigel Gee says: *"2012 has seen our company capitalise on investments made in the renewable energy market.*

"Developing designs for windfarm support vessels as early as 2009, there are now over 18 windfarm support vessels under construction at six

Houlder, successfully completed trials in October at the Rhyl Flats windfarm off the coast of Wales.

OTHER MARKETS

BMT Nigel Gee has also expanded its client base with increased activities in the large yachting market, both within re-fit and repair, as well as continued new build activities with some of the industry's leading yacht builders. Current construction projects include both sail and motor yachts from 65m to 110m in length, whilst re-fit work has been undertaken on both classic and modern yachts. Most notable work completed in 2012 included the delivery of the motor yacht, Vava II from Plymouth - at 96m this is the largest yacht ever to be built in the United Kingdom.

In the defence market, the team at BMT Nigel Gee continues to support a number of its sister companies within the BMT Group providing structural and mechanical

BMT Nigel Gee investing further in R&D activity including new hullforms aimed at improving efficiencies in the oil and gas market, where the company is focusing on additional expansion and has recently received an order for a number of high speed crew transfer vessels.

DIVERSITY

John Bonafoux concludes: *"Diversity has always been at the heart of our business and has allowed us to maintain a consistent workload. It's a great moment to see our team and office facilities expand due to resilient growth in all of our markets for the second and third quarter of 2012. Our order book moving forward into 2013 remains strong – a true testament to the quality of design, engineering and attention to detail our team deliver."*

BMT Nigel Gee
www.bmtng.com

WIND GROWTH DRIVES DEMAND FOR INSPECTION

Recent months have seen a surge in demand for hired turbine inspection instruments as manufacturers and energy producers seek to ensure optimal safety and efficiency, prevent downtime and maximise operational reliability.



TEST INSTRUMENTS

Test instruments are being used to check the internal and external condition of the towers and the turbine blades, and video borescopes are being used to inspect gearboxes. Ashtead Technology's

Tristan Craig-Tyler says: *"The growth in this business is driven partly by the expansion of the renewable energy sector, but also by a need to maximise revenue and extend operational life. Instrument rental is proving highly popular because it enables engineers to employ the latest technology while avoiding capital costs."*

BORESCOPES

Borescopes (industrial endoscopes) are commonly employed for internal examinations because they enable inspection without the cost and delay of dismantling. Tristan says *"This technology has advanced considerably recently; video borescopes are now available which are very light and easy to use, but provide extremely high quality images."*

One of the latest additions to Ashtead Technology's fleet of NDT rental instruments is the Olympus IPLEX UltraLite.

Weighing just 700 grammes, it incorporates a combined control and display unit that fits in the palm of one hand and frees the other hand to guide the probe insertion tube. Observed images can be stored on a memory card as high-quality JPEG images and MPEG-4 movies.

Other popular NDT rental instruments for turbine inspections include ultrasonic flaw detectors and ultrasonic thickness testers.



PREVENTATIVE MAINTENANCE PROGRAMME

One of the most important advantages of regular inspections is the development of a preventative maintenance programme. Any failure of critical components can be detected early, so that repair work can be planned during periods of low wind speed or planned down time. This prevents major failure, reduces maintenance costs and minimises downtime.

QUALITY CONTROL

In addition to preventative maintenance, inspection equipment is also employed for quality control during manufacture and assembly, and pre-warranty handover inspection.

Ashtead Technology
www.ashtead-technology.com

OFFSHORE WIND: IBERDROLA SELECTS AREVA TURBINE FOR A LARGE-SCALE PROJECT IN GERMANY

World-leading renewables operator, Iberdrola, has once again selected AREVA's offshore wind technology for the Wikingen project, to be developed 35 kilometres off the German Baltic Sea coast.

Under the terms of the agreement, AREVA will supply its M5000 5 MW turbine for the Wikingen wind farm that will produce up to 400 MW of electricity and that is to be constructed during 2016 and 2017.

COMPETITIVE TENDERING PROCESS

This success follows a highly competitive tendering process with several different offshore technologies proposed. Both companies will now enter into further negotiations to finalise the commercial and technical aspects of the supply contract.

Last year, Iberdrola, in partnership with Eole-RES, selected AREVA's technology for the 500 MW project in the area of Saint-Brieuc, off the coast of Brittany, as part of the first French offshore wind tender.

EXPERIENCE RECOGNITION

This new selection of AREVA's turbine by renewables market leader Iberdrola, demonstrates its recognition of the experience AREVA has acquired over the past years in the field of offshore wind. By 2014, the group will have more than 120 wind turbines installed in the North Sea, thereby reinforcing its leading position in the high-power turbines market.

Luc Oursel, CEO of AREVA, said: *"We are honored by Iberdrola's renewed confidence in AREVA's offshore wind technology which further comforts the group's strong ambitions in Europe. This new success further demonstrates the credibility of our long term strategy of growth and our long term commitment towards renewable energies."*

Areva
www.areva.com



GOOD ENERGY ACQUIRES CONSENTED ONSHORE WIND FARM SITE

Good Energy Group plc, owner of Good Energy Limited, the UK's leading 100% renewable electricity supplier, is pleased to announce that it has completed the acquisition of an onshore wind farm site from RWE Npower Renewables Limited, for a consideration of up to £3.0 million.

PLANNING PERMISSION GRANTED

The site, located by Hampole, near Doncaster, has planning permission for the construction of four turbines. It is Good Energy's intention to construct a wind farm with a generation capacity of approximately 8.2MW. The proposed wind farm is expected to generate around 20,000 MWh a year, nearly doubling the amount of electricity that Good Energy generates.

IMPORTANT STEP FORWARD

The project represents an important step forward in Good Energy's target to develop 110MW of new generating capacity by 2016. Owning and operating its own generation capacity will help the company to more easily manage its wholesale power costs to deliver more stable retail prices, particularly as customer numbers increase.

SELF FUNDED

Commissioning of the site is expected to take place in Q4 2013. This wind farm will become the second onshore wind farm in Good Energy's portfolio alongside the 9.2MW Delabole wind farm in North Cornwall, which was originally the UK's first commercial onshore wind farm. The company will complete the development phase in-house and expects to reach financial close with debt-funders during 2013. The acquisition has been funded from the company's existing cash reserves.

COMMUNITY ENGAGEMENT

The site will be eligible for Good Energy's new Local Tariff, which gives local residents living near wind farms the opportunity to benefit from a 20% discount off Good Energy's standard electricity tariff. Good Energy will also explore with key stakeholders other ways in which the wind farm could benefit the community and local households, as part of its comprehensive approach to community engagement around new renewable energy developments.

Juliet Davenport OBE, CEO and founder of Good Energy, said, "As our customer numbers increase, we see the development of our own generation assets as an important way in which we can keep wholesale costs down and deliver more stable retail prices.

"Acquiring sites like this one, that have already received planning permission, brings a welcome balance to the portfolio so that we can have this site in development in 2013. We also plan to bring online some of the sites we are currently developing from scratch in 2014/2015. With that in mind, we are pleased to have reached this agreement.

"We're very excited that this latest site will be part of our new Local Tariff, and we look forward to engaging with the local community during the final development and construction process. We are particularly keen to seek their views on how the site might act as a vehicle for local investment in the area."

Good Energy Group plc
www.goodenergygroup.co.uk

RWE Npower Renewables
www.rwe.com



LIMPET L5 LIFTS NEW LEEA AWARD FOR INNOVATION

An ingenious height access and fall prevention system has won the Lifting Equipment Engineers Association's inaugural Product Innovation Award. Developed by Limpet Technology Limited and distributed in the UK by Lift Turn Move Limited (LTM), the Limpet® L5 is a portable, multifunction unit that combines powered climb assistance for personnel working at height with integrated fall prevention, rescue and evacuation capabilities.

UNANIMOUS DECISION

Announcing the award at the LiftEx 2012 exhibition in Coventry on November 29th, Geoff Holden, Chief Executive of the LEEA, said: "The judges were unanimous in their admiration for the Limpet L5, which demonstrates that greater efficiency and improved safety can go hand in hand. Working at height is a major challenge for the lifting industry and there is no doubt that the Limpet L5 will prove an invaluable asset for many people working in the field."

POSITIVE RESPONSE

John Jones, Managing Director for LTM, said: "We have only been marketing the Limpet L5 for a matter of months and the response has been extremely positive. It is particularly useful in applications that put a real strain on workers in terms of climbing, such as stage rigging and wind turbine maintenance. This award underlines what a major step forward the Limpet represents in terms of both speed and safety."

PRODUCT FEATURES

Measuring just 658 x 506 x 403mm, the L5 is ideal for supporting workers that need to access high structures. Users simply clip their harness to the Limpet's integral safety line. An electric

SAFETY

In addition to greater efficiency, the Limpet L5 guarantees outstanding levels of personal safety. Providing a constant tight rope from above, fall prevention is built-in and slips are arrested within 10mm. Furthermore, in the event of a medical emergency at height, the Limpet's controls can be used to simultaneously lower two people to the ground.



Mark Jeffery of Limpet Technology and John Jones of Lift Turn Move Ltd.

hoist controlled by sophisticated sensing technology then provides an 'intelligent' vertical pull of up to 90% of the user's weight (including tools and equipment). As a result, Limpet users can make twice the number of ladder climbs with half the effort, resulting in less fatigue, fewer mistakes and reduced health risks. Where no ladder exists, the L5 can be used as a powerful personnel hoist, providing a simple and cost-effective method of positioning workers for difficult-to-access areas.

The Limpet L5 weighs just 65kg in standard configuration and operates from a 220-240AC/16A/50-60Hz single phase power supply. Suitable for users weighing 40kg to 140kg, it is fully compliant with the HSE '08 Type Test.

LTM Limited
www.liftturnmove.co.uk



Serving the Wind Industry

Royal HaskoningDHV - 8,000 professional environmental consultants, technical experts and engineers providing project consenting, H&S, technical and design services to offshore and onshore renewables projects across UK, Europe and the world for over 10 years.

royalhaskoningdhv.com

LEADING ENVIRONMENTAL FIRM LOOKING TO RECRUIT INDUSTRY EXPERTS

Leading independent environmental firm, SLR Consulting, has accelerated a recruitment drive which could see over 20 strategic staff hires within the UK operations over the next year.

UK INDUSTRY EXPERTS

SLR is also seeking to attract additional UK industry experts for possible placement into roles in its overseas operations in Canada, United States, Southern Africa and Australia in support of its global expansion plans.

The move follows the announcement earlier in the year of the company's continued growth and strong performance and the securing of a further £15million in acquisition finance.

SLR, which employs 320 consultants in the UK, is currently looking to fill senior strategic positions across its network of 22 offices. Opportunities also exist for entry-level placements to senior appointments in a broad range of technical disciplines.

MEETING MARKET NEEDS

"Our recruitment approach for the UK is based on ensuring we continue to meet the evolving needs of the market. So, despite the on-going challenges of the economy, we are investing to enhance our offering and strategic hires remain an important part of this plan," said Neil Penhall, SLR's UK Managing Director & International Operations Director.

"On an international level, we are keen to develop the cross-selling opportunities that come from our overseas operations. This allows us to take full advantage of the growth potential that the resource led economies present, where demand for consultancy services continues to grow."

REPEAT BUSINESS

SLR, which provides specialist advice and support on a wide range of strategic and site-specific issues, benefits from a high level of repeat business with 50 per cent of revenue coming from clients for whom the company has worked for five years or more.



"Drawing on UK technical expertise for international projects will continue to drive the on-going development of SLR's international operations in key sectors. Clients, wherever they are based, are able to receive support from the best and most appropriate technical experts," added Penhall.

SLR Consulting
www.slrconsulting.com/careers

NEW BREED OF WIND TURBINE ARRIVES IN LINCOLNSHIRE

Renewable energy products distributor Eco Building Products is generating some of the electricity needed at its Market Deeping showroom with a revolutionary new wind turbine.



Steve Redshaw of Eco Building Products

The company, which already meets much of its power requirement from photovoltaic (PV) cells on the roof of its building at Spitfire Park, has installed a WindTronics BTPS6500 turbine that produces up to 2,000 kW hours per year of clean renewable energy. Much of the wind-generated power is being used for security lighting around the exterior of the building.

ECO BUILDING PRODUCTS

Ian Greenfield of Eco Building Products said: *"We are now selling WindTronics turbines. However, as with most of what we sell, we like to gain real operating experience ourselves before offering products to customers."*

"We have been delighted with the performance of the turbine which is making a real contribution to cutting our energy costs and CO2 emissions."

"It has significantly extended our range of practical renewable energy solutions. In addition to PV and heat pumps, we can now offer a reliable, low-cost and easily installed wind turbine system."

SPECIFICATIONS

The BTPS6500 creates power at the blade tips, where speed is greatest, utilising a system of outer rim stators and magnets, rather than using the typical gearing system of traditional turbines.

This drastically reduces the mechanical resistance and gives a far greater operating range of wind speeds.

The turbine begins generating in wind speeds as low as 2 mph (0.9 m/s) and continues to draw energy in winds up to 40 mph (17.9 m/s) so it is almost always turning and producing power. In high winds, to prevent the turbine from being damaged, the turbine goes into auto shut down and the electromagnetic braking system is fully deployed.

WILDLIFE FRIENDLY

The system measures just 6 feet (1.8 metres) in diameter and is able to generate around 40 per cent of an average household's annual electricity needs. Through its patented design it eliminates many of the classic concerns around noise and vibration and is 'wildlife friendly' because its dense rotor system is easily seen by bats and birds.

WindTronics
www.windtronics.co.uk

Eco Building Products
www.eco-building-products.co.uk

FIRST TURBINE INSTALLED AT TEESSIDE OFFSHORE WIND FARM

The Teesside offshore wind farm has reached an important milestone with the installation of the project's first turbine.

Operator EDF Energy Renewables has now completed the installation of the tower, nacelle and rotor blades of the first of the 27, 2.3MW wind turbine generators to be erected on the 62MW scheme.

Commissioning tests on the new installation will be carried out ahead of electricity generation beginning in the forthcoming weeks.

MPI OFFSHORE AND SEAROC

Installation of the turbines is being undertaken with the MPI Adventure, a six leg jack up vessel, owned by the Stokesley-based MPI Offshore operating out of the Port of Hartlepool. With the change in project vessel SeaRoc has been appointed as principal contractor to oversee the completion of the project.

AN EDF FIRST IN THE UK

The wind farm, located 1.5km off the North East coast at Redcar, is the first UK offshore development undertaken by EDF Energy Renewables.

Work on the installation of the remaining wind turbine generators continues and, allowing for periods where the weather conditions will prevent construction works taking place, it is expected that the erection of all wind turbine generators will be completed in Spring 2013.

Christian Egal, Chief Executive of EDF Energy Renewables, said: *"The installation of the first offshore turbine on our first offshore scheme is a landmark event for the company, supporting the expansion of our onshore wind farm capacity over recent years.*

"Renewable energy will continue to play a key part of the country's energy mix going forward and the construction of this latest project demonstrates our ongoing commitment to investing in low carbon technologies.

"Developing a range of diverse energy sources is crucial to addressing climate change, ensuring security of supply and providing affordable energy for all. The new Teesside offshore wind farm will make a significant contribution to all these challenges and we are delighted that electricity will soon be generated from the site."

EDF EXPERIENCE

EDF Energy Renewables already has 21 operational onshore wind farms contributing 300MW of low carbon electricity in the UK. Including the Teesside scheme, a further 224MW of additional capacity is currently under construction.

EDF Energy Renewables
www.edf-er.com

MPI Offshore
www.mpi-offshore.com

SeaRoc
www.searoc.com

ED'S NOTE

This project will be covered in much more detail within our regional focus on Tyneside & Teesside, scheduled for our next edition.



IF YOU CAN'T FIND HIM YOU CAN'T SAVE HIM...

THE DEVELOPMENT OF A VITAL NEW LEVEL OF ACCURACY FOR LOCATING CASUALTIES AT SEA

The new iPIRB launched by MarineMTS and Telemar UK Limited, locates and identifies marine casualties fast so that every effort can be concentrated on rescue and saving life. The technology has been launched to marine industry operators including Taqa Bratani, Shell, Nexen, Marathon and Total, as well as Grampian Police.

RELIABLE AND PORTABLE

iPIRB (Individual Position Indicating Rescue Beacon) is a neat, portable and most of all – reliable, personal locator beacon system, which completes the search and rescue circle by providing a hitherto unavailable layer of pinpoint rescue accuracy for any organisation operating at sea – whether leisure or commercial.

SEARCH AND RESCUE TECHNOLOGY

Over the years, search and rescue technology has developed to the point where the location of an incident at sea can be determined by on-board communications technology with reasonable accuracy. However, available technology does not allow pinpoint accuracy – crucial when searching for an individual in the water, often in treacherous conditions. Or, multiple individuals – hundreds even.



In an emergency, the system can operate as a SOLAS AIS SART, ideal for tracking personnel on inspection and repair visits to offshore renewables fields.

effort is immediately concentrated on their rescue. Fast arrival and action gives victims a far greater chance of survival. We developed iPIRB to deliver this level of accuracy in any situation where there are casualties in the water, whether having come from a helicopter or a boat. Working with satellite technology, we've made rescue at sea more precise, and therefore, survival more likely."

Dave Pressley is General Manager of Telemar Scotland, a business unit of Telemar UK, who will be the distributor of the iPIRB™ in the UK. He added: *"Any organisation that has employees crossing sea either on the water or by air needs the best equipment possible for locating people in the event of a disaster. In that unfortunate situation, and often against the elements, iPIRB will allow these organisations to pinpoint individuals and better coordinate a successful rescue."*

Where help has been summoned to the rough location of an incident, iPIRB™ identifies the precise location of casualties within a search area, either on board a craft or crucially, in the water. Even unconscious casualties can be located, as the beacon is automatically activated on impact with the water. In the case when an incident results in multiple casualties, each can be located with absolute accuracy – reducing time in the water, and thereby increasing the chances of survival.

HOW IPIRB WORKS

- iPIRB™ consists of a robust and compact, pocket sized, AIS-SART which in combination with Loc8 and Microplot provides a unique, reliable way of locating and tracking marine disaster casualties
- Vital information for everyone who has abandoned ship, however many there are, will be found and tracked for up to 96 hours
- The AIS data transmitted by the SART can include an individual's identity number and other relevant information, as well as their exact GPS location
- Any drift and change in position is tracked and updated on a minute by minute basis
- Passenger and crew names can be included, as well as any health issues so priorities can be established
- iPIRB™ sends its information in real time to all AIS plotters within range
- With the Microplot and Loc8, the data is relayed via satellite and can be viewed at the company's onshore office using an Internet browser and by Marine Rescue Organisation Centres

MarineMTS
www.marinemts.com

Telemar UK Limited
www.telemaruk.com

TECHNIP OFFSHORE WIND WINS HIGH-PROFILE UK INDUSTRY HSE AWARD

Technip Offshore Wind has been awarded, by RenewableUK in partnership with The Crown Estate, the prestigious Renewable Energy Health and Safety Award, 2013 for the development of the pioneering Pull-In Module (PIM).

Technip, one of 7 shortlisted entrants, was presented with the accolade recently on the eve of RenewableUK's annual Health and Safety Conference, held in Sheffield.

BUSINESS VALUES

Ron Cookson, Senior Vice President of Technip Offshore Wind said: *'Safe, effective project delivery and innovation are core Technip business values. We are therefore delighted that our success in improving the cable pull-in process has been recognised through this award. I am especially pleased for the members of our team who have brought the Pull-In Module from concept to practical application with great energy and commitment.'*

SHINING EXAMPLE

In congratulating Technip Offshore Wind on the award, Maria McCaffery, Chief Executive of Renewable UK, referred to the Pull-In Module as a *'shining example'* of the commitment of the offshore wind sector to the continuous improvement of health and safety performance.

VITAL STEP-CHANGE – INTEGRATED PULL-IN MODULE

Technip Offshore Wind pioneered the ground-breaking new technology which significantly reduces offshore array cable pull-in time by up to 60%, offering a vital step-change in safety practises.

The integrated Pull-In Module innovation reduces the risk of injury to personnel offshore and saves substantial operational time at each cable end. It has been successfully launched and recovered more than 80 times without incident.

Technip developed the Pull-In Module after identifying pitfalls in existing methods of conventional lifting equipment used to install cables subsea and through J-tubes.

SAFETY CHALLENGES

The safety challenges included: wires strained under tension on deck; the winch operator being remote from the work site; and the frame considered unsafe for personnel working at height. These difficulties could also be further exacerbated by environmental factors such as poor subsea visibility and strong currents.

The Pull-In Module reduces the safety risks by removing vessel winch wires from operation and introducing compliance to industry standards. The technology also improves operations by reducing vessel dependency time as well as making the array cable installation process smoother and safer. As a result of its design, the Pull-In Module substantially improves safety during key operational phases and increases operational efficiency.

Technip Offshore Wind Ltd, part of the global Technip Group, is a leading provider of specialist offshore wind installation and project management services to the renewable energy industry. With its headquarters in Scotland, Technip Offshore Wind Ltd currently employs more than 120 people at its bases in Aberdeen, Tyneside and London.

Technip
www.technip.com



EVENTS AND WHAT'S NEW

WE CONTINUE TO FEATURE SOME OF THE MOST IMPORTANT EVENTS IN THE CALENDAR, SO THAT YOU CAN, AT A GLANCE, CONSIDER WHICH EVENTS TO SUPPORT. A MORE DETAILED LISTING IS AVAILABLE ONLINE.

There continues to be issues with the amount, scale and cost of events laid on for this fast growing industry. We will only feature those events which we believe are organised in the best interests of the industry as a whole.

WINDFORCE BALTIC SEA

WHEN 20 - 21 February 2013
WHERE Stockholm, Sweden
CONTACT www.windforcebalticsea.com

CANWEA WESTERN FORUM 2013

WHEN 11 - 12 April 2013
WHERE Vancouver, Canada
CONTACT www.canweaforum.ca

WIND ENERGY ASIA 2013

WHEN 24 February 2013
WHERE Jeju, South Korea
CONTACT www.gwec.net

PWEA 2013

WHEN 24 - 25 April 2013
WHERE Warsaw, Poland
CONTACT www.psew.pl

NOF ENERGY NATIONAL CONFERENCE - 'ENERGY - A BALANCED FUTURE'

WHEN 14 March 2013
WHERE Hilton Hotel, Gateshead UK
CONTACT www.nofenergy.co.uk

RENEWABLEUK CYMRU 2013

WHEN 1 May 2013
WHERE Cardiff, UK
CONTACT www.renewableuk.com

SCOTTISH RENEWABLES ANNUAL CONFERENCE & EXHIBITION 2013

WHEN 18 - 19 March 2013
WHERE Edinburgh International Conference Centre (EICC), Edinburgh. UK
CONTACT www.scottishrenewables.com

AWEA WINDPOWER 2013

WHEN 5 - 8 May 2013
WHERE Chicago, United States
CONTACT www.windpowerexpo.org

2013 NZ WIND ENERGY CONFERENCE AND EXHIBITION

WHEN 20 - 22 March 2013
WHERE Wellington, New Zealand
CONTACT www.windenergy.org.nz

WINDFORCE 2013

WHEN 4 - 6 June 2013
WHERE Bremerhaven, Germany
CONTACT www.windforce2013.com

RENEWABLEUK CONNECT – THE NETWORKING EVENT FOR RENEWABLES IN THE UK

WHEN 21 - 22 March 2013
WHERE Orbis Centre, Lowestoft, Suffolk, UK
CONTACT www.renewableUK.com

RENEWABLEUK OFFSHORE WIND 2013 CONFERENCE & EXHIBITION

WHEN 12-13 June 2013
WHERE Manchester Central, Manchester, UK
CONTACT www.renewableUK.com

EWEA TECHNOLOGY WORKSHOP: RESOURCE ASSESSMENT 2013

WHEN 25 - 26 June 2013
WHERE Trinity College, Dublin, Ireland
CONTACT www.ewea.org

MAGAZINE AND WEBSITE INTERACTION

QR CODES

You will notice that we have changed our pink and green flashes indicating more information online. QR codes have been substituted which means that you can scan the code with your smart phone and it will direct you to the featured company/organisation micropage held within our website so that can learn much more in all sorts of formats.



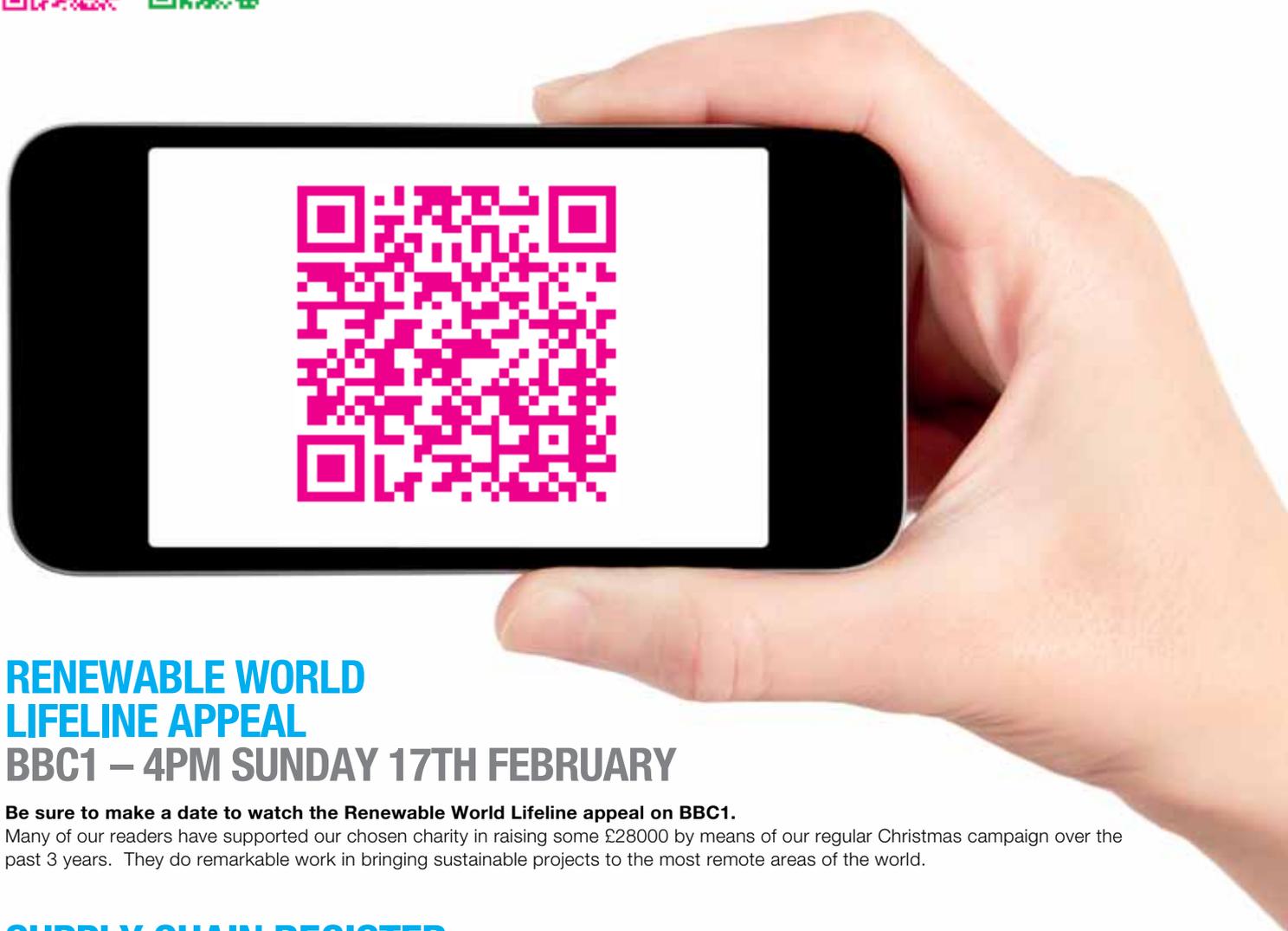
**SAMPLE QR CODES
PLEASE SCAN**

FORTHCOMING FEATURES

NEXT EDITION

- Spotlight on Esbjerg area, Denmark
- Offshore Accommodation
- Met Masts and Wind Prospecting
- Offshore Communications
- Specialist Surveying
- Working at Height
- Spotlight on the Tyne and Tees

PLEASE CONTACT IF YOU WOULD LIKE TO BE INVOLVED IN ANY OF THESE FEATURES.



RENEWABLE WORLD LIFELINE APPEAL

BBC1 – 4PM SUNDAY 17TH FEBRUARY

Be sure to make a date to watch the Renewable World Lifeline appeal on BBC1.

Many of our readers have supported our chosen charity in raising some £28000 by means of our regular Christmas campaign over the past 3 years. They do remarkable work in bringing sustainable projects to the most remote areas of the world.

SUPPLY CHAIN REGISTER

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

Visit our extensive online Supply Chain Register where circa 1200 companies specific to the wind energy industry are listed:

W www.windenergynetwork.co.uk

T 01765 644224 **E** duncan@greenenergypublishing.co.uk

RIPON GRAMMAR SCHOOL

A CARING AND SUPPORTIVE COMMUNITY WHERE THE INDIVIDUAL IS VALUED

During our time spent researching initiatives regarding education and training within the industry we came across a Grammar School which delivers something special. The school is rated Outstanding by Ofsted.

Ripon Grammar School has been serving the community of Ripon in North Yorkshire for well over 450 years and has a rich heritage and tradition which affects much of their daily work today.

It also prides itself on being forward looking.

A SPECIAL COMMUNITY

The essence of Ripon Grammar is creating a special community in which to learn and the needs of each individual in the school are paramount. The school aims to ensure every student fulfils their potential in a caring and supportive community where each individual is valued.

The school is over-subscribed due to

CAREERS

A well-resourced careers library exists so that students from all year groups, as well as Sixth Form, are encouraged to visit the careers library during break, lunchtime or after school when careers staff are available to provide impartial careers advice and guidance centred on the individual needs of the students.



the high quality of education on offer, and by secondary school standards they are not a large school, but this is one of its undoubted strengths. Everyone is valued as an important member of the community.

ENTERPRISE AND WORK EXPERIENCE PROGRAMMES

Enterprise and work experience programmes have also been formulated so that students have the opportunity to gain work experience, including formal placements, in both the fourth year and the sixth form and enterprise activities are run across all year groups.

These programmes are enriched through the contributions and involvement of a range of organisations, businesses, parents, and former students.

WIND ENERGY INDUSTRY

Following the school's interest in the wind energy industry it is our intention to work closely with them to create a better understanding of the technology involved and the advantages the industry can provide in the future.

The aim of the work experience programme is to give students the opportunity to gain an insight into the world of work, either to help them with their career choice or to enable them to see the skills and qualifications needed in the modern economy.

We will also help in giving factual information on the benefits of renewable sources of energy, which will encourage students into the industry as part of our Wind Industry Careers initiative.

- A group of mainly lower school students have designed and built 2 battery powered cars and competed at a national level. The current car is hoped to be a contender at the highest level.



6th Form Block



ENGINEERING AND THE ENVIRONMENT

The school has a particular slant towards engineering and the environment and there are various initiatives related to these subject areas, some of which we have highlighted here.

There are many more and we will be featuring these in future editions at appropriate times.

ENGINEERING

The school enjoys strong academic achievement, as you would expect from a selective grammar school system - however that is only part of their success.

Engineering is regarded as a very important component of the school's prospectus and is undertaken in design technology, science and maths, then increasingly throughout the whole school.

The school is also an active member of EES (Engineering Education Scheme) and have a programme of engineering talks and links with a number of universities.

ENGINEERING ACTIVITIES

- A team of lower 6th students work with a sponsoring company on a real life project – in recent years the school has worked with May Gurney rail, RAF at Leeming, and REME at Catterick barracks.

CREST AWARDS (CREATIVITY IN ENGINEERING SCIENCE AND TECHNOLOGY)

A small number of students gain a CREST gold award every year by working with both industry and Newcastle University. Students need to put in a total of 100 hours and fill in a log book which is passed by their industrial mentor. The university is then involved in the assessment and award.

There are many more engineering related initiatives which the school is involved in and we will be featuring these in future editions at appropriate times.

Ripon Grammar School
www.ripongrammar.co.uk

PIONEERING EDUCATION INITIATIVE TO BOOST SKILLS FOR ENERGY SECTOR

A pioneering education initiative, Your Future In Energy, that aims to give school pupils clear paths into careers in the energy industry, was launched recently in Aberdeen with a pilot at the city's Northfield Academy.

INVESTMENT AND JOB CREATION

The pilot comes at the start of a year in which the energy sector is set to see considerable growth with the price of oil making a strong start to the year and the Scottish government reaffirming its commitment to investment in renewables. Attention continues to focus on how to meet the resulting demand for skilled workers.



YOUR FUTURE IN ENERGY

Unlike previous initiatives aimed at encouraging pupils to enter the industry, Your Future In Energy is a cross-industry, streamlined programme integrated into the school curriculum and follows pupils through from primary six to the end of secondary school. The programme has been developed in line with the Curriculum for Excellence and has the support of the Scottish Government and industry leaders.

In particular, the programme aims to highlight the diversity of careers within the energy sector and the different routes into them, whether it be through university, college, apprenticeships, or other opportunities within the workplace.

WORKING TOGETHER

Tom Clark, Managing Director of Your Future In Energy said: *"This is the first time experts spanning the education sector, energy industry and training*

bodies have come together to map where the skills shortages lie, which competencies are needed to fulfil these roles, and in turn which school subjects will steer pupils towards achieving these.

"What's different about this programme is its ability to move beyond the recruitment fairs and more sporadic CSR initiatives to a more streamlined, cross-industry approach to securing the future talent that the energy sector so desperately needs."

SCOTTISH GOVERNMENT SUPPORT

Energy Minister Fergus Ewing said: *"Scotland's energy sector leads the world and provides excellent career opportunities. There are already tens of thousands of people in high quality, highly skilled rewarding jobs in the sector, and as it continues to expand, this number can only increase.*

"There are enormous opportunities for our young people in this vibrant and growing sector, and the Scottish Government is determined to give young people the skills they need to succeed. Our country has a long and proud tradition of science and engineering excellence. Improving science, technology, engineering and maths (STEM) education, in line with Curriculum for Excellence, is a key priority for the Scottish Government.

"As an education and industry partnership, the Your Future in Energy initiative provides young people with a valuable insight into careers in the energy industry."

ATLAS KNOWLEDGE CENTRE

The pilot was launched recently at international learning and skills provider Atlas, one of several companies backing Your Future in Energy. During their visit, pupils were shown how to use the award-

winning Atlas Knowledge Centre which will allow them to build their own personalised library of authoritative technical information for use throughout their education, supporting their future career choices and transition to the workplace.

Chief Executive of Atlas, John Rowley, said: *"Learning technologies play an important part in education today, both at school and in the workplace. Today's young people are digital natives, at ease learning online and in their own time, and we hope our resources will prove useful to the pupils. Your Future In Energy is an excellent initiative, with industry and education working together, and we are delighted to be supporting it."*

REAL WORLD EXPERIENCE FOR PUPILS

Throughout the week, as well as company visits, the pupils, who will shortly be making their Higher subject choices, participated in industry-led workshops on transferable skills, interview skills, CV building, psychometric testing and presentation skills, and attended an opportunity fair where they found out first-hand the range of prospects the industry has to offer them.

Ali Dow, Deputy Head Teacher of Northfield Academy said, *"Your Future In Energy is exposing our pupils to jobs they might never have considered before, and crucially, helping them to understand where the knowledge they learn here at school can take them after they leave."*

OFFSHORE CONTRACTORS ASSOCIATION SUPPORT

The broader initiative has been supported by the Offshore Contractors Association which has been instrumental in securing the involvement of its member companies. Bill Murray, Chief Executive of the OCA said *"Given the challenges facing the energy sector in the coming decades, this is exactly the type of cross-sector approach we need to deliver tomorrow's talent."*

INDUSTRY SUPPORT

Also involved in the pilot are Stork Technical Services, Amec, Wood Group, BIS Salamis, Sparrows Group, James Jack Cranes and JP Kenny. Following the pilot, the programme will be reviewed with the intention of rolling it out across the North East Scotland and beyond.

Your Future In Energy
www.yourfutureinenergy.com

NEW HIGHER APPRENTICESHIP SUPPORTING THE DEVELOPMENT OF THE ENERGY SECTOR

Newcastle College has launched a new Higher Apprenticeship to support the development of skilled personnel for the energy sector.

SCHOOL OF APPLIED SCIENCE AND TECHNOLOGY

Devised by the College's School of Applied Science and Technology, the Higher Apprenticeship focus on the key growth areas in the energy sector supply chain, wind generation and marine, which will require a substantial skilled and competent workforce in the near and long-term future.

The College, which is a member of energy sector business development organisation, NOF Energy, will work with industry employers to help create the next generation of skilled engineers.

Businesses interested in adding Higher Apprenticeships to their skills development strategies are encouraged to engage with the College, which will deliver the mix of high quality workplace and college-based learning.

APPRENTICESHIP TRAINING

Suitable for new employees and existing technicians looking to develop their skills set, the two-year Higher Apprenticeship is aimed at individuals with A Levels, Engineering Diplomas, Advanced Apprenticeships or have worked in industry to Level 3 standard.

The majority of the Apprenticeship training is achieved through workplace learning, which is assessed by the employer and the College. In addition, Apprentices spend one day a week at Newcastle College working towards a number of the programme's qualifications.

WIND GENERATION AND MARINE APPRENTICESHIPS

Delivered as part of the SEMTA Level 4 Higher Apprenticeship, the Wind Generation and Marine Apprenticeships share key qualifications including NVQ Extended diploma in Engineering Leadership and Essential Skills in Maths, English and ICT.

Wind Generation Apprentices will also undertake a Foundation Degree in Renewable Energy Technologies while Marine Apprentices will work towards a Foundation Degree in Subsea Engineering.

INCORPORATED ENGINEER STATUS

Upon completing the apprenticeship, participants can go on to study for a degree qualification and work towards 'Incorporated Engineer' professional status.

Helen Craig, Project Manager at Newcastle College's School of Applied Science & Technology, said: *"The College has been developing Higher Apprenticeships in all engineering disciplines, but the offshore industries, particularly in the emerging renewables sector, will have a particular requirement for skilled engineers when activity in the industry gains pace."*

"Supply chain companies will be planning their operations to serve the expansion of the industry, which will include the development of apprentices, which needs to include both Advanced and Higher levels to meet the technological demands of the sector. The Higher Apprenticeship will arm employees with the skills and competencies expected by the sector, which will make them valuable members of the workforce."

NOF ENERGY

Caroline Lofthouse, Business Development Manager at NOF Energy, said: *"The North East has an impressive cluster of energy sector supply chain companies that would benefit from the programmes being developed by Newcastle College."*

"As the supply chain gears up for the growth in offshore renewables, activities creating a highly-skilled workforce is essential. Not only will the sector require engineers for the next 10 to 15 years to support the construction of Round 2.5 and Round 3 offshore wind farms, there will be the on-going requirement for personnel that can manage the operation and maintenance of current and future wind farms."

Newcastle College
www.ncl-coll.ac.uk



SERVICE LEAVERS CAN PLUG SKILLS GAPS

THE TRANSFERABLE SKILLS OF LEAVERS FROM THE ARMED FORCES ARE SOUGHT NOW MORE THAN EVER WITHIN THE RENEWABLES JOB MARKET. WITH HEIGHTENED MEDIA COVERAGE AND COMPANIES ON THE VERGE OF REVOLUTIONISING THEIR PROCESSES TO CUT EMISSIONS, THIS IS THE TIME FOR ORGANISATIONS SEEKING TO INCREASE THEIR WORKFORCE TO LOOK AT ACCESSING THE TALENT LEAVING THE FORCES.

CAREER TRANSITION PARTNERSHIP (CTP)

For years, thousands of companies across all industries have been working with the CTP to gain access to service leavers, as they recognise the benefits a military background can bring to their organisation.

The CTP is a partnering agreement between the Ministry of Defence and Right Management, who are global career development and outplacement specialists. They provide resettlement support for those preparing to leave the Armed Forces and enter into the civilian job market, and also offer employers a recruitment service for those wishing to employ service leavers, all free of charge.

20,000 SKILLED INDIVIDUALS

Every year, over 20,000 skilled individuals leave the armed forces. The CTP help with all aspects of their resettlement, having an unrivalled pool of service leaver talent to call upon. To date, the CTP have assisted over 170,000 service leavers with their transition to civilian life.

TRANSITION INTO THE RENEWABLE SECTOR

Service leavers with a background in mechanical engineering, electrical and hydraulics will be able to transfer into the renewable sector with relative ease, along with those who have experience in logistics and project management.

TECHNICAL DISCIPLINES AND SKILLS OF SERVICE LEAVERS...

- **ROYAL NAVY** – Marine, Air, Hydrographic, Geophysical, Instruments and Nuclear engineering
- **ARMY** – Electrical, Mechanical and Instrument engineering
- **ROYAL AIR FORCE** - Technician Electrical/Mechanical/Propulsion, Airframe or Instruments engineering

It is not only technical skills that are gained throughout a service career, but also additional soft skills such as discipline, teamwork, integrity, loyalty and a selfless commitment to get the job done.

SKILLS ASSET FOR A WORKFORCE..

LEADERSHIP – leading teams of people with confidence and the ability to delegate tasks and roles, whilst providing help and support to staff

COMMUNICATION – service leavers have the skills to communicate with colleagues in some of the most challenging environments and are able to make decisions in stressful situations. These skills are necessary in all working platforms

SELF-MOTIVATION – developing individuals and providing them with the drive to succeed, and increasing opportunities for development and progression

PROBLEM-SOLVING – ex-military personnel will have dealt with various problem-solving situations, often under extremely pressurised conditions, and are trained to think outside the box

TEAMWORK – service leavers will have the ability to participate whilst considering ideas from other team members and are able to share information and good practice, knowledge and experience. Working together despite differences, team players figure out ways to work together and solve problems, treating fellow team members with respect throughout the process

RELIABILITY – ex-military personnel can be trusted to do what is expected of them and consistently accomplish the desired outcome, presenting a positive attitude and commitment to the task in hand

PRIORITISING AND MULTI-TASKING – time management, multi-tasking and prioritising are of high importance to all companies, and ex-military personnel have the ability to do all of the above in pressurised situations.

HONESTY AND INTEGRITY – honesty and integrity are qualities that service personnel have in abundance.

The above qualities are all paramount to the success of any individual wanting to pursue a career in the wind energy industry and are innate to the professions of ex-military personnel. They strive to be the best in all circumstances and the hard skills they can bring to the table from their trade can only consolidate their absolute suitability to this sector of work after they choose to move on from their service career.

WIND ENERGY SECTOR

The wind power sector has grown in recent years and the IEA (International Energy Agency) forecasts that renewables could '**become the world's second-largest source of power generation by 2015**'. Governments across the globe are striving to increase their renewable energy consumption as a precaution against rising prices for fossil fuels and to reduce their environmental footprint.

IEC INTERNATIONAL STANDARDS

IEC International Standards for the industry need to ensure wind systems and installations meet the latest technical requirements; for installers, utilities and other users, they need a guarantee that the equipment they acquire and install is as safe, reliable and efficient as possible. To achieve these requirements, and to ensure that the wind turbine industry continues to prosper and make an ever-larger contribution to electricity generation, there is a growing requirement for skilled workers to ensure the job gets done efficiently and effectively.

Career Transition Partnership
www.ctp.org.uk

WORLD LEADING WIND ENERGY INDUSTRY TRAINING

Uniquely, the latest accreditation enables Falck Nutec to be the only training provider able to deliver all GWO and RenewableUK accredited programmes. The RenewableUK available programmes are: Working at Height & Rescue Training (WAHR) for wind turbines and Marine Safety Training (MST.)

SAFETY AND QUALITY

The accreditations are used by wind energy sector businesses all over the world as a mark of safety and quality. The GWO training course covers the following modules: working at height, sea survival, first aid, fire awareness and manual handling. The modules are all delivered from Falck Nutec's state of the art site on the banks of the River Tees in Billingham, North East England.

Lisa Bryan, Business Development Manager at Falck Nutec, commented: *"We're very pleased to have been awarded this prestigious accreditation. This will allow us to provide an even higher level of training to offshore personnel, and be increasingly responsive to new innovations, and up-skilling, within the industry. This will be particularly relevant to offshore windfarm industry personnel as we move towards the construction of Round 3 Offshore installations in 2014 and beyond. This coincides with an increase in offshore personnel needing specialist training, which also reflects the increasingly highly skilled nature of the industry."*

"As well as being the only provider at the moment with approval to deliver all of the courses, we will be able to deliver everything at the same location, 'under one roof', in our purpose built training facility in Teesside."

ONE-STOP-SHOP

As well as offering the GWO and RenewableUK courses, the company also provides fitness to work assessments, as per the RUK guidelines and complementary training such as slinger/banksman and rigging and lifting training, making Falck Nutec a one-stop-shop for the wind industry.

Falck Nutec
www.falck.com

[Click to view more info](#)



= [Click to view video](#)

ED'S NOTE

We will again be featuring Falck Nutec in our regional focus on Tyneside & Teesside, in our next edition.



(In foreground) Bill Whyman, Centre Manager, James Dixon (in middle) and Jonathan Battye, Senior Instructor (in background.)

Falck Nutec Teesside is celebrating after becoming the world's only industrial training facility to hold approval to deliver all five Global Wind Organisation (GWO) training modules as well as both of the Renewable UK wind industry specific training courses.

LANDMARK

The landmark has been reached after Falck Nutec achieved approval to deliver the GWO Basic Safety Training standard. The GWO modules have been written by the industry for the industry and are aimed at ensuring the health and safety of offshore wind farm personnel, improving efficiency and standardising the basic safety and preparedness training for personnel working in the wind turbine sector.

FROM RAF AND RETAIL TO ICE RENEWABLES' TEAM

Two new members of the ICE Renewables' team have shown how skills obtained in retail and the RAF can be transferred to the wind energy sector.

VERITY NASEBY

25-year-old Verity Naseby has joined leading medium wind turbine specialist, ICE Renewables in Northallerton, as Operations and Maintenance Co-ordinator after holding roles in both retail and hospitality.

JOHN PRESTON

As ICE Renewables continues to expand the operations and maintenance team they have also appointed staff from the Royal Air Force, including John Preston.

John, now Operations and Maintenance Manager at ICE, enjoyed a 27-year career with the RAF progressing to Chief Technician, responsible for maintaining the RAF's eye in the sky the AWACs, which took him and his teams around the world.

RESPONSIBILITIES

At ICE Renewables John is responsible for ensuring the right resources are in the right place at the right time to carry out essential maintenance and repairs. He liaises with clients to ensure they are happy with the service provided, and maintains service records.

John commented, *"I wanted to work within the renewables industry after leaving the military. I like doing my bit for the environment - and trying to secure a safer, healthier planet for our children's children."*

basic compared to an aircraft hydraulic system, carries out the same basic functions."

In a newly defined role, Verity will be the main point of contact for clients and engineers, providing support and advice on maintenance and repair appointments. She is responsible for client communication, engineer co-ordination, turbine monitoring and is involved with the FIT accreditation process.

Verity says: *"Renewables is still a relatively new industry. I felt as though I had gone as far as I could go in retail management and I needed a new challenge."*

ICE Renewables has been operating for six years and is co-owned and managed by one of the industry's leading wind experts and Chair of Renewable UK's Small and Medium Wind Strategy Group, Julian Martin.

ICE Renewables
www.icerenewables.com

[Click to view more info](#)

ED'S NOTE - We will be continuing to feature ICE Renewables & the role of medium wind



"The company believes that as a business it's not just about installing a turbine, it's about how that turbine is serviced and maintained and the relationship we develop with the customer."

"All of the skills I learnt through the military have been transferable. A nut is a nut, whether it's on a multi-million pound aircraft or a wind turbine. The hydraulic pitch system, although"

WORKING WITH WEYMOUTH COLLEGE TO RE-TRAIN WORKFORCE MEETING THE NEEDS OF NAVITUS BAY WINDFARM

The SCA Group, specialist access and maintenance provider from Wimborne, working with Weymouth College, have developed a number of training schemes which will bridge skills-gaps and enable local workers to assist in maintaining the Navitus Bay windfarm proposed off the Dorset coast. The training scheme is being submitted as part of a bid to try and secure £1m of UKCES funding for new employer-led training courses.

WEYMOUTH COLLEGE

Weymouth College provide facilities for over 7,000 students from across Dorset and the rest of the UK, as well as from overseas, offering a diverse range of courses, excellent facilities and a team of highly dedicated and experienced staff

who provide guidance and support as well as quality teaching.

THE SCA GROUP

The SCA Group offer expertise in high level maintenance from ropes, and with limited training facilities in the UK for offshore work. Both parties are hopeful that funding will be granted in order that people local to Navitus Bay can be employed.

Rex Witts, Director of Construction and Engineering at Weymouth College, commented:

"Weymouth College can become a centre of excellence for wind farm training programmes. In addition we have specialist stonemasonry, engineering,

electrical installation and electronics provision. Working with the SCA Group will mean we can train our teams to carry out all of these functions at height."

Mike Unsworth, Navitus Bay Wind Farm Project Director, said *"Many different skills will be required to operate the Navitus Bay wind farm, and the sooner these skills are honed the better. One of our main aims is to keep as much of this work as local as possible, and we are delighted to see such a wave of local support from companies such as SCA."*

Weymouth College
www.weymouth.ac.uk

The SCA Group
www.thescagroup.com

LAUNCH OF MILITARY2ENERGY CAREERS SERVICE

NOF Energy, the business support organisation for oil, gas, nuclear and offshore renewables, has teamed up with The British Forces Resettlement Services (BFRS) to launch The Military2Energy Careers Service.

The service, which is designed to introduce ex-servicemen and women into careers in the energy sector, offers NOF Energy members the opportunity to communicate with and recruit from BFRS's Armed Forces community of more than 14,000 skilled service leavers.

AVAILABLE INDIVIDUALS WITH VALUABLE SKILLS

Each year, more than 20,000 individuals leave the Armed Forces. This figure is set to dramatically increase as the MoD plans to make 54,000 additional redundancies before 2015. Many of these service leavers possess valuable skills that are perfectly transferrable to roles in the energy sector.

MILITARY2ENERGY CAREERS SERVICE

The Military2Energy Careers Service allows NOF Energy members to take advantage of skilled ex-military personnel.

It offers companies a constant influx of ex-servicemen and women for enrolment on training courses, opportunity to promote vacancies at any point and organises work trial placements with potential candidates through interaction with ex-military personnel at live and virtual career events and exhibitions, company listing on the BFRS website and inclusion in the BFRS newsletter.

SUPPORT PROGRAMME

The service also provides organisations in the energy sector with a 12 month programme of support and multiple marketing opportunities to position their company as the employer of choice or leading training provider to the Armed Forces community.

ENERGY SECTOR MILITARY TO CIVILIAN CAREERS FAIR

The service is being launched following the successful Energy Sector Military to Civilian Careers Fair in September hosted by NOF Energy and the BFRS. The partnership is committed to tackling both industries' key skills and employment issues.

BFRS AND NOF

The BFRS is a non-profit company working for the sole benefit of the Armed Forces community. It provides help, advice and support to more than 14,000 members of the Armed Forces, both past and present, and their families, throughout the transition from military to civilian life.

Joanne Leng MBE, Director Business Development at NOF Energy, said: *"The transferable skills of armed forces personnel make them perfect candidates for positions within the energy sector, with many possessing specialist engineering and technical skills in high demand from the sector."*



Joanne Leng and Hannah Reynolds

"The Military2Energy Careers Service offers businesses in the energy sector an excellent platform to take advantage of the fantastic skills on offer and I would urge them to get involved with the scheme."

Hannah Reynolds, Marketing Director from The British Forces Resettlement Services, said: *"BFRS champions the skills, qualities and expertise possessed by those in the Armed Forces community and we're thrilled to be working with NOF Energy to help promote the valuable contribution that ex-military personnel can make to the energy sector."*

British Forces Resettlement Services
www.bfrss.org.uk

NOF Energy
www.nofenergy.co.uk



Powerskills UK is dedicated to working closely with local, regional, national and international Power, Engineering and construction employers to design and deliver training solutions that meet your specific needs.

For more information please contact Powerskills UK on: T 01757 211 066 W www.selby.ac.uk E info@power-skills.co.uk
Powerskills UK (part of the Selby College Group) Abbot's Road, Selby, North Yorkshire, YO8 8AT

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FILLING THE GAP TACKLING THE SKILLS SHORTAGE

In 2012 RenewableUK and Energy & Utility Skills issued a report on the rapid rate of growth within the renewables industry and the potential jobs created because of it.

The message to the renewables sector was stark: ***'the supply of appropriate skills to the labour market needs to ramp up rapidly over the coming years to meet rising demand.'***

WORKING FOR A GREEN BRITAIN

Within the 'Working for a Green Britain Vol 2' study a high growth scenario was put forward proposing that the industry would create 115,000 full-time jobs. However a shortage of skilled workers and a lack of training opportunities could put this sector at risk.

INDUSTRY SPECIFIC TRAINING

This issue is currently being tackled in numerous ways in an attempt to keep the momentum behind sectors such as Wind Energy. One approach to this problem is through the development of industry specific training to create a new work force here in the UK. Centres of Excellence for wind energy training are being set up to equip individuals with the training they need to work on/around wind turbines onshore and offshore.

RENEWABLES TRAINING NETWORK (RTN)

An organisation backing the development of industry specific courses is The RTN, set up by RenewableUK members to tackle the shortage of skilled workers in this sector. The primary focus of this organisation is to address the skills gap through the development of 'RTN approved' courses, which focus specifically on equipping individuals with the required skills for working in the renewables sector.

'WIND WORK READY' TRAINING COURSES

Through working closely with stakeholders to understand the training needs of the industry, RTN have already identified and approved a suite of 'Wind Work Ready' courses, including Safety Technology's Introduction to Wind: Onshore and Offshore.

The RTN aims to deliver training to 12,000 new entrants by 2016 and develop the skills of 11,450 employees currently working in the renewables industry.

ATTRACTING PEOPLE WITH TRANSFERABLE SKILLS

Enticing individuals to embark in a career in the renewables-industry is one way to tackle the skills shortage, but this is slow and will not produce the numbers required. Another suggestion may be to tap into the huge work force we already have right here on our doorstep.

UK OIL AND GAS INDUSTRY

The UK oil and gas industry is Britain's greatest industrial success story in the last 50 years, and employs over 380,000 people. However, the current forecasts predict that Britain can only expect to remain self-sufficient in oil for approximately another 10 years. By creating a range of training courses which are specifically tailored to transferring and enhancing skills acquired in the oil, gas and related industries to meet the requirements of the renewables sector, we are able to slowly decrease the skills shortage.

By encouraging the transition of skills we can create a strong work-force which can move easily across the energy sectors.

THE FORCES

Further transitions can take place from the military into the energy sector, with similar skill sets required for roles in both. With circa 20,000 Service leavers coming on to the civilian job market each year, including highly trained engineers, technicians and trainers, these individuals are a perfect solution for the skills shortages in the renewables sector. With the right training, skills developed within the forces can be easily adapted to meet the needs of this sector.

INDUSTRY NEED

One thing is clear, regardless of the strategy taken to achieve it, the industry needs a strong, skilled work force. In order to ensure this, whether it is from similar industries or not, accredited and customer driven industry specific training must be available here in the UK.

Safety Technology
www.safetetechnology.co.uk



SPECIALIST TRAINING COMBATS HOSTILE NORTH SEA ENVIRONMENT

WHEN YOU'RE MILES OFFSHORE IN THE HOSTILE NORTH SEA YOU CAN'T DIAL 999 IF SOMETHING GOES WRONG. STAFF FROM ONE SUBSEA CABLE INSTALLATION COMPANY WILL BE READY FOR ANYTHING, THANKS TO SPECIALIST TRAINING.

LEADING GLOBAL PROVIDER

Global Marine Systems Energy Ltd is one of the world's leading providers of submarine cable installation services delivering power cabling solutions from landfall to landfall or from landfall to offshore structures, such as windfarms, for the power and offshore renewable energy markets.

The company has successfully installed some of the world's leading offshore windfarm projects from the turbine through to the landfall. When the company won a recent contract to deliver the cable infrastructure for a planned German wind farm in the North Sea it needed to ensure its employees were adequately prepared should the worst happen.

TAILORED TRAINING PLAN

Working in one of the world's harshest and most dangerous environments means personnel need to be self-sufficient, with watertight rescue and emergency procedures in place should things go wrong. Global Marine Energy approached Maersk Training in Newcastle to help develop an advanced rescue and emergency plan tailored to the unique conditions it was about to experience and to train its 14-strong team to be completely self-reliant.

CREATING REALISTIC CONDITIONS

To ensure the training took place under realistic conditions, Maersk Training used cable tanks on a ship in the German port of Nordenham to simulate the confined spaces and heights the Global Marine Energy team would experience offshore. Groups of four were then taken through step-by-step procedures including use

of a cervical collar and spinal board and being lifted to safety in these difficult conditions.

LIVE TRIAL

In a live trial following the training, the team managed to rescue a casualty in just 20 minutes - timings on a par with a professional rescue team. The rescue and emergency procedures were also signed off by the client ensuring that Global Marine Energy could progress its work on schedule.

Andy Dorr, Project HSE Adviser at Global Marine Energy, said: *"Due to the nature of our work we are first on any site and have no access to any existing facilities. As you can imagine when you're offshore in the harsh and hostile conditions of the North Sea you are far from any emergency services and need to be able to deal with any emergency situation yourself. Any one of us needs to be completely confident they could rescue a colleague in the unlikely event that anything bad should happen."*

"As well as training our team in the very highest climbing and rescue standards for an offshore environment, Maersk Training helped us to refine our emergency rescue procedures to the highest possible standards. This gave our client confidence that we could deliver what they needed and we were able to get on with the job."

"Maersk Training's excellent and responsive approach has been invaluable in helping us to progress this project quickly and to build the trust of our important new client."

GLOBAL WIND ORGANISATION (GWO) APPROVAL

Maersk Training in Newcastle, which specialises in wind, renewable and offshore training, was the first centre in the UK to offer courses approved by the GWO and is also approved by industry bodies such as RenewableUK and OPITO.

The GWO programme is a globally recognised standard and is often the first step for those wanting a worldwide career in wind power - currently only a few centres globally have GWO approval.

CONSIDERATIONS

Jeremy Weiss, rescue training specialist and instructor at Maersk Training, who devised and delivered the training for Global Marine Energy said: *"When developing a training and rescue plan for an isolated and dangerous environment there are many considerations to look at including weather conditions, available equipment and communication limitations to name but a few."*

ROBUST RESCUE AND EMERGENCY PLAN

"Working in partnership with Global Marine Energy we created a robust rescue and emergency plan that covered every scenario. Global Marine Energy's team was extremely motivated and enthusiastic and training them was an absolute pleasure."

"The global wind industry is experiencing unprecedented growth and there are many resulting skills shortages that need to be plugged. This means we need to be able to react quickly to any client's needs, arranging bespoke training courses at short notice. We are more than geared up to do this and we are delighted that our work with Global Marine Energy has helped them to progress a very important contract for them."

Maersk Training Newcastle
www.maersktraining.com

Global Marine Systems Energy
www.globalmarinesystemsenergy.com

OKEHAMPTON COLLEGE WINS \$100,000 FUTURE ENERGY PRIZE

Okehampton College, in the heart of Devon, has won a major international award for its pioneering work in energy efficiency, renewable energy and its carbon reduction strategy.

ZAYED FUTURE ENERGY PRIZE

The Zayed Future Energy Prize for a European high school comes with a \$100,000 prize fund, which the college will spend on installing wind turbines on campus to reduce its consumption of fossil fuel derived energy.

In the last four years Okehampton College has cut its reliance on fossil fuels by 50% and has the ultimate aim of having net zero energy bills. Many large schools can spend well in excess of £1,000 a day on energy but at Okehampton it varies from £400 to nothing at all. The school is now being seen as an exemplar for reducing energy costs in the education sector.

ABU DHABI SUSTAINABILITY WEEK

College principal, Daryll Chapman, and 6th former Bryony Franco were awarded the Zayed Future Energy Prize (Global High School Category) at The Emirates Palace during the Abu Dhabi sustainability week – the largest of its kind attended by many world leaders.

The Prize is the legacy of Sheikh Zayed the late ruler of Abu Dhabi and first president of the United Arab Emirates who was passionate about environmental stewardship. The awards, held annually, celebrate innovation, impact, leadership and long term vision in renewable energy and sustainability.



HELPING OTHERS

As well as dramatically reducing its own carbon footprint the College has helped various other organisations including the National Trust, local authorities and around 200 other schools either directly or indirectly during presentations at conferences across the UK.

PROJECTS

Energy sustainability projects being run at Okehampton College include after school monitoring clubs, behaviour change campaigns and various technical measures including sophisticated energy monitoring packages, building management system, low energy lighting, thermostatic controls, insulation upgrades, high efficiency boilers, double glazing, draught proofing and 80kW of solar PV to be shortly followed by 22kW of wind power and 199kW of biomass heating.

INTERNATIONAL ACCOLADE

Keith Webber, Project Leader, said: *“To be awarded the Zayed Future Energy Prize is an incredible honour for the college and we are absolutely delighted to have been chosen as the European Global High School prize winner. The prize is the biggest international accolade for innovation in sustainable energy development so it really is a fantastic achievement for us.”*

WIND ENERGY

The college has already managed to reduce its consumption of fossil fuel derived energy by 50 per cent. The \$100,000 prize money received will go towards the installation of wind power to further supplement the school’s electrical supply, and the savings will help to fund further renewable energy projects.

The \$4 million prize fund is managed by Masdar, and awarded to individuals, high schools, companies, organisations or NGOs that have made significant contributions in the global response to the future of energy.

EXPERT JUDGING

Finalists were nominated by experts across the globe and the winners chosen by a jury chaired by HE Ólafur Ragnar Grímsson, President of the Republic of Iceland, which also included Dr Han Seung-Soo, former Prime Minister of Korea, Adnan Z. Amin, Director General of the International Renewable Energy Agency (IRENA) and Leonardo DiCaprio, actor and environmental campaigner.

Chair of school governors, Ian Courtney, said *“Okehampton is a Town with a plan and a bright future. The College has a magnificent reputation and is part of a growing federation of schools that is providing first class education. I am truly delighted with all the fantastic things that are happening and planned for the College and the town. I must congratulate the staff and students on the great things happening at the College.”*

Okehampton High School
www.okehamptoncollege.devon.sch.uk

Image – Okehampton College Principal Daryll Chapman, Project Leader Keith Webber and 6th form student Bryony Franco with the Zayed Future Energy Prize (photo courtesy of Okehampton Times)

ORMONDE OFFSHORE WINDFARM

A CASE STUDY

A2SEA were contracted by Offshore Design Engineering to install 30 5MW REpower turbines on Vattenfall's Ormonde Offshore Wind farm in 2011.

AHEAD OF SCHEDULE

First load-out for the project was on 11th March 2011 and the last wind turbine was installed on 1st August 2011, 19 days ahead of schedule. The Ormonde Offshore Windfarm is located in the Irish Sea 10 km off Barrow in Furness with the A2SEA vessel SEA JACK operating out of Belfast harbour.

2 FIRSTS

The Ormonde Offshore Windfarm is special in many ways; firstly it is the first commercial offshore windfarm to use jacket foundations. Secondly it is the first commercial offshore windfarm to install Repower 5MW wind turbines.

CHALLENGES

Many challenges were encountered whilst delivering and planning this project.

Logistically, transporting a full rotor with a diameter of 129 m and a transit time of 22 hours posed a challenge. There were also critical issues that A2SEA faced whilst in port.

SEA JACK was unable to jack-up in port so this meant they could not use the vessels crane for loading, there were also sailing restrictions within the port and a very narrow channel to contend with.

PLANNING

Planning was the key for this project. In order to reduce the learning curve and risk, A2SEA spent two days using a simulator with all those involved in the tow out of the SEA JACK vessel. This proved very successful and helped deliver the project ahead of schedule.

AN INSIGHT INTO THE FUTURE

The Ormonde Offshore Windfarm gives us a glimpse into larger scale projects and in to what the future will bring, considering the development plans for the coming years.

With such success using jacket foundations and the successful installation of 5 MW wind turbines this demonstrates that with the right planning, know-how and project set-up A2Sea are ready to move forward to the UK Round Three.

A2Sea
www.a2sea.com

[Click to view more info](#)



= [Click to view video](#)



RENEWABLES DEVELOPMENT PROGRAMME WORKSHOP 3

WASTE

WHAT ALL SUCCESSFUL TEAMS ELIMINATE

THIS WORKSHOP IS ON THE SUBJECT OF WASTE MANAGEMENT. IT IS NOT ABOUT TIDYING UP THE YARD IN ANTICIPATION OF A VISIT FROM SOME 'TREE-HUGGING' INSPECTOR, AND THIS WORKSHOP IS NOT ABOUT FINDING THE MOST EFFICIENT CARDBOARD BALER ON THE MARKET

John Britton, Director of Renewables Network Ltd highlights details of the 3rd workshop in the Renewables Development Programme.

This workshop on the subject of Waste Management is not about tidying up the yard in anticipation of a visit from some 'tree-hugging' inspector, and this workshop is not about finding the most efficient cardboard baler on the market (even though this would be a very useful investment).

This workshop is about taking ownership of the principles of customer orientation and operational efficiency.

The text book of Lean Management tells us that everything that adds cost, but does not add value is WASTE. So, we must begin our workshop with an appreciation of value.

THE SPECIFICATION OF VALUE BELONGS TO THE CUSTOMER



For the customer the value of every product or service is the right balance of Quality, Cost and Availability.



A good example is a copper top Duracell alkaline battery. For years this product was valued above all others because the customer was given exactly what was needed.

QUALITY - Duracell lasted 6 times longer than a zinc carbon in continuous use

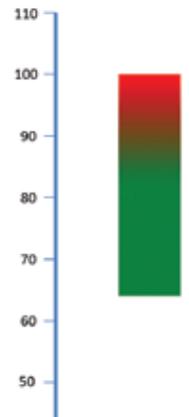
COST - Duracell cost only 2½ times more than a zinc carbon

AVAILABILITY - Duracell was available on more shelves than any other brand

Money was invested in maintaining the differential performance and on maintaining maximum distribution. Spending money elsewhere would have been a waste.

The customer will happily spend the asking price if the price represents value. The fact that a price is 40% uplift on cost means nothing to the customer, but think how many products or services are priced in this insensitive way.

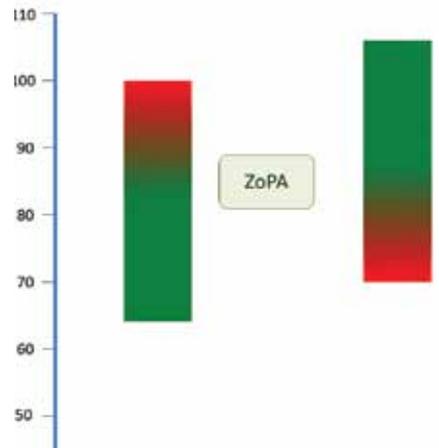
For this product the customer would buy instantly at a price of 65. He would be comfortable to purchase up to a price of 80. Above that the decision to buy would get progressively less comfortable. At a price of 90 he would really want to see some other incentive to buy added to the offer and, above that price his commitment would rapidly disappear.



A company that has a clear understanding of its customers' specification of value has a chance to be successful in the market, but this is only the first step.

WASTEFUL DESIGN

Insensitivity to the opinion of the customer can apply just as wastefully to product design as it can to pricing.



The supplier of this product has wasted his design talent in offering functionality or design features that he believes are worth a price of 105. The customer is not interested. The supplier has wasted his time.

Furthermore, this offer is made at a cost which leaves the supplier with no inclination to sell at a price less than 80. We can see that the Zone of Probable Agreement (ZoPA) is restricted to the small range between 82 and 86.

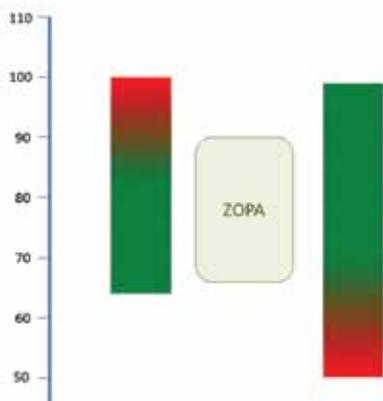
I guess you have seen as many examples as I have of products designed by the company's technical team who, in essence, have been locked in internal competition to build something with more bells and whistles than each other with little credence given to the customers' specification of value. The supplier who matches his offer to the customers' specification of value will not be wasting all this time and money.

The other wasteful design is the one that has given no consideration to production cost. Being sensitive to the customer specification of value and mindful of the cost of production are not contradictory influences. More often than not the use of standard components or standard production processes will not negate an aspect of design which has value to the customer.

Now we can look at the supplier who has a better chance of success.

This supplier has achieved two important targets

- 1 He has restricted his design to fit the customers' specification of value. The best price for him would be 100, the very limit of the buyer's tolerance
- 2 He has achieved a cost saving efficiency that far exceeds that of the other supplier.



This elimination of waste has put him into the position that he is still able to sell at a price of 65 without losing money. As a consequence, the Zone of Probable Agreement (ZoPA) for this buyer and seller is huge by comparison.

The elimination of waste under point 2 above is the vital ingredient to success. Let's remind ourselves of the definition we started with.

Everything that adds cost, but does not add value is WASTE.

WASTEFUL OPERATIONS

Think of your own operation and quickly list down the 5 changes you would make, no matter how big or small, that would save cost without making any difference to the customers' perception of value.

.....3 MINUTES LATER. Done it?

Good, now you can make those 5 changes without delay.

To help you find another 5 it is always useful to run through the 7 classic (Japanese) categories of waste.

TIM WOOD

- T** = Transport. Any unnecessary transportation of men or materials
- I** = Inventory. Despite what accountants tell you inventory is a potential liability
- M** = Movement. An individual's unnecessary movement in the execution of their job
- W** = Waiting. The unavailability of men or material that causes work to stop
- O** = Overproduction. Committing resources to activity that is not required yet
- O** = Overprocessing. Applying processes that have no value to the customer
- D** = Defects. Committing resources to products that are not fit for purpose

Do you feel that it is not quite the done thing to pay homage to the Japanese pioneers of continuous improvement? *"After all, theirs is a very different culture, they are more regimented than we are, and more used to obeying orders"* I hear some people say.

Let us not forget that the Quality Management systems, perfected in Japanese companies such as Toyota, were begun by the American managers who were appointed to rejuvenate Japanese industry after World War II. It was Deming and Duran who were the catalysts of these principles.

In any event, the only way to improve your own operation is to identify the principles that have been proven to work by others, and to make these principles your own by incorporating them into the culture of your own organisation.

If you, as the catalyst of change for your team, do not work out how a new principle can be incorporated into the workplace culture of your organisation then there is virtually no chance that your team will take ownership of the change, improve their level of performance and deliver the available benefit.

In realising the potential benefit to your own team I would urge you to explore further the insight that a focus on TIM WOOD will bring. As an example of the changes that are possible, that save cost without decreasing the customers' perception of value I refer you to the square water melon.



In the cost conscious food market the cost of transport is a significant element of the price to the consumer. In order to reduce this element,

without decreasing the customers' perception of value, watermelons have been grown in moulds so that more melons can be fitted into a given cubic space for transport. As a consequence the transport cost per melon has been reduced, to the benefit of the customer.

The management of waste is not a job for the boffins, or for the 'deadwood' in your team. It is the way to sustain your business, the way to offer competitive prices without sacrificing your profit margin and the way to build stronger relationships with customers who have a very clear specification of value. It is a job for every member of your team, and especially for you.

If you want to know more about the Renewables Development Programme, or about Renewables Network Ltd don't waste any more time...

Ring John Britton or Sam Pick on 01482 638464.

SUCCESS AND SELF ESTEEM



A NICE IDEA BUT IT'S NOT THAT SIMPLE

Many employers believe there is a link between an employee's self esteem and their performance or success in the workplace. Trainer and Motivational Speaker Frank Newberry explores the issue.

For the purposes of this article I would like to define 'self esteem' as how you regard yourself most of the time. If you have HIGH self esteem you think well of yourself. You feel that you are an OK person. If you have LOW self esteem you do not think that you are that special. You might even believe that you are not an OK person.

For many years I have heard it said that if a person has good self esteem they do better work than people who have poor self esteem. For some time the prevailing view has been that 'a happy worker is a good worker' and that supervisors should therefore keep their staff happy. It has been suggested that supervisors could do this in a cost-effective way by giving praise and recognition to people on a regular basis.

THERE IS NO PROVEN LINK BETWEEN SELF ESTEEM AND WORK PERFORMANCE

More recent scientific research suggests that whilst there are benefits to having good self esteem levels in the work team there are also drawbacks which should also be considered.

The research results are conclusive about one important aspect. There is no proven link between self esteem and the performance of typical work tasks. People can do a reasonable job, even a great day's work, without feeling good about themselves.

Importantly an employee with high self esteem does not necessarily perform straightforward work tasks any better just because they feel good about themselves.

Why then has it become popular to believe that self esteem equals success at work? Well, it would now seem that the people who popularised the notion that a happy worker is a good worker were expressing an opinion, albeit an expert opinion. They saw the maintenance of high levels of self esteem in work teams as a positive way forward for managers and decision makers. However, their claim was made without any specific evidence to back it up.

GOOD SELF ESTEEM CAN HELP IF THE EMPLOYEE HAS TO BE PERSISTENT AFTER FAILURE

In their defence, there are some (related) aspects of work performance that good self esteem does enhance. For example good self esteem can help if a job requires a person:

- 1 To have persistence after failure;
- 2 To be confident enough to speak up and if necessary criticise their work group's approach;
- 3 To be able to take initiatives, and
- 4 To come across as a happy person e.g. when dealing with customers

However, if a person has to do fairly straightforward tasks quickly and accurately their self esteem level does not seem to make any difference at all to that speed and accuracy. This means that a miserable so-and-so can do the work just as well as the happiest member of the work team!



HITLER HAD HIGH SELF ESTEEM

So any general efforts to boost the self esteem of the workforce could well be wasted, and worse, there is a downside to people having high or inflated self esteem. Boosting the self esteem of a narcissist i.e. a vain, conceited and self important person can be counter-productive. Narcissists can start out being very charming but they can end up alienating people especially when things do not go their way. Then can turn on the very people whose self esteem they had built up. A powerful example of this would be Adolph Hitler who had high self esteem and knew how to make people feel good about themselves.

As a trainer or performance consultant I am regularly called in by employers to work with teams and individual employees who are under-performing. Some of my clients have even asked me to give their team 'a boost' (a boost to their self esteem). When I meet the people concerned it is often very clear that the team's morale is low. Despite this there are usually individuals who are working hard and working well even though morale is low.

SLOW TO PRAISE BUT QUICK TO CRITICISE

When I probe the team morale problem I often find that part of the problem is that the team feels under-valued, they are rarely consulted on important issues and recognition is hardly ever given by employers. On the other hand criticism is given on an almost daily basis.

This approach characterised by many as management being 'slow to praise but quick to criticise' is often believed to be necessary 'so that staff do not become complacent' or 'come to expect praise all the time'.

And yet whenever I ask people (and I have asked hundreds) if they get too much praise at work they almost universally say they do not get enough. When I ask people if they would like a little more recognition - the vast majority say that more recognition would be appreciated.

There is research that shows whether or not it affects performance people like to be happy at work and, in my experience, they prefer to be around happy people. Happy workmates can help make the work a more enjoyable experience.

On balance the evidence is clear that employers should use praise: to boost staff self esteem - as a reward for doing a job well or making a special effort.

From my experience as an employer and as a performance consultant I have concluded that team leaders need good self esteem (see points 1-3) and teams should learn to appreciate and value each other more.

Frank Newberry
www.franknewberry.com

BUSINESS DEVELOPMENT

WELCOME AGAIN TO ANDY MCLAUGHLIN...



WHERE DOES IT HURT?

If you are running into price objections with your prospects, you are probably giving intellectual presentations, i.e., emphasising price or features and benefits. One of Sandler's cardinal rules is that people buy emotionally, they only make decisions intellectually. It is "pain" that will get you a sale, not price. Your job is to find someone who has pain, and can pay the price and make the decision to get rid of that pain.

WHAT IS PAIN, AND HOW DO YOU UNCOVER IT?

Act like a newspaper reporter or a psychiatrist. Ask questions, take notes, and take them furiously. People love to be interviewed, especially if they are talking about something near and dear to them. If you don't write anything down, they may think you're not for real. Use your note pad to keep control of the interview and give you time to think of your next question. Remember that your job is to get information, not give it.

HOW LONG HAS YOUR PROSPECT HAD THE PAIN?

Why would you want to know how long your prospect has had the problem? Because chances are, if they've had the problem for 10 years, they're going to have it for another 10 years. Obviously, there's no urgency here. They probably will not do anything to get rid of that pain in the near future.

WHAT HAVE THEY DONE IN THE PAST TO FIX THIS PAIN?

Your prospect's answer reveals the thinking process on his/her end, and shows you how much importance he/she places on the problem.

WHY HASN'T WHAT THEY HAVE DONE IN THE PAST WORKED?

This reveals who else they have used to try to solve the problem. It might disclose who you're working against. It could also show you that the prospect himself might be sabotaging the solution.

HOW MUCH IS THE PROBLEM COSTING HIM OR HIS COMPANY?

Most salespeople never ask how much a particular problem is costing the company, and more important, what it is costing that particular manager, owner, or whomever your prospect is. What is it costing her personally, both emotionally and financially?

There are some things you will get to before you reach true pain. They're called pain indicators and they fake out a lot of untrained salespeople. A pain indicator sounds like pain, but it's not, it's just an intellectual smoke screen. For example, if you're an accountant trying to sign up a new client, you might hear, *"I want to pay less in taxes so I can keep more in my pocket."*

Sounds like pain . . . but is it really? It's probably more a pain indicator than true pain. True pain sounds more like, *"I'm sick of giving away money to the government and I'm not going to take it anymore."* Now we're starting to get emotional! The words you'll hear are different: tired of, sick of, worried, concerned, frustrated, wasted effort, angry, upset, afraid, I've lost all hope, this is a terrible situation, disappointed, etc.

Once your prospect realises his or her pain, money is no object in finding a cure.

Andy McLaughlin
Sandler Training
www.centralnorth-east.sandler.com

ALL IN A DAY'S WORK...

Photos taken by Campbell MacCallum
and provided by Scira Offshore Energy.

NAME

Peter Sommerfield

COMPANY

Scira Offshore Energy Limited (a joint venture company owned equally by Statoil and Statkraft and established to operate the Sheringham Shoal Offshore Windfarm)

OCCUPATION

Marine Manager – Scira Marine Coordination Centre

HABITAT

Norwich



Peter Sommerfield

NEW BEGINNINGS

For Scira, January 2013 heralds their official takeover of as operator of Sheringham Shoal Offshore Windfarm situated 17 miles off the coast of north Norfolk. Boasting 88 3.6MW wind turbines, the Sheringham Shoal Offshore Windfarm will generate enough clean energy to power almost 220,000 homes each year. It also coincides with Scira's move to the 21st century purpose-built operations and maintenance base, situated 3 miles south of Wells-next-the-Sea in north Norfolk. The man at the helm of Scira's Marine Coordination Centre is Peter Sommerfield who, with his team, takes responsibility for the marine logistics of the whole operation – no mean feat!

Peter's narrative has been an interesting one, and I was fortunate to catch a moment to speak with him to find out more.

LEADING UP TO...

After serving 16 years in the fire service, Peter always had a desire to go to sea – must have been in his blood, as his father was a sea captain.

So at the age of 40 he made the decision to leave, return to college and follow his vocation! Having successfully completed his navigation officer's certification after 3 ½ years, he was then qualified to become an 'officer of the watch'.

THE JOURNEY BEGAN

He wrote to shipping companies, acquired employment and in turn travelled the seas of the world. He worked on chemical tankers, heavy lift ships, container ships and eventually salvage tugs off the coast of Scotland, before coming ashore and working as a manager for Windcat Workboats, until an opportunity arose as a Marine Co-ordinator on the Greater Gabbard Wind Farm.

This experience held him in good stead for his role at Sheringham Shoal, having been actively involved in the development and construction stage of the Greater Gabbard Windfarm.

In March 2011 Peter started working on the Sheringham Shoal Offshore Windfarm as Marine Co-ordinator, and in August 2012 he became the overall Manager of the Marine Co-ordination Department, overseeing the marine logistics required to facilitate activities on the wind farm, initially during the construction phase. To say the least, this has been an extremely busy time co-ordinating logistics for up to 500 workers offshore during the peak of the construction activities.

PERSONNEL

Prior to completion, the Marine Co-ordination Centre had 6 staff, working shifts to provide 24/7 cover. However with the construction complete, they now support daily operations and maintenance work, requiring cover from 6am to 10pm with a reduced staff of 3 Marine Coordinators and 1 Trainee.

TYPICAL DAY

Wind Turbine Technicians depart for their daily work on the windfarm from Wells-next-the-Sea, with a winter population of 2,500 which swells to over 10,000 in the busy summer months when many people arrive to enjoy a holiday in Norfolk.

It is normal for technicians to arrive/check in half an hour prior to sailing time, to ensure the manifests are correct, that the personnel are checked in and taxis/cargo movements logged. Of course just to add to this, the port of Wells-next-the-Sea is tidal, so all these processes have to tie in with the tide times.

On departure from the outer harbour, personnel step on board their transfer vessel, swipe their card, and are immediately logged onto the tracking system, with their locations logged in real-time on each turbine or substation they visit. They are also traced when leaving the turbines by way of swipe-cards system authorisation. The Marine Co-ordinators can then follow movements of all personnel in the field.

COMMUNICATIONS

Communications are paramount for the centre and all personnel have a licence for radio VHF use, (which is required by law). There are 5 huge screens at the centre; AIS – automatic identity system – which flag up any ships over 500 gross tonnes and any vessels at sea, within the vicinity, logging their identification and destination. Another screen shows all 88 turbines.

WEATHER MONITORING

There is a secondary monitor for weather and is vital for several reasons – not only does it flag up the

vessels in the area, but also the wave swell. The situation is continuously monitored to check the swell is stable – should it increase there is a need to wait for more clement weather.

MENTOR

During the construction of the wind farm, Statoil was manager of the project. Meindert Jan van de Velde of Statoil has been Peter’s mentor, bestowing a wealth of knowledge, in short - a walking oracle. Peter worked as his deputy during the construction phase. Meindert handed over the reins to Peter in August 2012 and has now returned to Norway, although Peter says he is always on hand – should he require advice.

UNUSUAL CIRCUMSTANCES

There is always a priority to make sure there are enough vessels for personnel. This was especially paramount during the construction phase with many parallel activities offshore, however the team always take into account unforeseen circumstances e.g. vessel breakdown – on one occasion 3 such vessels were out of action at the same time!

CONTINGENCY PLANS

In those circumstances contingency plans came to the fore, therefore a well rehearsed operation was put into play and this situation was dealt with the minimum of disruption!

Peter has also had to deal with medical evacuations, ranging from toothache to chest pains. It is the Marine Co-ordinator’s role to liaise with lifeboats, coastguards and medical professionals to evacuate and ensure safe transfer to hospitals for relevant treatment, with calmness and expediency.

AIMS AND ASPIRATIONS

Peter is contracted till June 2013 – he would love to remain at Sheringham Shoal, as there are so many opportunities within Scira.

Scira is a new company and the position offers a continual learning curve, is well managed and also provides facilities to enable wind farms to operate at maximum efficiency as well as fulfilling future needs.

HOBBIES

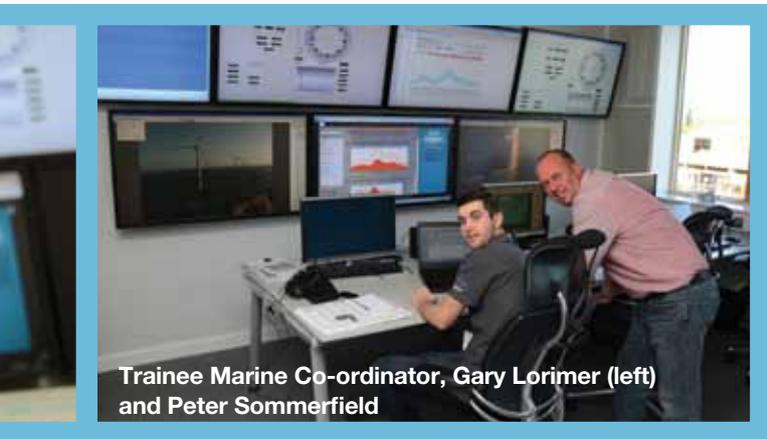
As a patriotic Welshman - he is a passionate spectator of Rugby Union! Reading, swimming and walking with his four legged friend!

3 WORDS TO DESCRIBE YOU?

At this point Peter modestly wavered in answering this question, then a colleague graciously stepped in and quoted ‘calm, caring and compassionate’.

Three qualities essential in dealing with this busy offshore environment. Peter’s colleague also added how well respected Peter is within the company, and how they know, should they need advice, he is reliable to the end and delivers support, knowing that everything will be covered ... quite an accolade and a deserved one too.

Fliss Chaffer
Wind Energy Network



Trainee Marine Co-ordinator, Gary Lorimer (left) and Peter Sommerfield

Cargo arrives 2 miles from the warehouse and it is the role of the Marine Co-ordinators to liaise with the harbour authorities to ensure safety and expediency.

The vessel ‘Frank T’ – owned and managed by the Port of Wells, transfers cargo from the inner harbour in Wells to the specially constructed outer harbour and from there onto the vessel, ensuring all is loaded correctly and personnel logged who will be travelling offshore.

*‘CALM, CARING
& COMPASSIONATE’*

LOGGING

Stringent checks and controls are paramount, and all personnel travelling are registered in the Offshore Profile system, where they record their medical and required access training certificates which verify their fitness and competence to work offshore. Once registered in the system personnel are issued with an identity card.

TO QUANTIFY OR NOT TO QUANTIFY? THAT IS THE QUESTION...

AN INTRODUCTION TO QUANTITATIVE RISK ASSESSMENTS

In previous issues Risktec introduced us to an effective Risk Management Process before describing the concept of Tolerability of Risk (TOR) and the principle of ALARP (As Low As Reasonably Practicable) as well as various deterministic risk assessment techniques. Here we continue their series of articles on risk management by exploring the use of Quantitative Risk Assessments (QRA).

WHY PERFORM A QRA?

For many industries the consequences of an accident are relatively low and the progression from release of a hazard to its ultimate effects is easy to comprehend. In such cases, simple, qualitative (or deterministic) risk assessment techniques are usually more than adequate. The Risk Assessment Matrix (RAM) (see February/March 2012 issue) and Bow-Tie technique (see December/January 2013 issue) are two commonly used deterministic techniques for assessing and controlling risk.

However, deterministic techniques alone are unlikely to be adequate when assessing facilities, operations etc. which employ complex processes and engineering systems, have high potential consequences and/or have complex hazard progressions. In such scenarios it is appropriate to undertake a Quantitative Risk Assessment (QRA), also commonly referred to as a Probabilistic Safety Assessment (PSA) or Probabilistic Risk Analysis (PRA). Table 1 summarises the pros and cons of deterministic and probabilistic approaches.

WHAT IS A QRA?

If we jump back to our second article on Risk Management (see June/July 2011 issue), we defined risk as being the product of the likelihood of an unwanted event occurring (release of a hazard) and the severity of the resulting consequences;

Risk = Likelihood x Consequence

Whilst QRAs come in a vast array of shapes and sizes, performed using a plethora of tools and techniques, in very simple terms it is a systematic technique whereby appropriate numerical values are applied to 'likelihood' and 'consequence' allowing the associated risk to be expressed in numerical terms.

The results of a QRA are numerical estimates for risk exposure that can cover the full range of consequence effects being considered (e.g. harm to the environment, plant/asset damage, programme delays, cost overruns, etc.) but are most commonly used in a health and safety context to quantify risk to people and society in general, for example by expressing risk as the frequency of fatality per annum.

	Deterministic	Probabilistic
Hazard/Initiating Event	Limited to consideration of relatively frequent events, commonly called "Design Basis accidents".	All potential credible accidents are included.
Analysis Method	Utilises conservative rules, standards and guidelines. Arguments may use a variety of techniques, including engineering judgement, factors of safety, incredibility of failure arguments, etc.	Arguments follow a well established methodology. Best estimate assumptions.
Common Cause Failure[⊗]	Not normally assessed in detail.	Multiple and common cause failures easily assessed.
Input Requirements	Can be performed using very simplistic, conceptual design information and evolved/enhanced through detailed design.	Although can be used to perform high-level scoping calculations to support conceptual design decisions, generally requires detailed design information to make worthwhile.
Results	Compliance with the rules, standards and guidelines infers a safe facility. Does not determine residual risk.	The risk from the facility may be determined. Allows the targeting and prioritisation of further risk reduction activities.
Cost/Time	Relatively quick and economical.	May be time consuming especially if full PSA/QRA is used.

*The potential for a single cause to negate a number of safeguards (e.g. power failure causes a loss of control and deactivates the fire detection system).

Table 1: Relative pros and cons of deterministic and probabilistic risk assessment techniques

identify those hazards/faults that should be assessed via QRA. Also, the findings must be used within an overall safety justification which pulls together both deterministic and qualitative elements in a manner that is sensitive to their relative strengths and weaknesses.

IS THERE A ROLE FOR QRA'S IN THE WIND ENERGY INDUSTRY?

In the next issue we will explore some specific examples which show that there is a role for QRA in the Wind Energy Industry. However this is certainly not a black and white issue, the nature and scope of any QRA will vary hugely based on a range of factors including; nature of the hazard and its development, available information, existing precedents, stakeholder expectations, but perhaps more crucially, what role the QRA is to play within the overall safety justification strategy. This must be fully understood before embarking on any QRA.

Gareth Ellor
Risktec Solutions Ltd
www.risktec.co.uk

BENEFITS OF A QRA

Beyond their raison d'être of providing an accurate estimate of risk within a complex facility which cannot be adequately assessed using deterministic means, QRAs present a number of further benefits. They can be used to confirm the validity of your deterministic assessment strengthening your overall safety justification. In addition, it is a very effective tool for comparing the risk profile for various design and/or operational options as part of your risk based decision making process (see article on ALARP in April/May 2012 issue).

LIMITATIONS OF A QRA

A QRA is only as good as the input data used. Make sure it is accurate and relevant/appropriate for your specific application and, wherever possible, is based on relevant historical information. It is easy to overly complicate a QRA and go straight in for lots of detail. This is time consuming to do and complex to verify, escalating costs. Where possible, start by using simple, bounding assumptions and only add in more complexity if needed. But make no mistake, this is not about manipulating inputs/assumptions to give you the answer you want, a common pitfall of QRAs. Your approach must always remain demonstrably conservative to support a robust safety assessment. Another common mistake is that of 'salami slicing'. Whilst the QRA of an individual scenario/fault may show the risk to be acceptable, if a number of scenarios/faults impact on the same people, the overall cumulative risk may not be acceptable. Your QRAs must be adequately linked to assess overall risk. Finally, always remember a QRA is not a 'one-stop-shop'. A screening exercise using deterministic means is required to

DIFFERING ATTITUDES, DIFFERING SHADES OF WRONG!

BLEAK

(1980, Major Oil Company Representative):

"QRA is equivalent to counting the number of angels that can stand on the head of a pin. It can be concluded that risk analysis is likely to be a waste of time if applied to chemical processes"

BLAND

(1985, International Study Group on Risk Analysis):

"The whole analytical exercise might be considered to be objective. However, it must be realised that because of the large body of assumptions, estimates, judgements and opinions involved, much of the input information is often subjective"

BULLISH

(1993, Extract from Major Oil Company Risk Engineering Standard):

"QRA is a tool which helps translate hindsight (accidents) into foresight (planning) – showing ways and means (improved engineering, procedures and supervision) to prevent the calculated accidents from happening"

BLINKERED

"Our QRA result is below the risk tolerability criteria so we are OK"

NOT BOTHERED

"QRA gives us some numbers but does not significantly affect safety on the ground"



**EAST
ANGLIA**
**IN THE
BEGINNING...**

To begin at the beginning is a fairly smart thing to do – the start of our East Anglia spotlight therefore highlights the fact that the Scroby Sands windfarm (background image) was the undisputed first offshore wind farm to be constructed in the UK

What better way to open our East Anglia feature – the area and E.On, the developer, saw the potential and invested in the future.

EAST ANGLIA

Welcome to our second regional focus on East Anglia an *'area of excellence in the wind energy industry throughout Europe and beyond'*.

We again feature the region to show the remarkable progress the area has made since our first spotlight in the summer of 2011.

You will find elsewhere in this edition our lead industry article entitled "Collaboration – the name of the game" and nowhere demonstrates that ethos more than East Anglia.

We therefore visit and elaborate on the vast array of companies, associations and organisations who have invested in the area and are already reaping the well deserved rewards.



James Gray

EAST OF ENGLAND ENERGY ZONE OUR SPOTLIGHT SPONSORS

The East of England Energy Zone highlights the advantages of relocating to a region which has been the UK's leader in offshore energy for 50 years.

ATTRACTING INVESTMENT

The programme creates, cultivates and promotes the energy sector, helping to build momentum towards its ultimate goal of attracting £31 billion of investment to the region over the next eight years. The Zone also offers valuable business support and access to a well-established and experienced supply chain and workforce ideally located for the Southern North Sea. The East of England Energy Zone is backed by a unique partnership of local government and industry, which can fast track investors to the local supply chain, skills programmes and other support.

James Gray, Inward Investment Director for the East of England Energy Zone at the East of England Energy Group (EEEEGR), said: *"The East of England has led the offshore energy sector in England for 50 years and as a result has a wealth of experience and a sophisticated supply chain. We are the ideal location for businesses wishing to get involved in the huge offshore wind developments close to our coast.*

Competition for energy industry investment is fierce but we want to ensure that companies thinking of investing in the East of England Energy Zone are fully aware of the benefits that locating and operating in the area can bring."

EXPERIENCE

The understanding and experience already established in the region plays a pivotal role in attracting business to the east. The recent application for a proposed giant windfarm off the coast of Suffolk is proof enough that the East of England Energy Zone's offer to the offshore industry is of a global standard and has exceptional potential for growth.

EAST ANGLIA ONE

Known as East Anglia One this is the first of six phases to build out the massive 7200 megawatt East Anglia Array wind farm in development off the Norfolk / Suffolk coast.

It is anticipated that the East Anglia One development, will support up to 2,700 jobs during the construction phase, representing more than £170m for the UK economy for each year of construction.

"As you would expect there is massive interest in the development of this windfarm, one of the largest planned globally. We are talking to industry leaders from around the world who see the potential that our experience and prime location can offer" says James.

PORT FACILITIES

The East of England Energy Zone is home to a number of port facilities, with Great Yarmouth, Wells and Kings Lynn in Norfolk, plus Lowestoft and Ipswich in Suffolk, all offering easy access to offshore developments. From the Round 2 developments, including Dudgeon, Sheringham Shoal and Race Bank to the much larger East Anglia Array, Doggerbank and Hornsea Round 3 projects, the region has proved that both its location and expertise have created the perfect recipe for success from which it can continue to grow to meet new challenges.

Whilst the ports have flourished with the increase in offshore activity in the region, local businesses have also been given a boost given the increased demand for local goods and services, including construction, assembly, specialist recruitment, training and other services.

CONTINUED... >

CONTINUED... >

LEADING ENGLISH PORTS

Great Yarmouth and Lowestoft are England's leading offshore energy ports with 50 years operations and maintenance experience of supporting the offshore energy industry. These two ports are the closest deep water harbours to major wind farms in development off the East of England coast including East Anglia Array, Greater Gabbard, Race Bank, Sheringham Shoal and Dudgeon.

LOCATION

The favourable geography halfway between the Thames Estuary and the Humber, as well as more than 50 years' experience in operations in the Southern North Sea has seen the East of England evolve into one of the most diverse energy regions in the UK.

MAJOR ECONOMIC OPPORTUNITY

The energy sector is a major economic opportunity for the East of England businesses both within the UK and accessing projects across Europe, with pipeline projects showing potential sector investment in the region worth £31bn by 2020. Over 60% of the proposed opportunities are predicted to arise from offshore wind, with further projects identified in gas (£4.4bn), nuclear and decommissioning (£7.7bn) and power (£0.5bn).

Around 6,200 businesses are currently active in all energy sectors across the region including oil and gas, civil nuclear, wind and biomass, and they are responsible for a total annual turnover of £12.9 billion. Approximately 103,400 people are presently employed in the region, a figure that is set to increase with the new industry driven skills programme, Skills for Energy, hosted by EEEGR.

NEW ANGLIA LOCAL ENTERPRISE PARTNERSHIP

Within the East of England Energy Zone the New Anglia Local Enterprise Partnership has created an Enterprise Zone which focuses on growing energy-related business. The Enterprise Zone, which covers six sites in Great Yarmouth and Lowestoft, has already seen businesses, including the training company Nexus and global company Seajacks, take advantage of its range of attractive benefits. Discounted business rates, simplified planning and super-fast broadband are on offer for growing businesses and the successes deliver a powerful message about the potential and forecast investment in the region, with current predictions estimating that by 2020 the Energy Zone could be generating enough low carbon electricity to power every home in the region.

CENTRES FOR OFFSHORE RENEWABLE ENGINEERING (CORE)

The region has also been designated one of only six COREs in England by Government.

James said: "We have the experience which developers and contractors are looking for in our supply chain and workforce. Our ports have been at the forefront of supporting large UK Round 2 developments; Great Yarmouth's outer harbour has proven itself as a base for assembly and construction; Lowestoft is home to SSE's Operations Centre for the Greater Gabbard windfarm; while Wells is now home to SCIRA the Statoil – Statcraft Company which successfully developed and is running Sheringham Shoal. Now fully constructed and



operational, the 317MW Sheringham Shoal Offshore Windfarm located off the coast of North Norfolk comprises of 88 wind turbines generating enough energy on its own to power almost 220,000 homes. Another prime example of how businesses in the East of England Energy Zone are shaping the future of the energy industry.”

COLLABORATION

Business and political leaders in the region are taking an innovative approach to the development of the energy industry. The Norfolk Suffolk Energy Alliance (NSEA) is a unique partnership in the UK where the public sector is working across local boundaries with the private sector as part of a consortium.

James adds: “Our partnership means businesses can quickly access all the key organisations and influencers who can help businesses establish their operations as smoothly as possible. Our Offshore Energy Support Team is working with most of the industry leaders to provide the access, information and business introductions they need.”

SHOUTING ABOUT THE EAST OF ENGLAND ENERGY ZONE

An essential part of the work of the East of England Energy Zone’s (EEEZ) agenda is to actively attract more businesses, interest and investment to the region. And its proactive stance has seen its hard work already paying off in less than a year.

Since its launch in May 2012, there has been a drive to raise awareness of the EEEZ through continued communications and presence at events.

James Gray continued “Our main aim is to emphasise the world-class capabilities of our regional supply chain. We are doing this both by supporting our region’s businesses in supplying their exceptional skills and products and by getting in front of key players nationally and internationally to increase awareness, stimulate interest and generate leads.”

MARKETING PROGRAMME – NATIONAL AND INTERNATIONAL

And added, “We launched a marketing programme which is targeting the main players in the industry by attending key exhibitions, speaking at industry seminars and consistently placing articles and features in major industry publications. In the past 12 months representatives have attended key UK and European events including the RenewableUK Annual Conference and Exhibition in Glasgow and the European Wind Energy Association conferences and exhibitions in Amsterdam and Copenhagen.

“As a result of the marketing activity, we’ve gauged a serious interest from major companies in the sector and we are in direct talks with most, if not all, of the industry leaders. And 2013 promises to be just as busy. Plans are in place to visit more events including the EEEGR Southern North Sea Conference in Norwich in March, where leading international offshore energy leaders such as Alstom and Fred.Olsen will be speaking.”

FUTURE MARKETING ACTIVITY

EEEZ will also visit Offshore Energy in Aberdeen in May, RenewableUK in Manchester in June and the EWEA annual conference in Frankfurt in November.

“We are seeing companies coming to the region to tap into and join the supply chain which is very encouraging. Often this is through specific one-to-one meetings but also through ‘meet the buyer’ events. As an example, AREVA worked with us to set up an event for 80 delegates from the supply chain with a number of one-to-one meetings before and after the main session. I gather this has led to a number of new and re-invigorated working relationships. We have also been working with UKTI and a number of foreign embassies, hosting six delegations in the last six months and attracting global interest from international countries including China.”

EEEZ IN NUMBERS...

- Capital expenditure projected £50 billion
- Radius of all energy investment 70km
- Years of supply chain experience 50 years
- East Anglia Array size 7200 mw
- Total number of turbines projected - 200

East of England Zone
www.theenergyzone.co.uk

[Click to view more info](#)

- 1 Source: EEEGR
- 2 Source: <http://sd.defra.gov.uk/2010/03/low-carbon-revolution-in-the-east-of-england/>
- 3 Source: www.scira.co.uk

HARWICH INTERNATIONAL PORT A NATURAL GATEWAY TO EUROPE

Strategically located on the East Anglian coast, Harwich International Port is long-established as a natural gateway to Europe.

Now, building on those assets which have made it such a success in its traditional markets, the port is carving out a new role for itself, as one of Europe's leading facilities for the offshore wind industry.

Offering nine berths, totalling over 1,500 metres in length, the port is located in one of the UK's finest naturally protected harbours, offering fast lock-free access to the North Sea and beyond.

POTENTIAL

Within a port estate comprising over 260 acres, there is the potential for some 83 acres of land to be made available immediately to developers or manufacturers.

WIND ENERGY SECTOR

Commencing operations in this sector as the main installation base for the Gunfleet Sands Offshore Windfarm, the

port then operated in a similar role for both the Greater Gabbard and London Array projects, as well as providing facilities to craft involved in other offshore developments.

Within those projects supported to date, Harwich has played host to a wide range of jack-ups, cable vessels, barges and accommodation vessels, as well as diving and support craft of numerous types, operated by many of the foremost companies within the industry.

CONNECTIVITY

The port offers excellent connectivity, with quick access to the UK's trunk road network, and with direct freight and passenger rail connections into the port. There are also twice daily ferry services to

Rotterdam and Hoek van Holland, with a three times weekly service to Esbjerg, whilst all four major London airports lie within two and a half hours drive.

THE FUTURE

In a prime position to support forthcoming UK Round 2.5 and 3 projects, as well as those being developed by European neighbours, Harwich International Port looks forward to further cementing its position at the heart of the renewables industry.

Harwich International Port
www.harwich.co.uk



SNS 2013

THE SEA OF OPPORTUNITY

The Conference for Offshore Energy

Southern North Sea Conference

5th & 6th March 2013, Royal Norfolk Showground, Norwich

Book online at www.eeegr.com

Our biggest exhibition and conference so far

National and international delegates & speakers

Prime networking opportunities

EUROPEAN UNION
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DEVELOPING YOUR BUSINESS IN THE OFFSHORE WIND MARKET - BE INFORMED

In 2012 East Anglia's increasing importance to the UK's energy demand was highlighted by the final commissioning of Greater Gabbard and Sheringham Shoal. There was disappointment in seeing East Anglia One OWF construction pushed back from 2015 to 2017, London Array Phase 2 delayed and other projects across Europe postponed and even put on hold.

ACCURATE INFORMATION IS KEY

It is vital for developers and the whole supply chain to remain well informed with accurate, up to date, authoritative market intelligence, whether you are an established business or new entrant.

COMPLEXITY

The offshore wind market is highly complex and subject to change. This complexity increases as the scale of

Governments are concerned with keeping the lights on at reasonable cost, and meeting renewable energy targets. Developers are concerned with generating electricity profitably.

Changes to energy policy and financial incentives may affect profitability and alter developers project schedules especially if the changes were unforeseen.

Government policies, supply chain constraints, technologies, competition, developers, financial pressures, legislation changes and community concerns all affect a successful outcome.

CONSTANT MONITORING LEADS TO SUCCESSFUL DECISION MAKING

The offshore wind market is constantly changing affecting all businesses involved - so know your market and monitor it constantly.

4C Offshore is the leading source of independent, authoritative, accurate offshore wind, grid and supply

chain information continually updated to reflect global sector developments.

Subscribers stay ahead with strategic market intelligence to enable effective and successful decision making.

4C Offshore
www.4c offshore.com



DO SUCH DELAYS MEAN THE OPPORTUNITY IN EAST ANGLIA IS DRAWING TO A CLOSE?

Delays are not new. During the development of Round 1 and Round 2 in the UK, delays were common and significant. Causes for such delays included technical issues (such as grid connections), supply chain bottlenecks, finance, and policy changes by governments.

CHALLENGES

Moving forward developers are likely to experience setbacks when taking on the challenges involved with much larger projects further offshore.

such projects requires many international partners working collaboratively.

UNCERTAINTY

An example of delay was highlighted where the UK market stumbled due to the introduction of Electricity Market Reform (EMR) and changes to the Renewables Obligation scheme creating in part uncertainty regarding the return on investment for planned projects.

WE ARE NOT ALONE

Other countries face delays due to policy, technical constraints (grid connection) and in some cases where support mechanisms are insufficient to make the offshore developments viable.

KEEPING GREATER GABBARD SAFE

Hydrosphere UK Ltd's contract for the rental of six Cardinal buoys to mark Britain's largest windfarm, Greater Gabbard, has been extended again by Fluor Limited.

Fluor - the principal contractor for the Greater Gabbard Offshore Windfarm project - originally approached Hydrosphere in 2009 for the supply of temporary navigation lights to mark the site in its construction phase. This involved the installation of 140 3.6MW wind turbines located around two sand banks known as the 'Inner Gabbard' and 'The Galloper' in the North Sea off the Suffolk Coast.

Hydrosphere delivered a total of 174 Carmanah 601 and M650 solar powered marine navigation lights in the construction phase - these were used to mark the monopile foundations to ensure the site would be seen by shipping, making the site as safe as possible for marine traffic.

LED LANTERN

The Carmanah M650, an advanced, self contained, high-performance and low maintenance solar LED marine lantern, has proved to be highly reliable and extremely robust and is one of the most popular lights Hydrosphere supplies to windfarms.

INTEGRATED LIGHTS

Previously lights powered using solar panels needed a separate battery box, however, as both lights and solar panels have become more efficient it is now possible to incorporate the solar system within the light.

"Integrated lights are increasingly being used for windfarms," Andy Reid, Hydrosphere Director explained *"Their small size and lightweight construction makes them ideally suited for this sort of application as they can be put on smaller platforms. We've supplied many of these lights to windfarms across the UK."*



JET 9000 BUOYS

Impressed with Hydrosphere's track record, Fluor employed the company for the supply of six cardinal navigation buoys needed to mark the Greater Gabbard wind turbines. After undertaking a full site and design study to ensure that the buoys and mooring systems would be suitable for the stringent 100 year Ramboll weather study, the company recommended six JET 9000 buoys, which were installed in February 2009.

Reid explained the reason behind the choice: *"The JET 9000 buoys are manufactured by world-leading buoy manufacturer Mobilis and provide a really robust and cost-effective solution for offshore and deepwater applications, especially where high*

visibility is a must. As with all Mobilis buoys in the JET range, because they are constructed from UV stabilised polyethylene components these buoys really do withstand the elements and will retain their colour within IALA guidelines for more than 15 years."

AUTOMATIC SATELLITE MONITORING SYSTEM

Each of the buoys is fitted with an automatic satellite monitoring system designed by Vega which has greatly reduced the number of expensive onsite inspections required throughout the buoy rental. As well as monitoring parameters such as solar energy

in, power used, current in and out, lamp condition and the buoys' geographical location 24-hours a day – transmitted via regular status reports – the units also transmit emergency alerts in the event of a vessel colliding with the buoy or if the buoy drifts or is dragged out of position. Throughout the buoy rental period Hydrosphere has also carried out scheduled maintenance visits and the buoys are reported to be in good condition.



PARTS ACCESSIBILITY

Should the buoys require any replacements Hydrosphere has spare parts stored in Harwich, where a Trinity House vessel commissioned to undertake any necessary repairs is based. This has proved to be an efficient arrangement that has helped Fluor to comply with the 97% operating availability cycle as required by the General Lighthouse Authorities.

A Trinity House vessel will be used to remove the buoys and moorings at the end of the contract. As the Lighthouse Authority for England and Wales, Trinity House was commissioned by Hydrosphere as the most experienced organisation to carry out the installation, maintenance and lifting of large navigation buoys.

SHERINGHAM SHOAL BUOY RENTAL EXTENDED

SCIRA, the developer of Sheringham Shoal Offshore Wind Farm, have extended their rental of eight JET 9000 Q HV buoys from Hydrosphere.

Hydrosphere deployed the buoys with the Trinity House Vessel Galatea and have carried out full maintenance visits, again using Trinity House Vessel Galatea and were all found to be in very good condition with only slight wear on the moorings.

WIDESPREAD PROJECT EXPERIENCE

The company has supplied navigation lights and buoys for windfarms across the whole of the UK during both construction phase and through to the completed turbines. Projects worked on include Sheringham Shoal, Walney, North Hoyle, Scroby Sands, Kentish Flats, Burbo Bank, Robin Rigg, Lincs, and Strangford Lough.

Hydrosphere UK Ltd:
www.hydrosphere.co.uk

NEXUS DEVELOPING SKILLS FOR BUSINESS

A company created to provide engineering training for employees and school and college students, is the most recent organisation to move into the Great Yarmouth and Lowestoft Enterprise Zone, which is part of the East of England Energy Zone.

NEW ANGLIA LOCAL ENTERPRISE PARTNERSHIP

The Enterprise Zone has been developed by the New Anglia Local Enterprise Partnership which helps to grow jobs, and remove the barriers to business growth in Norfolk and Suffolk.

Based in brand new premises on Beacon Park, Great Yarmouth, Nexus provides high quality, professional training and resources to develop the skills that business need.



FACILITIES

This includes 3D CAD facilities, an energy/renewables laboratory, an advanced manufacturing workshop and training areas for electronic instrumentation, mechanical and electrical engineering, an ICT suite and classrooms.

Nexus Centre Manager, Keith Loveys said, *“Moving to the Enterprise Zone is really exciting, creating wide-ranging opportunities for us. We are surrounded by engineering and energy sector businesses in the East of England Energy Zone, which can benefit from what we have to offer.”*

COST SAVINGS

“With the Enterprise Zone’s business rates relief we can make significant cost savings to plough back into Nexus year after year.” Keith concluded.

Andy Wood, Chairman of New Anglia Local Enterprise Partnership said *“We’re delighted that Nexus has moved into new premises in the Enterprise Zone as the company will play a pivotal role in understanding and delivering the skills needed by the engineering and energy industries now, and in the future.”*

Nexus
www.nexus-engineering.org

EEEEGR

TO STAGE REGION'S BIGGEST ENERGY EVENT

A cast of leading international speakers is being lined up for the largest energy event ever to be staged in the East of England region.

SNS SEA OF OPPORTUNITY CONFERENCE

Up to 500 delegates and 82 exhibitors are expected at the SNS Sea of Opportunity Conference to be held by EEEGR (the East of England Energy Group) at the Norfolk Showground in March.

"Everyone knows about the vast potential of the energy sector in this region. Now, at EEEGR, we are doing everything possible to push those big opportunities right in front of local businesses which can benefit most," said Holly Harvey-Perdicou, EEEGR Events Manager. *"These are once-in-a-lifetime chances."*



"Each of our expert speakers will underline the dependence on a skilled workforce in this region and the major opportunities presented to companies in the energy supply chain here."

FORMAT

The two-day SNS (Southern North Sea) event will include the main conference, an afternoon Platform for Innovation session and a gala dinner sandwiched between the two.

INTERNATIONAL SPEAKERS

Topline speakers already lined up for the March 6th conference include Eddie Rae, Alstom's Global Supply Chain VP; Lee Clarke, General Manager of Forewind, the Dogger Bank wind farm developers; and Statoil Vice-President Halfdan Brustad.

"It will be a tremendous opportunity for supply chain members to hear first hand about the technological challenges facing the sector from experienced companies which have already learned many lessons but will need more assistance and innovate thought from this region as the sector continue to evolve," said Holly.

GALA DINNER AND SPECIAL ACHIEVEMENT AWARDS

Also on March 5th, the gala night will feature a key national industry speaker and the presentation of EEEGR's member of the year and special achievement awards. The annual Innovation Awards will now be held in tandem with the Summer Conference in July.

EUROPEAN REGIONAL DEVELOPMENT FUND (ERDF) SUPPORT

For one fee, delegates can attend working



SPONSORS

Also taking the stage will be key speakers from main sponsors Perenco and gold sponsors Claxton Engineering. Gee-Force Hydraulics are networking sponsors.

sessions on both SNS days, with the gala dinner priced separately. SNS2013 is supported by the European Regional Development Fund (ERDF).

EEEEGR
www.eeegr.com

DECC SUPPORT

The Platform for Industry sessions the previous day, supported by DECC, will focus on the technological challenges for oil & gas and windpower, speakers for the latter including Alan Mortimer, Scottish Power's Head of Renewables Policy; Jamie Mathlin, High Voltage Commissioning Manager for London Array; and SSE Renewables Commercial Manager Sid Anverali.

[Click to view more info](#)

COLLABORATION A VITAL INGREDIENT IN UNIVERSITY LIFE

As universities strive to produce employable graduates, it is becoming increasingly vital for educational and industrial partners to collaborate to ensure that students develop transferable engineering skills as well as hands-on commercial experience of the energy industry.

INDUSTRY LINKS

Students studying Energy Engineering at the University of East Anglia have gained several valuable skills through links with regional companies, for example learning risk assessment with Shell at Bacton Gas



Terminal, studying wind turbine planning with Windcrop and understanding the turbine installation process with Seajacks.

SEAJACKS

Seajacks operate several jack-up barges which transport, install and maintain off-shore wind turbines from their central base in Great Yarmouth. UEA students were invited aboard the docked Leviathan barge, gaining a unique insight into the wind energy industry without the risks and practical difficulties of an off-shore environment.

WIND ENERGY MARKET

Students were able to observe the safety culture and technical challenges of turbine maintenance, as engineers worked to re-fit the barge's facilities ahead of a new installation. The trip also supplemented students' technical knowledge with a wider appreciation of the wind energy market, as students discussed the commercial side of the business with company executives before exploring the bridge to gain greater appreciation of the specialised management and supervision



techniques required at sea. Seajacks MD Blair Anslie sees the UEA courses making a positive impact on the wind energy industry, saying "Because of the involvement of the industry from the outset in the design of the courses and support through their delivery, the results should be far more applicable to the industry's needs and what we need in the graduates that we employ."

More recently Seajacks has gone on to employ a student who originally attended the trip – proving the value of integrating strong industrial links at university level to secure the future of energy engineering in East Anglia.

University of East Anglia
www.uea.ac.uk/engineering



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EDEN ROSE MAKES MAIDEN PASSAGE TO WELLS-NEXT-THE-SEA

Eden Rose, one of Tidal Transit's growing fleet of purpose designed vessels for use by companies involved in the planning, development, construction and operation and maintenance of offshore windfarms in the Greater Wash and the Southern North Sea, made its maiden visit to the Outer Harbour at Wells-next-the-Sea in North Norfolk recently.

IMPORTANT STEP FORWARD

To the many people walking past the Outer Harbour on what was a beautiful winter's morning, this would have been no big deal, but it was in fact a very important step forward in the development of North Norfolk's renewable energy economy.

OUTER HARBOUR INVESTMENT

The tidal restrictions associated with Wells Harbour are well known, and the investment in the new Outer Harbour was made when Scira Offshore Energy chose Wells-next-the-Sea as its operations and maintenance base for the 88 turbine Sheringham Shoal Offshore Wind Farm, which was recently fully commissioned.

EDEN ROSE AND SCIRA

Eden Rose is currently on contract charter to Scira, a contract which was awarded because the vessel is able to remain at sea for up to four days, and can comfortably accommodate offshore technicians who need to be on site on a daily basis to undertake routine maintenance.

Tidal Transit Commercial Director Leo Hambro was delighted with Eden Rose's smooth passage up the channel to the Outer Harbour saying: "Our new generation vessels provide offshore windfarm developers and operators with greatly enhanced operational flexibility in comparison with the more traditional vessels. Being able to berth in Wells rather than Great Yarmouth is obviously far more convenient for Scira's maintenance schedules.

"However, the Outer Harbour's ability to receive vessels of this size should now encourage other Round 2 offshore wind farm developers to seriously consider North Norfolk as their on-shore base of operations, using Wells-next-the-Sea as the point of sea-going access."

Tidal Transit
www.tidal-transit.com

[Click to view more info](#)



LOCAL SUCCESS ON AN INTERNATIONAL SCALE

NWFTC (National Wind Farm Training Centres), leading UK wind farm training provider the first UK Company to gain GWO (Global Wind Organisation) Certification.

Headquartered in Colchester, but partnered with Lowestoft College, one of the UK's leading providers of training to the maritime and offshore industries, NWFTC recently achieved GWO accreditation for its training courses. The first for a UK owned and based company.

RECOGNITION

NWFTC are recognised within the industry as one of the leading providers of training to new and existing windfarm workers and offer specialist, customisable courses which meet the demands of the fast-growing offshore wind energy sector.



Recently inspected by independent auditor Det Norske Veritas, NWFTC received a glowing recommendation and were granted GWO (Global Wind Organisation) Certification for both of its state-of-the-art training facilities in Lowestoft and Barrow-in-Furness. This accreditation covers all 5 elements of the GWO Basic Safety Training standard and is an internationally recognised certification by all the major companies in the wind industry.

GWO

The GWO is a coalition of the world's leading wind players, including Siemens, Vestas and E.On, whose aim is to reduce the risks for employees on wind turbines by creating an international industry standard for training that all workers entering the industry have met.

Dan Smart, Training Director for NWFTC commented: "Already RenewableUK approved for some time, this new certification provides NWFTC with the ability to provide training courses with accreditation to meet any individual or company's training needs in one course, in one place, at one time. This new accreditation helps us to provide the very best and most up to date training solutions for both offshore and onshore windfarm workers."

NWFTC
www.nwftc.org

£110 BILLION OF INVESTMENT EXPECTED IN UK WATERS BY 2020

CENTRES FOR OFFSHORE RENEWABLE ENGINEERING - GREAT YARMOUTH AND LOWESTOFT

In England there are locations that have been awarded CORE status by the UK Government. CORE status is awarded through recognising the existing port infrastructure, skills and supply chain to enable rapid growth within the offshore wind sector.

CORE SITES

England has six CORE sites: these are the Great Yarmouth and Lowestoft, the Humber, the Kent, the Liverpool City Region, the North Eastern and the Tees Valley.

CORE areas provide...

- Excellent infrastructure and logistics
- Large amounts of available land for development including deep water access
- Skilled and available local workforce
- Experienced supply chain
- Easy access to Round 1, 2 and 3 offshore windfarms
- Extensive business support available
- Local government support providing free location finding services and assistance on skills, premises and grant funding applications

THE GREAT YARMOUTH AND LOWESTOFT CORE

Great Yarmouth and Lowestoft together form the primary focus of the East of England Energy Zone – one of the world's largest and most diverse clusters of energy businesses. The East of England Energy Zone is the all energy location. With 50 years' experience in offshore and marine operations in the Southern North Sea, the two towns, plus other key assets in the East of England, are home to an energy industry that spans all sectors with a well-established and sizeable supply chain and workforce.

UNRIVALLED SKILLS AND CAPABILITY

Around 6,200 businesses are currently active in the region from all energy sectors including oil and gas, civil nuclear, wind and biomass, and between them are responsible for a total annual turnover of £12.9 billion and the employment of approximately 103,400 people.

IDEAL PORT FACILITIES

Two ports (Great Yarmouth and Lowestoft) with complementary facilities – England's leading ports, supporting the offshore energy sector in the Southern North Sea for 50 years, and which are the closest deep-water ports to the East Anglia Array wind farm, a 7,200 MW, 1,200 turbine development – only 44km from the East Anglia coast. Commercial premises and port related land with quayside infrastructure with Enterprise Zone status providing up to £0.275 million per business in rate relief, plus other advantages.

Other port facilities in Norfolk and Suffolk, also active in supporting the energy sector – Wells, Kings Lynn and Ipswich – plus Harwich in Essex which strengthen the offer.

THE PERFECT LOCATION

The two towns are the closest ports to over £50 billion of capital expenditure to be invested in offshore wind, oil and gas exploration and extraction, nuclear (new build and decommissioning), gas storage and platform decommissioning over the next 20 years.

Easy access to the Round 3 Homsea and Dogger Bank developments and many Round 2 developments.

INCUBATION FACILITIES

Dedicated innovation, incubation and high-specification office facilities for the energy sector supporting new business and investors to establish a footprint in the East of England Energy Zone. Beacon Innovation Centre in Great Yarmouth, and OrbisEnergy in Lowestoft at Britain's most easterly point, offer companies flexible tenancies and fully serviced accommodation.

COMMITMENT TO SUPPORT THE SECTOR

- Norfolk and Suffolk Energy Alliance – political and business community commitment
- New Anglia Local Enterprise Partnership
- Offshore Energy Support Team – offers a dedicated "soft landing" package
- East of England Energy Group – a dedicated energy industry trade association through which to reach experienced supply chain partners

New Anglia Local Enterprise Partnership

www.newanglia.co.uk

EAST ANGLIA THE POWERHOUSE FOR AN OFFSHORE REVOLUTION

Johnathan Reynolds is the business development lead for Suffolk's flagship innovation centre OrbisEnergy and director of energy firm Nautilus Associates. He explains how OrbisEnergy is helping to develop the renewable energy supply chain.



THE WORLD'S LARGEST MARKET FOR OFFSHORE WIND

Norfolk and Suffolk are at the centre of the world's largest market for offshore wind. There is around £30bn of planned investment in new energy projects in the region by 2020. The world's largest offshore wind farm, London Array, is nearing completion. Then there will be a thousand-plus wind turbines in another major project: the East Anglia Offshore Windfarm.

It's huge; in just one geographic area it's one and a half times the size of Suffolk. We're looking at a market that's tens of thousands of offshore wind turbines, and then there are the foundations, cables, substations, vessels and longer term asset management, operations and maintenance opportunities.

Offshore oil and gas is still big business in the region too, with more than £44bn of new investment in gas exploration, production and storage projects across the UK. There are plans for CO² storage in the Southern North Sea; and onshore there are the nuclear power station developments. Nowhere in the UK has a broader energy mix or provides as much business potential as Norfolk and Suffolk. Nowhere offers more opportunities for diversification across the energy and engineering sectors than East Anglia.

It's well worth remembering that it's not just the specialist energy sector companies who stand to benefit. They'll need a supply chain of local companies providing manufacturing, design, engineering, operations and maintenance capabilities. And they'll need a wider supply chain made of a huge range of supporting services, from financial and legal advice to catering. These companies will need support as they grow to meet the business demand, and that's where OrbisEnergy can help to develop the full value chain.

ORBISENERGY: DEVELOPING THE SUPPLY CHAIN FOR OFFSHORE RENEWABLE ENERGY

OrbisEnergy is the national innovation and incubation centre for offshore renewables based in Lowestoft. It's owned by Suffolk County Council and managed by enterprise specialists NWES. Its main purpose is to help regional businesses join the energy supply chain and take advantage of the rapid development of offshore renewables in the North Sea. It offers companies access to high-spec office suites supported by dedicated support from industry professionals, plus the opportunity to get involved in a range of leading research and development programmes.

OrbisEnergy plays a major role in ensuring all the links in the supply chain have access to this fast growing industry, helping to build partnerships and commercial links among suppliers, contractors, engineers, manufacturers and research centres.

CONTINUED... >

CONTINUED... >

SUPPORTING THE WIDER SUPPLY CHAIN

The supply chain spreads much wider than most of us realise. There are opportunities to provide a huge range of services to the energy sector, not just specialist technical services. These companies all need support, whether it's finance, personnel, marketing, IT, contracting, procurement, or legal advice. And then there's the indirect supply chain providing services such as office supplies, bed-and-breakfast, hoteliers, caterers, taxi firms, and many more; they're all needed to make the whole supply chain work.

At OrbisEnergy we've developed an energy supply chain strategy for Norfolk and Suffolk, working with the New Anglia Local Enterprise Partnership, EEEGR, and public sector bodies. A great deal of research went into our strategy, including development of a database of 9000 companies across the region. It's enabled us to assess our region's key strengths, looking right across the supply chain and the regional economy. We can take an informed view of how we develop new programmes, how we direct new investment and where we target our support.

We're finding through our supply chain development endeavours that most people weren't aware of the opportunities for them. They're quite stunned; they say: *"I didn't know that all this was going*

on, here on my doorstep; how can my company get involved?" And some companies worry that they'll be too small to supply to major contractors, but we show them that there are ways and we can help them to win that business.

THREE APPROACHES TO DEVELOP THE SUPPLY CHAIN

The OrbisEnergy team is focusing on three complementary approaches to develop our supply chain...

- Supporting businesses that have already secured opportunities within the sector, and building on these strengths, but at the same time working with their direct supply chain to encourage growth
- Engaging with businesses who have the necessary capabilities and are planning to enter the market, helping them to understand the industry
- Exploring opportunities for companies who are currently unaware of the sector, matching gaps in the supply chain to the capabilities of businesses

We're helping companies to achieve growth in a sustainable way, understanding when and how to build their capability and capacity to win business from the major projects, whether they are supplying directly or indirectly to the supply chain. We're helping them to identify where they fit in the supply chain, because it's not always clear; it's vital to understand that. We're helping them to understand the different culture in different



FROM SLP ENGINEERING TO SEMBMARINE SLP

Sembmarine SLP (formerly known as SLP Engineering), having its facilities strategically based in Lowestoft, have been involved in the energy business since 1967, following the discovery of offshore gas near Bacton by BP in 1965.

HISTORY

Initially formed by the Howard Doris Group as Sea & Land Pipelines Ltd, and having since been acquired by several internationally based companies, SLP emerged from a short period of administration in 2010 to become part of the Dutch company - Smulders Group.

In October 2012 through a management buyout agreement backed by Singapore based company Sembcorp, SLP Engineering became Sembmarine

SLP Ltd, part of the multibillion pound Sembcorp Group of companies.

COMPLETED PROJECTS

With its strong track record and long history in offshore engineering, construction and EPC contracting, SLP first entered the renewable energy industry through the inclusion of micro wind turbines placed onboard unmanned Oil & Gas Platforms, supplying backup power generation for control systems.

CELTIC OFFSHORE WINDS' RHYL FLATS

In 2002, the company fabricated its first offshore Metrological Metering Station for Celtic Offshore Winds' Rhyll Flats project, followed by two similar structures for SHELL in the same year.

NESS POINT 2.6MW TURBINE – "GULLIVER"

During 2004, SLP designed and installed the onshore Ness Point 2.6mw turbine – "Gulliver" which at the time was the largest wind turbine in the UK.

SCROBY SANDS OFFSHORE WIND FARM

In addition engineering support for the installation of the Scroby Sands offshore windfarm development was provided.

FURTHER SUCCESSFULLY COMPLETED PROJECTS INCLUDE...

- Metrological Metering Stations for Centrica's Docking Shoal
- Electrical Substation topsides & Jacket for Siemens' Thanet project
- Substation jacket for Thornton Bank project

parts of the industry – for example, oil and gas companies work very differently from offshore wind developers. And even within offshore wind, different companies have different contracting strategies and are looking for different types of supplier relationship. And we're bringing companies together to take advantage of shared opportunities, perhaps where there are complementary skills or where an opportunity is too big for a single SME.

We're helping companies to understand how the dynamics of the supply chain are changing. "Customers" and "suppliers" are becoming interchangeable terms, because many companies are finding that their customers are their suppliers for something else. It's no longer a linear relationship; it's multi-lateral. It's about having a strong trusted relationship, so that the parties understand who does what, what we supply each other, how we operate, our standards, our ethos, our culture. All of that is crucial if we are going to build solid relationships for the long term.

The major companies are definitely looking for long-term supplier relationships. They're telling us that they are prepared to invest time and effort into building relationships before they award contracts because they want the confidence that the companies they're working with are robust, have credibility, and are the right sort of companies that aren't going to fail.

We're also facilitating dialogue between developers, government and SMEs, to give the best information we can about the

major project and investment timescales. We don't have all the answers, but we can provide the basis for making informed plans for investment in growth. We know roughly within a three to six month period when major project decisions or milestones are likely to happen. Things might change; project timescales might change; but we can reduce the uncertainty that holds people back.

STATE-OF-THE-ART FACILITIES FOR CONFERENCES AND TENANTS

OrbisEnergy has a state-of-the-art conference centre, where we invite major international companies such as the French giant Areva to meet local businesses and find out about the region's capabilities. It's an ideal opportunity for local suppliers already in the supply chain (or wanting to join) to investigate face-to-face what the industry requires and how they can access those projects.

As well as the conference facilities, OrbisEnergy is a specialist innovation and incubation centre, primarily for offshore renewable energy - offshore wind, wave and tidal – and supporting services. Our 'anchor' tenants include two major energy companies: SSE Renewables and East Anglia Offshore Wind. We are attracting lots of companies to gravitate towards Lowestoft and OrbisEnergy, to be part of – and next door to – some of the major players. Some tenants are start-ups; and some companies are providing direct and indirect support to the supply chain. Cooper Lomaz, the recruitment company, has recently moved in. Their Operations

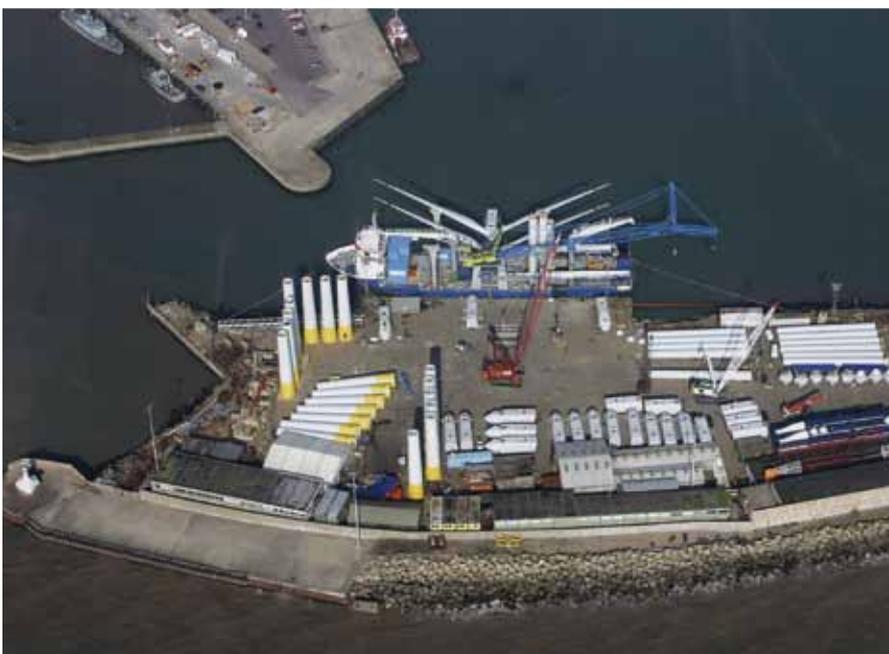
Manager Mark Fletcher says: *"All the big operators have offices in the Orbis Centre. It is the place to be for anything related to the energy industry."*

A LONG-TERM BUSINESS OPPORTUNITY THAT'S GLOBAL

While there are significant business prospects for construction and installation, the long-term opportunities will be around operations, maintenance and asset management of the windfarms; that's the 20 to 25 year business after a windfarm is installed. The region is ideally positioned for longer term operations and maintenance, building on many years' experience of the oil and gas industry off the East Anglian coast.

This is not just a local opportunity. It is a global business; there are global opportunities for companies based in our region. We're here to help them to maximise their growth potential, with our partners EEEGR (East of England Energy Group) and New Anglia Local Enterprise Partnership, supported by the local authorities across Suffolk and Norfolk. It's our ambition to drive growth and to bring wealth and job creation opportunities to the region for the next twenty years; and we can also service a global market from Suffolk. We're already starting to realise that ambition.

Johnathan Reynolds
OrbisEnergy Centre
www.orbisenergy.net



FUTURE OFFSHORE WIND PROJECTS:

Having its fabrication facilities situated at Hamilton Dock which has open access to the North Sea, Sembmarine SLP with its experienced local work force, now in excess of 250 personnel, continues to generate inquiries from International and UK offshore wind developers.

With solid experience in offshore engineering, the company is in a prime position to support the planned East Anglia offshore wind projects.

Sembmarine SLP
www.slp-eng.com

[Click to view more info](#)

A WIND OF CHANGE

The demand for specialised diesel engineers has always been high in the East Anglia area. Farming, fishing, oil and gas all have a heavy presence in the region. Recently though there has quite literally been a wind of change.

A dirty engine room filled with the smell of the days catch has been replaced by the spotless engine rooms of today's ultramodern wind farm support vessels (WFSV's).

EXPERTISE

East Coast Diesel has repaired diesel engines in the marine, industrial and plant sectors for over two decades. Trained by leading engine manufacturers such as CAT, MAN & Scania, the engineers are highly skilled in a demanding industry. Relocation to the Richards Dry Dock facility in 2010 further increased the ability to service marine engines.

NEW ENGINE TEST HOUSE

In 2012, a brand new engine test house was officially opened. With two test bays, diagnostic tests can be carried out on engines up to 1000bhp and 2000bhp simultaneously. 'Dyno-testing' enables highly accurate performance tuning. It also detects engine faults that may not be apparent and the importance of testing should not be underestimated. Should an engine fail, especially at sea, downtime can be incredibly disruptive and expensive.

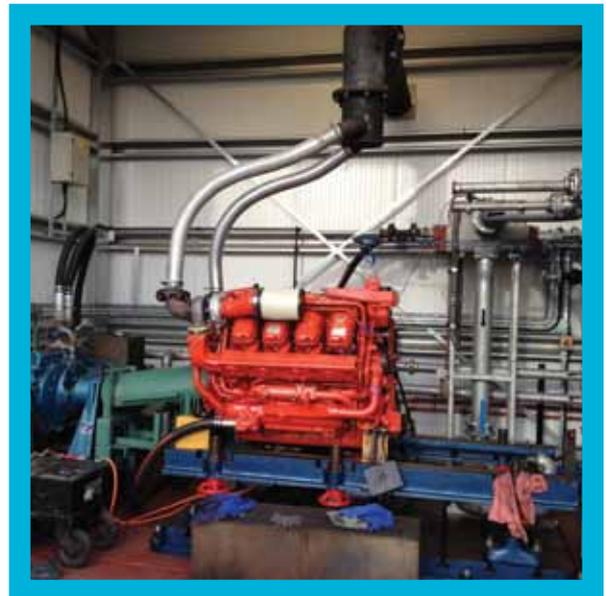
RE-DEVELOPMENT

Richards Dry Dock has just undergone a major facelift, redeveloping the old dry dock into a state of the art wet dock with a 200 tonne travel lift, meaning no tidal restrictions and enabling the ability to service many boats simultaneously. However, wind farms such as Scroby Sands, East Anglia, London Array, Sheringham Shoal, Lincs & the Humber Gateway are easily accessible and with a fleet of fully equipped service vehicles most work can be carried out in situ.

EXCITING TIMES

With so many wind farms in close proximity, exciting times lie ahead for the area. With further plans for the facility in the pipeline, East Anglia truly has a boat building and repair facility to match anywhere in the country.

East Coast Diesel
www.eastcoastdiesel.com



www.harwich.co.uk

Efficient Flexible Diverse

Harwich International Port is renowned for its excellent roll on roll off and passenger services and is also well established as one of the UK's leading break-bulk and project cargo facilities.

Located in one of the country's foremost naturally sheltered harbours, with excellent rail and road connections, the Port offers lock-free access to the North Sea, from the East Anglian coast.

From established cargoes to the new spheres of renewable energy, where it has acted as a main installation port for the Gunfleet Sands, Greater Gabbard and London Array Offshore Wind Farms, make Harwich International Port your port of call.

Harwich International Port
A member of the Huctisson Port Holdings Group

SCIRA OFFSHORE ENERGY AWARDS CONTRACT TO NORFOLK BASED ENERGY SERVICES COMPANY

Scira Offshore Energy has awarded a new contract for the provision of a range of support services for its £1bn Sheringham Shoal Offshore Wind Farm off the coast of North Norfolk, to a local energy services company GEV Offshore Limited.

GREAT YARMOUTH BASE

From its base in Great Yarmouth, GEV Offshore will provide rope access led fabric maintenance services, and under a separate award, provide lifting operations support to Scira, which operates 88 turbines and 2 substations at its recently commissioned offshore site.

GROWTH PLANS

GEV Offshore continues to enhance its presence in the East of England, further underpinning its support for the local economy and employment in the region. It is currently identifying new head office premises to accommodate its growth plans, and has made a significant

solution for wind turbine corrosion issues. The specialist coating is completely non-harmful, 100% recyclable and offers protection for in excess of 15 years.

SCIRA CONTRACT

David Fletcher, Managing Director of GEV Offshore, said: *"This 3-year contract strengthens GEV Offshore's presence in the growing renewables sector, which is projected to represent nearly 50% of our company's turnover in 2013.*

"We were delighted to secure this contract having successfully worked on the field during the construction phase. We also welcome the commitment shown by Scira in awarding the work to local companies and helping to create local jobs. We are planning to recruit additional technicians and fill a number of administrative roles from the local labour market to support this contract and this is good news for the region."

VERSATILITY

GEV Offshore employs more than 60 staff on and offshore in the UK and is recognised as one of the leading energy service companies working in the Southern North Sea. It will provide a full range of fabric maintenance services including work using rope access techniques, for the offshore wind turbines and substations and the onshore substation at Salle, near Cawston. It will also provide lifting operations support for the ongoing maintenance of the substation cranes and supply expert personnel to perform lifting operations.

Scira Contract Manager, Colin Galer commented: *"GEV has been associated with the project from an early stage, supplying crane operations maintenance and support and, as we move into the operations and maintenance phase, I am keen that we build on the excellent relationship we have with the GEV team."*



Scira's Colin Galer flanked by GEV Offshore's Managing Director David Fletcher, left and GEV Offshore's Operations Director Brandon Hannon, right.

Scira's General Manager Einar Strømsvåg said: *"Now that the construction of the Sheringham Shoal wind farm is complete, and Scira has assumed full responsibility for its operation and maintenance, we need to ensure that we establish a supply chain which can support the technical integrity of our wind farm. Wherever possible, we want local companies to be the foundation of that chain. GEV Offshore fulfills the criteria."*

investment in dedicated 'working at height' training facilities at its Great Yarmouth base.

INNOVATIVE ANTI-CORROSION COATING

It has also invested in its local presence at the prestigious Hethel Engineering Centre, to which it has re-located its Oxifree anti-corrosion coatings business. The company owns the sole UK rights for this innovative anti-corrosion coating, which has been identified by leading offshore wind farm operators, including Scira, as a potential

GEV Offshore

www.gevoffshore.com

Scira

www.scira.co.uk

MANTSBRITE LAUNCHES ULTRASONIC WIND SENSORS

Precise assessment of the wind speed and direction is integral to an accurate weather forecast, which will always be of great importance to the marine industry. Any instrument that can deliver this information reliably will take the guesswork out of a potentially life-threatening situation.

DEALERSHIP NETWORK

Through its 175 strong dealer network in the UK and Ireland, Mantsbrite is a leading supplier of high specification electronic equipment to all sectors of the marine market - leisure, fishing and commercial.



Ultrasonic wind sensors in situ

EXCLUSIVE DISTRIBUTION AGREEMENT

In a move which will further enhance the range of sophisticated instrumentation which it supplies to its dealers, the company has negotiated an exclusive distribution agreement for a range of 2-axis ultrasonic wind sensors from the French manufacturer, LCJ Capteurs. LCJ Capteurs is well-respected in the field of European marine electronics, (the same team was behind the successful range of MLR GPS from the 1990s) and is currently producing its 4th generation ultrasonic wind vanes and anemometers for marine use.

ULTRASONIC WIND SENSOR ADVANTAGES

Mantsbrite's Managing Director David Ash believes ultrasonic wind sensors are an exciting addition to the company's range of products, saying: "The main advantages of ultrasonic wind sensors are two-fold. There are no moving parts to wear out and the performance will not degrade over time unlike conventional anemometers where bearings wear and eventually fail, giving inaccurate wind information. Wind speed resolution is superb at 0.1 knot and the sensitivity range is 0.25 to 80 knots on the CV7. The LCJ Capteurs Ultrasonic wind sensors are available in a variety of configurations to suit most applications, and have a variety of data outputs such as NMEA 0183 & NMEA 2000. They are also compatible with the range of equipment produced by other popular manufacturers such as Raymarine and B&G, meaning that they can be used to replace existing anemometers."

MANUFACTURER REPUTATION

David continued, "These are high quality instruments, robust, compact, light and energy efficient, whilst being manufactured at competitive prices. The reputation of the manufacturer and the reliability of the instruments are known globally, and we are proud to add LCJ Capteurs' Ultrasonic wind sensors to our existing range of equipment from an already impressive list of equipment from major manufacturers."

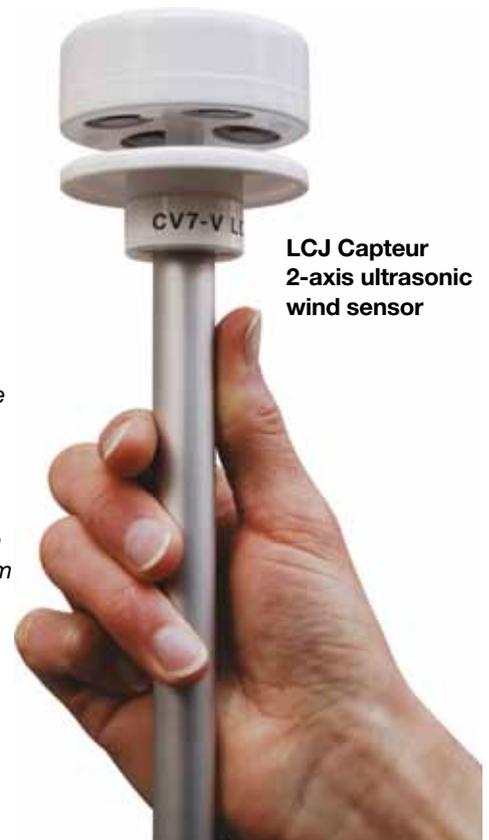
OFFSHORE WIND ENERGY SECTOR

Adding, "The burgeoning offshore wind energy sector, particularly along the UK's eastern coastline, is creating an increasing demand for vessels to service both the construction and maintenance stages of these new wind farms. Mantsbrite and its dealers are

experiencing a growing demand for sophisticated navigational equipment and instrumentation from a wide spectrum of boat builders, which are continuing to step-up their production to meet the ever-increasing needs of this expanding industry."

And he concluded, "I don't think it will be long before ultrasonic wind sensors are a standard fixture on vessels being used in many sectors of the marine industry."

Mantsbrite
www.mantsbrite.com



LCJ Capteur
2-axis ultrasonic
wind sensor

Providing specialist engine support to East Anglia's premier workboat repair facility.
Richards Dry Dock, Great Yarmouth



Tel - 01493 659269. sales@eastcoastdiesel.com

EAST COAST DIESEL
Diesel Engine Repair Specialists

- 24 hr emergency assistance
- Complete overhaul, service & repairs
- Dyno testing onsite up to 2000bhp
- Parts shipped worldwide

NORTH NORFOLK ACTS TO GAIN ECONOMIC BENEFITS FROM COASTAL ENERGY

of the North Norfolk coast, which has a unique coastal landscape and is a highly popular tourist destination.

LOCAL DEVELOPMENT ORDER (LDO)

The District Council, supported by the North Norfolk Renewables Group partners has proposed the establishment of a LDO to offer a simplified planning regime at Egmere, as this would help to create a focus for development associated with the offshore wind energy sector. North Norfolk District Council is now intending to undertake public consultation on the proposed LDO during the early months of 2013.

THE NORTH NORFOLK BUSINESS FORUM (NNBF)

The NNBF is a Community Interest Company which champions the interests of North Norfolk's many businesses, mainly SMEs and micro-businesses, and Chairman Ian Doughty believes the LDO will help encourage the continuing development of the local coastal energy supply chain, saying, *"We have worked closely with Scira Offshore Energy over the last 5 years, helping to set up Supplier Days and producing the Sheringham Shoal Supplier Directory, and we are very pleased that there are now many local businesses which have contracts and supply agreements with Scira."*



Courtesy of CHP, supplied by Scira Offshore Energy

The private and public sectors have come together in North Norfolk to co-ordinate the opportunities presented for inward investment, employment and the development of the local supply chain through the development of further large offshore wind energy projects off the coast of North Norfolk.

THE NORTH NORFOLK RENEWABLES GROUP – WORKING TOGETHER TO PROMOTE THE AREA

By working together under the umbrella of the North Norfolk Renewables Group, North Norfolk District Council, Wells Harbour Commissioners and the Holkham and Walsingham Estates are seeking to promote the area as a location for investor development.

With two further offshore wind farms consented in the coastal waters of the southern North Sea- i.e the Dudgeon and Race Bank schemes, the environs of Wells-next-the-Sea are particularly suitable for supporting early project work, such as surveys and environmental assessments,

on-going project management during the construction phase and as a permanent base for the long term operation and maintenance phases of these developments.

SHERINGHAM SHOAL OFFSHORE WIND FARM

The success of the model used by Scira Offshore Energy Limited in constructing its 88 turbine Sheringham Shoal Offshore Wind Farm and developing its operation and maintenance centre at Egmere, some 3 miles south of Wells-next-the-Sea has encouraged the North Norfolk Renewables Group to come together in seeking to support other potential operators to invest in the area in support of their offshore investments.

PARTNERSHIP

The partners believe that by working together a co-ordinated response can be provided to inward investment enquiries for sites and premises, which seek to secure the benefits of new job-creating investment by offshore wind companies, whilst respecting the sensitive environment

"Through its Coastal Energy and Marine Engineering forums, NNBF will be able to support and encourage the businesses which the North Norfolk Renewables Group attracts to the locality with a wide range of initiatives."

Leader of North Norfolk District Council Cllr Tom Fitzpatrick said, *"Whilst attending a renewable energy conference recently, I was pleased to find that a number of delegates had an understanding of North Norfolk's growing involvement in offshore wind in the Greater Wash and the Southern North Sea. We now need to build on that understanding to attract businesses in the renewable energy supply chain to the district, and believe that the positive identification of land to accommodate such investment, supported by a Local Development Order, is a demonstration of our commitment in attracting new jobs and investment into North Norfolk and diversifying the local economy."*

North Norfolk Renewables Group
www.northnorfolk.org

NEW BUSINESS BOOSTS IVB TURNOVER

Significant new contracts have boosted fledgling East of England company Inspection Verification Bureau Ltd (IVB).

Launched less than two years ago but led by a small team with combined experience of more than 100 years, the latest business will allow the Norfolk-based business to hit its annual growth target of 20% on turnover on current turnover of £2m.

ONLINE RESPONSE

"It has also given us tremendous momentum for future years," said Inspection Manager, Matt Chapman. *"We're getting lots of good enquiries, more than half of them directly through our website."*

GLOBAL SUPPORT

IVB offers global support with inspection and verification for the oil, gas and renewables sector and latest contracts include work for Rossi Long, ODE, National Oilwell Varco and Petrofac.

"We're delighted with the new website created for us by TMS Media and more than half our enquiries come directly from that source," said Matt.

"Interest is coming in from all over the world and around 80-85% of our income is from overseas. But we are working hard to boost UK trade as well."

EAST ANGLIA OFFSHORE WIND (EAOW)

Among the new contracts is inspection services work with international engineering contractor ODE in Great Yarmouth to support EAOW, a joint venture between Scottish Power Renewables (SPR) and Vattenfall Wind Power Limited to develop a windfarm off the East Anglia coast.

IVB will continue to support ODE with third party inspection at vendor sites around the UK ensuring onsite compliance with client procedures, inspection test plans and other mandatory requirements.

OTHER PROJECTS

The company will also work with ODE's Kingston-Upon-Thames office on the Solan Toppides project providing vendor inspection services. The Solan oil field lies

west of the Shetland Islands in 135m deep waters.



For Norwich-based Rossi Long, IVB is helping with structural design calculations and fatigue analysis for Oceaneering Ltd, Knightsbridge Project clump weights to be used in the North Sea. Made with a mixture of magnetite the large clump weights were constructed with a unique tether attachment designed for stability and ease of access for offshore vessels.

Inspection Verification Bureau Ltd
www.ivbltd.co.uk

EXPERT EVIDENCE FEWCOTT WIND FARM PUBLIC INQUIRY

Suffolk based Pager Power provides worldwide planning solutions for radar interference, radio links, airport obstructions and wind turbines. Mike Watson, company founder, recently gave evidence to a Public Inquiry in Banbury for discharging radar and aviation planning conditions relating to the Fewcott wind farm's impact on the Primary Surveillance Radar at Oxford Airport.

RADAR ISSUES

Wind Turbines can interfere with airport radar systems causing clutter on airport radar screens. Many UK wind developments are prevented or delayed every year because of the wind farm radar issue, although a number of mitigation solutions are available. There are, however, many examples of wind turbines and radar co-existing safely in the United Kingdom – for instance there are two wind turbines at East Midlands Airport.

FEWCOTT WIND FARM

The Fewcott wind farm, which has planning consent, is to consist of four 125 metre wind turbines and will be situated 15km northeast of the airport. The company then evaluated a number of radar mitigation solutions and identified three that were most appropriate - namely employment of a Transponder Mandatory Zone in the airspace above, Radar Blanking or implementation of a Non-Auto Initiation Zone.



TRANSPONDER MANDATORY ZONES

Transponder Mandatory Zones are established to prevent aircraft without transponders (a device that replies to interrogations from Secondary Surveillance radar) entering designated airspace. Radar Blanking prevents wind turbines affecting radar screens but, also prevents display of wanted returns from aircraft in the immediate vicinity of the blanked area. Non-Auto Initiation Zones allow the radar to display aircraft over the wind farm whilst not showing wind turbine returns – these zones can be quite effective for mitigating smaller wind farms.

TECHNICAL ASSESSMENTS

Pager Power determined the extent to which the radar would be affected using its custom online software. These technical assessments can be delivered in as little as eight hours and are complemented by support and consultancy services.

Pager Power Limited
www.pagerpower.co.uk

[Click to view more info](#)

[Click to view video](#)

SURVITEC EXTENDS SERVICE OFFERING TO WIND INDUSTRY

Survitec Group has expanded its range of products and services for East Anglia's growing wind industry to include the supply and installation of Capital Safety's power assisted climbing system. As well as being an approved installer, Survitec is also qualified to train offshore engineers in how to use the system.

REDUCED WORKER FATIGUE

Designed for use in conjunction with a ladder safety system, the Powered Climb Assist System provides weight relief to reduce worker fatigue. It adjusts to a wide range of climbing styles and user weights to provide effortless ascent and descent. It comprises top and bottom pulley assemblies, which are fixed to the ladder, a wire cable, wire cable grip and a motor control and cable tensioning unit.

of both critical safety equipment and lifting equipment for the marine, industrial and offshore markets, the company has found itself uniquely placed to supply essential products and services into this rapidly expanding market.

Many of their customers now include major energy companies, large infrastructure contractors, specialist engineering businesses and workboat operators that provide crew transfer services to the offshore wind industry. Survitec supplies and services immersion suits, lifejackets, Personal Locator Beacons (PLB), life-rafts, MOB systems, pyrotechnics, buoys, lights, fibre and wire rope used by crew transfer vessels and offshore engineers.

APPROVED INSTALLER

In addition to the Powered Climb Assist System, Survitec is an approved installer for Capital Safety's Uniline fixed fall protection and rescue systems. The company is also qualified to carry out inspection and testing services on the different types of lifting equipment used offshore, from cranes and hoists to terminal davits. Through life asset management solutions can be set up to track inventory and provide online certification services, ensuring equipment is always fully compliant with the relevant legislation.

OFFSHORE WIND MARKET

Survitec's Lifting & Height Safety Key Account Manager Mandy Easter explained: *"We have seen sales in the offshore wind farm market grow strongly over the last 12 months. East Anglia is playing an increasingly important role in the UK's renewable energy market and we are determined to provide the critical safety products and services necessary to keep people safe while working in a hostile and demanding offshore environment."*

LOWESTOFT SERVICE AND DISTRIBUTION CENTRE

The East Anglian wind farm business is managed through Survitec's Lowestoft service and distribution centre which was recently audited and verified as an approved supplier on the Achilles UVDB supplier management service. This industry-wide scheme provides information to the major utility companies' procurement teams in advance of issuing tender opportunities.

Survitec Group
www.survitecgroup.com



POWERED CLIMB ASSIST SYSTEM

Capital Safety's DBI-SALA branded Powered Climb Assist System is ideally suited to extremely tall structures like wind turbines, which often have a fixed ladder installed inside the tower instead of a lift. Climbing the ladder several times in a single shift can be extremely tiring for maintenance engineers.

TRIALING THE SYSTEM

Survitec's wind energy relevant team members are trained and qualified experts in the system, and in other rescue and evacuation systems, so that they can provide clients with the prerequisite training. As a result, Survitec has been given access to Capital Safety's dedicated wind turbine training facility. This will allow clients to trial the systems before placing an order.

BUSINESS GROWTH

In East Anglia, Survitec's offshore wind energy business has grown by over 20% in just 12 months. As a leading provider

COMPANY SECURES ALMOST £2.3 MILLION FROM GROWING PLACES FUND

AN ENGINEERING FIRM HAS SECURED £2.28 MILLION TO DELIVER NEW JOBS FOR HARWICH AND RESPOND TO SIGNIFICANT OPPORTUNITIES IN THE OFFSHORE WIND SECTOR.

AJ WOODS ENGINEERING

AJ Woods Engineering, which is based in the town, is to receive the money from the 'Growing Places Fund' following a successful bid to the South East Local Enterprise Partnership (SELEP) - a business-led body focusing on economic growth in East Sussex, Essex and Kent.

INVESTMENT

The loan obtained from the SELEP with support from Essex County Council, Tendring District Council and the Haven Gateway Partnership, will support a comprehensively planned programme of investment in new facilities at Harwich to meet the needs of companies operating in the offshore renewable industry.

WIND ENERGY SECTOR

Peter Martin, Leader of Essex County Council, said: *"Construction of wind turbines off the Essex coast will require many survey vessels working from nearby ports for both construction and maintenance."*

"Harwich is the only national sheltered deep water port so securing such activity into the town is not only vital, but

makes commercial sense. Creating a significant offshore hub now in Harwich is fundamental for securing long term opportunity and investment into the area."

KEY ISSUES OF SKILLS AND DEVELOPMENT

Peter Halliday, Leader of Tendring District Council (TDC), welcomed the funding as a significant boost for both Harwich and Tendring.

"We supported the bid by AJ Woods both in principle and by providing practical help," he said. *"We are delighted that it has been successful and that this new investment is being made in one of the key issues of skills and development."*

"This Growing Places Funding will help to generate growth and create much-needed jobs for the Tendring District."

Cllr Halliday added that it is now very important that TDC assists in the delivery of this programme to help ensure that this funding is released and the predicted outcomes achieved.

FANTASTIC OPPORTUNITY

Tony Woods, Managing Director of A J Woods said: *"The loan fund is a fantastic*

OrbisEnergy
offshore renewable business

The Hub for Offshore Renewables in the East of England

- A specialist innovation and incubation facility for offshore renewable business
- Offers managed office space with access to first class business support services
- Part of the East of England's world leading all-energy hub
- Offers a virtual incubation programme nurturing new entrants to grow
- Access is available to professional support from industry specialists with vast experience in offshore technologies
- Stimulates the exchange of knowledge between academic institutions, entrepreneurs, and regional businesses
- An inspirational conference and meeting venue

Telephone us on 01502 563368
email us at orbisenergy@nwes.org.uk
visit us at www.orbisenergy.net

Suffolk County Council, Waveney District Council, EEDA, NWES



DEDICATED HARBOUR

The project will look to create a dedicated harbour and operations centre for high speed offshore support vessels. 300 local jobs are to be created through this initial programme of activity. Construction work on the new facilities will start as soon as possible in 2013.

GROWING PLACES FUNDING

The funding for AJ Woods Engineering was part of £8.7million worth of Growing Places Funding recently announced by the SELEP Board.

Six schemes will benefit from the funding that could lead to 2,365 jobs being created.

AJ Woods Engineering
www.ajwoodsengineering.co.uk

[Click to view more info](#)

opportunity to really make a difference for Harwich, this development will help to bring international companies and manufacturing to the town and provide skilled work for local people to help secure their long term future and

prosperity. We could now have 15 – 25 years' work here in the District with the new offshore wind farms that are going to be built off our coast. A similar venture in Ramsgate has led to a boom in employment for local people there."

FINANCIAL INCENTIVES FOR WIND ENERGY INNOVATION IN THE UK

Many of you will have heard about the 'Patent Box' recently and you may be wondering what is a Patent Box anyway? The uninspiring name actually refers to what could be a very exciting and beneficial new tax regime which will come into effect in April 2013.

PATENTS

Historically the main reason to patent your invention was to stop your competitors from using or benefiting from your Intellectual Property. Many may have considered that patents are not financially worthwhile due to a perception in the costs of enforcing the rights.

NEW PERSPECTIVE

The Patent Box regime brings a whole new perspective into why you should consider patenting your new wind energy creation. Under the new policy, corporation tax will be reduced to only 10 per cent for profits earned from products covered by a patent. All active qualifying patents are eligible - the regime does not only apply to new patents.

The patent only needs to cover a part of your product. This includes improvements to existing wind energy apparatus which can be quite small improvements as long as they are new and inventive.

You only need to obtain a UK patent to qualify for the tax benefit; the benefit will apply to all overseas profits which are taxable in the UK. A UK patent is relatively inexpensive and quick to obtain and the direct financial benefits can be quickly realised.

PATENT AND TRADE MARK ATTORNEYS

Dummett Copp LLP are a firm of Patent and Trade Mark Attorneys based near the Suffolk coast and provide specialist Intellectual Property advice in the energy sector.

They would be happy to discuss any questions you may have about the Patent Box, or if you would like any more information about applying for patent protection then please feel free to contact them. Dummett Copp offer all new clients a free initial consultation.

Dummett Copp LLP
www.dummett.com



Nick Jackson

CHRIS EDENS JOINS ODE MANAGEMENT TEAM

Offshore Design Engineering Limited (ODE) Great Yarmouth, who provide project management, engineering and operations support services to the energy industry, have announced the appointment of Chris Edens as Senior Projects Manager.

CONTINUING DEVELOPMENT

Mr Edens will work alongside Engineering Manager Chris Fairhurst to focus on the continued development of the engineering services that ODE provides from its Great Yarmouth base to the offshore oil, gas and renewable industries.



Chris Edens

EXPERIENCE

A Chartered Process Engineer, Mr Edens has a breadth of technical, operational, project, HSE and management experience, gained working with both major and independent oil & gas companies and the industry regulator.

He joins ODE from the HSE where he held the position of process safety specialist, responsible for conducting offshore inspections and investigations across the UKCS. Prior to that he worked with Perenco UK for 7 years in a variety of project and operational roles, latterly as project superintendent he was responsible for the safe and efficient delivery of on and offshore projects and brownfield modifications in the Southern North Sea.

OFFSHORE ENGINEERING FOCUS

Paul Chilvers, Regional Director at ODE Great Yarmouth, said: *“Chris’ extensive knowledge and technical expertise, will make an excellent and complimentary addition to the company, as we seek to strengthen our capabilities in the area*

of offshore engineering projects. Chris is already well known to ODE and I am confident that he will prove to be a very important member of my management team. Chris will take on a range of key responsibilities that will ensure that our engineering projects continue to be delivered effectively and efficiently. His previous experience make him a perfect fit for matching our requirements to provide high quality, yet fit for purpose, solutions to our current and future clients.”

AN EXCITING AND INTERESTING MOVE

Mr Edens said: *“ODE has a reputation for delivering robust engineering solutions to the offshore industry, making this an exciting and interesting move for me. It is a respected company both locally and internationally and I will look forward to actively increasing the high standards and services that ODE already achieves.”*

Offshore Design Engineering
www.ode-ltd.co.uk

HYDRAULIC BOLTING SOLUTIONS

Great Yarmouth is the major location for the offshore energy sector in England with an experienced and well established supply chain. The oil and gas sector has traditionally been a big user of hydraulic bolting equipment. Now so is the burgeoning wind energy sector.

Few suppliers of this equipment, the majority based in the North of England, have tended to move north to Aberdeen when it has come to expanding operations – Until now that is.

GEE-FORCE HYDRAULICS

Gee-Force Hydraulics, the Lancashire-based specialist provider of hydraulic torque wrench and flange spreading/alignment equipment established premises on the Gapton Hall Industrial Estate in Great Yarmouth in May 2012, holding a wide range of hire stocks and equipment spares to service their energy sector clients.

SPX BOLTING SYSTEMS

The company is a distributor for SPX Bolting Systems whose equipment they both hire and sell. They also hire and sell flange spreading and alignment equipment

by Equalizer International and sell a wide range of other hydraulic tools and equipment by SPX Power Team.

Regional Sales Manager Nick Thomson, who runs Gee-Force’s Great Yarmouth operation explained: *“We already serviced a number of Great Yarmouth clients from our Lancashire HQ but the more we spoke to local businesses the consistent message we received was that the one way we really would differentiate ourselves from the competition was by actually being here on the ground. So that’s what we did. And the response since we opened has been very positive indeed. We have rapidly expanded the overall hire stock offering to keep up with demand and envisage more of the same for 2013.”*

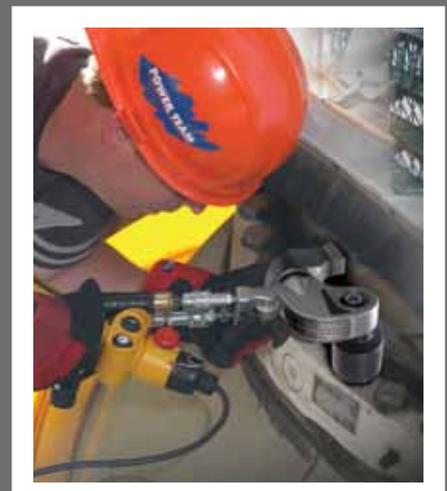
PERSONAL TOUCH

Company MD Graeme Cook started the company in 2004 said: *“We are a relatively small company compared to some of our competitors but we are growing quickly and enjoy a close relationship with supportive manufacturers. That said, we’re fleet of foot and our size means that our customers benefit from a*

personalised relationship. Good customer service has always been at the heart of what we try to do.

“By placing ourselves right at the heart of the East of England’s energy sector, we are well positioned to literally react quicker and more efficiently to the needs of England’s major energy hub.”

Gee-Force Hydraulics
www.gee-force.co.uk



CONTINUING GROWTH FOR FENDERCARE MARINE

Nestled in the picturesque Norfolk countryside lies the headquarters of Fendercare Marine, one of the world's foremost suppliers of marine services and products.

Fendercare Marine, a member of leading marine service provider James Fisher & Sons Plc, has seen considerable growth over the last few years and, with a diverse and expanding portfolio of equipment and services operating in the marine and offshore industries worldwide, this looks set to continue.

25TH ANNIVERSARY

Celebrating its 25th anniversary in 2013, the company has expanded into the offshore wind renewable energy market with the launch of its first wind turbine support base in Great Yarmouth, Norfolk.

WIND TURBINE BASE

The base on the Old Bure Marine site in Cobholm followed on from the success of their first base in Lyness, Orkney and is already proving a hub for all types of offshore activity in the Southern North Sea. The Great Yarmouth site incorporates more than 6,000 sq.ft of workshop together with over 10,000 sq.ft of yard/storage space and a large set down area, with capability to moor up to three support craft at any one time and capacity for a further five vessels on land.



SERVICES AND HANDLING

There have been numerous full boat lifts at the site using the site's 250 tonne crawler crane, including lifts from underneath and above using spreader beams and lifting eyes. Customers have also required hull cleaning using environmentally friendly technology (supplied by the Fendercare Marine subsidiary, Blastgreen) fabrication, fuelling, supply of fendering, engine repairs, engine lift out and use of the sites fully equipped project management offices.

FENDERCARE MARINE EQUIPMENT AND LIFTING SERVICES

Since it opened, the Great Yarmouth base has been so successful that Fendercare Marine has made a strategic decision to move their lifting services business there to give customers access to an even greater range of products and services.

As well as existing shoreside support, the newly named division (Fendercare Marine Equipment and Lifting Services) will also be offering mechanical, electrical and lifting equipment; hydraulic equipment and winches; lifting slings and load/stress monitoring equipment.

EXPANSION

The base is expanding to accommodate an additional workshop space of 4800 square feet, housing a wide variety of lifting equipment including a new 2,000 tonne lifting press. The new services are available not

only that, but it also demonstrates our long term commitment to East Anglia, generating additional employment and revenue to the Great Yarmouth economy. Fendercare Marine is celebrating 25 years trading this year and we are confident that this venture will be another great milestone in our history."

Following the success of the Great Yarmouth base, Fendercare Marine will be looking to establish other similar facilities around the country throughout 2013, primarily to service offshore wind farm support vessels.

WIND TURBINE PERSONNEL SAFETY

Fendercare Marine and their subsidiary Straininstall Marine have been using their expertise they have gained to focus on safety products for the wind energy market. They have now designed and produced three complementary systems – Vessel



Motion Monitoring System, Eco-Fender and Intelligent Fender System to enhance the safety of wind turbine personnel getting to and from the wind farms.

COMMITMENT

With the launch of the Fendercare Marine Equipment and Lifting Services, the creation of their new safety products and further bases planned for 2013, it is clear to see their commitment to the wind energy market is genuine and will continue as the industry expands.

Fendercare Marine
www.fendercare.com

[Click to view more info](#)

only to the renewable industry and their existing onshore industrial customers but to the oil and gas offshore sector, creating a truly unique offshore energy support base.

Eric Plane, Fendercare Marine Managing Director said, *"The launch of Fendercare Marine Equipment and Lifting Services is a very exciting development for us. The success of our Great Yarmouth base has exceeded our expectations, so this move means we can help even more of our offshore marine customers and our onshore industrial customers. Not*

3SUN GROUP AWARDED SCIRA CONTRACT FOR SHERINGHAM SHOAL OFFSHORE WINDFARM

3sun Group, a specialist provider of products and services to the energy industry, has been awarded a three year contract by wind farm operator Scira Offshore Energy. The contract is effective 1 January 2013 for operational services for Sheringham Shoal Offshore Wind Farm.

SPECIALIST

3sun Group specialises in delivering a comprehensive range of products and services to the oil and gas, marine and renewable sectors, specifically control and instrumentation products and services along with specialist equipment for inspection capabilities.

SERVICES

The Group will provide two specific services for the Sheringham Shoal Wind Farm. Firstly, a statutory certification and inspection service for all onshore and offshore equipment of the Sheringham Shoal Offshore Wind Farm, including the 88 wind turbines, two offshore substations and the onshore substation at Salle near Cawston. Secondly the provision of general engineering services including design, supporting calculations, production of engineering documentation, fabrication, painting, mechanical and electrical installation/assembly and retro-fit works.

IMPORTANT CONTRACT

Scira's General Manager Einar Strømsvåg said that he was delighted to confirm the award of this important contract: "Now that the construction of the Sheringham Shoal Wind Farm is complete, and Scira assume full responsibility for the operation and maintenance of the plant, we need to ensure that we have a supply chain which can support the technical integrity of our windfarm."

"3sun Group is a locally based company with a high level of competence, experience and expertise, and a strong focus on providing local employment opportunities."

GREAT YARMOUTH HEADQUARTERS

Having recently launched its new, larger Great Yarmouth Headquarters following an investment of £500,000 into the facility, Graham Hacon, Managing Director of 3sun Group, said: *"Securing this contract from Scira is great news and sees us*



Scira's Colin Galer with 3sun's Group Managing Director Graham Hacon at the recent opening of 3sun's new facility in Great Yarmouth.

ending a very strong year on a high. We look forward to commencing the work and strengthening our relationship with Scira by providing our well-qualified technicians, our high quality service and to completing the contract to schedule.

"I am delighted that Scira has chosen 3sun Group, a local company, and are honouring the local supply chain in this way. We recently launched our new, larger Great Yarmouth Headquarters, following a £500K investment, and have pledged to continue to support the local economy and employment in the region. We aim to recruit at least 12 people in Great Yarmouth by the end of the year, and as we secure more contracts on and offshore the UK and across the world we will continue to recruit," he continued.

CO-ORDINATION

Scira's Colin Galer, a Mechanical Engineer in the Operation and Maintenance Department, will co-ordinate the service provision from 3sun Group, and was very pleased to attend the recent opening of the Group's new premises in Great Yarmouth: *"I'm really looking forward to working with the team at 3sun, and am confident that this contract will assist Scira in achieving our goals of having safe, reliable and 100% compliant work equipment, at all locations."*

Sheringham Shoal Offshore Wind Farm is owned equally by Statoil and Statkraft through joint venture operating company Scira Offshore Energy.

3sun Group employs over 175 staff working both on and offshore and has worked on energy projects all over the world including UK, Malta, Tunisia, Ghana, Singapore, Angola, Ivory Coast, Ireland, France, Denmark, Sweden, the USA and New Zealand.

3 Sun Group
www.3sungroup.co.uk

Scira
www.scira.co.uk

PURPOSE BUILT WIND TURBINE INSTALLATION VESSELS FROM SEAJACKS

Formed in 2006, Seajacks is a leading UK-based owner and operator of self-propelled, self-elevating jack-up vessels. The vessels are purpose-built for installation of turbines, foundations and transition pieces as well as operations and maintenance of this equipment. Seajacks currently owns and operates three self-propelled vessels – the Seajacks Leviathan, Seajacks Kraken and Seajacks Zaratan - and has a fourth vessel under construction, the Seajacks Hydra, which is due to be delivered in the third quarter of 2014.

EXPERTISE AND EXPERIENCE

Seajacks vessels have installed 230 turbines on some of the largest offshore wind farms in the world, representing almost 830MW of installed capacity since Seajacks entered into the offshore wind market in 2010. Successful installation projects include Greater Gabbard, Walney and Sheringham Shoal.

RECENT CONTRACT

More recently, Seajacks was awarded the Main Installation Contract for the construction of the Meerwind Offshore Wind Park. This role sees Seajacks Zaratan and Seajacks Leviathan working together to install 80 monopile foundations and transition pieces, after which, both will go on to install Siemens 3.6MW turbines at the site.

MOBILISATION WORKS

To prepare for this project, both vessels underwent an intense mobilisation period during the summer of 2012. During the mobilisation works, Leviathan's 300t main crane was replaced by a brand new 500t model and Zaratan was fitted out with the latest technology in pile installation.

INNOVATIVE AND BESPOKE MODIFICATIONS

Seajacks engineers worked with external contractors to develop a range of bespoke pile installation equipment including a 'first of its kind' Pile Guide Tool to guide the 675t monopile structures into position, and a 400t hydrohammer, used to drive the piles up to 26m into the seabed.

Seajacks

www.seajacks.com



EAST ANGLIA RIPE FOR OFFSHORE WIND INVESTMENT

The joint owners of the world's largest operational offshore windfarm (located off the Suffolk Coast) are already looking to the future with a proposed extension now in the final stages of the planning process and expecting a decision later this year. SSE Renewables and RWE npower renewables highlight below their involvement in two projects which are proving crucial to maximising offshore wind investment in East Anglia.



Image courtesy of CHPV/SSE/RWE

GREATER GABBARD

In September 2012, it was announced that Greater Gabbard (approximately 23 km off the Suffolk Coast) had officially become the world's largest operational offshore wind farm. With all 140 turbines commissioned and exporting electricity, the 500MW wind farm has been making a significant contribution towards the UK's renewables portfolio. Greater Gabbard Offshore Winds Ltd (a 50-50 Joint Venture between SSE Renewables and RWE npower renewables) is now responsible for the day-to-day operation of the complete wind farm and has an operations base in Lowestoft employing 100 people.

GALLOPER

The Crown Estate awarded the rights to develop an extension to the Greater Gabbard Offshore Wind Farm under Round 2.5 of the Offshore Wind Licensing Arrangements. The project, which became known as Galloper, secured a Grid Connection in 2009. Galloper Wind Farm is proposed to be up to 504MW and is one of the first offshore wind developments to go through the relatively new planning process for Nationally Significant Infrastructure Projects (NSIPs). Extensive pre-application consultation took place prior to a Development Consent Order application being submitted in November 2011. The Planning Inspectorate (the Examining Authority) is now finalising a report, which will be submitted to the Secretary of State by 1 March 2013 along with a Recommendation on whether to grant consent.

SSE

www.sse.co.uk

RWE npower renewables

www.rwe.com

www.pipeshield.com

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Pipeshield International Ltd is a world leader in engineering subsea protection and stabilisation systems. We have a proven track record of delivering products, services and solutions to withstand the most challenging and toughest subsea environmental conditions.

Our leading products include concrete and bitumen mattresses, pipeline and cable protection and crossing support structures, anti-scour fringed solutions, freespan correction and offshore grouting services. We also provide a range of added value services including lifting and installation equipment, subsea rated bulkbags and field joint coatings.

Pipeshield is certified to ISO 9001, 14001 and OHSAS 18001 demonstrating our well managed and robust quality, environmental and safety management systems respectively. We also hold various other industry awards for best practice.

Our current operations include manufacturing facilities and arrangements strategically positioned around the world including the UK, Europe, Caspian Region, South Africa, Middle-East and Far-East.

WORKING TOGETHER FOR BUSINESS GROWTH

Within the East of England Energy Zone, New Anglia Local Enterprise Partnership (LEP) has created the Great Yarmouth and Lowestoft Enterprise Zone based across 6 sites, which focuses on growing energy-related business. The Enterprise Zone covers 121 hectares of development-ready land.

HELPING COMPANIES GROW

New Anglia LEP, which helps to create jobs across the two counties, is offering companies moving into the Enterprise Zone a range of benefits, to help companies grow.

This includes...

- A discount on business rates of up to £275,000
- Simplified planning
- Superfast broadband

Two businesses have recently moved into a new Enterprise Zone which offers a range of benefits to help energy-related companies grow.

SEAJACKS

Blair Ainslie is the Managing Director Seajacks, global owner and operator of jack-up vessels, which is the first company to move into the Enterprise Zone on the South Denes site in Great Yarmouth.

Mr Ainslie said, *“We could have set up our business anywhere in the world. However, we are expanding our operation and have moved into new premises in the Enterprise Zone.”*

“It’s a no-brainer,” he added, *“with the round 3 development of offshore wind farms and benefits in the Enterprise Zone.”*

NEXUS

Nexus, a company created to provide engineering training is the most recent organisation to move into the Enterprise Zone on the Beacon Park site in Gorleston, Great Yarmouth.

“This creates wide-ranging opportunities for us,” said Nexus Centre Manager, Keith Loveys *“We are surrounded by energy and engineering sector businesses in the East of England Energy Zone, which could benefit from what we have to offer.”*

New Anglia Local Enterprise Partnership
www.newanglia.co.uk



2 YEAR CONTRACT COMPLETE AT GREATER GABBARD OFFSHORE WINDFARM

Reef Subsea Dredging & Excavation announced recently they successfully completed their integral part in the Greater Gabbard Offshore Windfarm project working collaboratively with the operations team for Fluor, the principle contractor.

Reef Subsea Dredging & Excavation (RSD&E) completed their multi-million pound project over a period of two years (2010 - 2012) where they performed the excavation of approximately 100 monopiles around the j-tube approach to enable cable entry, remedial lowering of inter-array cables, and burial of circa 80 cable approaches to the monopiles using their non-contact excavation tools.

SPECIFIC REMIT

The company was selected for their range of non-contact controlled flow excavation tools providing high levels of safety for sensitive subsea structures combined with their ancillary jetting system which enables them to work on-site in a wide range of soil conditions ranging from sand to hard clays measured at a strength of 172kPa.

Niels-Henrik Brodtkorb, Managing Director of Reef Subsea Dredging & Excavation, commented: *"I am extremely proud of the task we achieved on this long-term project for Fluor completing with a strong focus on safe performance and efficiency. Our range of tools were perfect for this project and we were in a position to continually adapt our equipment to meet the client's needs, specifically on trench width when challenged with various soils. Unique gyroscopic stability and use of a real-time sonar ensured the excavations were carried out to specification. Greater Gabbard is one of our greatest references in the renewables market, and we look forward to working again for this valuable client of ours."*

Brodtkorb continued to comment: *"Building on our success at Greater Gabbard we have recently completed campaigns on two of the largest offshore wind farms currently in construction in the UK and two high profile interconnectors. The contract was awarded before Rotech Subsea and Scanmudring joined forces to create the world leader in seabed dredging & excavation. A subsidiary of Reef Subsea, we work independently from the Group's companies and offer the same base-costs solutions to all our clients and we seek to serve operators and contractors from the Oil & Gas and Renewable energy sectors."*

PARTNERSHIP

Greater Gabbard Offshore Wind Limited is a 50/50 joint venture partnership between Scottish and Southern Energy (SSE) and

INTEGRATION

Reef Subsea Dredging & Excavation is the new dredging and controlled flow excavation organisation formed after the integration of Scanmudring and Rotech Subsea. An independent world leader providing subsea excavation and dredging solutions through vessels' contractors to benefit operators and contractors worldwide. They offer a one stop shop service with the largest range of seabed services in relation to dredging, deburial and lowering of pipelines and cables, decommissioning and seabed preparation.

EQUIPMENT

The fleet of equipment comprises...

- Controlled Flow
- Excavators
- Scanmachines
- Scandredges
- Scancrawler
- Hydraulic Grabb
- Scanrovdredges

Services from RSDE are available for vessel-contractors from their locations in Aberdeen, Mandal, Houston and Singapore.



T8000 Excavation tool

RWE Npower renewables. The Greater Gabbard Wind Farm, presently the world's largest wind farm, is situated in the UK North Sea, off the Suffolk Coast. The project consists of 140 wind turbines producing 504 megawatts, enough clean electricity to power around 530,000 homes.

Reef Subsea Dredging & Excavation
www.rsdne.com

[Click to view more info](#)

TRAINING FOR NEW ROLES IN A GROWING INDUSTRY

Young people are being trained in skills for the wind energy industry in a new course at Great Yarmouth College designed in partnership with sector employers.

ENERGY SKILLS FOUNDATION PROGRAMME

As new roles are created across the developing industry, practical projects are being added to the new Energy Skills Foundation Programme to prepare young people for the workplace.

The programme was launched last September with 19 pioneer students after the college worked closely with EEEGR and Marine East to ensure the programmes met industry requirements and quality.

It is hoped that the students will move from the one-year intensive course to Apprenticeships.

PROJECTS

One of the projects to generate a clear understanding of how wind power and turbines work challenges students to design and make their own working models of mini-turbines. One of the two groups is creating a traditional turbine with propellers. The other is an alternative wind farm using barrels that work on a similar principle to a jet engine.

Tutor Kevin Forbes said: *“They are just small models that they have designed and created themselves and must work on exactly the same principle as power generating turbines. They are also creating a solar panel and running a remote-controlled car from power generated by the panel.”*

PARTNERSHIP

For manufacturing experience, the College has forged a partnership with one of the borough’s biggest employers, Pasta Foods, where students join the workforce once a week to gain process engineering practical experience.

Karl Jermy, Managing Director of Pasta Foods – one of Great Yarmouth’s biggest employers – said: *“Our factory is engineering intensive not labour intensive. Most people you see in the factory are engineers. Their experience here will give them an insight into how a factory works and the work of engineers in a manufacturing setting.”*

REAL WORLD EXPERIENCE

Great Yarmouth College Director of Construction and Engineering Gary Jefferson said real world experience was integral to the course.

“Between us, we are creating tomorrow’s engineers and with the experience they gain at Pasta Foods, they will be ahead of the competition in the employment market.”

Lecturer Alan Ridge, who teaches the Energy Skills Foundation course, said as well as electrical, energy and manufacturing skills students would carry out maintenance projects in the welding department.

They would also visit windfarms, a fossil fuel power station, Bacton gas terminal, Sizewell B nuclear power station and employers including Halliburton.

“The industry is so diverse – windfarms, nuclear, fossil fuels and oil and gas. After this course they could go on into work, on to an apprenticeship, or move on to a BTEC Extended Diploma in engineering.”
 Alan added

STUDENTS

Students are keen to get started in a working environment.

Lewis Swann, 18, said: *“This is real – the opportunity to learn real applied skills to work in the energy industry.”*

Aaron Kern, 18, said: *“This course should set us up for a career. This time next year we could be starting a job.”*

Great Yarmouth College
www.gyc.ac.uk



Students at work

Where do you find the UK's leading oil, gas and renewable energy experts?
Great Yarmouth, Norfolk.

- Commercial premises and land for development within Enterprise Zone
- Deep water outer harbour and modern river port
- Centre of marine engineering with 47 years offshore experience
- 400-company strong energy supply chain with world class capability
- One of six national Centres for Offshore Renewable Engineering (CORE)



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Economic Development Unit
 01493 493141 | 01493 493142
 144, 151, 152, 153
www.great-yarmouth.gov.uk/business

ENTERPRISE ZONE
 GREAT YARMOUTH & LAKESHOTT
 GREAT YARMOUTH
 ECONOMIC ZONE

World Class Energy.

PLAYING A PIVOTAL ROLE

EEEGR, the East of England Energy Group, is poised to play a vital and pivotal role in what is emerging as one of the most significant energy regions in Europe.

New wind farms have already sprung up along the East Coast but they will inevitably fall under the shadow of even more imposing developments in the Southern North Sea - East Anglia ONE, Hornsea and Dogger Bank among them.

That activity will build alongside the continuing oil & gas fields, the development of new nuclear, the emergence of tidal power and an array of other potential raw power points.

A STRONG SINGLE VOICE

With such a variety of sectors, resources and skills, EEEGR believes it essential to have a strong single voice to unite, drive and champion the entire energy industry across the region.

EEEGR works to promote the East of England as a world leading all energy hub, encouraging inward investment from energy majors and attracting international business opportunities. The group may be approaching only its 12th birthday, but with 390 members ranging from major national and international companies through to fledgling start-ups, it has never been stronger or more active.

RISING TO THE CHALLENGE

Chief Executive Simon Gray sees it becoming even more involved in making sure that the East of England supply chain is communicating, preparing and making itself fit for purpose to rise to the challenges ahead.

"The opportunities are there but we have to make them happen. We have to step up to prove that we can compete and deliver; to work as a team and provide the safety and quality that the industry demands."



Simon Gray

SOUTHERN NORTH SEA (SNS) 2013

They are words backed by action. EEEGR's Southern North Sea (SNS) 2013 Conference and Exhibition in March at the Norfolk Showground will be the biggest energy event ever staged in the region and featuring global expertise and guidance.

DELEGATION

In the autumn, EEEGR and its partners will also head a delegation of 18 key regional energy players to the combined East of England Energy Zone exhibition stand at Offshore Europe 2013 in Aberdeen

to showcase the area's abilities to an audience of up to 50,000 global visitors.

SUPPLY CHAIN DEVELOPMENT PROGRAMME

Meanwhile EEEGR's Supply Chain Development Programme, part-funded by the European Regional Development Fund, is giving businesses the chance to meet industry specialists for free guidance, assistance and contacts to help develop their role in the ever-expanding energy industry.

VITAL IT INFRASTRUCTURE FOR SHERINGHAM SHOAL OFFSHORE WINDFARM

Computer Service Centre, based in Norfolk, first engaged with the renewables industry through its contract with Scira Offshore Energy Ltd, the operator of the Sheringham Shoal offshore windfarm.

INITIAL THREE YEAR CONTRACT

Christopher Cooper, Co-Director, reports that the company was responsible for building the IT infrastructure for Scira from scratch, as part of a three year contract with option to extend. There were two parts to the contract – "making it operational" and then "looking after it" as Cooper puts it.

CONSIDERATIONS

Firstly, the company had to consider the way in which data could flow between the windfarm and the offshore and onshore substations. Secondly it had to provide all of the traditional functions that a business needs – everything from server infrastructure to collaborative working applications. The team decided to follow Statoil's IT system for ease of use. "We visited Norway to evaluate the systems they were using and decided to mimic them for Scira, giving transferred staff familiarity with a lot of the systems," says Cooper.

A wide area network transfers data from the windfarm to the onshore systems. "Delivery of the wide area network to North Norfolk was a challenge - we had to prevail on BT to install vast amounts of fibre optic cable," Cooper says.

The network Scira is using is known as a redundant cloud network. Cooper explains that this means the information resides in separate data centres. If the primary cloud fails, the data remains available. "The environment that they're using is a private closed environment on Computer Service Centre's own infrastructure," he adds. "Our ISO27001 accreditation means customers can be assured their data is secure."

EEEEGR is working with a specialist team of energy industry consultants that between them, have the insight and expertise to deliver growth within individual businesses and across the supply network. To date the programme has supported more than 100 companies, created around 200 jobs, safeguarded another 30 or so and helped seven business start-ups.

Mr Gray is determined that such support should get through not just to businesses directly connected to the energy world, but those keen to form part of its supply chain.

SHERINGHAM SHOAL OFFSHORE WINDFARM

He was very impressed with the impact that Scira Offshore Energy's Sheringham Shoal Offshore Wind Farm had on the small North Norfolk town of Wells where a new harbour extension was created to service the development.

"The harbour has enjoyed a renaissance and diverse local businesses from ship chandlers to local food providers have reaped the benefits of the investment in this new source of energy.

"Their story should be an example to everyone in the region of the potential prospects if they take full advantage of the opportunities and gear themselves up for the investment we will be seeing in the East of England."

But the biggest challenge is likely to be in providing enough skills to service the near-insatiable demands of a future energy sector.



SKILLS FOR ENERGY

It is an issue being tackled with resolve and dedication by EEEGR's Skills for Energy team. Both Lowestoft and Great Yarmouth colleges are opening the door into the industry for young people through the Energy Skills Foundation Programme – an industry-designed course. The University of East Anglia has launched its degree programmes in Energy Engineering and tremendous strides are being made in recruiting ex-military personnel with engineering skills into our sector.

EPISCENTRE

And any day now there should be news about the EPISCentre, a flagship building for this region which will house an independent energy industry skills centre.

EEEEGR

www.eeegr.com

[Click to view more info](#)



TENDER PROCESS AND RELEVANT TRAINING

The tender process was intense and it took four months to get the go-ahead amid stiff competition. More recently the company organised for multiple engineers to receive offshore survival training, and training in specific SCADA systems to further supplement its commitment to Statoil. The final stage is to re-locate the company into its new purpose-built offices, which is underway.

OUTSIDE BUSINESS INTEREST

"Because of the investment we have made, and lessons that we have

learnt from this project, we've been sought out by other businesses in the offshore market." emphasises Cooper.

Cooper reports that the contract has had an *"amazing effect"* on the company. It has expanded from 21 to 31 people and now has the credibility to engage with other offshore wind developers.

FANTASTIC TEAM

"We've got a very good skills base and a fantastic team - Statoil was impressed by our ability to deliver on time and on budget," Cooper adds. *"Offshore wind companies want a can-do attitude and they certainly get that with us. We are a small company but have top clients and further plans to expand."*

Computer Service Centre

www.computerservicecentre.co.uk

ESSEX

VIBRANT AND ENTREPRENEURIAL

Essex is an economically vibrant and successful entrepreneurial county. A key area of change and development is in the field of low carbon technologies. BIS estimates that the global market for low carbon and environmental goods and services was £3.2trn in 2009/2010, £116bn of which was in the UK alone. Investment in green energy generation is such that it is now highly likely that some renewable energy sources will achieve cost parity with traditional non-renewable energy sources over the next decade. De-centralised energy sources coupled with smart grid technology could help to reduce energy dependency on carbon sources.

SUPPORTING ESSEX BUSINESSES

Essex County Council has been working with local training providers across the county, to financially support Essex businesses, by providing a wage subsidy of up to £2,500, across 52 weeks, to take on an apprentice in a range of engineering and wider energy sector frameworks that support the region's growth in the offshore wind sector. This includes: Construction, Logistics, Plumbing, Oil/Gas, Domestic Renewables (e.g. solar panels, heat pumps and insulation), Electrical, Glass and Marine.

JIANGSU PROVINCE LONG TERM RELATIONSHIP

Essex County Council also boasts a 25 year relationship with the Jiangsu Province in China. The relationship started back in 1988 and was formalised in 1992 with the signing of a Memorandum of Understanding whereby the two areas agreed to work together to promote two-way exchanges in the fields of trade, investment, education and culture.

Jiangsu, at the heart of the important Yangtze river delta area and bordering Shanghai, is one of the most economically dynamic Provinces in China and Essex County Council works with the Jiangsu Provincial Department of Commerce, to provide Essex businesses with access to market information and business introductions that would otherwise be difficult for them to obtain.

OFFSHORE WIND

With the world's biggest offshore wind farms being built off the East Coast of England, at the same time China is developing its offshore wind industry at a rapid rate, Essex County Council has hosted visits from the Presidents of some major Jiangsu offshore wind energy companies which have presented the opportunity to create hundreds of jobs, both directly and indirectly, to help boost the county's economy. The strong link with Jiangsu is something Essex County Council shall continue to build on and will reap the rewards for years to come.

Essex County Council
www.essex.gov.uk



TMS PUTTING ENERGY INTO THE POWER STRUGGLE

The balance of power between the offshore wind industry and the oil & gas sector will be a challenge for the East of England for a generation or two yet.

KEEPING PACE

After more than 20 years working with the energy sector, creative design agency TMS Media has to keep pace with the changing dynamics of the industry.

“Nearly 50 years after the discovery of North Sea gas transformed our region, we now have some of the world’s biggest wind farms arriving off our shores,” said Steve Scott, Managing Director of Great Yarmouth-based TMS.

“It means our region faces some of the biggest changes, challenges and opportunities in an already demanding energy world. I’m delighted to say that not only are our clients embracing and rising to those challenges but often leading the way in the evolution.”

CLIENTS

Bridging the gap: CLS Offshore working on the Thanet wind farm in 2010



ODE (Offshore Design Engineering)

Among them is international engineering contractor ODE which project managed one of the UK’s first commercial offshore wind farms at Scroby Sands from its Great Yarmouth base nearly 10 years ago.

Today it has a long track record of successful windfarm work including the recently announced project management and engineering support services contract for the £1.6bn Iberdrola Wikingen windfarm planned in the Baltic Sea. But ODE

In the beginning: Construction work on Scroby Sands wind farm in 2003.



Photo courtesy of chpv.co.uk

bridges the gap to the oil & gas sector with contracts such as that to provide operations and engineering support to all of E.ON Ruhrgas UK’s (ERUK) operated fixed and subsea assets in the UK North Sea.

CLS Offshore

The oil and gas market was also the initial target of CLS Offshore, headquartered in Great Yarmouth, but it extended its engineering, fabrication, construction and installation work into offshore windpower with contracts including the highly successful project to help install 100 turbines in the Thanet windfarm.

Inspection Verification Bureau Ltd

Fledgling Norfolk company Inspection Verification Bureau Ltd was also keen to tap the oil and gas market with its independent inspection, assessment and verification work, but many of its recent contracts have been in the renewables sector.

NHV Helicopters

Fellow TMS clients NHV Helicopters, with its UK base in Norwich, has confirmed an order for ten new aircraft to expand business, including offshore crew transfer flights for the energy world.

“The key to these successes is flexibility and we’re helping all these companies maintain the highest profile in the energy industry whether through websites, publicity or other marketing activity,” said Steve.

EEEEGR

TMS also supported the launch of EEEGR nearly 12 years ago and has continued to build the trade association’s profile to a point where it now has 390 members and intends further growth.

“EEEEGR was set up to represent all aspects of the energy industry and to speak for them with one voice - so, in a way it was ahead of its time,” said Steve. *“Now it must play an even greater role encompassing the political, industrial, training and academic interests to the best mutual*

advantage. We’re delighted with our continuing relationship in achieving those goals.



Steve Scott, TMS Media

IMPERIAL HOTEL & PKF ACCOUNTANTS

“It’s also pleasing to see many supply chain clients and EEEGR members working with the industry even if not directly related to the energy sector. Among them is Great Yarmouth’s Imperial Hotel, which understands the particular requirements of offshore workers and visiting industrialists; plus accountants PKF whose local team is wooing the offshore industry offering an international array of offices to support the growing global flavour of the regional business.

“Such shared expertise, endeavour and commitment gives the East of England the strongest possible base for our future energy industry.”

TMS
www.tms-media.co.uk

SUCCESS FLOURISHES

AS A RESULT OF SCIRA INVESTMENTS

Successes resulting from Scira Offshore Energy's £1bn investment in the Sheringham Shoal Offshore Wind Farm, which includes significant investment in Wells-next-the-sea and North Norfolk, have flourished as local companies step up the pace and outshine national competitors to land large scale contracts.

From support services and specialist equipment through to IT provision, businesses in the East of England have taken full advantage of the investment into offshore wind developments, with many, including Scira itself, recruiting to manage the sizeable projects.

SHERINGHAM SHOAL OFFSHORE WINDFARM

As the operator of the Sheringham Shoal Offshore Windfarm, Scira Offshore Energy has encouraged the involvement of local North Norfolk companies in both the construction and longer-term operation and maintenance of its projects. Now that the Sheringham Shoal Offshore Wind Farm is complete Scira has assumed full responsibility for the development's supply chain and therefore looks to ensure it's at the best possible standard to support the technical integrity of the farm.

Scira's General Manager, Einar Strømsvåg, said: *"As one of the largest employers in North Norfolk, Scira has successfully helped to bring skilled employment opportunities to the East of England. During its construction stage alone, Sheringham Shoal created numerous short-term roles and local contracts, but with the wind farm now fully operational there are around 60 permanent positions, with the majority of filled positions being Norfolk residents."*

WINNING CONTRACTS

Norfolk firms such as GEV Offshore Limited, 3sun Group and Computer Service Centre are just some of the winners of the large-scale local contracts resulting from the investment, but smaller businesses are also reaping the benefits. Hotels, inns, restaurants, and bed and breakfast providers in Sheringham, Wells and other surrounding villages are welcoming a growing number of both occasional and regular visitors.

GEV OFFSHORE LIMITED

Enjoying a recent contract win for the provision of a range of support services off the coast of north Norfolk, Great Yarmouth based GEV Offshore Limited will provide both rope access-led fabric maintenance services and lifting operations support to Scira.

3SUN GROUP

Also, confirming a three-year contract for operational services is the 3sun Group delivering statutory certification and inspection service for equipment on the 88 offshore wind turbines, two offshore substations and the onshore substation. The company will also contribute general engineering services including design, supporting calculations, production of engineering documentation, fabrication, painting, mechanical and electrical installation/assembly and retro-fit works.

Mr. Strømsvåg continued: *“There are also a number of indirect long-term jobs, including transit drivers to transport wind turbine technicians daily, Scira site security, office cleaning and catering, vessel skippers and crew, IT infrastructure and support services.”*

COMPUTER SERVICE CENTRE

Echoing Scira’s employment success is its IT supplier, Computer Service Centre of Norwich, which won its first contract back in 2011 to develop an ‘always on’ IT system for the offshore wind farm’s operations. Originally required to carry communications to more than 70 users, Computer Service Centre now manages all IT functions for Scira and has expanded its core team by 10 additional staff in the last year.

NORTH NORFOLK DISTRICT COUNCIL (NNDC)

Another example of Scira’s successful working relationships includes North Norfolk District Council (NNDC), offering the former Wells Field Study Centre as a temporary operations and maintenance base.

Leader of NNDC, Tom FitzPatrick, said: *“This council is determined to secure as many economic and employment benefits from offshore wind energy developments in north Norfolk as possible, and one way of doing this is to create and promote a positive environment for inward investment by wind energy companies and their sub-contractors. The on-going partnership with Scira keeps our district at the forefront of energy technologies and helps us keep an eye on the future of renewable energy.”*

LOCAL DEVELOPMENT ORDER

NNDC also granted consent for the construction of an operations and maintenance base and associated storage facility at Egmere, within the area of the proposed Local Development Order, which NNDC is promoting to encourage jobs related to the offshore renewables industry, located three miles south of Wells-next-the-Sea. Wind farm workers use the facilities to change for their offshore duties, before travelling via mini-bus to the outer harbour in Wells where vessels will take them offshore, returning later the same day via the same method. This is to ensure traffic in the town is minimised and additional car parking is not required – a perfect example of how a cutting edge energy company can work in harmony with one of the most beautiful areas of the country.

Sheringham Shoal Offshore Wind Farm is owned equally by Statoil and Statkraft through joint venture operating company Scira Offshore Energy.

Scira Offshore Energy
www.scira.co.uk

GEV Offshore Limited
www.gevoffshore.com

3sun Group
www.3sungroup.co.uk

Computer Service Centre
www.computerservicecentre.co.uk

Norfolk District Council
www.northnorfolk.org

LAW

A PERSONAL VIEW FROM THE INSIDE

My involvement in the energy industry has been as a construction and engineering lawyer, working for developers and contractors. It has encompassed both mainstream energy including coal, gas, oil, and nuclear, together with renewable energy including wind power, wave power, waste to energy, biomass, shale gas and anaerobic digestion.

EXPERIENCE

This began over 20 years ago, and has covered a vast range of projects including...

- The construction of nuclear power stations
- Flue gas desulphurisation
- Bio energy plants
- Biodiesel plants
- Oil and gas exploration
- Drilling and production
- Refining and storage to wind farm development
- Anaerobic digestion plants
- Wave and tidal energy schemes
- Waste to energy plants

I am currently involved in the renewable energy field particularly in relation to wind farms, biodiesel, biomass, wind energy and shale gas exploration and production.

POSITIVITY

The positive aspects of such projects include the creation of ventures to develop energy related projects, for example, the assembly of sites, obtaining of relevant permissions and consents, negotiation and conclusion of contractual arrangements with landowners, turbine suppliers, contractors, distribution companies and power purchase companies – literally cradle to grave.





Martin Collingwood

It is rewarding to see projects in which I was involved from their inception being re-powered and beginning life afresh with bigger and better turbines by an industry which is becoming increasingly mature.

AN OCCASIONAL NEGATIVE

There is however, at times, a downside in performing the role of a projects lawyer.

An example which comes to mind is in relation to a 21 turbine onshore wind farm which shortly after completion and commissioning suffered a catastrophic failure.

This was due partly to extreme weather and also to systems failure leading to the damage to a number of the turbines and loss of power output. Quite simply the safety systems failed when the turbines were expected to deal with a storm for which they were not designed and the turbines blew themselves apart. That incident has thankfully not been repeated and turbine design has evolved substantially in the intervening period.

ONSHORE AND OFFSHORE

Just as the onshore turbine market has matured over time the offshore market will have to do so to cope with the added risks and pressures that installation and operation in harsher offshore environments requires.

PROACTIVE AND PREVENTATIVE PLANNING

The industry is already designing, where possible to avoid potential failure - and we have seen a number of incidences where failures have been proactively dealt with by replacement on a preventative basis, including bearings and foundations to avoid potential serial failure and down time in the windfarm.

CONTINUED POSITIVITY AND RISK REDUCTION

These are all positive developments which are set to continue. In the future we will see the turbines designed in such a way as to reduce the need for regular maintenance visits as frequently as previously required.

This will also serve to reduce risk to personnel involved and operating costs, which will reduce the cost of offshore power generation.

Martin Collingwood
Andrew Jackson Solicitors
www.andrewjackson.co.uk

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MASTS & TOWERS

FLI Structures are designers, fabricators and erectors of Masts & Towers to wind farms and can offer the below capabilities...

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FLI structures

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 Tel: 01452 722200 Web: www.fliscrew piles.co.uk & www.fli.co.uk

KEEPING THE BLADES TURNING

ICE DETECTION
JOHN REIMERS, AN EXPERT
IN WIND TURBINE BLADE
MONITORING SYSTEMS AT
BOSCH REXROTH, EXAMINES
THE ISSUES AND OFFERS A
POTENTIAL SOLUTION

As rated power outputs increase, the cost of a wind turbine increases. However, the cost increase of the rotor grows faster than the cost of the other components - when the rated power is doubled, the cost of the blade set will be four times as high.

With more and more turbine types covering lower than average wind speed regions, the rotors grow even faster, thus raising the cost percentage of the blades still further. For this reason, sustaining the value of the rotor becomes more and more important.

CONDITION MONITORING

Until now, rotor blade condition monitoring has not been the highest priority with manufacturers and operators. This does not mean that blades have been problem free, rather that other components are perceived as more critical to turbine reliability and have therefore received greater attention.

Another point is the availability of rotor blade condition monitoring systems is very limited. The market leader by far is Bosch Rexroth's BLADEcontrol with 650 systems sold to date, showing the small market coverage that blade condition monitoring systems have.

DEMAND AND STANDARDS

With the change in rotor value ratio, the demand for such systems is growing, with year on year sales doubling for the second time in 2012.

The standards for successful blade condition monitoring are high. Customers demand high turbine availability, directly connected to low downtime. In addition, planned maintenance and repair for the low wind season are vital as is the assurance that disastrous blade damages like break-offs will not happen. In a nutshell, customers want to be alerted, whatever kind of blade damage occurs, whether small or structural and as early as possible.

ICE DETECTION

Another demand is for sensitive and accurate ice detection. Flying chunks of ice thrown off the turbine in operation at the velocity of a speeding car, endanger a large radius surrounding it. A 300 metre radius distance of danger is realistic for an average 2 to 3 MW turbine.

SYSTEMS AND SOLUTIONS

There have been different physical approaches to judge the blade condition. Ultrasonic systems, passive sound systems, measurements of bending moments in the blade root in various forms and automated visual concepts, to name a few. But only the approach of natural oscillation analysis has led to an available, sensitive and affordable system that can be retrofitted in nearly every wind turbine type and covers almost all the needs of rotor blade monitoring.

A two-dimensional accelerometer in every blade, glued onto the inner surface at one third of the blade's length, picks up the vibration of the rotor blade. The signal is digitised and sent to the evaluation unit at the foot of the tower. There, the signal is analysed with different algorithms to detect damages, ice accretion and aerodynamic imbalances.

DEVELOPMENT

The system has been continuously enhanced since its first installations back in 2005. New algorithms have been developed and many different damage types, large and small, have been detected. These include tip damage after lightning strikes, sparweb separations, trailing edge cracks, loose parts in the blade, in the hub and within the pitch system.

When it comes to ice detection, the direct measurement on the blades is a great advantage compared to measurements on the nacelle, because nacelle measurements cannot reflect the conditions on the moving blades with tip speeds of more than 200 kph.

ACCURACY

The main physics behind BLADEcontrol's accuracy is that an oscillating body vibrates slower when it becomes heavier. The shifts in certain frequency peaks are evaluated by the system, thus being able to detect less than 10kg of ice on a blade, 50 metres long.

As ice builds, the system signals the controller to stop the turbine when it becomes too thick. It can also detect and signal the permissible restart conditions of the turbine automatically after ice has shed, because measurements are executed at standstill as well.

CONTROL

The intelligence allows BLADEcontrol to control the active blade de-icing systems and prevent the turbine from having to be shut down at all. As de-icing systems are expensive their use is limited to windfarms in extreme conditions, such as cold climate regions and in high altitudes, for example in mountainous regions.

In Europe's temperate climate, icy periods are comparatively short. Here the ice triggered related downtimes with BLADEcontrol will be up to 90% less compared to turbines with nacelle mounted ice sensors.

Bosch Rexroth
www.boschrexroth.co.uk

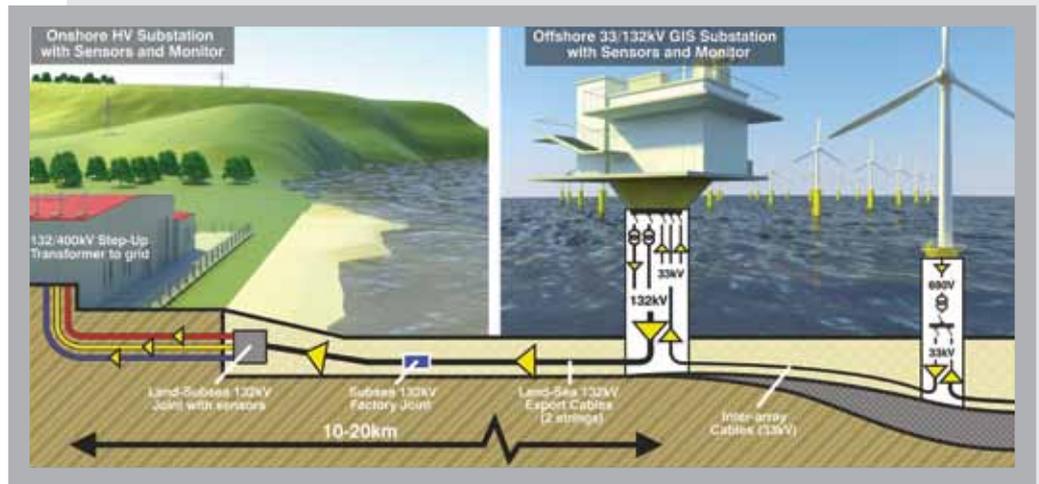
[Click to view more info](#)

CONDITION MONITORING OF OFFSHORE WINDFARM MV/HV NETWORKS

Offshore wind generation currently remains the most expensive renewable energy option at an estimated Levelised Cost of Electricity (LCOE) of £135 per MWh generated over the expected 20-year lifetime of the asset (c.f. to LCOE of £60/MWh for onshore wind). The UK Government's Department of Energy and Climate Change (DECC) has identified that a reduction in the high operating and maintenance (O&M) costs of the offshore wind farms is essential to drive down costs and to make this source of renewable electricity more affordable.

Figure 1:

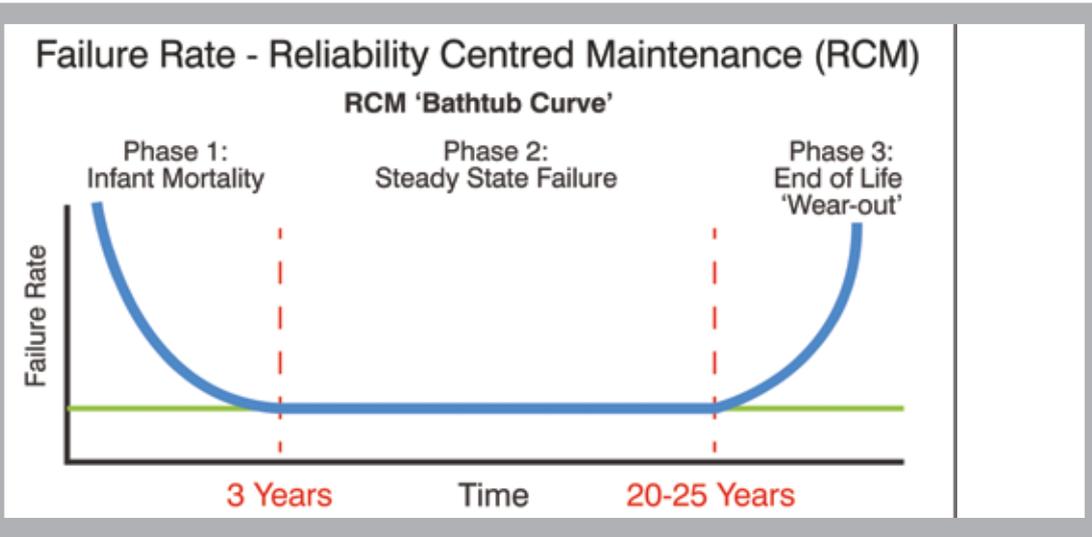
MV and HV network for a typical 'Round 2' UK 500MW + offshore windfarm



BENEFITS OF CONDITION MONITORING

Unplanned outages from medium voltage (MV - 33kV) and high voltage (132kV+) cable faults can lead to significant down time and lost revenue for offshore windfarm operators. In order to ensure continued operational reliability, more effective risk management and to help reduce the presently high O&M costs, it is recommended that the operators apply Condition-Based Management (CBM) regimes to their MV/HV cable networks. The efficacy of any such CBM scheme will be largely dependent on the quality and reliability of the condition monitoring (CM) data from which resultant repair/replace/retain engineering decisions are made.

Figure 2:



WHEN TO APPLY CONDITION MONITORING

Due to the known high rate of 'infant mortality' problems with offshore cable networks within the first 3 years of service (as shown in Figure 2: RCM 'Bathtub Curve'), it is recommended that condition monitoring should start with the testing and commissioning of the new MV/HV cables components at installation (using portable HV power sources and diagnostic testing). This testing can then be supplemented by continuous on-line partial discharge (OLPD) monitoring technology throughout the cables' service life, with particular focus on this 'infant mortality' phase.

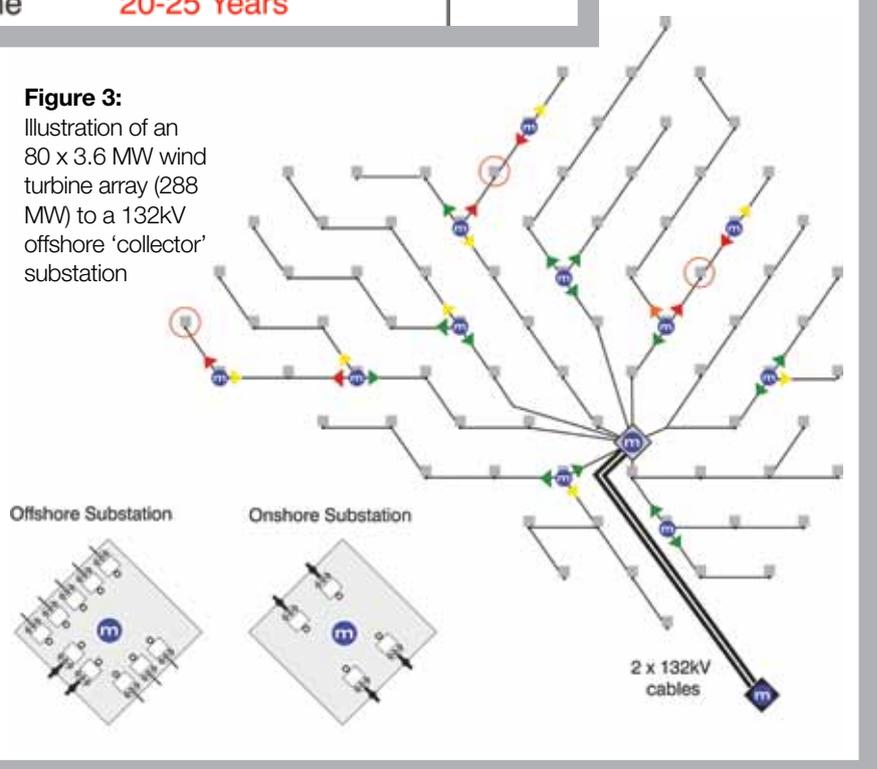
TOOLS FOR ON-LINE CONDITION MONITORING

In order to ensure effective CBM, there is a need for continuous, high-level, diagnostic state and condition data from the condition monitoring (CM) technology employed.

There are a number of on-line cable CM techniques available to achieve 'holistic' MV/HV cable condition monitoring including On-line Partial Discharge (OLPD) monitoring, Distributed Temperature Sensing (DTS), Optical Time Domain Reflectometry (OTDR), Transient Earth Fault and Overvoltage Transient detection and Power Quality Monitoring (PQM).

Figure 3:

Illustration of an 80 x 3.6 MW wind turbine array (288 MW) to a 132kV offshore 'collector' substation



It is proposed that the best cable condition diagnostic assessments will require the cross-correlation of data from a number of these modules.

Dr Lee Renforth
HVPD Ltd
www.hvpd.co.uk

CWIND GENERATES SUCCESS STORY AT LONDON ARRAY

With the recent success story about the final Siemens wind turbine being installed as part of Phase I of the London Array Offshore Wind Farm, CWind also has cause for celebration...

LARGEST GENERATOR MANAGEMENT PROJECT

As the largest consented offshore windfarm to date, London Array is also the largest generator management project to date, and CWind has been working closely with Siemens and EP Tools since January 2012, offering a complete generator management service - installation, commissioning, servicing, maintain/repair and re-fuelling for all the EP Tools supplied generators on site, currently standing at 154 units.

ZERO FAILURE RATE

To date, there has been a zero failure rate on the generators and NO extended down time due to parts replacement or lack of fuel.

Generator deployment during the construction phase is vital to provide power for services such as light, de-humidifying, elevator and general commissioning tasks. These need to be managed with generators transported and lifted onto each turbine which then require maintenance, servicing and re-fuelling as well as lifting off and transporting back. This all needs to be done safely and effectively, with minimal downtime.

DETAILED INDIVIDUAL GENERATOR HISTORY

The size of this generator management project has required CWind to deliver in a number of areas: Close working with teams at Siemens and at the generator company EP Tools. CWind makes sure that every generator has a detailed history and service log, right down to current fuel and expected running time.

The detailed log for each generator ensures services schedules are always met, and so far 965 services have been carried out since January 2012 (an average of six a day!).

RE-FUELLING

Re-fuelling is also critical to keep the units operating and not one has run dry. An effective re-fuelling system is also in place to secure against spillages. The

management process is made possible, not just by the management, systems and trained technicians, but by the CWind fleet of CTruk 20T workboats that are used as re-fuelling (and support) vessels.

With a 15,000 litre diesel storage tank and 20 tonne payload these robust workboats can carry more and do more than conventional workboats. Yet due to the lightweight composite construction have a fuel consumption around half that of a comparative alloy vessel. Up to 6 generators can be transported at one time on these flexible workboats.

SERVICING AND MAINTENANCE

Service teams always travel with spares for the generators so that servicing / maintenance opportunities are maximised. When a problem does surface on a generator the company employs a 'fast-response' attitude to rectifying faults. Even major engine failure scenarios can be dealt with in under 24 hours - and always with qualified and conscientious technicians trained by CWind's training arm - the NWFTC (National Wind Farm Training Centre).

The company has developed systems that have worked exceptionally well at London Array, but are totally scaleable for even larger projects. Also working at Lincs windfarm on a generator management project the company has two other generator projects it is assessing for clients. CWind constantly seeks to deliver effective, streamlined one-stop solutions for all its clients to ensure every project is as successful as London Array.

CWind
www.cwind247.com

London Array
www.londonarray.com



EXTENDING PROJECT LIFE CYCLES AND REDUCING MAINTENANCE COSTS

Latest technology in protective, decorative and marine coatings designed to extend project life cycles, reduce maintenance costs and ensure large financial savings.

From its Flixborough base, a world leading company in the production and supply of protective coatings for the chemical, petrochemical and other industries is perfectly placed to serve the South Humber industrial belt.

TRIED AND TRUSTED BRAND

Jotun is a trusted brand for international prestigious projects, including the Eiffel Tower in Paris, the Petronas Twin towers in Malaysia, the tallest building in the



world, the Burj Khalifa in Dubai and a fifth of the world's shipping.

PROTECTIVE PRODUCTS

Protective products include high performance coatings for the marine, offshore and industrial sectors, together with powder coatings, a range of decorative paints and also intumescent coatings for protection of steelwork against fire - Jotun was, for instance, entrusted to provide the protection for the Eiffel Tower in Paris.

REPUTATION

Today, Jotun's diverse product range bears a solid testament to the company's reputation of being a one point solution for clients, consultants and contractors alike. For iconic buildings, such as the Burj Al Arab, Dubai's first 7 star hotel, Jotun used

their "single source" approach to supply all coatings, from the powder coated window frames to the concrete car park and also internal decorative paints.

QUALITY CONTROL

For best results quality control at each stage of the job is important. Hence all Jotun coating technical advisors are highly trained and experienced, capable of assessing and analysing customer's requirement which cover all aspects of surface preparation, application, inspection and paint technology.

"Continuous innovation has been the key cornerstone to our continued growth and success. Jotun has remained committed

to meeting market needs through the development of innovative, high-quality products and maintaining its reputation for raising benchmarks within the paint manufacturing industry. This has enabled us to almost treble our UK business in the last 8 years" said Richard Chapman, UK Managing Director.

LATEST TECHNOLOGY

Jotun Paints (Europe) Ltd offers advanced products incorporating latest technological developments

to meet specialised needs above and below ground in environments ranging from the icy waters of the Arctic to desert conditions.

An example is Sea Quantum X-200 HPS, new anti-fouling technology which provides fuel saving for the world's shipping of up to 6% and contributes to reducing global warming.

FLIXBOROUGH FACTORY

The Flixborough factory is the Norwegian owned Jotun Group's biggest Protective Coating's factory in Europe and produces 30-million litres of industrial and marine paints a year locally in Flixborough.

The group works with many local companies, providing the coatings for the local steel industry, energy production

and chemical and refinery businesses. In the UK, Jotun is also winning major work for the infrastructure on the rail and the underground networks.

The factory goes from strength to strength with record production and sales. And the Flixborough plant takes pride in being one of the most efficient within the group worldwide, reflecting the skill and commitment of the workforce and their embracing of initiatives such as lean manufacturing.

GLOBAL IMPACT

The improvement, and the way it has been achieved, has attracted the attention of other Jotun factories worldwide. Jotun employs almost 10,000 people globally, 250 of whom are UK based are predominantly in Flixborough.

The Flixborough operation exports 80 per cent of its production and the company world-wide has now extended the area the local operation is responsible for servicing by another 20 countries. The areas the operation is now responsible for include South America, West African countries as well as the territory it has traditionally covered which includes Russia to Panama and Trinidad.



Richard Chapman, says *"Jotun has enjoyed long and continuing involvement with leading manufacturers in the chemical and petrochemical*

industries. Its Flixborough location makes it ideally placed to serve all major Humber Bank developments, such as the new investments in offshore windfarms.

We have a superb, well trained and progressive workforce and as a global manufacturer we are proud to be associated with Lincolnshire and the Humber Bank. Our values, strategies and products all contribute to a better world."

Jotun Group

www.jotun.com

Port banking on renewables for jobs and growth

The Port of Tyne is stepping up the pace in the race to provide clean, green renewable fuels for the future with £180m investment plans for its south bank estate in South Tyneside.

GROWTH

On the back of several years of record growth, the Port has focused its business strategy for further growth on renewable energy - ensuring thousands of jobs and helping the UK to meet its target of cutting carbon emissions by at least 15% by 2020.

DEVELOPING INFRASTRUCTURE

The proposals announced recently are to develop infrastructure and new facilities for handling, storage and transportation of imports of wood pellet, an important source of bio-energy for power stations, and to extend its main Riverside Quay at Tyne Dock, bringing jobs and economic benefit to the North East region.

The Port is already the largest handler of wood pellet in Europe and the plans are to enhance and expand its existing wood pellet storage facilities and associated quay and rail infrastructure. These developments if delivered in full will create 900 jobs in construction and a further 300 full-time operational jobs, supporting an additional 2,000 jobs. This would take the Port's impact on the regional economy to well over £500m in Gross Value Added each year, and increase the number of jobs supported by 20% to a total of 12,000 jobs.

The Port is currently talking to existing and new customers about putting the new facilities in place. The process to find an investment partner to assist with funding is well underway and discussions are being held with a number of interested parties.



INVESTMENT

The developments represent the biggest investment ever made by the Port and follow major investments already made in 2012. These included the strategic land acquisitions of the former McNulty site in South Tyneside and Morston Quays in North Tyneside both of which increased the Port's landholdings by almost 10%, to 624 acres, and available berths by 30%, providing in total over 3km of berth space on both banks of the river.

Additionally, it is investing in an extra gantry crane which will support the Port's container terminal business. The £6m crane will be delivered later in 2013.

FUTURE PLANS

Further plans under consideration for the future on its now enlarged Tyne Dock Estate include facilities for offshore engineering and development of key

buildings such as an office headquarter building and environmental improvements to provide a natural buffer between industry and the developing town centre. The Port will work with South Tyneside Council to support its future plans for the adjoining Riverside Park and public amenities.

NORTH EAST LEP ENTERPRISE ZONE

In addition there are other plans for the Port's estate on the north bank of the River Tyne, in particular for additional investment on a large site within the North East LEP Enterprise Zone. The Port is currently marketing this site for offshore wind turbine manufacturing for the world's largest offshore wind farms in the North Sea, and is in advanced discussions with potential partners.

EXISTING BUSINESSES

The Port continues to work with its existing customers to ensure facilities and services are developed to assist them in growing their businesses, including major companies such as Nissan, VW, Tetley and JML, who rely upon the Port's connectivity, facilities and services to get their products to market quickly and efficiently.

"These are very significant plans for the Port of Tyne which are imperative for both the sustainability of the Port and the future delivery of the Government's carbon reduction targets.

Andrew Moffat, the Port of Tyne's Chief Executive Officer.



"The expertise we have gained in handling wood pellet for over two years and the technologies we have developed are now being sought by national and international energy companies looking to reduce their reliance on fossil fuels and meet government targets of using renewable fuels. The new proposals are for sophisticated, high spec storage and transfer solutions in terms of design, efficiency and reducing environmental impact, and are intended to

"The Port is on target for another year of record turnover and profit," added Andrew Moffat.

"To continue to survive and thrive, we must maintain a competitive advantage and these forward thinking plans will enable us to do just that, significantly increasing the Port's impact on the regional economy."

DIVERSIFICATION

The Port of Tyne, once world famous for coal exports and in latter years, for coal imports, has diversified in recent times to ensure it can keep pace with the global economy and its customers' needs. It is now the UK's largest car exporter, the fourth largest coal importer and one of the largest handlers of wood pellet in the world. It operates an award-winning International Passenger Terminal for ferries and cruise ships, and recently became Britain's largest trust port, overtaking the Port of Dover. It also manages a busy container terminal and UK wide distribution network with a fleet of more than 180 trucks and trailers.

maintain our position as a world leader in handling this important new fuel."

"It is in renewable energy where we see the next major area of growth for us," said Andrew Moffat, the Port of Tyne's Chief Executive Officer. "That is why we are working with major companies in the power generation industry to identify their future requirements and making sure we will be ready to meet their needs.

SOUTH TYNESIDE COUNCIL

Cllr Iain Malcolm, Leader of South Tyneside Council, commented: *"This will further strengthen South Tyneside's position as a key player in the renewables and green energy industries, as well as creating new jobs in the borough and the wider North East.*

"The Council is making major investments to attract new jobs to the borough and to transform our town centres, and this development will complement those initiatives."

Welcoming the plans, MP for South Shields, the Rt Hon David Miliband, said: *"This is very good news for South Shields and the surrounding communities. The Port's vision and ambition ultimately will provide the jobs we very much need in this area now and for the future, and importantly, is supporting the growth of renewable fuels to provide the clean, green energy we need for the future."*

PORT DEVELOPMENT

Initially, the Port will submit applications to extend the Port's multi-functional berths at Riverside Quay by 100 metres and provide the additional facilities for wood pellet including multi-purpose sealed storage, enclosed conveyor systems and a new length of railway line. It will involve the closure of seldom used public by-way, Redheads Landing. New and better access to river views will be provided at an area nearby which will be specially designed and more suitable for public use.

Port of Tyne
www.offshorewindtyne.com.

ED'S NOTE

The area will be covered in much more detail within our regional focus on Tyneside & Teesside, scheduled for our next edition.

CONCRETE SECTOR UNDER STARTER'S ORDERS FOR ROUND THREE OFFSHORE PROGRAMME

WHEN IT COMES TO REALISING THE OPPORTUNITIES OFFERED BY THE GROWTH IN OFFSHORE WINDFARMS, THE CONCRETE SECTOR IS "UNDER STARTER'S ORDERS".

CONCRETE OFFSHORE WIND CONFERENCE

The recent 2012 Concrete Offshore Wind conference, hosted by MPA The Concrete Centre, learnt that the future for concrete gravity foundations is looking very positive. The progress and development of industry gravity foundation construction and installation solutions combined with the growing recognition of concrete performance and environmental benefits means that the concrete sector is ready to realise the opportunities presented by The Crown Estates Round 3 leasing programme.

SIGNIFICANT PROGRESS AND INCREASING RECOGNITION

Opening the conference, John Bingham of Royal HaskoningDHV and Chairman for the Interest Group for Gravity Foundations – Offshore Wind, highlighted how the scene is now set for concrete gravity foundations to help deliver the full potential of offshore wind renewable energy. Significant progress has been made on the development of a wide range of foundation solutions that are cost effective, require minimum maintenance and offer long-term performance. Increasingly, these solutions are being recognised as offering the best environmental choice. As a result, the renewable energy industry is taking the option of concrete gravity foundations far more seriously.

REDUCING COSTS

The UK is already the world's largest offshore wind market, and as Ian Bryan of The Crown Estate explained, that lead will be cemented by the potential of 32GW generated from Round 3 offshore windfarms in addition to the 8GW of energy from previous rounds. There is steady progress being made on gaining planning consents, on the development

and delivery of regulatory frameworks and on reducing the cost of offshore energy to £100/Mwh by 2020 which will make the cost of offshore wind energy comparable with other low carbon technologies. All this was good news for the concrete sector which was further underlined by Bryan stating that: *"The prognosis for steel bases is low. The supply chain cannot match demand. Whereas, the concrete sector is making a very real case for concrete foundation solutions that is increasingly being taken on board by the renewables industry."*

WIND – THE MAIN DRIVER

The need for the potential of Round 3 to be realised is underlined by the fact that currently renewables supply 10% of UK electricity. By 2020 the target is 35%. *"The main driver for growth in renewables will be wind"* said Nick Medic of RenewableUK. *"You cannot have a low carbon energy supply without it."* The windfarms proposed under the Round 3 leasing programme will deliver 30% of the UK's electricity supply from up to 6,000 wind turbines. *"That is a considerable growth market for concrete gravity foundations"* said Medic.



Ian Bryan, The Crown Estate

ENERGY SECURITY

The potential of renewables to provide the UK with energy security was highlighted by David Curran of DECC. He called for a major programme of investment in a mix of nuclear and renewable energy and believed that the newly agreed low carbon subsidy system would provide the assurance of necessary funding for renewable energy development by providing stabilised income streams. This is important if developers are to be attracted to invest in renewables. Making such investment more attractive will support the development of offshore wind farm projects.

ATTRACTIVE INVESTMENT ENVIRONMENT

It is important that the UK benefits from providing the framework for an attractive investment environment. One of the best ways of ensuring this is to ensure a high UK content in offshore windfarms in terms of material supply and workforce. This, explained Chris Willow of BVG Associates, has an important political message: *"Having a real measured UK content in offshore windfarms demonstrates 'payback' for subsidies and links their development to UK jobs and investment."*



Concrete gravity foundations by being UK sourced can help meet the objective of a UK input and content of up to 60% for offshore windfarms."

NEW GENERATION GRAVITY BASES

Against this background, the concrete sector has developed a new generation of gravity bases that offer particular advantages for offshore locations. Concrete gravity bases, typically in the form of cellular caissons ballasted with gravel or sand, are low maintenance, have considerable design flexibility and whole life cost efficiencies. In particular, the high damping properties of concrete minimises vibration. This negates potential structural fatigue. Onshore construction of the concrete bases provides certainty of programme as potential weather delays are minimised whilst the development of innovative placement techniques eases the installation process and minimises the use of expensive heavy lifting equipment.

"Ongoing technological construction and installation developments for concrete gravity bases will add to their advantages by helping to deliver construction, installation and operation cost reductions for offshore windfarms" explained Alan Bromage for MPA The Concrete Centre.

ENVIRONMENTAL BENEFITS

The avoidance of piling during installation is a major environmental benefit of

concrete gravity bases over other foundation types that require driving steel piles into the sea bed. *"No piling is required for gravity concrete bases. They are lowered into position"*, explained Ian Reach of Marine Space. *"The avoidance of piling noise installation is an environmental advantage for concrete gravity bases as the impact on marine life from piling noise is likely to lead to planning conditions being applied resulting in project delays and increased costs."*

With this in mind, retaining concrete gravity bases as an option through the planning process is a prudent priority for developers."

Monopiles, steel jackets, tripods and floating platforms all require drilling or hammer piling to secure them to the seabed. The noise and vibration impact of this will increase due to increased size of the foundations necessary for Round 3 deep water locations. The resultant sound pressure waves from piling, drilling and hammering could be at levels high enough to cause death, damage and displacement of marine animals, sensitive fish species and some fish eggs and larvae. Domestic and international environmental legislation, such as the Habitats Directive and the Marine Strategy Framework Directive, now reflect the serious consideration of these possible effects.

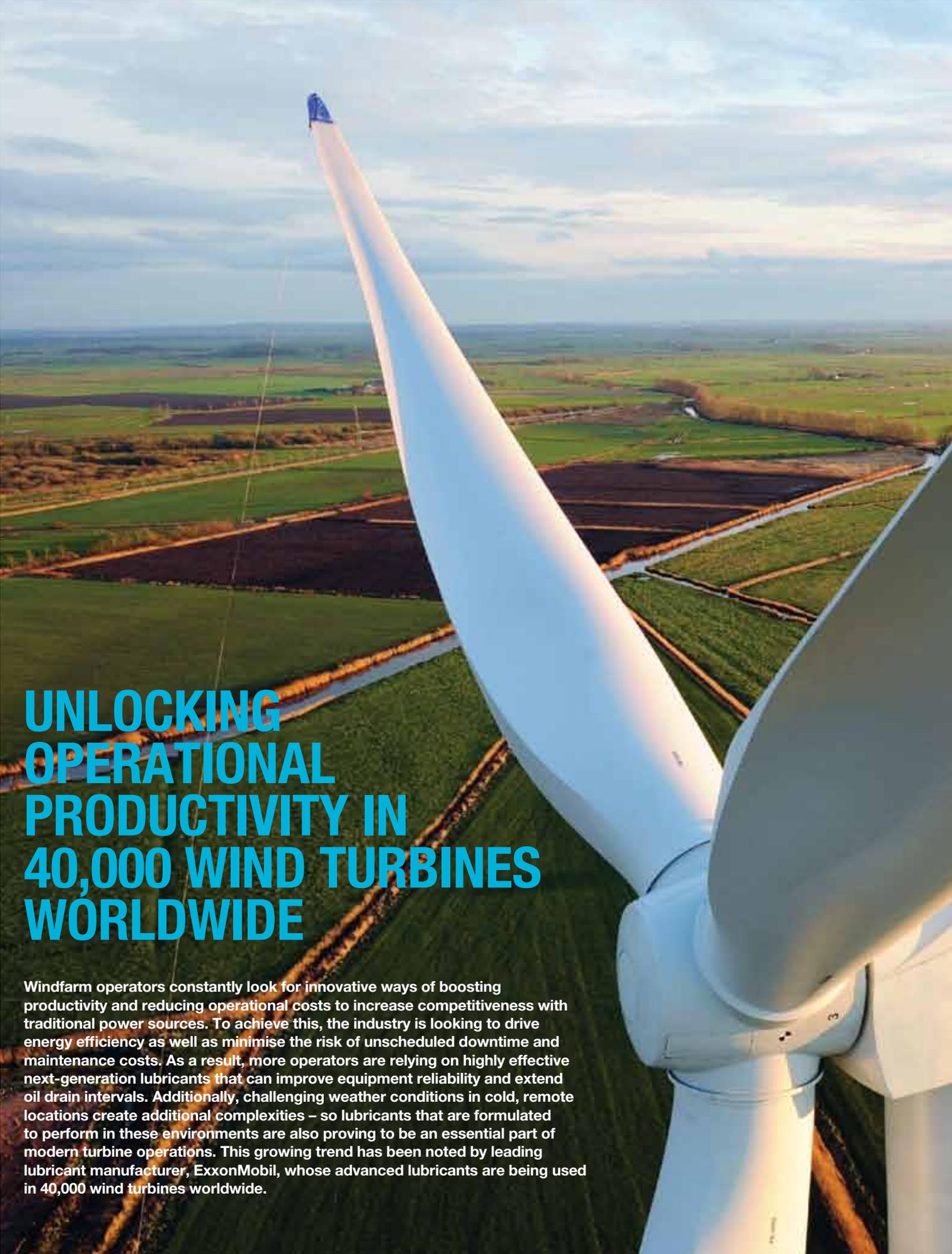
The attractiveness for developers of removing the environmental issue of piling noise was underlined by Adam Pharaoh of Royal HaskoningDHV who stated: *"Developers would be bound to prefer non-piled foundations if they were technically proven and cost effective. If this critical point is reached in the development of low-noise foundations, people may then start ruling out piling to reduce their consenting risk."*

SECURE AND SUSTAINABLE ENERGY SUPPLY

"Encouraged by the coming together of product and supply chain development, the provision of planning consent frameworks and stabilised investment environment plus the growing recognition of the benefits of concrete gravity foundations for offshore locations, particularly for the deep waters of Round Three, the concrete sector is ready to play its part in ensuring that the UK has a secure and sustainable energy supply" said Bromage.

MPA Concrete Centre
www.concretecentre.com

[Click to view more info](#)



UNLOCKING OPERATIONAL PRODUCTIVITY IN 40,000 WIND TURBINES WORLDWIDE

Windfarm operators constantly look for innovative ways of boosting productivity and reducing operational costs to increase competitiveness with traditional power sources. To achieve this, the industry is looking to drive energy efficiency as well as minimise the risk of unscheduled downtime and maintenance costs. As a result, more operators are relying on highly effective next-generation lubricants that can improve equipment reliability and extend oil drain intervals. Additionally, challenging weather conditions in cold, remote locations create additional complexities – so lubricants that are formulated to perform in these environments are also proving to be an essential part of modern turbine operations. This growing trend has been noted by leading lubricant manufacturer, ExxonMobil, whose advanced lubricants are being used in 40,000 wind turbines worldwide.

PROVEN PERFORMANCE

A US-based energy company realised significant performance and cost benefits by switching to ExxonMobil's gearbox oil, Mobilgear SHC XMP 320. The mountaineer wind site operates forty-four turbines with a 66-megawatt (MW) output. The Flender Model PEAS 43090.5 gearboxes (60 gallon capacity) within the 44 NEG Micon 1.5MW turbines were filled with Mobilgear SHC XMP 320 gear oil in 2002.

EXTREME CONDITIONS

These gear boxes operate in an extreme four-season climate with temperatures ranging from -25°C in winter up to +40°C in summer. The operations, therefore, require a lubricant that could perform in tough applications across a wide temperature range, whilst also providing protection against micropitting and gearbox deposits.

HARD COST SAVINGS

As a result, the operator has reported hard cost savings of US \$176,000 over seven years of service. This was largely achieved by extending oil drain intervals to twice the industry average for wind turbine gear boxes, saving \$4,000 per turbine in reduced oil change maintenance costs. As part of its Signum oil condition monitoring programme, findings from the used oil analysis also showed excellent gear box cleanliness and better overall gear condition than expected, thereby helping to manage costs.

40,000 GEARBOXES WORLDWIDE

Due to results like this, Mobilgear SHC XMP 320 is now used to protect 40,000 gearboxes of wind turbines worldwide and is the initial-fill gear oil of choice for many of the world's top wind turbine builders. In addition to its ability to maximise equipment performance and durability, the ability to extend the interval between oil changes from 18 months to three years or more can potentially make a big impact on reducing costs and difficult maintenance logistics. For example, this helps operators avoid the expense associated with replacement parts, labour and chartering specialist vessels to carry out the maintenance of offshore wind turbines.

UK'S GROWING WIND POWER INDUSTRY

Closer to home, the latest additions to the company's global customer base are three North Sea-based wind farms – Alpha Ventus, Borkum West and Thornton Bank, which demonstrates how these specialist lubricants are being relied upon by the UK's growing wind power industry.

GETTING WARMED UP

To complement the improved functionality of gearbox operations, Mobil SHC 500 hydraulic oils have been proven to offer energy efficiency benefits in hydraulic equipment. Compared to standard mineral hydraulic oils, Mobil SHC 500 can help to reduce hydraulic system energy consumption by up to 6.2 percent. This series was engineered to help protect hydraulic equipment operating in extremely cold conditions in offshore wind farms such as the North Sea or in remote onshore locations. At low temperatures Mobil SHC 500 is four times thinner than similar viscosity grade conventional mineral hydraulic oils*, allowing it to circulate around the hydraulic system faster at start up, ensuring the lubricant is in place to protect machine components. Although wind farms are unlikely to be exposed to such extreme arctic temperatures, the extent of the lubricant's cold temperature performance demonstrates that operating within UK weather conditions and wind chill factors can be easily met.

COLLECTIVE RESULTS

When combined with application expertise such as ExxonMobil's Signum Oil Analysis Programme, which monitors the performance and health of the oil and components on an ongoing basis, the considered application of advanced lubricants to different components of wind turbines can achieve significant results.

Mobil Industrial
www.mobilindustrial.com

Signum Oil Analysis
www.signumoilanalysis.com

[Click to view more info](#)

* Based on comparative -400C Brookfield, ASTM D2893 test results, between Mobil SHC 525 and Mobil Unisvis N 46. For very low temperatures Mobil Aero HF or Unisvis HVI 26 may be considered depending on the Equipment Manufacturers Minimum Viscosity Startup requirements.

CRITICAL SOFTWARE TECHNOLOGIES BOOST EFFICIENCY OF POSEIDON OFF-SHORE WAVE AND WIND TURBINE PLANT



In December 2012, the UK government committed to purchasing up to 2% of the energy it uses from green sources, in a new “Energy for Growth” initiative. Currently, the Government Procurement Service (GPS) buys what amounts to 3% of the UK’s total energy demand. This policy will see a pilot scheme in 2013, buying 2% of that £1.5bn per annum GPS budget being spent on renewable energy. For many, this is a much needed step towards our investment in renewable energy sources.

POSEIDON

In 1999, Floating Power Plant first developed Poseidon, a concept for an integrated floating power plant that generates electricity from both wave and wind energy. The wave energy plant serves as a floating foundation for offshore wind turbines, thus creating a sustainable energy hybrid.

CONDITION MONITORING

One area that needs to be streamlined and efficient is the technology deployed to monitor the structural health of, for example, dynamic load-bearing components in wave generators. In 2011, Floating Power Point tasked Critical Software Technologies to develop an advanced Integrated Condition Monitoring

system on its innovative Poseidon prototype situated off the coast of Lolland, Denmark.

The command and control solution, provided by Critical, provides advanced monitoring functionalities on key components, sending early alerts to the Poseidon team, warning them of potential problems on the plant so they can be resolved before they cause severe disruption or damage.

TECHNOLOGY

This is done by combining Critical’s csEMS technology, which provides optimised asset management support tools, with PRODDIA, a leading structural systems health management solution, also from within the Critical Group.

The systems measure against such parameters as wave height and wind direction, to accurately calibrate the stresses on the platform.

KEY ISSUES

Operation, maintenance and survivability are key issues when working off-shore and a traditional, simplistic approach to monitoring and maintaining the health of critical equipment and software is simply not good enough.

MEETING THE CHALLENGE

If the challenge of switching to renewable energy sources is to be met, then it is essential that projects such as Poseidon are undertaken, for failure could not be blamed entirely on government policies.

Critical Software Technologies
www.critical-software.co.uk



Safety training for the Wind Energy sector

Safety Technology provide a range of safety training for working in and around wind turbines including;

- GWO approved:
 - Working at Heights
 - Manual Handling
 - First Aid
- RenewableUK approved:
 - Work at Height and Rescue







www.safetytechnology.co.uk
 South Wales | Blyth | Great Yarmouth | USA

PIPESHIELD THEY'VE GOT IT COVERED

Pipeshield International Ltd is a world leader in engineering and manufacturing subsea protection and stabilisation systems to withstand the most challenging and toughest of subsea environments.

They are headquartered in Lowestoft and maintain manufacturing bases in the UK and South East Asia and have production experience in the Middle East, Indonesia, Malta, Canada, and South Africa.

COST EFFECTIVE SOLUTIONS

They are a well known and highly reputable brand in the offshore oil and gas and now in the renewables industry and have been identified as a leading source of knowledge for designs and cost effective solutions for subsea installations for cable protection and scour prevention.

Products include concrete mattresses, anti-scour fronded solutions, impact protection structures and concrete crossing solutions. They offer bespoke lifting and installation equipment, designed to suit their client's installation and mobilisation requirements.

ONE-STOP-SHOP

With in-house design, engineering and analysis capabilities, they offer a complete service from conceptual and front-end engineering design through to construction.

UNIQUE SOLUTION

Pipeshield recently developed an unique solution for the Lincs OWF project.

A special lifting frame was designed and fabricated to enable an array of mattresses to be placed around the monopile immediately after it was driven in a single lift, thus any perceived scour issues were resolved immediately, this was not only cost effective in time and effort but provided a permanent solution and totally replaces the need for rock dump.

The overall installation time was reduced and resulted in an effective, accurate and simple placement installation.

CERTIFICATION

They are proud to be certified to ISO 9001, ISO 14001 and OHSAS 18001 which recognises their well managed and robust quality, environmental and safety management systems respectively. They also hold various other industry awards for best practice.

Pipeshield
www.pipeshield.com

[Click to view more info](#)



FLEXIBILITY, EXPERTISE AND CAPABILITY REAP REWARDS

The challenges for the offshore wind energy industry are many. With the growth in the number of opportunities increasing annually, Aquatic Engineering & Construction Ltd took a strategic decision some years ago to adapt and develop its offshore oil and gas capabilities and bring its 35 years' experience to bear in this key energy production service.

OFFSHORE RENEWABLES ENERGY INDUSTRY

The senior team at Aquatic believed that both in terms of capability and engineering experience, the business was, and is, in an unique position to support and serve the offshore renewables energy industry.

Chris Brooks, President of Aquatic commented, *"Our aim is to meet the individual needs of our customers through a flexible approach. As an independent solution provider who works in partnership with customers and other contractors, we are well-placed to deliver high calibre projects of any size or in any location."*

HOSTILE ENVIRONMENT

When the working environment is literally in deep water, usual business planning has to give way to shifting sands, tides, a hostile or unsuitable weather system that happens to pass through, and any supplier operating under these conditions needs to be flexible and also be able to think imaginatively about new solutions that might be necessary because of time and climate pressures.

INVESTMENT

As part of the Acteon group, Aquatic also enjoys the benefits of its investment, and is rightly proud of its impressive range of equipment for the installation and spooling of power cables. For every project, there's the right piece of equipment and any supplier needs to be able to meet the logistical obstacles that can come in to play.

WIND ENERGY PROJECTS

Aquatic has been privileged to work on many of the most well-known wind farm projects including Greater Gabbard and Thornton Bank and with most of the operators involved.

ACTEON – GLOBAL ORGANISATION STRENGTHS

Aquatic is part of the Acteon's wider risers, conductors and flowlines offering and joins the other Acteon companies in linking subsea services across a range of interconnected disciplines.

Combining the strengths of a major global organisation with those of independent market specialists, all Acteon companies have complementary skills, experience and technologies that link seabed to surface across a range of interconnected disciplines.

Aquatic Engineering & Construction Ltd
www.aquatic.co.uk

Acteon Group
www.acteon.com



WIND TURBINE COMPONENT TRANSPORT NO EASY MATTER

For over 14 years, Collett & Sons Ltd have specialised in transporting, shipping and handling wind turbines throughout the UK and EU and with the more recent advent of components being sourced on a global basis, they have added a marine division to deal with the growth of their clients requirements.

INVESTMENT

In 2008 they invested heavily in a purpose designed depot at the Port of Goole, to receive, handle and store turbine components. With additional investment in heavy lifting equipment with a capacity of 110 tonnes, this facility now acts as a stockpile and storage facility for the import of wind turbine components which allows 'just in time' delivery of the turbines to sites throughout the UK.

Although Collett is known as a vehicle operator the company is so diverse in the nature of the services that it offers and trades as three integrated divisions...

DIVISIONS

- **Transport & Projects** – undertaking the transport, storage, heavy lifting and project management from door to door on a worldwide basis
- **Marine** – undertaking ship chartering operations, port handling and ships agency services providing port and ship expertise throughout the UK
- **Consulting** – applying unique knowledge and expertise, from transport and marine divisions, undertaking route surveying and site access studies and reporting. Providing 'swept path analysis' on CAD format with specialist vehicles and components



RECENTLY COMPLETED PROJECTS INCLUDE...

- 10 Turbines to Earls Hall, Essex
- 12 Turbines to Tickton, East Yorkshire
- 8 Turbines to St. Neots, Cambridge
- 6 Turbines to Kendal, Cumbria
- 8 Turbines to Crick, Northampton

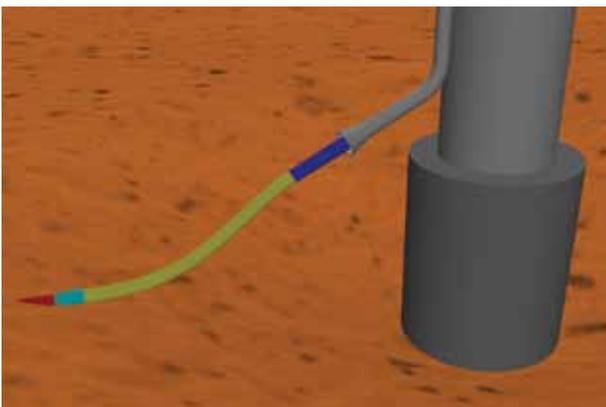
Collett & Sons Ltd
www.collett.co.uk

NEW METHODOLOGY TO ASSESS FATIGUE IN FREE HANGING POWER CABLES IN MONOPILES

BPP-Cables have recently developed a methodology to quantify the damage to free-hanging inter-array cables within monopiles. Removing the J-tube, an external steel conduit for the power cable, from monopile foundation designs yields attractive reductions in capital expenditure.

"J-TUBELESS" DESIGNS

"J-tubeless" designs typically feature a hole in the monopile for power cable entry near the seabed and a hang-off platform inside the foundation structure.



This solution allows a power cable, protected at the entry location to be freely suspended from above the mean sea level within the turbine tower.

KEY RISK

A key risk of this configuration is the potential fatigue failure of the cable. Vibrations caused by wind and wave loading on the structure will drive an excitation of the suspended cable length. This oscillatory response will inflict fatigue damage on the metallic components of the power cable. To quantify the damage the

analysis must consider factors as diverse as: hydrodynamic damping, mechanical properties of the cable, installation method and protection system geometry.

SOLUTION

Using OrcaFlex™, a time-domain marine finite-element package, BPP-Cables can model the

response of the power cable to excitation at various points in the foundation.

Thousands of computer simulations are generated to describe the expected motions of the cable over its operational life. These simulations are processed, using software developed by BPP-Cables, to produce stress time histories for the most vulnerable power cable components.

Additional processing, using specialised efficient algorithms in the BPP-Cables software, translates these simulated stress traces into predicted fatigue damage. The entire process from receipt of data to submission of an analysis report can be completed in a little as three weeks.

BENEFITS

Quantitative methodologies are a valuable tool used in assessing the overall project risk. In addition, knowledgeable engineers can use them to assess the benefits of any proposed mitigation techniques.

BPP Cables
www.bpp-cables.com

MOVING THROUGH THE GATED PATH: NCOE'S PROCESS FOR PROJECT DEVELOPMENT AND SUCCESS

AT NCOE OUR GOAL IS TO GENERATE BUSINESS VALUE BY DELIVERING PROJECTS, WHICH ARE EFFICIENT IN BOTH CAPITAL INVESTMENT AND LONG-TERM OPERATION

In our previous article in the May/June 2012 edition of this magazine we looked at Project Strategy and how it was important to assert an early influence on a project. This identified how influence and cost are all related. However in this article we will demonstrate how the gating process maximises influence at the front end of the project and ultimately lowers financial and other risks.

Our processes in NCOE have been developed from a wealth of industry experience which exists in the company. They also represent the current view of recognised good engineering practices. We apply these consistently across our range of projects. And, of course we are always looking for new projects and developments in which we can help in this way.

MAXIMISING INFLUENCE BY FOLLOWING THE GATED PATH

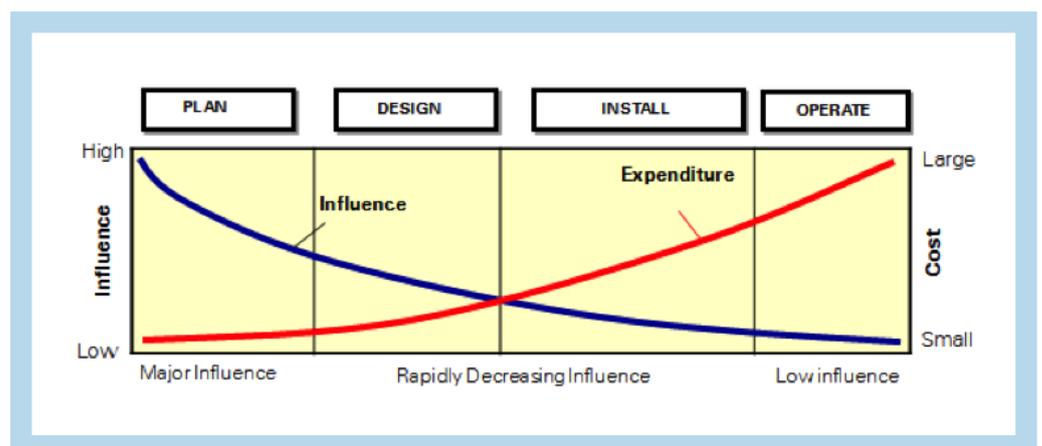
We apply a gated process to our projects to ensure all options are properly screened and the correct option is selected for definition and execution phases.

A gated process has a clearly defined entry point and a clearly defined exit point. This means that in a project lifecycle you cannot move forward, progressing into the next stage until the first gate has been passed and approval has been gained to move forward. It really is a bit like going on a walk entering one field, walking through it to reach the gate at the other side. Design-readiness and understanding project risks are major factors at gate milestones. More often than not trying to push forward with a design concept when the project risk are not fully understood usually results in re-work later in the life cycle. Therefore a gated process minimises these risks.

One of the major advantages is that it ensures there is a methodical process and audit trail to each decision. The prize is selecting the correct option first time without having to go back and recycle options. Recycling is a very costly and time consuming process. Therefore time and effort spent in the earlier stages of the life cycle presents significant gains later on. For example changing the installation methodology before you start construction is much easier than when you are at the workforce with a team of construction personnel.

YOU MAY RECALL THE GRAPH THAT WE INCLUDED IN OUR PREVIOUS ARTICLE. DEMONSTRATING COST AND INFLUENCE AT EACH STAGE OF THE PROJECT:

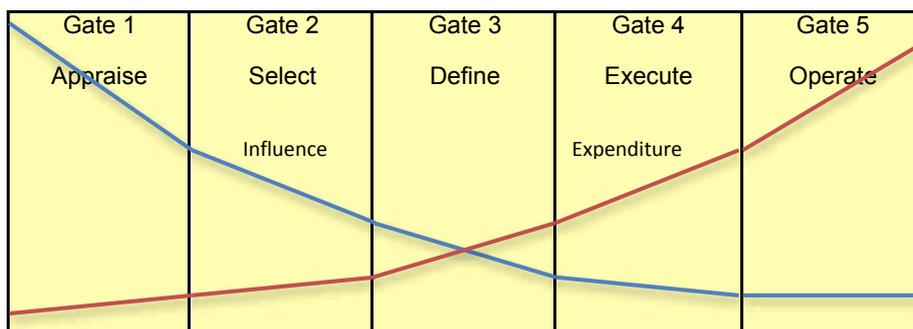
The same cost and influence is applicable to the gated process.



Apply for sanction to move forward through gate 2 to investigate and select the option to be developed.

Gate 2 Select - Select the preferred project option, one which maximises long term value and appropriately manages risk over the long-term, for progression to the Define gate. Making the right concept selection decisions are key and should not be rushed. Decisions informed by integrated data, then adding sufficient

WE COULD APPLY A SIMILAR GRAPH TO THE GATED PROCESS:



Apply for sanction to move forward through gate 4 into Project execution

Gate 4 Execute - Implement the Project Execution Plan as an integrated work-scope with close attention to quality, performance and risk management.

Gate 5 Operate - Complete the project close out and handover in timely manner. Support the safe execution of the start-up plans. Ensure the completion of performance testing and lessons learned.

As the graph illustrates costs at the front end are low in terms of the full project cost because a small team of people are generally involved. As soon as a project reaches gates 3 and 4 depending on the scale of the project the numbers of people which are involved could ramp-up significantly, purchasing of long-lead items may begin and the cost increase rapidly. Therefore a good solid structure must be in place from the start.

To give an outline in more detail of our gated process at NCOE for projects consists of the following Gates, where each one becomes an exercise in itself.

Gate 1 Appraise - Confirm the viability of the project and identify a range of project options to be screened, at least one of which is technically and commercially viable.

- 1 Determine main requirements. Licenses, tariffs, overall requirements specification
- 2 Existing engineering capability and knowledge
- 3 Identify the project options to be screened for viability
- 4 Estimate the overall costs to be met for design and installation and also the lifecycle costs to make the project viable

definition, combined with a strong Management of Change process and planning, will ensure readiness for entry to Define.

- 1 Investigate alternative options
- 2 Determine safety risks, environment risks, and commercial risks
- 3 Determine the knowledge base for each option
- 4 Determine major parts and suppliers
- 5 Select the option to be taken forward and further developed
- 6 Project cost estimate

Apply for sanction to move forward through gate 3 to further define the option to be developed

Gate 3 Define - Complete the technical definition through Front End Engineering Design (FEED) and project execution planning, with the development of project cost estimate and schedule, and risk management plans. Also further development to confirm business case and performance targets for entry to Execute Gate.

At this point the project has been developed with an audit trail showing due diligence. This is then applied to determine the best option to take forward into Engineering, Purchasing, Installation and Commissioning (EPIC). Cost estimates are also refined at this stage.

CONCLUSION

In conclusion, using this process minimises risks. In terms of project design and management, only the viable ideas will progress, where they will be given increased resources. Those that are not viable will shut off before investment is wasted upon them.

Although we may apply the analogy of taking a walk through fields, this is a serious process and not just a "walk in the park". This will therefore provide a viable, risk reduced, developed pathway to project success.

Tom Kellacher
Newcastle Chambers of Engineering
www.ncoe.co.uk

[Click to view more info](#)

THE PROOF OF THE PUDDING!

We like to feature case studies – there is nothing better because they are ‘real life’ scenarios, which helps enormously when making decisions on the use of a company’s services.

We feature 2 case studies by Lynx Metmasts who are industry leaders in met masts and wind measurement instrument systems. They provide a comprehensive design, installation, maintenance, repair & upgrade service, covering the UK & Ireland.

PROJECTS INCLUDE...

- Micro-Generation/SmallWind/REFIT
- Community Wind Projects
- Large-Scale Windfarms
- Onshore & Offshore
- Power Curve Testing



CASE STUDY 1 - CLIMBING DERRICK SYSTEM

Lynx Metmasts was recently contracted to rescue a 60m tubular met mast which was in imminent danger of collapse. The mast had just been purchased by their client as part of a community wind farm project. However, after due diligence carried out by the client, it was discovered that the mast was in immediate danger due to brittle guy wires, one of which had snapped.

FINDING A SOLUTION

The client contacted the original installer who recommended a controlled collapse, as it was too dangerous to attempt lowering the mast in such condition. This solution did not meet the client’s main criteria of uninterrupted wind measurement data.

The client contacted Lynx Metmasts for a second opinion and they were able to meet their requirements in full. Remedial works involved erecting their climbing derrick system alongside the met mast. The derrick provided support at critical points and enabled full height access for the replacement of all guy wires.

RE-ALIGNMENT

The mast was then re-aligned and certified to the OEM specifications. The client is delighted that they maintain consistent wind measurement assessment for another 12 months, following which the mast can be safely de-commissioned.

INNOVATION AND EXPERIENCE

This project stands as an example of their innovation and the considerable work at height experience of the Lynx Metmasts team.

CASE STUDY 2 – 10m TILTING MAST ON MARINE SURVEY SHIP

Lynx Metmasts were given a project by NUI Galway to design and install a 10m tilting mast on the bow of Celtic Explorer.

CUSTOM DESIGN

The mast was a custom design to mount meteorological instruments for surveys in the Atlantic Ocean. The team carried out the design, supply and installation of the mast and the winching equipment at Galway Port. The installation was completed on time and budget and underwent several wet tests with continuous breaking waves over the bow of the vessel.

CHALLENGING PROJECT

This challenging project stands as a testament to the quality of their design and installation teams – whatever the task.

Lynx Metmasts Services Ltd
www.met-masts.com

PEIKKO FOUNDATION SYSTEM USED BY ALSTOM

PEIKKO’S WIND TOWER FOUNDATION SOLUTION WILL BE APPLIED IN THE NEW MUUKKO ONSHORE WIND PARK IN FINLAND

Peikko are to supply foundation design and ETA approved foundation systems and products to 3MW wind turbines by Alstom.

EXPECTED OPERATIONAL DATE – JUNE 2013

The project is already underway. The turbines will be installed in the beginning of 2013 and the wind park will be operational in June 2013.

DEVELOPER

The developer in the project is TuuliSaimaa, a respected Finnish wind energy expert and one of the major players in the Finnish wind energy field. Their delivery consists of the foundation and foundation extension in the hybrid tower solution.

FOUNDATION CONCEPT

The foundation concept is based on Peikko’s proven solution and it includes Peikko’s anchoring technology. The use of their foundation concept enabled the fast start-up of the site and meet an extremely rapid programme starting in the depths of a Scandinavian winter.

BESPOKE SOFTWARE

The company’s foundation solution utilises bespoke software for quick and efficient design of integrated bases to optimise concrete and reinforcement usage.

CABLING ON WINDFARMS

Cable trenching is an essential part of works performed on a windfarm project. The majority of windfarms are constructed in areas that are not suitable for general agricultural development. Therefore, the topography of the routes designated for the cable can be rugged and unforgiving and pose challenges for access of materials and plant.

ADAPTING TO NEEDS

Cleantech Civils Ltd has formed its company foundations primarily from

trenching and utility laying. Over the years, it has developed plant and equipment to adapt to the need for more efficient ways of trenching, unique to the industry.

Large capacity cable drums and ducting trailers have proved to be a success in increasing production on site while maintaining quality assurance and safety of materials. Crossing existing waterways, roads and ravines always pose a challenge, but with the aid of Cleantech's directional drilling department, sleeve construction and fluming methods, it can

be carried out without disruption to the surrounding environment.

CABLING PROCESS OPTIONS

The process for installing cables from the turbines to the connection points can be carried out in two ways, either by direct bury or through ducts. The direct bury process involves taking the cable directly

from the drum into the excavated trench. Cleantech designed and developed a frame which can carry three cable drums and a fibre optic drum and mobilised along the route using the 45ton excavator. The advantages with this method are all the cables can be laid into the trench on one passing, and from a Health and Safety benefit, no operatives are required to enter the excavation as all placing and cable tying can be completed safely from the sides of the excavation.

DUCTING PROCESS

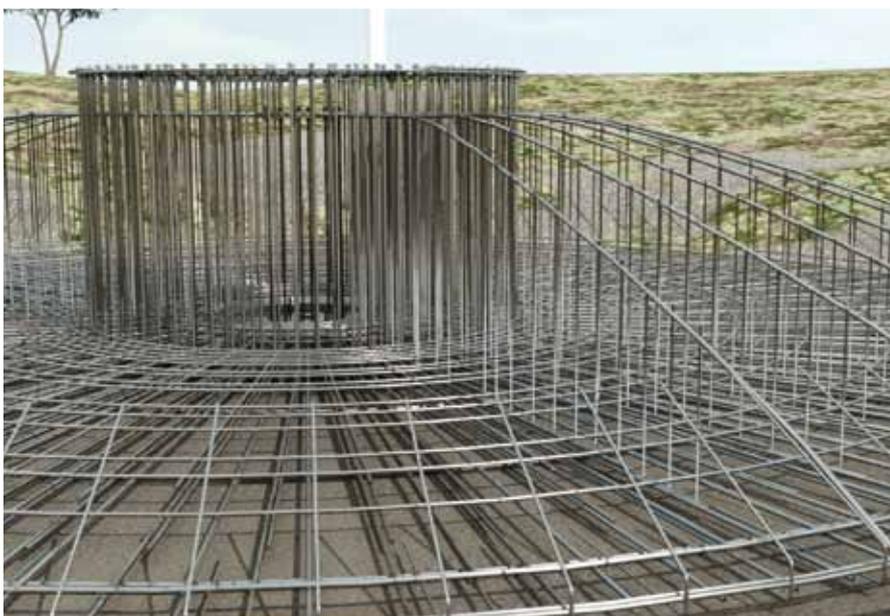
The ducting process is used more typically on spine routes and in roadways. The company use excavators with rotator/swivel hitches and 0 tail swing to assist working in difficult narrow routes. All their staff are highly experienced in constructing to the specification of cable ducting, traffic management, safe-dig systems and environmental awareness.

They have also designed a duct laying trailer where teams can place duct safely into the trench from high level which also improves efficiencies and safety.

After ducting has been successfully installed they place the cables into each configuration with specialist pulling equipment, all calibrated and certified to pull the cables to specification.

Print outs and data history can be presented for all cable pulls throughout the project.

Cleantech Civils Ltd
www.cleantechcivils.com



REDUCED COSTS

The design typically reduces the total rebar and concrete contents of a base by 20% each, which also affords associated labour savings and a shorter construction programme.

Peikko
www.peikko.co.uk

 = Click to view video

SHOT PEENING AND C.A.S.E.™ SUPERFINISHING OF SURFACES TO OPTIMISE ROUGHNESS AND STRESS

Residual stress and surface roughness can radically affect a components performance. However, until recently engineers have only designated roughness constraints on drawings, with little heed to residual stress. This is now changing as industries become aware of the significance of these issues and both are now designated on drawings and critical applications.

CONTROLLED SHOT-PEENING

Controlled Shot-Peening is the cold working of a surface with spherical media, impinging at a pre-determined velocity under controlled conditions. The surface yields, but it is restrained by the substrate inducing a uniform residual compressive stress resulting in increased fatigue strength.



C.A.S.E.™ SUPERFINISHING

This process is beneficial in situations where metal to metal contact occurs and where high temperature, fluid flow and optimum performance are required. It is especially beneficial as a post controlled shot peening treatment, the combination of the two processes improving fatigue performance and increased running efficiency.

This is a technique of surface refinement in a controlled gentle manner to give a negative Rsk with very low Ra and Rv. It works by preferentially removing surface asperities whilst retaining the beneficial negative valleys.

Recent work on case carburised components in EN36, ground to simulate gear flanks produced the following results:

CONCLUSION

Controlling the residual stresses and surface roughness will significantly improve the performance of a component. These improvements are achieved by introducing a repeatable magnitude and depth of compressive stress by controlled shot peening and then controlled C.A.S.E.™ Superfinishing of the surface, to remove the asperities likely to puncture the lubricant film and cause premature failure.

Metal Improvement Company, LLC
www.cwst.co.uk

As Ground		Shot Peened		SP + C.A.S.E.™ Superfinishing	
Across Lay	Along Lay	Across Lay	Along Lay	Across Lay	Along Lay
Ra	0.084	0.233	0.248	0.044	0.043
0.083	0.619	1.990	1.933	0.277	0.389
Rt	185.243	80.44	81.448	80.413	64.965
1.079	22	52	49	48	55
Sm	0.06°	0.23°	0.23°	0.06°	0.07°
23.931					
HSC					
155 Slope					
0.1°					

Note: All dimensions in microns.

Ra = Arithmetic Mean of the departures of the roughness profile from the mean line.

Rt = Maximum peak to valley height of profile over assessment length.

Sm = Mean Spacing between profile peaks at mean line.

HSC = The High Spot Count is the number of complete profile peaks projecting above the mean line.

Slope = Slope of profile throughout the assessment length.

TIP-TOP CONDITION

Wind power has been identified by the Government as one of the key technology platforms to enable the UK to achieve its carbon emissions and climate change targets. However, whilst wind power is environmentally friendly, it is not without issues of its own, most notably how to ensure that turbines remain operational for long periods in often harsh climatic conditions.

ROTOR BLADES

In particular, rotor blades are among the most accident sensitive components of a wind turbine and, if damaged, one of the most expensive parts to replace.

PERIODIC CONDITION MONITORING

The condition monitoring of rotor blades is normally carried out on a periodic basis with long intervals between inspections. This can be problematic, as a small easily rectifiable fault can grow to something much more serious.

CONTINUOUS CONDITION MONITORING

The answer to this problem may lie in using the natural oscillation of the turbine blade to determine the blade's true condition. Rexroth's BLADEcontrol is a system that continuously monitors the condition of the rotor blades on wind turbines and immediately signals to the operator and/or the machine control problems such as structural blade damage, ice build-up or lightning damage. What's more it can keep track of the history of the blades condition to offer an on-going forensic trail of wind turbine performance.

BLADECONTROL

BLADEcontrol performs an analysis of the natural oscillation frequencies of the turbine blade which change when the blade is damaged or has a greater dynamic load, such as when ice forms. In terms of maintenance work, BLADEcontrol can differentiate between small, non-threatening edge cracks and major structural damage. This allows for the introduction of a planned maintenance schedule rather than a reactive schedule.

EARLY DETECTION EQUALS HIGHER YIELDS

Calculations suggest that a control system such as BLADEcontrol could generate a payback period of less than two years by early detection of repairs, lower insurance costs, savings on maintenance costs and reduction in unnecessary downtime leading to higher yields.

Stuart Williams
Bosch Rexroth
www.boschrexroth.co.uk

[Click to view more info](#)

DEDICATED ON-SITE VEHICLES REDUCE DOWNTIME

WORLIFTS LIMITED, ESTABLISHED IN 1976 HAS OVER 35 YEARS OF EXPERTISE IN DELIVERING SOLUTIONS TO ALL INDUSTRY SECTORS AND SPECIALISES IN THE PROVISION OF ON-SITE SERVICES WITH THE UTILISATION OF DEDICATED VEHICLES.

The company offers a total on-site package that includes...

- Testing, Calibration & Hire of Hydraulic Bolting Tools
- Examination & Certification of Lifting Equipment
- Total Tool Inventory & Asset Management
- Training for Safe & Correct Use of Bolting Tools
- Demonstration of Tools for Bolting Applications

COLLABORATION WITH ENERPAC

Enerpac specialises in professional high-pressure bolting solutions. Their hydraulic bolting solutions serve the complete bolting workflow – from a pipe alignment to complex joint positioning of large structural assemblies. The extremely strong and compact tools are used in industrial markets and applications throughout the world. The company makes the bolting process more accurate, safer and efficient.

ENERPAC BOLTING SERVICE

Introducing the bolting service van powered by Worlifts, is available from 2013 – the on-site vehicle offers a full bolting tool service and maintenance package which includes on-site testing, tool calibration, tool repair and tool hire.

Rob Chatley, Worlifts Bolting Sales Engineer is responsible for the van, and also provides the client with personalised bolting demonstrations and training.





ONLINE ASSET MANAGEMENT SYSTEM

This service is supported by their proven existing online asset management system which enables immediate access to customers' tool inventory and current tool status.

Worlifts
www.worlifts.co.uk

[Click to view more info](#)



The company gives advice on the best solutions and the bolting tools that are most suited to the application, thus enabling safe and controlled performance of bolting activities.

FULL COMMITMENT AND GUARANTEED SERVICE

Worlifts is an Authorised Bolting Tool Distributor and an Enerpac Authorised Repair & Service Centre and support any preventive or corrective after sales service regarding Enerpac tools.

OTHER BENEFITS

The company can also service a standard range of high pressure hydraulic tools which include Enerpac pumps, cylinders, jacks or bolting tools, with the best of

service, fast execution, full commitment and guaranteed workmanship.

STEEL TORQUE WRENCHES – ADVANCED DESIGN

Enerpac's S and W-Series steel hydraulic torque wrenches are the most advanced and safe torque wrenches on the market. They now include a new handle to improve tool handling and safety when operating.

SPECIFICATIONS

- Constant torque output provides high accuracy +/- 3% across the full stroke
- Fast operation per wrench cycle
- Easily interchangeable cassettes
- TSP-Pro Series Swivel providing 360° X-axis and 160° Y-axis rotation

WIND ENERGY INDUSTRY

The company is able to offer the wind power industry the option of an on-site bolting tool service designed to reduce down time and improve safety and efficiency.

WAVE TURBINE COULD SIGNIFICANTLY BOOST PERFORMANCE OF OFFSHORE WIND

WAVEWINDER - A REVOLUTIONARY, UK INVENTED AND INTERNATIONALLY PATENTED WAVE ENERGY CONVERSION TECHNOLOGY COULD MORE THAN DOUBLE THE OUTPUT OF OFFSHORE WIND FARMS AT MINIMAL ADDITIONAL COST.

SUSTAINABLE AND CONSISTENT

After extensive testing and independent validation by industry experts, this innovative technology has been proven to be capable of delivering more sustainable and consistent zero emission/fuel cost free power than alternate sources - with energy capture efficiency approaching 20%, a capacity factor well in excess of 50% and an estimated unit power supply cost up to 40% less than other sources of energy.

A DIFFERENT CONCEPT

Unlike most other ocean energy conversion devices which rely on complex articulation, oscillation or 'over topping' principles, WaveWinder is an attenuator which continuously rotates.

WAVEWINDER

Best suited to near shore environments, where water depth is 20-30m and wave height is typically between 2-5m, the apparatus can be installed in isolation or can 'piggy-back' on existing offshore wind installations - with significant cost reduction benefit and ROI potential.

An array of units, equivalent in area to a football stadium, could deliver up to 10MW of near continuous power.

HOW IT WORKS

The key principle of operation is fluid flow both through and around the device which, by continuously displacing buoyancy along helical conduits, generates continuous rotary motion.

This rotation is then transferred by direct mechanical drive through a standard marine transmission system and converted to electrical power by a generator - similar to a wind turbine but without the added complexity of handling pitch and yaw.



RELIABLE AND COST EFFECTIVE

With just one major moving part, the device is also inherently simple, reliable, cost effective and durable.

Significantly, all the know how to implement WaveWinder already exist – from established manufacturing technology to industry proven offshore deployment, power transmission and operational expertise.

Reliability, durability and survivability are no different to other marine structures – many of which have been in continuous operation for more than 40 years.

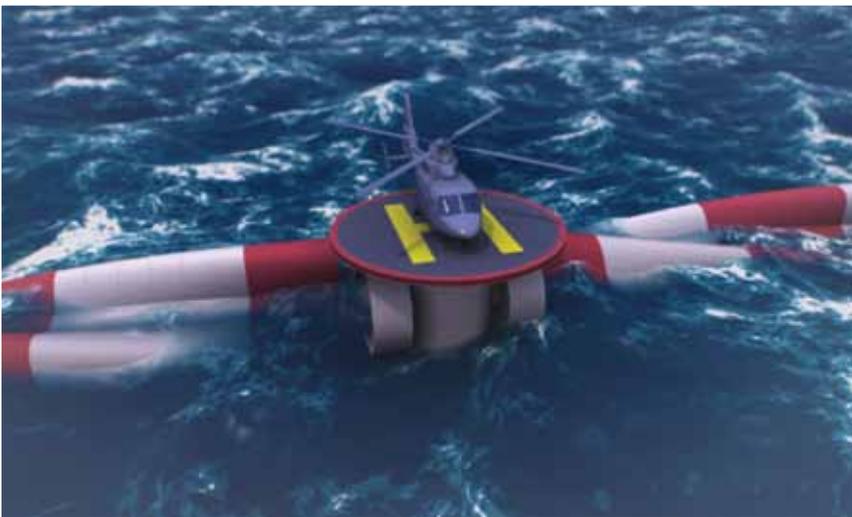
MITIGATING FAILURE

Consequence of failure is similarly mitigated. The units are unmanned, so there is minimal human risk, no combustible or toxic fluids are involved and ‘fail safe’ mechanisms can be incorporated which automatically disengage the rotor in the event of extreme weather conditions or potential catastrophic failure.

SERVICE AND REPAIR

In addition, WaveWinder can be serviced or repaired using helicopter or surface vessel access and the rotor assembly can be replaced in situ and towed to shore for repair.

WaveWinder
www.wavewinder.co.uk



20 QUESTIONS

JOHN BEST

WHO ARE YOU?

John Best, Head of Sustainable Energy, Fendercare Marine



WHAT BROUGHT YOU INTO THE INDUSTRY/YOUR POSITION?

I led the East of England Energy Group as CEO for 11 years. Fendercare Marine was a member of EEEGR, looking at ways in which they might raise their profile. As a result, I became particularly interested in the possibility of working closer with the company which for many years had been a “hidden secret” to the Energy sector. And so it is, after a 40 year apprenticeship that I find myself working for an international business in the global marine industry located just 4 miles from Loddon, Norfolk where I started my career at sea as a Navigating Cadet with Bibby Line, leaving school at the age of sixteen.

FAMILY STATUS?

I plan to marry my fiancée Jo this year. Between us, we are enjoying supporting and encouraging our children Amber, Sasha, Lily and Joel in their development.

WHO IS YOUR HERO AND WHY?

I have no specific hero; however I have been impressed and moved by the impact of small and effective groups and individuals who make a difference but are often quietly unsung. There are many.

WHAT ANNOYS YOU THE MOST?

Unnecessary and trivial issues that do not make a difference to peoples’ lives but occupy a large amount of our time.

WHO WOULD YOU NOT LIKE TO BE?

I would not like to be anybody who is a pessimist

WHAT IS THE BEST ADVICE YOU HAVE EVER BEEN GIVEN?

It’s better to ask forgiveness than permission

WHAT IS YOUR FAVOURITE SMELL?

Norfolk Lavender – there is something very calming and relaxing about its fragrance.

WHAT DO YOU DO IN YOUR SPARE TIME?

At home, I try to switch off from a busy work life - which may surprise some people. I enjoy relaxing with my family, going to the cinema, swimming when I can, visiting the theatre and dining with friends socially.

WHAT IS THE MOST BIZARRE SITUATION YOU HAVE FOUND YOURSELF IN AND HOW DID YOU DEAL WITH IT?

In the early 1970’s when visiting a port in West Africa, to pick up a cargo of timber, our pilot approached the berth too fast and we collided with the quay. I was on the forecastle head and was instructed to “drop the starboard anchor”. I did this but it landed on a raft of logs and floated rather than sank!!! Not very helpful. It was clear that something needed to be done quickly so I decided to drop the port anchor which fortunately held well and allowed us to stop the vessel.

WHAT IS YOUR FAVOURITE RECORD/ CD/ARTIST/MUSIC?

I have a fondness for “Moonlight Shadow” by Mike Oldfield and Maggie Reilly as it holds delightful personal memories.

IF MONEY WAS NOT A FACTOR WHAT WOULD YOU BUY TOMORROW?

I would enjoy the prospect of being a business angel to help young people (on a not for profit business basis) learn and develop team, entrepreneurial and vocational skills. Mainly because it’s harder for young people to get a start in life, yet so important for us all.

WHAT 3 WORDS WOULD BEST DESCRIBE YOU?

Energetic, tenacious and enthusiastic networker (that’s four - whoops!).

WHAT TALENT WOULD YOU LIKE TO HAVE?

I would enjoy being a talented musician or linguist – both enable one to communicate and engage internationally

WHAT MAKES YOU ANGRY?

I would prefer to use the word frustrated than angry. I get frustrated by unnecessary bureaucracy and the waste which it creates.

WHAT LAW/LEGISLATION WOULD YOU LIKE TO SEE INTRODUCED?

Given a magic wand I would prefer to see less legislation than invent any more.

WHAT PROMINENT PERSON WOULD YOU LIKE TO MEET?

Through my work, I have had the good fortune of meeting many inspirational people from all walks of life. If I had a time machine I would enjoy going back as a fly on the wall to watch some of the scientific breakthroughs that shape our lives today such as inventions by Thomas Edison.

WHAT BOOK ARE YOU READING AT PRESENT?

I am working through The Prize by Daniel Yergin. It is an astonishingly readable history of oil, reads like a novel. Lessons to learn for sustainability.

WHAT CAR DO YOU DRIVE?

I drive a Renault Scenic – I like the “sit up” feel of the car which is a bit like driving your sofa.

WHERE WOULD YOU LIKE TO BE 10 YEARS FROM NOW?

I will see 58 candles this year and so would like to be retired from work as I will have notched up my 50 years of gainful employment by then. I am keeping an open mind, but, I would like to remain actively engaged with people and contribute to society using my combined skills and experience gained from half a century travelling through the University of Life.

**'The Centre of Excellence,'
for Nationally Approved Training**

HOTA was established in 1987 by the industry for the industry



HOTA provides Nationally Approved Training Courses for Renewable, Offshore, Maritime & Onshore Organisations including:

- Survival
- Firefighting
- First Aid
- Medical
- Health & Safety
- Emergency Response
- Electrical
- Entry into Enclosed Space



More than 100 training courses are offered in the current training portfolio with timetabled courses running 51 weeks per year across its 3 major sites in Hull.

As a Limited Company with Charity Status, HOTA is renowned for its flexibility and capability to adapt training to meet company specific requirements.



01482 820565

www.hota.org

HOTA, Malmo Road, Sutton Fields Industrial Estate, Hull HU7 0YF
Tel: 01482 820567 Fax: 01482 823202 Email: info@hota.org



Offshore Wind. Delivered.

With over 225 turbine installations to date, Seajacks has the knowledge, experience and people to ensure your wind farm project is installed successfully and safely.



For more information on Seajacks and the services we offer, call +44 (0) 1493 841 400 or email info@seajacks.com

seajacks.com

KONECRANES®

Lifting Businesses™



Konecranes UK for versatile, easy and effective load handling solutions for the wind energy industry

See our full range of lifting solutions at

www.konecranes-uk.com

Simply Innovative



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Support the BBC Lifeline Appeal for Renewable World

The Charity of the Renewable Energy Industry

"I'd like to ask your company to support the BBC Lifeline Appeal for Renewable World. Renewable World helps bring renewable energy to some of the poorest, most vulnerable people in the developing world. As well as affording others some basic comforts we take for granted, energy also gives people access to healthcare and education, and the means to work their way out of poverty. Please watch the appeal on BBC1 at 4pm on Sunday 17 February and make a donation."

Gethin Jones



Worldwide, Renewable World helps deliver wind, solar, hydro and biogas energy services to vulnerable off-grid communities. Renewable energy pumps water for all year round irrigation, provides lighting and powers micro enterprises. This helps people like Sumina in Nepal (above) to afford a better education for her children and improve her livelihood because of greater profits from agricultural activities.

You can support Renewable World by letting your staff and clients know about the appeal. Email events@renewable-world.org or call 01273 234801 for your corporate supporter's BBC Lifeline Appeal for Renewable World pack.

Make a donation to Renewable World today! Visit www.renewable-world.org



Registered charity no. 1119467

BBC Lifeline Appeal for Renewable World: BBC1, 4pm, Sunday 17th February 2013